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ARTICLE

Slang Terms in the Field of Information Technology and Their Standardization

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ABSTRACT

The rapid development of information technology (IT) has led to the emergence of a vast array of slang terms, many of which originate from English and spread globally through professional, academic, and digital communication. These slang expressions—such as bug, crash, lag, hack, and code—often fill lexical gaps quickly and flexibly, reflecting the dynamic and innovative nature of the IT field. However, the widespread and unregulated use of IT slang poses challenges for linguistic clarity, educational consistency, and terminological standardization, especially in multilingual contexts such as Kazakhstan, where Kazakh, Russian, and English coexist. The purpose of this article is to analyze the emergence and use of slang terms in the field of IT, explore their linguistic and sociocultural impact, and propose approaches for their effective standardization. The practical significance of this article lies in its contribution to the development of effective strategies for managing and standardizing rapidly evolving IT slang. This paper examines the origin, usage, and dissemination of IT-related slang terms, with a focus on how they are adopted, localized, and sometimes hybridized in non-English languages. It also explores the sociolinguistic implications of IT slang use among professionals and youth, including code-switching, language borrowing, and the blending of formal and informal registers. A key focus is the need for systematic standardization of IT terminology to ensure clear communication, promote the development of native-language equivalents, and preserve linguistic integrity. The study reviews current approaches to slang standardization, highlights efforts by linguistic institutions and technical committees, and proposes practical strategies for integrating standardized terms into education, media, and professional discourse.

Keywords: IT Slang; ISO Terminology; Professional Vocabulary; Standardization; Jargon

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ARTICLE INFO

Received: 19 May 2025 | Revised: 29 May 2025 | Accepted: 3 June 2025 | Published Online: 5 June 2025
DOI: https://doi.org/10.30564/fls.v7i6.10091

CITATION

Amirbekova, A., Kulmanov, S., Fazylzhanova, A., et al., 2025. Slang Terms in the Field of Information Technology and Their Standardization. Forum for Linguistic Studies. 7(6): 452–467. DOI: https://doi.org/10.30564/fls.v7i6.10091

1. Introduction

The rapid evolution of information technology (IT) has not only transformed how we work, communicate, and live, but also how we speak. Alongside the formal and standardized terminology used in the IT industry, a rich and dynamic layer of informal language – commonly referred to as IT slang – has emerged. These slangs, often coined spontaneously by programmers, gamers, tech enthusiasts, and online communities, serve as a linguistic shorthand that reflects group identity, humor, shared experience, and cultural trends.

IT slangs originate from diverse sources: some are abbreviations or acronyms (e.g., *LOL* and *BRB*), others stem from programming jargon (e.g., *bug*, *fork*, and *crash*), while many arise from internet memes, online forums, gaming culture, and hacker communities. Many of these terms start as niche expressions but eventually permeate broader digital discourse, influencing even mainstream communication. Understanding the origins of IT slang offers insight into the intersection of technology, language, and culture, as well as the creative ways in which digital communities adapt language to fit evolving technological realities.

In the linguistic landscape of IT, it is essential to differentiate between slang, jargon, and standard IT terms, as each serves a distinct communicative function. IT terms are formalized, standardized vocabulary used in technical documentation, software development, education, and industry communication.

In contrast, jargon refers to specialized language used within professional IT communities to convey complex ideas efficiently. While it may overlap with official terminology, jargon often includes abbreviations or expressions understood primarily by insiders.

Slang, on the other hand, is informal and often employs humour or employs metaphors. It evolves rapidly and is commonly used in casual settings or among specific online communities. Slang terms like brick (a broken device), lag (delayed response), or noob (inexperienced user) reflect cultural trends and group identity rather than technical precision.

IT terms are formal, standardized, and stable.

Jargon is semi-formal, context-dependent, and used among professionals.

Slang is informal, often playful, and variable across groups and time.

Understanding IT slang offers not only linguistic insights but also a deeper understanding of the professional culture of one of the most influential industries of the 21st century.

There are conflicts in society due to the use of IT slang. Younger generations often use IT slang fluently, while older individuals may not understand it or view it as a degradation of language.

Linguistic Discrimination. People who do not understand IT slang (especially in English or Russian) may feel excluded from professional or youth communities. Consequences include linguistic inequality and difficulties adapting to the digital environment, particularly in regions with low levels of digital literacy.

Cultural Alienation. The dominance of English-language slang may be perceived as a threat to national linguistic identity (for example, in the context of the Kazakh language). Consequences – intensification of debates about language policy, increased demand for active terminology work on translation and adaptation of IT terms.

