CHAPTER II
LITERATURE REVIEW

2.1 Telecommunication

The term telecommunication originates from the Greek word "tele," meaning "distant," and the Latin word "communicare," meaning "to convey" or "to share" (Bonok, 2023). In general, telecommunication refers to the technology that enables the transmission or exchange of information from one location to another. According to Law of the Republic of Indonesia Number 36 of 1999 on Telecommunications, telecommunication encompasses any transmission, sending, or receiving of information in the form of signs, signals, text, images, sound, or other data through wired, optical, radio, or other electromagnetic systems (Republic of Indonesia, 1999).

In the context of digital technology development, telecommunication plays a vital role as the primary medium for facilitating social interaction, business activities, and the global exchange of information (Solekan, 2009, as cited in Laili, 2023). Its implementation can be found in various media, including the internet, telephones, radio broadcasts, and television. Based on the nature of interaction, telecommunication can be classified into three main types: one-way communication (simplex), full two-way communication (duplex), and alternating two-way communication (half-duplex) (Solekan, 2009, as cited in Laili, 2023).

Simplex communication refers to the process in which the sender and receiver cannot interact directly through the same medium, as in the case of

television broadcasts, radio, or pagers. In contrast, duplex communication allows both sender and receiver to interact directly and simultaneously using the same medium, as commonly seen in telephone calls, Voice over Internet Protocol (VoIP), or video calls. Meanwhile, half-duplex communication enables two-way interaction alternately, such as in walkie-talkies, fax machines, or online chat rooms (Solekan, 2009, as cited in Laili, 2023).

For a telecommunication system to operate effectively, four essential components must be present (Widyanto et al., 2023). First, information, which represents the data being transmitted and may include voice, text, images, or even large document files. Second, the transmitter is the device or system responsible for initiating the transmission. Third, the receiver, the device or system that obtains the transmitted information. Fourth, the transmission medium, which is the channel through which information travels, such as cables, optical fibres, or wireless signals. A clear understanding of these components forms the foundation for achieving efficient and effective communication processes in both personal and professional contexts (Widyanto et al., 2023).

2.2 Glossary

According to the Kamus Besar Bahasa Indonesia (KBBI, 2025), a glossary is defined as a concise dictionary or a list of words accompanied by explanations within a specific field of knowledge. Conceptually, a glossary is a curated collection of terms focused on a particular subject area or discipline, complete with definitions

that clarify the meaning of words or expressions in the context of a language, field of knowledge, or specific human activity (Maculan et.al, 2023). In applied linguistics, a glossary is often referred to as a terminology dictionary, serving to maintain consistency and accuracy of term usage, particularly in technical translation. By arranging terms alphabetically, a glossary facilitates quick access to definitions and reduces the risk of misinterpretation.

In practice, glossaries are typically tailored to specialised fields, such as education, information technology, or linguistics, and are designed to meet the specific needs of their intended audience. They may take the form of printed glossaries, which are typically published officially by language authorities such as the *Balai Pengembangan dan Pembinaan Bahasa Republik Indonesia*, or digital glossaries, which are accessible as mobile applications or online databases with searchable and regularly updated content (Tarp & Gouws, 2023). This variety of formats ensures accessibility for users with different needs and preferences.

The scholarly study of glossary creation, known as glossography, examines how explanatory notes (glosses) are integrated into texts and develops theoretical frameworks for terminology management. As a branch of lexicography within applied linguistics, glossography traces its origins to Samuel Johnson's seminal A Dictionary of the English Language, which introduced foundational principles such as spelling standardization, etymological tracing, pronunciation guidance, and meaning clarification.

In the field of telecommunications, the role of glossaries becomes particularly vital due to the presence of numerous technical terms without direct equivalents in the Indonesian language. Telecommunications glossaries help maintain consistency in technical terms such as bandwidth, cyber drill, and payload. Across technical manuals, international standards documents, and regulatory frameworks. This function is crucial for preventing misinterpretations, especially in multinational collaborations or equipment interoperability testing (Widyanto et al., 2023).

Therefore, an ideal telecommunications glossary should be systematically organized, field-specific, and regularly updated. The definitions provided must be clear yet concise, while also considering cultural context and linguistic nuances to remain effective in technical document translation. A standardized glossary, whether in print or digital form, allows users to identify contextually accurate terms while ensuring consistent terminology usage, an increasingly important need in the face of rapid advances in digital communication technologies.

2.3 Technical Translation Theory

Technical translation is a specialised branch of translation that focuses on transferring texts containing specific terminology and functional content within a particular field. Unlike general translation, technical translation requires an in-depth understanding of the concepts, processes, and technical terms used in the relevant domain to ensure accuracy and avoid ambiguity (Saptaningsih, 2018).

Common types of texts in technical translation include technical reports, user manuals, patents, government regulations, and scholarly publications, each with its own stylistic and formatting standards (Newmark, 1988). Therefore, technical translators must not only master the source language (SL) and the target language (TL), but also have a clear understanding of the text's context, purpose, and intended readership.

