

Borrowing and Adaptation of English IT Terms in Sinhala: A Critical Literature Review

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ABSTRACT

This literature review examines the morphological processes used in adapting English Information Technology (IT) terminology into non-European vernacular languages, particularly Sinhala. The review synthesizes scholarly discussions on language adaptation, borrowing, and lexical innovation, with particular emphasis on the role of morphological processes such as borrowing, calques, affixation, hybrid compounds, transliteration, and phonological adaptation. Drawing on both global and Sri Lankan scholarship, the study explores how languages negotiate the growing dominance of English in the field of Information Technology while preserving linguistic and cultural identity. The review highlights that different languages adopt varying strategies depending on socio-cultural, political, and linguistic contexts. European languages such as French and Spanish frequently employ native equivalents and phonetic assimilation to maintain linguistic purity, whereas Asian languages often combine transliteration, semantic translation, and direct borrowing. In the Sinhala context, studies reveal that English loanwords are adapted through suffixation, hybridization, Sanskritization, and phonological assimilation to align with Sinhala phonotactic and grammatical structures. The review further identifies socio-linguistic influences such as language policy, educational background, cultural norms, and communicative efficiency as key determinants in shaping adaptation strategies. Additionally, the literature points to several challenges in adapting IT terminology, including the absence of equivalent native lexical items, inconsistencies in terminology usage, and difficulties in maintaining accuracy and clarity. Despite the growing body of research on technical terminology adaptation, limited attention has been given to the specific morphological processes involved in adapting English IT terms into Sinhala. Therefore, this review establishes the theoretical and contextual foundation for examining the linguistic mechanisms underlying Sinhala IT terminology adaptation.

Keywords: Morphological Adaptation, English Loanwords, Information Technology Terminology, Sinhala Language, Language Borrowing

INTRODUCTION

The rapid expansion of Information Technology (IT) has transformed communication, education, commerce, and everyday social interaction across the world. As technological innovations continue to emerge, English has become the dominant language of digital communication and technical knowledge, resulting in the widespread circulation of English IT terminology across both native and non-native English-speaking societies. Consequently, many vernacular languages have been compelled to adapt English technical vocabulary in order to facilitate technological accessibility and effective communication among local users. This process has become particularly significant in multilingual and postcolonial societies where English functions as a global lingua franca while local languages continue to serve as the primary medium of cultural and social identity. In this context, language adaptation plays a crucial role in bridging the gap between global technological advancement and local linguistic practices.

Sinhala, as one of the official languages of Sri Lanka, has increasingly absorbed English IT terminology through various linguistic and morphological processes. With the growing use of computers, smartphones, social media platforms, and internet-based communication, English technical terms have entered everyday Sinhala discourse

in both formal and informal contexts. These borrowed terms are often modified to conform to Sinhala phonological, grammatical, and morphological structures through processes such as borrowing, affixation, hybridization, calques, transliteration, and phonological assimilation. At the same time, socio-cultural influences, language policies, and the need for communicative efficiency also shape the adaptation of technical terminology in Sinhala. Although numerous studies have examined language borrowing and technical terminology adaptation in global contexts, limited scholarly attention has been paid to the specific morphological mechanisms involved in adapting English IT terminology into Sinhala. Therefore, examining these adaptation processes is important for understanding the evolving relationship between language, technology, and linguistic identity in contemporary Sri Lankan society.

COMMON TRENDS HIGHLIGHTED IN THE GLOBAL CONTEXT

The common themes highlighted in existing knowledge are morphological processes used to adapt English IT technical terms in other languages, socio-linguistic impact on adapting IT terms in non-European vernaculars, and challenges in adapting English IT terminology in them. This section provides a detailed overview of such common trends discussed in the global context.

Morphological Processes Used in Adapting English IT Terms

The role that English currently plays as a lingua franca is unquestionable. It has become the most widespread vehicle of communication among speakers of multiple languages across the globe. In the area of Information Technology (IT), English has gained a dominant position, since many of the terms employed on a daily basis are in English (García & García-Sánchez 2020). Therefore, it is of prime importance to unravel how English IT terminology is adapted to various non-English vernaculars. Moreover, many studies related to the phenomenon of adapting IT terms in non-English vernaculars are confined to the types of adaptation strategies used.

García & García-Sánchez (2020) aptly discuss how English technical terms are adapted in the field of IT by five European languages: Italian, German, French, Portuguese, and Spanish. Thus, the study examines how 53 technical terms, such as folder, upload, download, sign in, merge, pull, push, SSH key, database, hardware, interface, file, etc., are adapted. These terms are originally English; however, each of the examined languages develops different strategies of non-adaptation (using the source term with no modifications), phonetic adaptation (addition of German suffix -en, French final -e, etc.), grammatical swaps (converting nouns into verbs), native equivalents, and hybridization to adapt IT technical terms. The data reports that the most frequently used type is non-adaptation, and the less frequent type is phonetic adaptation. Phonetic adaptation and native equivalents are majorly found in French, as it prefers to nativize foreign terms to fit into the native identity. The research further suggests that the adaptation strategies reveal the degree of exposure to English by professionals working in the field of IT.

Nikitiuk (2022) describes the modern processes associated with the adaptation of English IT terms in French and Italian. The study examines the structural types of simple words, compound words, derivative words (suffixes and prefixes), and abbreviations belonging to IT terminology. Thus, French and Italian employ the assimilation process when adapting the borrowings into native phonetic norms while fully or partially retaining their original appearance. For example, the English term “animation” [æniˈmeɪʃn] becomes French “animation” [animasj] and English “client” becomes Italian “client”.