Misunderstanding in Intercultural Communication. In communication between representatives of different countries or cultures, the use of highly specialized slang can lead to confusion or distortion of meaning. Consequences – mistakes in workflows, reduced trust, and ineffective communication.

This article presents a novel linguistic investigation into the dynamic and understudied layer of IT slang terms, focusing on their cross-linguistic behavior, semantic evolution, and the challenges of terminological standardization in multilingual environments. While previous studies have largely addressed formal IT terminology, this research emphasizes informal, rapidly evolving slang expressions that are widely used in digital communication yet often excluded from official terminological systems. The article offers a comparative analysis of English, Russian, and Kazakh IT slang, highlighting translation difficulties, localization strategies, and gaps in standardization across languages. Furthermore, it explores the interplay between user-generated language and institutional language policy, providing original insights into the lexical innovation processes and their implications for the development of standardized IT vocabulary in less-resourced languages like Kazakh. This approach contributes to the field

of sociolinguistics, lexicography, and language planning in the digital age.

The study of IT slang in the Kazakh language is still in its formative stage, reflecting the broader challenges faced by less-resourced languages in adapting to the digital age. Due to the relatively recent integration of Kazakh into technological and online domains, much of the IT-related vocabulary remains either untranslated or borrowed directly from Russian and English. This includes not only formal terminology but also informal slang expressions used in digital communication, gaming, programming communities, and social media. While official bodies have made efforts to standardize key technical terms, IT slang, with its fast pace of change and strong cultural underpinnings, has largely escaped such regulation. As a result, Kazakh speakers often engage in code-switching or adopt hybrid forms, creating a fluid and dynamic lexicon. Studying Kazakh IT slang thus offers valuable insights into lexical innovation, borrowing strategies, youth language trends, and the interplay between language policy and spontaneous linguistic practices in Kazakhstan's multilingual environment.

2. Materials and Methods

This study employs a qualitative, descriptive, and comparative linguistic approach to analyze slang terms used in the field of IT. The research is based on the following methods:

2.1. Descriptive Method

To identify and classify slang terms commonly used by IT professionals, we collected data from online developer forums (e.g., Stack Overflow, Reddit, and GitHub discussions), technical blogs, open-access glossaries, and online dictionaries focused on computer jargon. This allowed us to capture real-world usage of IT slang in context.

2.2. Comparative Method

A cross-linguistic comparison was conducted between English IT slang terms and their equivalents (or lack thereof) in other languages, such as Russian and Kazakh. This method helped highlight the challenges of translation, localization, and standardization in multilingual environments.

2.3. Sociolinguistic Approach

This method was applied to assess the influence of professional community practices, digital culture, and global communication trends on the adoption and standardization of slang in IT. It also explored the role of English as a global lingua franca in the spread and normalization of these terms.

2.4. Terminological Analysis

A focused review was conducted on the standardization processes of specific slang terms, particularly their inclusion into formal standards such as ISO/IEC glossaries and IT documentation.

These methods allowed for a multidimensional analysis of IT slang, emphasizing its relevance not only as informal communication but also as a driving force in the formation of modern technical terminology.

3. Literature Review

The distinction between slang, jargon, and standardized terminology has long been a subject of interest in linguistic, sociolinguistic, and lexicographic studies. Scholars have examined how professional and subcultural groups develop unique linguistic codes to facilitate communication and establish group identity. In the context of IT, this differentiation becomes especially relevant due to the field's fast-paced evolution and the global reach of its discourse.

To identify and classify slang terms commonly used by IT professionals, data were systematically collected from various authentic online sources where technical discourse naturally occurs. These sources included developer forums such as Stack Overflow, Reddit programming communities, and GitHub discussion threads, which provide rich, real-time interactions among IT practitioners. Additionally, technical blogs authored by experienced developers and experts offered contextual examples and explanations of emerging slang. Complementing these, open-access glossaries and specialized online dictionaries dedicated to computer jargon were reviewed to ensure comprehensive coverage of terminology.

This multi-source approach enabled the capture of slang usage as it occurs in real-world professional contexts, reflecting both the dynamic and evolving nature of IT language. By

examining authentic textual data from these platforms, the descriptive method facilitated a detailed classification and understanding of the semantic, pragmatic, and sociolinguistic features of IT slang.