Newmark (1988) points out that although technical terms typically account for only 5-10% of the total content, they carry significant weight in determining the accuracy and clarity of the translation. Errors in translating such terms can drastically alter the intended meaning, potentially leading to technical failures or legal issues. As a result, technical translation often employs specific strategies, such as retaining original terms for institution or journal names, translating standard terms directly, and providing explanatory footnotes for opaque or culturally bound terms (Catford, 1965).

Theoretically, translation is defined as the process of transferring the meaning of a text from one language to another while preserving the message, tone, and context intended by the original author (Newmark, 1988). Catford (1965) describes it as the replacement of textual material in one language with equivalent textual material in another language. However, such replacement is not always complete, as some elements, such as graphology or cultural nuances, may lack direct equivalents. Challenges become more pronounced when the SL and TL differ

significantly in purpose or cultural background, making it challenging to produce equivalent effects on the target audience.

In the telecommunications sector, technical translation becomes even more complex due to the industry's rapid technological evolution, precise terminology, and strict compliance requirements. Telecommunication documents such as equipment manuals, international standardization papers, and government regulations contain terms that must be translated consistently to prevent misinterpretation. Even minor errors in this field can lead to operational failures, hinder device interoperability testing, or result in non-compliance with global standards (Widyanto et al., 2023).

To address these challenges, the use of specialized technical glossaries has proven to be an effective solution. A glossary enables translators to maintain term consistency, reduce the risk of errors, and adapt to newly emerging terminology as technology advances. In telecommunications, glossaries may include definitions for terms such as bandwidth, cyber drill, and payload, which not only facilitate the translation process but also ensure shared understanding among all stakeholders. Thus, a glossary is not merely a translator's tool; it is a critical instrument for ensuring accuracy, clarity, and reliability in multilingual technical communication.

2.4 Ministry of Communication and Digital Affairs Republic of Indonesia

The Ministry of Communication and Digital Affairs is a government institution responsible for overseeing state affairs in the fields of communication

and information technology (Regulation of the Ministry of Communication and Digital Affairs, 2025). As the regulatory authority, the Ministry plays a strategic role in establishing standardised telecommunication terminology in Indonesia, particularly in response to the rapid growth of digital infrastructure that demands the harmonisation of technical terms. This standardisation effort is essential, given the variety of official documents, regulations, and publications that employ telecommunication-related terminology within the national context.

The primary purposes of telecommunication terminology standardisation are to prevent confusion among standards users caused by conflicting terms and definitions, and to facilitate alignment among various stakeholders involved in the development of telecommunication standards (International Telecommunication Union (ITU-T, 1994). The implementation of this policy is expected not only to optimize regulatory quality in the telecommunications sector but also to serve as a model for other ministries or agencies facing similar challenges in managing technical terminology.

The close alignment between theoretical foundations and practical needs underscores the urgency of developing a Telecommunication Glossary. This glossary presents standardized telecommunications terms in an Indonesian-English bilingual format, accompanied by definitions to enhance user comprehension and provide quick access to accurate terminology. Additionally, it will include example sentences sourced from official documents referencing international regulations, such as ITU Report, thereby serving as a reliable reference for professionals,

academics, and stakeholders in the telecommunications field. Consequently, this initiative not only addresses current terminological challenges but also supports broader objectives of clarity, efficiency, and compliance within Indonesia's digital communication landscape.

2.5 Previous Studies

A review of previous studies serves as a crucial foundation for establishing the theoretical and methodological basis of this research. Such a review provides insights into the outcomes of earlier works and facilitates comparative analysis to support the current study (Creswell, 2014). One relevant work was conducted by Rohani and Suyono (2021), titled "Developing an Android-Based Bilingual E-Glossary Application for English for Specific Purposes (ESP)." This study focused on the development of a mobile application designed to assist learners in understanding English for Specific Purposes terminology through an Android-based digital medium. While valuable for language learning, the research did not specifically address telecommunication terminology nor explore the use of a glossary format.

Another contribution, which introduced A Glossary for Knowledge Organization Systems Terminology, emphasizes the conceptual and systematic arrangement of terms within knowledge organization systems (Maculan et al., 2023). This approach highlighted the importance of structured and consistent terminology to facilitate user access to information. Similarly, developed a glossary

product titled Developing a Slang Terms Dictionary, compiling informal vocabulary into a structured reference format. Both studies demonstrate that a glossary approach can be adapted for different purposes; however, neither has applied it specifically within the telecommunications sector.

Drawing on these findings, the present study introduces innovation through the development of the Telecommunication Glossary. Unlike previous works, the product in this research employs a glossary format that is highly practical and accessible, particularly for institutions requiring concise and clear printed references. The glossary not only presents standardized telecommunication terms in a bilingual (Indonesian-English) format but also includes definitions, example sentences, and illustrative visuals to enhance contextual understanding. Considering the dynamic nature of telecommunication terminology, the glossary is designed for easy future updates, ensuring its continued relevance (Byrne, 2006; Cabré, 1999). This approach bridges the gap left by earlier studies and makes a significant contribution to the management of technical terminology in the telecommunications field.