In addition, both languages tend to convert/translate compounds and prefixes and suffixes replacing native features. However, this does not precisely align with the concept of loan translation. For instance, the English term “test concept” is transformed into the French concept de test. This example illustrates the replacement of an English prepositionless structure with a prepositional French one, adding the preposition de and rearranging the word order according to native language rules. Similarly, both languages use the respective affixes to replace English affixes: The adaptation of derived English lexical items in French often involves the use of various suffixes such as tion (the most frequent suffix), age, ique, ment, eur as given below.

- acceptance test > test d'acceptation

- **indicator** > **indicateur**
- **parameterisation** > **paramétrage**
- **e-government** > **cybergouvernement**
- **informatics** > **informatique** (Nikitiuk, 2022, p. 81)

The most frequent suffixes used by Italian include *zion* (*sion*), *ità*, *ment*, *ur*, *enz*, and the prefixes *ciber*, *tele*, *ri*, *sotto* when adapting English IT borrowings. For example,

- **application** > **applicazione**
- **compatibility** > **compatibilità**
- **retrieval** > **ritrovamento**
- **transparency** > **trasparenza**
- **eOrganisation**, **e-organisation** > **ciberorganizzazione** (Nikitiuk, 2022, p. 83)

When adapting abbreviations, both languages use the method of direct borrowing with no structural changes to the source word. The study reveals that both languages preserve the original term structure in the adaptation processes. Thus, according to Nikitiuk (2022), French and Italian prioritize maintaining nativeness when adapting English IT terminology.

Zaki (2024) briefly discusses the three modes of adaptation that French uses to integrate the vocabulary of computing into its linguistic system namely: *calque* (which includes two subcategories: *semantic calque* and *morphological calque*); *loanword* (which includes three subcategories: *full loan*, *hybrid loan*, and *modified loan*, and *neologisms*). Zaki (2024), Molnar (2011), Nikitiuk (2022), and many other research on the adaptation of English IT terms in French depict how French prefers to preserve its native identity. “French authorities have adopted a language policy aimed at avoiding the massive use of Anglicisms and at enriching and modernizing the French language so that it can express all the scientific and technological innovations, the number of which continues to grow every day” (Zaki, 2024). Therefore, French frequently uses processes such as *assimilation* *process/phonetic adaptation*, *affixation* and *loan translation* when adapting English IT terms.

Tatsenko & Orol (2021) depict that the most commonly used methods of adapting English IT terminology in Ukrainian are *equivalent*, *loan translation*, and *transliteration*. One of the predominant methods in adapting abbreviations and acronyms of IT terminology is *borrowing* with the preservation of Latin writing. In addition, IT terms borrowed from English, are also transferred to the Ukrainian language through the methods of *transcription*, *modulation*, and *grammatical substitutions*. Similarly, Oliinyk et al (2022) also mention that Ukrainian mostly uses the method of *transliteration* in adapting IT terminology.

Kuzmina (2020) analyzes the process of borrowing and adapting English loan words in the Spanish information and communication technologies terminology. The study comparatively examines the glossaries and dictionaries compiled by the Royal Spanish Academy and the National Corpus (CORPES XXI) of the Spanish language. The Spanish Academy recommends the spelling and grammatical adaptation of Anglicisms and offers Spanish equivalents to replace them. Therefore, the Dictionary of Spanish Language contains a large number of borrowings adapted to Spanish and a smaller number of direct borrowings. The dictionary includes direct borrowings such as *byte*, *gigabyte*, *kilobyte*, *megabyte*, etc. Some borrowings retain the form and pronunciation of the original language, especially if these borrowings have terminological meanings and are used on an international scale.

Analyzing the Corpus (CORPES XXI), the author reveals that some English borrowings interact with the lexemes of the Spanish language, obeying the Spanish syntagmatic structures. These examples include *página web* (web page), *sitio web* (web site), *servicio web* (internet service), *web correo* (email), etc. These examples confirm the high degree of assimilation of such borrowings and their cognitive interpretation by users of these technologies. Thus, according to Kuzmina (2020), Spanish adapts English IT terms through direct borrowings retaining the original form and pronunciation, *assimilation*, and Spanish counterparts (native equivalents).

Kameneva (2019) analyses articles from professional journals, materials from thematic conferences, and websites of professional organizations, and concludes that approximately half of the scientific terms in the field of information technology are formed through transliteration, while a smaller proportion, about 40%, are formed through loan translation in Russia. Industry professionals frequently use Anglicisms or transcribed equivalents to refer to scientific concepts.

Accordingly, Kameneva (2019) describes that a significant number of two-part terms such as “internet” and “web” and phrases such as “internet community” and “internet application” are adapted through transliteration or a loan translation. In addition, English abbreviations are directly borrowed. As a result, such abbreviations have become increasingly prevalent in specialized publications and mass media. In contrast, spoken professional and business communication among industry specialists is replete with Anglicisms and transcribed English terms, as well as various hybrid forms and Russified terms. Kameneva (2019) further argues that recently, the majority of IT terms entered the Russian language via transliteration, likely due to the growing complexity of technologies, terminology, and the rapid development of new scientific and technical fields. A clear trend is emerging toward simplifying the use of English terms through transliteration and transcription in Russian computer discourse (Kameneva, 2019).

Kameneva (2019) concludes by claiming that the language of IT continues to contribute to the lexical and phraseological systems of Russian and other languages, borrowing and assimilating English terms through loan translation, transliteration, and other translation methods. Terms often originate by transferring the meanings of general conversational words into the specialized language of computer technology, followed by their consolidation within it (Kameneva, 2019). In summary, it is apparent that Russian prefers adapting English IT terms mainly through transliteration and loan translation. In addition, hybrid compounds, direct borrowings, and transcription are used in the adaptation process. Moreover, the authors identify that technical terms are used in two different ways: although there are formally created terms in the glossaries, they are not used in spoken contexts.