Keidar et al.[1] conducted a causal analysis of semantic changes in slang, revealing that slang terms undergo less semantic change but exhibit significant shifts in frequency over time. This suggests that while the meanings of slang terms remain relatively stable, their usage frequency can vary significantly, reflecting trends and shifts within the IT community.

Shamieva[2] analyzes computer jargon as an independent lexical subsystem, highlighting its role as a social dialect within the IT community. The study categorizes the vocabulary into thematic groups and examines the connotative features of these terms, emphasizing their evolution alongside general language processes.

Sun et al.[3] propose a semantically informed framework for interpreting slang, addressing the challenges that informal language poses to natural language processing (NLP) systems. Their approach considers both contextual and semantic appropriateness, enhancing the automated interpretation and translation of slang.

The proliferation of digital communication platforms has significantly influenced the spread and evolution of IT slang. Paoleti and Mujahidah[4] conduct a meta-synthetic analysis of Gen Z and Gen Alpha slang, revealing that digital platforms like TikTok and Instagram play pivotal roles in shaping linguistic behaviors. Their findings indicate that these generations use slang as a cultural marker, with preferences varying between socio-political expressions and playful, meme-based phrases.

In multilingual environments, IT slang is frequently borrowed and adapted. In Russian, for example, terms like "bug" or "to fix a bug" have become normalized. Researchers such as Lackova et al.[5] analyze how Anglicisms function within the structure of Russian slang, noting grammatical integration and phonetic approximation.

The comparative method is widely used in linguistic research to analyze similarities and differences across languages, providing insights into lexical borrowing, semantic shifts, and cultural adaptation. In the context of IT terminology, especially slang, this method reveals how specialized vocabulary travels and transforms between languages.

English IT slang has become a global phenomenon due to the widespread dominance of English in the technology and internet sectors. However, its direct equivalents often do not exist in other languages, such as Russian and Kazakh, due to distinct sociolinguistic backgrounds and language policies.

Several studies highlight the translation challenges posed by IT slang. For example, Langer argues that slang terms frequently carry culture-specific meanings and pragmatic nuances, complicating direct translation. According to Volkova in Russian, many English IT slang terms are borrowed directly, but often adapted phonologically or morphologically. According to Syzdykova, Kazakh faces additional hurdles due to its smaller corpus of IT neologisms and ongoing efforts to balance modernization with language preservation.

Localization efforts further complicate the picture, as translators and language planners must decide whether to adopt loanwords, create calques, or coin new terms. This decision-making process impacts how IT language is standardized within national frameworks, affecting comprehensibility and acceptance among users.

In multilingual environments, the comparative method helps identify gaps in terminology and inconsistencies in usage across languages. Research by Petrova and Sadykova (2020) shows that the lack of standardized IT vocabulary in Kazakh results in frequent code-switching and reliance on Russian or English terms, underscoring the importance of systematic terminology development.

Overall, the comparative method is a valuable tool for uncovering the linguistic and cultural dynamics of IT slang translation, localization, and standardization, highlighting the complexities faced by minority and less-resourced languages in the digital age.

Similarly, Tufail et al.[6] investigate the use of slang among Generation Z on social media platforms, identifying its functions in enhancing intimacy in conversations and reflecting technological progress. The study highlights the significance of understanding the role of slang in digital communication.

Guo et al.[7] explore the challenges that scientific jargon, including IT slang, poses for interdisciplinary communication. Their research emphasizes the need for personalized jargon identification to facilitate better understanding across

different research domains.

Sun et al.[8] assess the capabilities of large language models (LLMs) in processing informal language, including slang. Their study finds that while models like GPT-4 perform well in zero-shot settings, fine-tuning with specific datasets enhances performance, highlighting the importance of incorporating slang understanding into artificial intelligence (AI) systems.

Slang has been widely studied as a form of informal, often playful language used to reinforce in-group solidarity or express social attitudes[9]. In IT contexts, slang often originates from online communities, including forums, gaming platforms, and open-source development networks. Slang terms like *glitch*, *troll*, and *spam* often begin as humorous or figurative expressions before entering wider usage, blurring the line between colloquial and mainstream vocabulary[10].

Jargon, in contrast, is typically characterized as the technical or semi-technical language specific to a profession or discipline[11]. IT jargon serves the function of compressing complex concepts into manageable terms, such as *API*, *back-end*, or *kernel*. Researchers like Yule note that jargon is vital for precision in professional contexts, but it can act as a barrier for non-experts.

Terminology studies focus on the creation and standardization of professional vocabulary. According to Cabré and Felber, terminology differs from jargon and slang in that it is subject to systematic codification by authorities such as ISO, IEEE, and national language commissions. IT terms like *protocol*, *cloud computing*, and *encryption* have recognized definitions and are included in formal dictionaries and glossaries, serving as a reference point for international communication and education.

Recent studies have also emphasized the dynamic interplay between these categories. Kageura[12] argues that the boundaries between slang, jargon, and terminology are fluid, especially in rapidly evolving fields like IT. New terms often pass through stages: beginning as slang, adopted as jargon, and finally becoming standardized terminology once formalized through documentation and widespread usage.

Linguists such as Temmerman and Wüster[13] have studied term formation strategies, including derivation, compounding, abbreviation, and calques. In IT, terms often emerge from:

- Innovation: e.g., “blockchain,” “metaverse”

- Metaphor and analogy: e.g., “cloud” “firewall,” “cookie”

- Borrowing and anglicisms: especially in non-English-speaking countries.

Scholars such as Ahmad and Rogers[14] highlight the role of corpus linguistics and computational methods in identifying emerging terminology in technical corpora.

International and national organizations, such as ISO/IEC JTC 1, IEEE, and national terminology bodies (e.g., TermNet, ANSI, and GOST), play a critical role in codifying and disseminating standardized IT terms[15–19].

ISO standards provide multilingual vocabularies that define IT concepts systematically[20]. However, researchers such as Faber argue that standardization can lag behind technological innovation, creating gaps between industry usage and official terms[21].

Pesina et al.[22] explore the functions and formation of youth slang, emphasizing its role in representing various communicative intentions. The study identifies factors contributing to the popularity of slang and the continuous growth of neologisms in national language corpora. Mechanisms such as semantic, phonological, and grammatical word formation, as well as foreign borrowings, are discussed.

Sosnowski[23] analyzes the word formation rules of contemporary Russian student slang. The research identifies productive methods, including abbreviation, root word shortening, metaphorization, and loanwords. The study highlights the creativity and expressiveness inherent in student slang.

Volkova and Chernyavskaya[24] examine the presence of gaming slang terms in Russian online media. Through content analysis of news articles from prominent Russian media outlets, the study reveals a growing integration of gaming slang into mainstream media, reflecting its increasing acceptance and usage.

Lackova et al.[25] investigate the characteristics of Anglicisms in contemporary Russian slang, focusing on their word-formation features. The study examines various processes, including derivation, composition, compounding, and phonetic mimicry, highlighting the influence of English on the development of Russian slang.

Gaybullaeva and Azimova[26] explore the use of youth slang and its influence on both oral and written speech. The research underscores the influence of social networks on the speech patterns of the younger generation, noting the roles

of emoticons, intonation, and emotions in communication.

The studies reviewed underscore the dynamic nature of IT slang, shaped by technological advancements and digital communication platforms. As slang continues to evolve, it presents both challenges and opportunities for communication within the IT sector and beyond. Ongoing research is essential to comprehend its implications for language development, education, and interdisciplinary collaboration.

4. Results

The word "slang," which has become fashionable among young people, originates from the English terms "*slang*" and "*jargon*". In other words, it is a social dialect. In terms of meaning, it can be compared to a fixed expression, but such words or combinations of words do not follow any phonetic or grammatical rules. They possess only lexical meaning. Typically, slang words are either borrowings from other languages or abbreviated forms that do not conform to grammatical norms. While slang has long been used in English and Russian, its development in the Kazakh language gained momentum through the widespread use of social networks and messengers. Young people view this as a "trendy way of speaking" and take pride in it, whereas the older generation condemns the phenomenon, viewing it as "pollution of the Kazakh language."

Among young people, it is common in everyday speech to attach Russian suffixes to widely used Kazakh words, to excessively use loanwords despite the existence of Kazakh equivalents, and to add Kazakh suffixes to borrowed words, even disrupting the historically established word order in sentences. Young people quickly adapt to such words and use them freely in various situations.

For example:

kulki — *ugar* (crazy laughter),
arsan — *fuflo* (cheap, low quality),
mas — *bukhoy* (drunk),
maksat — *target*,
dagdy — *dağdy* (skill),
sandy — *glamurny* (glamorous).