Matsuda et al (2008) look at the different approaches to adopting technical terms, including IT terminology in three Asian Languages: Japanese, Vietnamese, and Thai. This study examines academic databases and employs a statistical analysis of technical terms. The authors claim that there are two approaches widely used in Asian languages: phonetic adoption (transliteration of borrowed terms) and semantic adoption (expressing the meaning through a substituted native word). Accordingly, Vietnamese tends to adopt words into its language semantically, through adoption, while Japanese adopts them phonetically through transliteration. However, IT terminology is prevalent in Japanese in the Katakana language¹. Thai, to a large extent, has chosen the approach of using the source language (English) in many domains (therefore, Thai contains a considerable amount of direct borrowings and phonetically adopted ones). However, IT terminology is largely in Thai.

According to Singh (2021) and Baksi (2024), Indians initially adapted all types of technical terms, including IT terminology, to Sanskrit; therefore, Hindi contained a large number of Sanskritized technical terms. In addition, Arabic and Persian languages were also employed in adapting technical terms. During the 19th century, the government found that Urdu was the most appropriate vernacular to acquire Western knowledge (because this language includes a large cluster of Arabic and Persian borrowings). Thus, technical terms were developed by translating directly from English to Urdu and by creating neologisms in Sanskrit. In this process, Indian linguists used the strategies of translation and transliteration.

Volkova, Vasilyeva & Abramova (2022) discuss the methods used to adapt IT terms in Russian, examining 500 English multicomponent terms of the IT sphere and 500 of their Russian equivalents taken from the computer terms dictionary. This study classifies IT terms into three categories, namely three-component, four-component, and five-component terms. 44% of three-component terms were adapted as calques, preserving the structure and meaning. Further, due to the typological differences between the English and Russian languages, the grammar transformations such as changing the order of the components, using cases and prepositions, and changing parts of speech were used. In 13% of cases, shorter Russian terms were used to express the same meaning as the

¹ There is a historical background behind this, which will be discussed in the next section.

original multicomponent English terms. Four-component and five-component terms have been adapted by changing the general order of the components. Volkova et al (2022) summarizes that calques, clarification, transliteration (mainly one or two components), lexical addition and description are the most commonly used methods.

In summary, various languages adopt different strategies to adapt IT terms in the native discourses. While some strategies are influenced by informal usage, some countries are involved in developing formal methods of adapting IT terms in their native languages. French and Spanish, more significantly, employ different strategies to nativize the terminology, avoiding foreign lexicon within the vocabulary. Asian languages such as Hindi have the influence of their donor languages in contact, such as Sanskrit. Collectively, most of the countries use transliteration and loan translation to adapt IT terms, while abbreviations are directly borrowed.

Socio-Linguistic Implication of IT Terminology Adaptation

The above illustration on the morphological processes of language adaptation and strategies of adapting English IT terminology into different languages reveals that there is a strong socio-linguistic impact on this phenomenon. Some languages attempt to localize English borrowings, imbuing native identity, while some languages attempt to preserve the subject authenticity; therefore, preferring direct borrowings. One salient phenomenon that similar studies highlight, along with the morphological processes, is the socio-linguistic impact of adapting IT terminology in non-English vernaculars. Therefore, it is important to investigate this aspect. This section intends to analyze similar studies that document this phenomenon. Many studies have discussed the impact of cultural norms, political influences, and effective communication in this respect.

Cultural norms have a wider impact on adapting technical terms. Shenishin, Najm, & Hegazi (2022) mention that terms that convey bawdy meanings or anti-cultural norms should be settled to ease the target audience. Therefore, there is a possibility not to create localizations in the adaptation process, specially in a language like Arabic. Thus, culture and language differences have a significant impact on adapting new concepts in a language. It is evident that localization hinders the authenticity of the source term and faces challenges in terms of cultural norms.

According to Singh (2021), English literacy of the target community is a significant factor that influences the creation of IT terminology. IT has emerged as an enabling technology in reducing the knowledge gap across different linguistic groups encompassing over 95% of India's population that is not English-literate. It is, therefore, necessary that people should be able to use computers and other IT systems in their own language. This fact necessitates the need to effectively adapt IT terminology within the field.

Similarly, Kenges & Kurmanbayuly (2023) reveal that the consistency in IT terminology depends on the target community. This study depicts that the amount of IT technical terms in the Kazakh language is dominated by Russian terms: the frequency of using some Kazakh terms is zero. Moreover, variant terms have been created, making similar words to describe the same concept. The technical terms given in the Computer Science textbook from grades 4 to 7 are not used in termicom.kz database, which reveals a lack of consistency in IT technical terms prevailing in the Kazakh language. Presenting these problems, Kenges & Kurmanbayuly (2023) argue that, although technical terms are formally created maintaining language standards, the usability of terms is more important. Thus, this study also reveals that the target audience is the most convenient factor that decides the effectiveness and the usage of the term.

García & García-Sánchez (2020) reveal how effective communication serves as an influential factor in adapting IT Anglicisms. Accordingly, this study argues that one of the main features of the scientific lexicon is its accuracy, neutrality, and economy. This refers to the creation of international terminologies whose main goal is to facilitate communication among expert users from different parts of the world who also speak different languages. These terminologies intend to fulfil two of the basic principles of specialized languages: accuracy and avoidance of ambiguity. Thus, García & García-Sánchez (2020) aptly depict the importance of using effective adaptation processes such as phonetic adaptation, hybridization, borrowings, etc., when incorporating English IT terms in different languages.