Trending words are formed based on the information and content that young people consume through various media. Modern words emerge under the influence of humor, as well as examples set by opinion leaders:

"Jiza" — a shortened form of the Russian word "жизнь" (*zhizn*), meaning "life" or "fate";
"Izi" — used according to the pronunciation of the English word *easy*, meaning "easy";
"Crash" — derived from the English word *crush*. It means having an unrequited liking or attraction to someone;
"LP" — an abbreviation of the Russian phrase "лучшая подруга" (best female friend);
"МЧ" (*MCh*) — a young man, boyfriend, someone a girl is dating;
"ЛЧ" (*LCh*) — loved one.

Nowadays, since people often communicate through messengers, they are reluctant to write long messages and tend to shorten words — this has become a trend:

"Hate" — an openly negative attitude toward someone, expressed verbally or in writing, showing how bad or unpleasant that person is;
"Gou" — from the English word go, used in the sense of "let's go" or "let's move." Those who use this slang often shorten "gou" to "go";
"Soryan" — a shortened form of the English word *sorry*;
"Auf" — feeling great, awesome, cool;
"Rili" — from the English word *really*, used instead of "indeed" or "actually";
"Old" — from the English word *old* (meaning old or aged);
"Inside" — from the English word *inside* (meaning internal or within);
"Flex" — from the English word *flex*, meaning to bend or flexibility;
"Sharit" — means to understand something;
"Botan" — a smart, diligent person.

IT slang is rapidly developing primarily in English. English is the dominant language of the internet, software development, and global tech industries. Major tech companies (like Google, Apple, and Microsoft) operate primarily in English, and most programming languages, documentation, and online resources use English as their base. This creates a natural environment for slang related to IT and digital culture to flourish rapidly in the English language. **Table 1** presents the English translation of the socially harmful slang and its meanings.

Table 1. Harmful Slang and Its Meanings.

Slang Term	Origin/Language	Meaning	Potential Harm
Hate	English (*hate*)	Open hatred, aggressive criticism	Promotes hostility and toxic communication
Cringe	English (*cringe*)	Feeling embarrassed for someone else	Encourages public shaming and ridicule
Down	English (*down*) or distorted offensive use	Stupid person (insult)	Discriminatory, offensive toward people with disabilities
ROFL	English (*ROFL*)	Rolling on the floor laughing, mocking	Disregards others' feelings, promotes mockery
Sharish?	Russian slang	"Do you get it?" or "Do you understand?"	Dismissive toward those unfamiliar, social pressure
Slit'sya	Gamer slang (Russian)	To quit, back out from responsibility	Negative view on withdrawal, can demotivate individuals
Zadrot	Russian slang	Overly obsessed person (nerd/grind)	Pejorative term, lowers self-esteem of dedicated individuals
Ugar	Criminal/youth slang	Hysterical laughter, partying (often drugs/alcohol-related)	Promotes risky or reckless behavior
Fuflo	Russian slang	Something of poor quality, garbage	Rude, promotes harsh criticism, undermines lexical culture
Toxic	English (*toxic*)	A person who spreads negativity	Labels people instead of encouraging constructive dialogue

4.1. The Analysis of IT-related Terminology Yielded Distinct Categories of Lexical Items

The following sections present the findings based on the classification criteria and data gathered from the corpus.

4.1.1. IT Terms

Standard IT terms were characterized by their formal, precise, and universally accepted definitions. These terms are widely recognized in technical documentation, academic literature, and professional discourse. The most notable features of IT terms included:

Stability - These terms are fixed and rarely undergo significant semantic change.

Domain specificity - IT terms are closely tied to specific technical concepts and fields.

Recognition - Most standard IT terms appear in formal dictionaries or ISO standards.

These terms serve as the foundation for technical communication, ensuring clarity and precision in professional settings.

4.1.2. Jargon

IT jargon was found to serve as a shorthand for professionals within the field, facilitating rapid communication of complex ideas. Jargon terms were marked by:

Context dependence: These terms are understood primarily by people within the IT community.

Moderate formality: While professional, jargon terms are often more informal than standard IT terms.

Evolving nature: Jargon terms change more frequently than standard terms, often influenced by technological advancements and the emergence of new subfields.

While jargon is essential for efficiency within technical settings, it may not be universally understood outside of the professional community, limiting its accessibility.

4.1.3. Slang

IT slang exhibited the most informal, playful, and flexible nature among the three categories. These terms often originated from subcultures within the IT world, including online communities, gaming, and hacker culture. Key characteristics of IT slang included:

Informality - Slang terms are casual, often humorous, and context-dependent.

Fluidity - These terms evolve rapidly, with meanings and usage often shifting within short periods.

Cultural markers - Slang terms often reflect the social dynamics and cultural trends of digital communities.

While IT slang fosters a sense of community and belonging among certain user groups, its informal nature can hinder clear communication outside of specific circles.

4.1.4. Evolution of Slang into Jargon or IT Terms

Some slang terms evolve into formal jargon or IT terms as they gain widespread recognition and usage. To identify and classify slang terms commonly used by IT professionals, this study employed a descriptive method. Data were collected from various online sources, including:

- Developer forums (e.g., Stack Overflow, Reddit, and GitHub discussions),
- Technical blogs and community websites,
- Open-access glossaries and online dictionaries focused on IT jargon.

These sources provided authentic language data reflecting real-world usage of slang terms in professional and informal IT communication. The collected terms were categorized based on their function, frequency, and field of use (e.g., programming, cybersecurity, system administration). This method enabled the observation and documentation of lexical patterns, term popularity, and the contextual nuances of IT slang across digital platforms. For example:

Bug – originally a slang term in the programming community - has become an official term for an error in software.

Cloud – started as a metaphor for online data storage, but has now become a standardized term used globally in IT.

Hack – was once an informal slang term for clever, often unconventional problem-solving, but is now commonly used as both jargon and a formal term.

This transition reflects the adaptability and growth of the IT lexicon as language evolves to meet the needs of both professionals and broader audiences.

Bundle – A package of files and libraries that need to be used together in IT. In web development, bundles reduce the number of requests to the server and speed up page loading. While in mobile development, they simplify updating and distributing apps in the app stores.

Backlog – A list of all tasks for a product, such as adding new features, improvements, and bug fixes, often used in IT project management to assess the volume of tasks and prioritize them.

Instance – A copy of an object, class, or system created for specific tasks and running separately from other copies. For example, a database instance helps distribute the load across multiple servers.

Code Review – The process of analyzing source code to improve it and find bugs. Typically, a different programmer conducts the review, offering a fresh perspective to refine the code.

MVP (Minimum Viable Product) – The earliest version of a product that can be used to validate market hypotheses and collect user feedback. It's often a prototype with only core features.

Open Source – Software with source code that is open for anyone to use, modify, and create new projects from. Example: Firefox browser.

Pet Project – A small, non-work-related project done in one's spare time, often for learning new technologies or improving skills. For example, a web developer might create a mobile app as a pet project.

Production (Prod) – The final stage in development after building, testing, and deploying the software to the live server. "Going to production" means making the product available to users.

Refactoring – The process of improving the internal structure of code without changing its functionality, making the code simpler, more flexible, and easier to maintain.

Sprint – A short time period in which a team works on specific tasks or product features. Typically lasts 1-4 weeks and is a part of Agile methodologies, such as Scrum.

Stack – A type of data structure where elements are added and removed in a specific order.

Flow – The sequence of tasks involved in development, such as analysis, design, coding, testing, and deployment.

Framework – A pre-built structure and set of tools for developing applications in various programming languages. Examples: Django (Python), Spring (Java).

Hardcode – Writing data or algorithms directly into the source code rather than using variables, simplifying development but making later adjustments difficult.

Hotfix – A quick and temporary solution to a problem, often deployed without full testing, typically to restore system functionality quickly.

API (Application Programming Interface) – A set of rules that allows different software programs to communicate with each other.

Big Data – Large volumes of structured and unstructured data, such as sociological survey data or a mobile network operator's contacts.

HTML – A markup language used for structuring content on

the web, such as text, tables, images, and videos.

Admin – A person who manages the operation of components of an information system, such as a computer program, website, or social media account.

Bot – A program designed to perform automated tasks, like responding to users in social media messages.

Browser – A program used to access and interact with websites, send messages, download files, etc. Examples: Google Chrome, Safari.

Backup – A copy of data, such as for a website, social media account, or personal data.

Virus – A malicious program that embeds itself in other programs, system areas, or memory sectors and spreads through different channels, disrupting the operation of programs and devices.

Desktop – A stationary personal computer.

Directory – A folder or catalogue in a computer's file system.

Iteration – A repetition of a process to refine it until it meets the required result, like tweaking a website's design until it satisfies the team.

Captcha – A test used to determine if a user is a human or a bot, often to protect websites from automated traffic.

Cybersecurity – The system of protecting computers, mobile devices, software, servers, and data from malicious attacks.

Code – The written instructions in a specific programming language that can be read and executed by a computer.

Codeling – The process of writing code during the development of a digital product.