Matsuda et al (2008) mention that the native languages dominate in technical glossaries in Asian languages such as Japanese, Vietnam, and Thai: these languages excessively use native counterparts rather than English borrowings. The socio-linguistic reasons behind this trend are prioritizing semantic adoption in Asian countries, language policies and historical background. Semantic adoption is popular among Asian languages due to the diversity of scripts in Asia. In European countries, adapting or sharing terms by phonetic adoption is easier because almost all languages have the same origin and share the same script. Therefore, in order to achieve mutual communication using technical terms, Asian countries need to make special efforts to go over the variation and harmonize terms with each other.

Second, various social, political, and historical factors influence language use in Asian countries. This applies to the adoption of technical terminology too. In Vietnam, adoption is strongly promoted under the strict language policy. “The Political Resume of the Socialist Republic of Vietnam states that every nationality has the right to use its own language and system of writing, to preserve its national identity, and to promote its fine customs, habits, traditions and culture” (Matsuda et al, 2008, p. 30). Therefore, they seldom use phonetically adopted words. This political reason also impacts the primary cause for the semantic adoption of terms (Matsuda et al, 2008).

Moreover, English is not a mandatory subject in Vietnam, which has resulted in a low prevalence of phonetically adopted words from English, as many individuals are unable to understand their meaning. Additionally, the Vietnamese language has historically been influenced by various foreign languages, including Chinese, French, and Russian. As a result, Vietnamese technical glossaries do not contain English borrowings or contain a larger proportion of native equivalents (Matsuda et al, 2008). This is also one pivotal socio-linguistic aspect that influences the adaptation of IT terminology in Vietnam’s lingua franca.

Similarly, Chinese characters and words were integrated into Japanese centuries ago and are now considered part of the native Japanese language. By the late 19th century, numerous Kango (words written with Chinese characters but created by Japanese speakers) were developed to represent Western technical terms. Since World War II, it has been the mainstream to transliterate into Katakana. Therefore, Katakana influence is wider in Japanese IT terminology. After centuries, Japan began to be familiar with English and the language was used in teaching-learning practice in Japanese education institutes. As a consequence of this historical practice, while Japanese teachers and students were familiar with many English loanwords, IT terms began to be pronounced in accordance with Japanese phonetic rules (Matsuda et al, 2008).

Thai, as per Matsuda et al (2008), is less influenced by Chinese but has been significantly shaped by Sanskrit, resulting in a high prevalence of technical terms phonetically derived from Sanskrit. However, English influence on Thai later changed this identity. While Thai possesses native equivalents at the lexical level, English is commonly used as the medium of instruction in higher education. Consequently, despite the availability of native terms, there is a preference for using terms phonetically derived from English or employing English directly.

Thus, Matsuda et al (2008) provide a comprehensive overview of the impact of socio-linguistic aspects in adapting English IT terms into native languages. The influence of donor languages, language policies, and trends in education are remarkable aspects in this regard.

Another outstanding socio-linguistic factor is the puritan concept. Zaki (2024), Molnar (2011), Nikitiuk (2022), and many other French studies depict how French attempts to adapt English IT terminology with a nativized identity. Molnar (2011) mentions that French normalizing organizations try to prevent English technical terms from spreading in French and replace them with authentic French terms. Although it is not rigidly given, Matsuda et al (2008) also reveal that the Vietnamese consider using nativized terms despite their familiarity with English. Baksi (2024) also indicates that the puritan approach dominated when creating technical terms in Hindi; therefore, it advocated that classical sources of Sanskrit and Arabic should be utilized for the purpose. Indian language activists have played a powerful role in this respect. Thus, such languages have used adaptation strategies that created more localized terminology.

Hence, various socio-linguistic factors such as political reasons, cultural norms, languages in contact, effective communication, and language purity have a substantial influence on adapting English IT terms in vernaculars. The adaptation processes that the languages use primarily depend on such factors.

Challenges in Adapting English IT Terminology

Another pivotal topic that similar studies cover is the challenges encountered by vernaculars when adapting IT terminology. One influential factor in this regard is the lack of specialized terms in vernaculars. Kornieva & Kozak (2023) investigate the latest trends in the formation of terms in the field of software development and identify difficulties in adapting such terms in vernaculars. This research depicts that the IT field creates complications in terms of terminology due to its dependence on English. Accordingly, one of the main complications is translating or adapting a multi-component lexicon due to the unavailability of equivalents in the Ukrainian language.

Further supporting this argument, Shenishin (2022) mentions that linguists and translators tend to Arabization technical terms that do not have native counterparts. Consequently, it is not possible to develop a purely Arabic word. This also addresses the intricacies involved in rendering the authenticity of the word, which also affects authentic translation. For example, the Arabic language consists of three lexical items to replace the term 'servers', as linguists followed three different approaches to adapt the word. In addition, due to the difference between language lineages, non-European languages find it difficult to form single-term equivalents for English technical terms. Therefore, languages opt to create phrasal nouns and descriptive terms to replace English words. Thus, it is apparent that languages face challenges when the origin is not European.

A similar challenge that arises regarding the creation of technical terms is accuracy and clarity. Tatsenko & Orol (2021) state that one crucial feature of a technical term ought to be accuracy and clarity, which challenges the formation of technical terms. This study claims that several strategies used to adapt IT terms in Ukrainian are less effective. In many instances, adapted terms need annotations in translations and technical writings. In addition, as accuracy and clarity have become a pressing challenge, Ukrainian contains multiple IT technical terms. This situation has arisen because many efforts have been made to create effective technical terms that preserve clarity and accuracy. Thus, it is clear that maintaining precision in technical terms has become a challenge.

This fact is further supported by Fetisova, Voytkova, Podkamennaya, Nevolina, & Universalyuk (2020). This study examines Russian IT terminology in technical writings and English IT source words. The authors suggest various strategies, such as semantic translation, descriptive translation, and replacement of Russian counterparts, to effectively indicate IT terms in translations, specifically to maintain clarity.

Due to the domain-specific terminology in the field of IT, and also due to the fact that IT texts are full of colorful words and phrases based on word-play (puns), translators have to use explication (descriptive translation) to convey the meaning of such expressions (p.268).

Further, the research argues that replacing Russian counterparts is challenging because it might convey a different meaning compared to the source word. Thus, using IT technical terms even within domain-specific writings also have become a challenge due to language barriers.

The ideal solution for the above two challenges is phonetically adapting English terms, yet languages such as Asian and Arabic have created various political and cultural restrictions, such as language purity. As aforementioned, not only languages such as Hindi (Baksi, 2024) and Vietnamese (Matsuda et al, 2008), but also French was influenced by language purity in terms of adapting English technical terms (Molnar, 2011) (including IT terminology). This phenomenon appears as a challenge before creating technical terms in vernaculars.

Hence, adapting foreign technical terms itself has become a challenge for many non-English vernaculars. The major reason appears to be the difference in language origin, which results in a lack of specialized terms in

vernaculars to replace the English IT lexicon. Therefore, languages find it difficult to create a consistent set of technical terms while maintaining accurate meaning. On the other hand, language purity plays a dominant role in the phenomenon.

Linguistic Implication of IT Neologisms

Apart from the common themes discussed above, the impact of IT neologisms/technical terms on languages is highlighted in similar studies. The phenomenon that is more salient is the role of English when adapting IT technical terms in other languages.

The widespread use of English as an international language and the advent of the internet as a mode of fast communication channel, which has no boundaries, both are mutually enforcing novel trends and bringing tremendous changes in this age of globalization. English is the only language that is internationally spoken and accepted. Furthermore, the impact of the English language on the internet has been disclosed above, and it has also been proven that there are many websites using English as their medium of communication (Sofyan, 2019, p. 74)

Supporting this, Pan (2022) describes that information technology enabled English as the widely used language within the internet-using community.

In 1996, it was estimated that 80 percent of the people using the Internet were English-speaking. In 2000, the figure had fallen to 54 percent, with 7.1 percent Japanese-speaking, 5.4 percent Chinese-speaking, 5 percent German-speaking, 4.7 percent Spanish-speaking, and 3.9 percent French-speaking. Nevertheless, the fact that numerous people using the internet in English proves the power of the English language within technology (Pan, 2022, p.4).

Similarly, according to Chaudhari (2022), every human being uses their MT or L1 for day-to-day communication; however, the rapid growth of IT connects people through English. In this era of globalization, the new changing communicative forms such as social media and virtual groups have proved to be lucrative and rewarding disciplines. “English has become an advent of catering for the smooth and easy needs of communication, which has bridged people together”. Therefore, the access and use of these new and changing forms have become easy.

It follows that the influence of IT on English as a language of communication is clear. In addition, beyond the terms coined to name IT devices, other novel trends also had a significant impact on languages. Supporting this fact, Oliinyk et al (2022) mention that abbreviations emerged under the influence of the widespread development of mobile communications enabled via popular services such as ‘WhatsApp’, ‘Facebook’, ‘Messenger’, etc. This research on the digital influence on language leads to several conclusions:

- The emergence of new words is due to the emergence of new objects, phenomena, and concepts.
- Simplification of languages occurs for the sake of the economy of linguistic means in communication through the use of internet messaging services, mobile communications, video telephony, etc.
- Globalization and internationalization of the world's languages occur through the Internet, which simplifies international communication.
- The spread of Internet culture, the popularity of memes, and cultural phenomena specific to the Internet community impact language as a tool of online and offline communication. (Oliinyk et al, 2022, p. 45)

Pan (2012) highlights the emergence of a fourth language² influenced by the growth of IT. The fourth language is the communicative language, which is referred to as the netlingo in this study. Netlingo is not a version of English; it is a version of communicative language generated by net speakers. “The special features of this type of language include word compounds and blends (e.g. weblish, shareware, netiquette etc.), abbreviations and acronyms (e.g. THX 'thanks', IRL 'inreal life', F2F 'face-to-face', BTW 'by the way', OMG 'oh my god', BFF 'best friends forever', BRB 'be right back', etc.), less regard for accurate spelling and/or typing errors, and minimal

² Davis Crystal introduces internet language as the ‘fourth medium of communication’

use of capitalization, punctuation, and hyphenation” (p.4). Although it is said that netlingo is not a version of English, (so there can be other versions as well), the English netlingo is commonly used by net speakers all over the world. This phenomenon, in one hand, depicts the significance of English in the digital era in introducing and coining new words.

The work of Gao (2006) documents the changes in the Chinese language under the influence of computer communication and the Internet. In addition, Panyushkina (2014) reveals several features of communication in Spanish language social networks and concludes that the main consequence of digitalization is the formation of neologisms that form new concepts (Internet, e-mail, browser, server) and these neologisms affect both phonetic and grammatical aspects of the language, abbreviations, orthography, punctuation, etc. Although the development of language is a natural process, the widespread digital neologisms play a significant role in language development.