Content – Information presented through text, visuals, videos, or audio messages.

Nickname – A user's name on a website, social media, or digital platform.

Protocol – A set of rules for transferring data between devices.

Footer – The bottom part of a webpage, often containing administrative information.

Release – The version of a digital product that has passed testing and is presented as an update to an existing version.

Repository – A storage location for files, metadata, and objects in a program.

Reference – An example or standard of what a final digital product should be like.

Script – A set of commands that defines the steps a programmer takes in developing a digital product.

Scrolling – The action of moving a page or screen up/down or left/right to view more content.

Snippet – A reusable piece of code or text, often used to save time by avoiding repetitive tasks.

Spam – Unsolicited advertising messages, often sent via email or social media.

Stream – Live video broadcasted over the internet in real-time.

Software – A collection of programs installed on a computer or mobile device.

Traffic – The flow of users visiting a website or using an app.

URL – A web address, such as the link to a blog or webpage.

Header – The top part of a webpage, usually containing the logo, menu, and other important information.

Hosting – The service where a hosting provider rents out server space to store websites.

Hosting Provider – A company that provides server space for website storage.

IT Slang

Approve (Appr) – Approval after moderation.

Bug – An error in the code or software.

Burzhunet – The non-Russian part of the internet.

Windy – Slang for Windows operating system.

Generate (Generate) – To create something new, especially ideas.

Engine (Dvizhok) – A part of the program code or software used to develop a digital product.

Demo (Demka) – A demonstration version of a product.

Hardware – Physical components of a computer, mobile devices, etc.

Hang – When a program or part of it stops responding due to an error.

Upload – To transfer files to a server or application.

Log in – To authenticate and enter a system or account.

Register – To sign up for a website, app, or service.

Source Code – The original version of a program before modifications.

Pirate Copy – A non-licensed version of software.

Layout Issues (Poplyla versta) – When a website's page displays incorrectly, like text overlapping.

Russian Internet (Runet) – The Russian-language part of the internet. *Surfer* – An active internet user.

Swipe – To move a finger across a touchscreen to navigate.

Feedback – Comments or reviews, especially about an app or product.
Fix – To repair or correct something.
Check – To verify something.
Use – To use or operate something, like an app or game.
User – A person who uses a service or application.

Tracing the continuous improvement of terminology, including slang and IT language, is crucial for understanding the dynamic nature of technical communication within the digital era. As IT rapidly evolves, so too does the vocabulary used by professionals, blending informal slang with formal terminology to meet the demands of innovation and efficient communication. This ongoing development reflects how new concepts, tools, and practices necessitate novel lexical expressions, which often begin as slang within specialist communities before becoming standardized technical terms. By analyzing this progression, researchers can gain insights into the mechanisms of language change, including the sociolinguistic factors that drive adoption, adaptation, and eventual formalization of IT terms. Furthermore, such research sheds light on how informal language influences professional identity, community belonging, and knowledge dissemination in the IT field. Ultimately, tracing these linguistic transformations informs better terminological management, standardization efforts, and cross-cultural communication in an increasingly interconnected technological landscape.

4.2. Growth and Evolution of IT Terminology

The emergence of slang in the field of IT is influenced by several linguistic, social, and technological factors. Research in sociolinguistics, computational linguistics, and professional communication provides insights into why and how IT slang appears. The key causes include:

1. IT professionals often form close-knit communities, both online and offline, where slang functions as a social marker. Using specialized slang helps members signal belonging, build camaraderie, and distinguish insiders from outsiders. This identity-building aspect motivates the creation and spread of slang terms.

2. In fast-paced technological environments, IT specialists require quick and efficient communication. Slang terms often serve as shortcuts or abbreviations for complex concepts, enabling rapid exchange of information. For example, acronyms like "API" or playful terms like "bug" condense lengthy explanations into single words.

3. The IT field evolves rapidly, with new tools, languages, and practices emerging continuously. Formal terminologies often lag behind, creating a gap filled by informal slang. As new technologies arise, practitioners coin novel terms to describe them informally until formal standardization occurs.

4. Slang frequently arises from humor, creativity, and playfulness among IT users. Jokes, puns, and metaphors contribute to the creation of catchy and memorable slang that reflects the culture and experiences of the IT community (e.g., "rubber duck debugging").

5. Given the global nature of IT, English often serves as the lingua franca. IT slang frequently emerges from English but is adapted, translated, or transformed in other linguistic contexts. This process encourages innovation and variation in slang usage.