Firuzabonu (2018) mentions that the rapid development of new computer technologies and methods for processing information inevitably influences the formation of new words and lexical meanings. In the recent years computer technology has added a significant number of new terms to the language such as webinar, malware, netroots, and blogosphere. These scientific and technical neologisms are a major phenomenon that makes essential changes to the linguistic model of the world.

Thus, the rapid growth of IT has led to the widespread use of English as a global language across many fields. Consequently, English plays a predominant role when coining new technical terms, specially for IT. However, these studies predominantly highlight the impact of communicative language, which is not the major focus of the current study and provide little emphasis on the adaptation of scientific technical terms of IT in vernaculars.

COMMON TRENDS HIGHLIGHTED IN THE SRI LANKAN CONTEXT

Research on adapting English terminology into Sinhala has mainly focused on scientific and technical vocabulary, while studies specifically examining Information Technology (IT) terminology remain limited. Existing scholarship largely discusses the broader processes of borrowing, substitution, and standardization of technical terms in Sinhala, together with the linguistic and sociocultural challenges that emerge in these adaptations. More recent studies tend to emphasize technological developments related to Sinhala language enablement in computing, particularly within the fields of Natural Language Processing (NLP), machine translation, localization, and language engineering.

Within this broader context, the adaptation of English loanwords into Sinhala has become an important area of sociolinguistic and morphological inquiry. Since English functions as a major source language for scientific and technological vocabulary in Sri Lanka, many English-origin terms have entered Sinhala through systematic adaptation processes. Scholars such as Dissanayaka (1969; 1998; 2003; 2005; 2007; 2017), Kanduboda (2015), Balagalle (1996), and Premawardhana (2003) identify several processes involved in integrating English words into Sinhala, including affixation, hybrid compounding, phonological assimilation, loan translation, and Sanskritization. These processes are particularly relevant to IT terminology, as many English technological terms are adapted to fit Sinhala grammatical and phonological patterns. Therefore, examining the morphological processes used in adapting English loanwords into Sinhala provides a foundation for understanding how English IT terms are localized in Sinhala usage.

Morphological Processes in Adapting English Loanwords into Sinhala

English functions as a dominant lingua franca in many societies and has significantly influenced Sinhala through borrowing and adaptation processes (Tonkin, 2004 as cited in Kanduboda, 2015). In the Sinhala context, this influence is particularly evident in the integration of English content words, especially nouns and verbs, rather than functional categories (Kanduboda, 2015). Studies such as Kanduboda (2015), Premawardhana (2003), and Weerakoon (2000) identify systematic strategies used in substituting English loanwords into Sinhala. These adaptations are largely shaped by morphological and phonological processes that align borrowed forms with Sinhala structural patterns.

Dissanayaka (1969; 1998; 2003; 2005; 2007; 2017) provides a comprehensive account of Sinhala loanword adaptation. English nouns are commonly integrated through affixation. For instance, person-denoting nouns take the suffix *kenek* (e.g., waiter-*kenek*), while pluralization is marked with *-la* (e.g., waiter-*la*) or *-yo*. Thing-denoting nouns are often nominalized using *eka* (e.g., car-*eka*), while definiteness and case relations are expressed through additional suffixes such as *-k*, *-ta*, and *-wala* (Dissanayaka, 2007).

Verbal borrowings are adapted using auxiliary Sinhala verbs such as *karanawa* (transitive) and *wenawa* (intransitive), with tense and modality expressed through forms like *kala*, *wuna*, and *karai* (Dissanayaka, 2007). This results in hybrid verb constructions such as *develop-karanawa* and *develop-wenawa*, reflecting structural integration into Sinhala grammar.

Phonological adaptation is also central to loanword integration. English borrowings are modified to conform to Sinhala phonotactics through vowel epenthesis, consonant doubling, and sound substitution (Balagalle, 1996; Dissanayaka, 2005). For example, final consonants are typically vowel-finalized (e.g., bank > bæŋku, lamp > la:mpu), while certain consonants undergo systematic substitution (e.g., /f/ > /p/, /t/ doubling in *minittu*). Such processes result in nativized phonological forms that fit Sinhala syllable structure.

Overall, English loanword adaptation in Sinhala involves affixation, hybrid compounding, phonological assimilation, and loan translation. These processes collectively enable the integration of English-origin terms into Sinhala while maintaining structural and phonotactic conformity (Dissanayaka, 2007; Balagalle, 1996; Premawardhana, 2003).

When forming IT terms in Sinhala, these processes have been used in various degrees. In addition to phonological and morphological integration, some English IT-related terms are adapted through loan translation and Sanskritization. Technical terms are sometimes rendered using Sanskrit-derived equivalents or calques rather than direct borrowing (Premawardhana, 2003), for example, internet > *antarjāla*. This reflects a parallel strategy of semantic and lexical substitution alongside direct morphological adaptation.

Morphological Processes of Adapting Scientific Technical Terms in Sinhala

Scholarly publications such as Meegaskumbura (1994), Wickramasinghe (1997), Premawardhana (2003), De Silva (2011), etc., examine methods used to create various domain-specific technical terms (including IT) based on English source words. Meegaskumbura (1975) mentions that Martin Wickramasinghe attempted to coin technical terms using vernacular terms, terms of foreign languages such as Sanskrit, and direct borrowings, whereas Munidasa tried to confine to vernacular terms. According to Meegaskumbura (1975), Wickramasinghe used Sanskrit to coin technical terms because of a particular historical importance: the ancient writers who wrote on academic subjects were also influenced by Sanskrit. The reason for this must be the flexible affixation process possessed by Sanskrit.

In contrast, Cumaratunga refused this mixed process and attempted a purely local process to coin technical terms, and consequently, a new affixation method was introduced, which contributed to enriching the Sinhala language. Thus, his purpose was to create a language that fulfils the requirements of modern speakers. In coining a new system of terminology for dictionaries, Cumaratunga's opinion was that using Hela words (Sinhala words) is ideal. He argues that, when coining verbs, if the foreign verb stems are borrowed, it must be combined with a native affix (such as *-kərai*, *-ve*) as in *parikṣa: kərai* (to test); *nirikṣaṇəjə kərai* (to observe) (Meegaskumbura, 1975).

In addition, Meegaskumbura (1994) mentions that Cumaratunga used colloquial language to coin new words in his new language style.

Although Cumaratunga initially created new words based on Sanskrit and scholarly language, they were reader-friendly. Cumaratunga did not hesitate to use colloquial language. His children's literary texts contain a smoothened colloquial language... His writings were often designed according to the intellectual levels of the

readership, imbuing a classical touch. When carefully analyzing his writings, it is apparent that his language is a classical yet diversified living one (p. 9).

According to W. S. Karunathilaka (n.d), Cumaratunga used four methods to create technical terms for the Sinhala vocabulary system.

1. Converting foreign terms into borrowings
2. Using Sanskrit technical terms
3. Attributing new meanings to old/existing words
4. Coining new Sinhala terms (as cited in Meegaskumbura, 2004, p.285)

Coparahewa (2010) highlights that, Hela Hawla followed a few methods, which are not purely native, in the process of coining technical terms.

- Using words hidden from the usage
- Coining words based on common colloquial terms in Sinhala
- Attributing new meanings to existing words
- Coining words based on foreign words
- Borrowing foreign words (p.260-261)

According to Coparahewa (2010), during the initial stages of creating technical terms formally, glossary compilers followed the word-coining methods that Indians used, due to the pressing need for such terms in the language. Once, the team used the dictionary compiled by Raghu Vira, borrowing Sanskrit stems to coin Sinhala words for English source words (Coparahewa, 2010; De Silva, 2002). In addition, the Sanskrit-English and English-Sanskrit dictionaries edited by Sir Monier Monier-Williams were utilized to make the word-coining process easier (De Silva, 2002). As a result, numerous Sanskrit terms entered the Sinhala language, leading to many conflicts between the glossary compilers and other scholars who rejected this Sanskritization (Coparahewa, 2010).

In addition, Aelian de Silva created technical terms through inflection. For instance, he created technical terms by modifying existing verbs and nouns: creating new verbs using existing verbs, creating verbs using existing nouns, and creating nouns by adding suffixes to existing nouns (De Silva, 2002). Using such processes, de Silva prioritized the preservation of native/Sinhalaized identity and flexibility in newly formed technical terms.

In summary, the pioneers of technical language creation have used different strategies to adapt English technical terms in Sinhala during the early stages of glossary compiling. Using Sanskrit stems in this process is significant. In addition, scholars have also employed methods such as affixation to Sinhalize borrowings. Later, other methods have been used to adapt technical terms. However, the technical term adaptation process in Sri Lanka has not been proven to be systematically consistent.

Thus, the majority of previous research and scholarly articles aptly manifest how the scientific-technical terms were adapted in Sinhala. However, these articles do not specifically highlight IT terminology, which needs more emphasis in the field of linguistic research.

One of the recent studies that examines the creation of IT technical terms in Sinhala is Widyalankara (2015). This study examines the methods used to adapt IT technical terms in the Glossary of Computer Terms- Sinhala Dictionary Resources. The study further engages in a brief lexical analysis of the technical terms in the glossary and G.C.E. (O/L) IT Teacher Instructional Manual of Sri Lanka (Sinhala Medium). This study utilizes the Betz-Duckworth-version for a taxonomy of lexical borrowings assembled by Grzega (2003). Accordingly, the research provides sample glossary terms pertaining to each category. The classification of processes (according to the taxonomy employed in the study) and examples of glossary items are as follows.

Loans

1. Importation (borrowed words)

- i. Foreign words (cartridge- ka:ʈriʃ/ fax- fæks/ mouse- maʊs)
- ii. Loanwords (algorithm- ælɡorɪtəmə/ menu- menuwə/ chip- cipəʃə)
2. Partial substitution
 - i. Loan blends (analog modem- ænəlog moʊdəməʃə/ antivirus- æntɪ vaɪrəsə)
3. Substitution
 - i. Loan coinage
 - a. Loan creation (programme- krəmœləkʰəʃə/ software- mruɖukaŋɡə / icon- niru:pəkəʃə)
 - b. Loan formation
 - Loan translation (all-purpose computer- sarwaəka:rʃə paɾɪɡanəkəʃə)
 - Loan rendering (holding time- dh̥a:rəŋə ka:ləʃə/ domain tip- wasam imə)
 - ii. Loan meaning (driver- dh̥a:wəkəʃa:)

The analysis of the Teacher Instructional Manual depicts that approximately 34% of IT terminology is English words in English font embedded in the Sinhala matrix contents. The next high frequency of occurrence of IT terminology was of assimilated loanwords (18%) and unassimilated foreign words (16%). Partial substitutions were rare, and more remarkably, loan coinages were 0%. This study argues that the high preference of English terms and importations over vernacular coinages, loan translations, and loan creations in the G.C.E. (O/L) IT Teacher Instructional Manual of Sri Lanka (Sinhala medium) is due to practicality and pedagogical pragmatism (Widyalankara, 2015). Thus, the research reveals that despite the efforts to create IT technical terms with the purpose of preserving the native language's identity, users opt for convenience in usage.

Widyalankara (2015) analyzes the usage of IT technical terms in texts emphasizing the fact that there is no consistency in the adoption of IT technical terms in glossaries and technical writings. The analysis of this study is confined to the official glossary and G.C.E. (O/L) IT Teacher Instructional Manual of Sri Lanka (Sinhala medium).

Debates on Methods used to Adapt Technical Terms

While discussing the different approaches used to adapt technical terms, these scholarly works emphasize differing perspectives regarding them. The purpose of this section is to examine such views.

Coprahewa (2010) mentions that Hela Hawla's Sipiyuru Wadan³ were not widely used in society except in certain instances. Contemporary writers such as Wickramasinghe criticized the language policy adopted by Cumaratunga and Hela Hawla, taking facts of language into consideration. For example, Wickramasinghe argues that the meaning of the term Wadu Basa (which was promoted by the Hela Hawla, refusing the term Paribhasha Shabda) was derived from the word 'usage'; therefore, it is inapplicable in the context of science and technology. Thus, Wickramasinghe highlights the difference between technical terms and ordinary language, and the inapplicability of using the day-to-day language to coin scientific terminology (Coprahewa, 2010).

Like in many Asian languages, language purity is a commonly discussed topic in local research. Sinhala often employs Sanskrit stems to create technical terms when they are adapted from English. However, the language policy adopted by Hela Hawla ignored all the technical terms including Sanskrit (Coprahewa, 2010). Aelian de Silva was another anti-Sanskrit scholar, who highly criticized the efforts of forming Sinhala technical terms by the Department of Official Languages.

The Department conveniently overlooked the important fact that it was charged with the responsibility of producing technical terms in Sinhala and not in Sanskrit or in any other language... the Official Languages Department spawned a large number of so-called 'Sinhala technical terms' which were borrowed largely from Sanskrit (De Silva, 2002, p. 18).

De Silva (2002) criticizes the Department's ignorance of a very important feature of the 'inflection' of Sinhala. He refuses the fact that Sanskrit is the parent language of Sinhala, and therefore, he argues that the word-coining

³ The Hela Hawla used this term to refer to Technical Terms instead of using *md̥ṣṇd̥l̥s̥l̥ mo (pa:riḇa:fiṭa pada)*

process must be deviated from Sanskrit. Further, De Silva (2002) claims that Sanskrit words are weird and clumsy.

Thus, strategies for adapting scientific technical terms in Sinhala were controversial among many language scholars. Employing Sanskrit stems in this process is a widely criticized phenomenon.

RESEARCH GAP

Previous studies conducted in the Sri Lankan context have extensively discussed the adaptation of scientific and technical terminology in Sinhala through processes such as borrowing, affixation, Sanskritization, loan translation, and lexical coinage (Meegaskumbura, 1975; 1994; Coperaheva, 2010; De Silva, 2002; Premawardhana, 2003). These studies mainly focus on broader language policies, terminology creation strategies, and debates regarding linguistic purity. Although they provide valuable insights into the development of Sinhala technical vocabulary, most of them examine scientific and technical terminology in general rather than Information Technology (IT) terminology specifically.

Among the limited studies related to IT terminology, Widyalkara (2015) mainly analyzes glossary items and instructional materials using a lexical borrowing taxonomy. However, the study primarily categorizes types of borrowings and measures their frequency of occurrence rather than examining the morphological processes through which English IT terms are adapted into Sinhala. Similarly, previous research has paid greater attention to phonological assimilation, Sanskritization, and language policy debates, while comparatively little attention has been given to the structural and morphological mechanisms involved in adapting English IT terminology into Sinhala usage.

Furthermore, existing research demonstrates that there is no systematic consistency in the adaptation of IT technical terms in Sinhala (Widyalkara, 2015). The coexistence of direct English borrowings, assimilated forms, Sanskritized terms, and vernacular coinages indicates variation in adaptation practices. However, previous studies have not sufficiently examined how these forms are morphologically constructed, localized, and used within contemporary Sinhala discourse. In addition, many studies are confined to official glossaries and institutional publications, giving limited attention to naturally occurring usage in contemporary spoken and written contexts.

Therefore, a significant research gap exists in relation to the morphological processes used to adapt English IT terms into Sinhala. A focused linguistic analysis of these processes is necessary to understand how English IT vocabulary is integrated into Sinhala morphology, how hybrid forms are created. Further, it is of prime importance to research the usage and usability of existing Sinhala IT technical terminology, referring to glossaries, IT manuals, and dictionaries.

CONCLUSION

According to the above analysis of literature, it is apparent that many studies in the global context discuss the methods/processes used to adapt English IT technical terms to vernaculars. Many studies highlight the approaches adopted by French, signifying the phenomenon of nativizing technical terms. In addition, a limited number of similar studies highlight the challenges and the impact of socio-economic factors on adapting technical terms in vernaculars. Further, the emergence of the Internet Language and its linguistic influence is another topic discussed in similar research. More importantly, some studies generally discuss scientific technical terms, including IT terminology. Therefore, some of the above-illustrated themes are not specifically relevant to IT terms. Similarly, the scholarly writings in the local context also provide a general overview of scientific-technical terms, including IT.

In conclusion, there is a pressing need to extend this field of research, specially in the Sri Lankan context, with a more impactful view of creating user-friendly technical terms in Sinhala. Specifically, it is pivotal to study the usability of adapted technical in a vernacular like Sinhala as it is the lingua franca of the Sinhalese. Thus, this paper highlights the need to carry out more research in the field with a more holistic approach.

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