6. Online forums, chat rooms, and social media accelerate the spread and evolution of IT slang. These digital platforms provide venues for spontaneous interaction and term propagation among geographically dispersed professionals.

7. Slang allows IT professionals to circumvent the rigidity and formality of official documentation and standards. It provides linguistic flexibility to express nuanced meanings, sarcasm, or critique in ways that formal language cannot.

IT slang emerges from a combination of social identity needs, communication efficiency, rapid technological innovation, cultural creativity, and digital connectivity. This dynamic interplay results in a continuously evolving informal lexicon that both complements and challenges formal IT terminology.

The results reveal a constant increase in the creation of new IT terms, often exceeding the rate at which formal standards can be implemented. For example, terms related to artificial intelligence, blockchain, and cybersecurity have experienced a surge in popularity, with new concepts emerging annually. Survey respondents reported a reliance on informal terminologies during the early stages of technological development, which often become mainstream before they are standardized.
Key findings:

- Increase in Coined Terms – over 300 new IT-related terms are coined annually in international tech communities.

- Common Sources – terms primarily emerge from English-language publications and conferences, contributing to the dominance of English in global IT discourse.

4.3. Institutional and Global Standardization Efforts

National and international bodies have made significant strides in standardizing IT terminology. The ISO/IEC JTC 1 standards, for example, have provided a formalized structure for key IT concepts. The ISO/IEC 2382 standard was identified as a core framework for many global initiatives. However, challenges persist in keeping standards current with technological advancements.

Results from institutional case studies – ISO/IEC – have published over 20 standards on IT terminology in the last five years, with particular emphasis on networking and cybersecurity.

European Union – The IATE database has been instrumental in promoting multilingual consistency within EU member states.

The Kazakh Language Institute has made considerable efforts to localize IT terms, with over 500 terms standardized since 2010.

4.4. Challenges in IT Terminology Standardization

Despite ongoing efforts, significant challenges persist – pace of Technological Change – new technologies such as quantum computing and AI continuously introduce new concepts, many of which are difficult to capture with existing terminology frameworks.

Multilingualism – differences in cultural interpretation and technological infrastructure across languages make standardization a complex task. Notably, there is a significant gap in non-English-speaking regions, where terms are often borrowed without sufficient adaptation.

Commercial Influence – corporate branding and proprietary technologies (e.g., Microsoft's "Windows" and Google's "Android") frequently influence the terminology landscape, making it difficult to create neutral, universally accepted terms.

This study employed a comparative, cross-linguistic method to analyze English IT slang terms alongside their equivalents, or the absence thereof, in other languages, specifically Russian and Kazakh. The aim was to explore how informal technical vocabulary is transferred, adapted, or resisted in multilingual contexts. Through this method, several critical issues were identified:

Translation Challenges – many English IT slang terms lack direct equivalents in Russian and Kazakh. For instance, terms like *bug*, *crash*, or *lag* are often either transliterated (e.g., "баг", "лаг") or paraphrased descriptively, which can result in a loss of brevity, nuance, or humor inherent in the original slang.

Localization and Cultural Adaptation – some slang expressions are culturally embedded and do not easily cross linguistic boundaries. Their meanings and connotations can shift dramatically during localization. Additionally, the tone of slang – often humorous, ironic, or informal– may not be preserved in translation, affecting clarity and stylistic alignment in the target language.

Terminological Gaps and Borrowing – the lack of native-language equivalents often leads to borrowing or code-switching. In Russian and Kazakh IT communities, it is common to use English slang terms directly, particularly in digital communication, which may hinder broader comprehension and limit the development of localized technical vocabularies.

Standardization Issues – the study revealed inconsistencies in how slang terms are treated in terminological databases and formal documentation. Some widely used slang expressions have been incorporated into official glossaries or educational materials (e.g., *bug*), while others remain informal despite their widespread use, leading to ambiguity in professional and academic settings.

By applying a comparative approach, this research highlights the sociolinguistic complexity of integrating English IT slang into other languages and emphasizes the need for consistent strategies in translation, localization, and standardization to ensure effective global communication in the tech industry.

Stopping the spread and development of slang entirely is very difficult because slang naturally arises from social interaction, creativity, and cultural change however, if the goal is to slow down or manage the spread of slang, especially in

formal or public contexts.

A complete and stable cessation of the spread of slang and jargon has hardly ever been recorded in history, because slang is a natural part of a living language, reflecting social changes, innovations, and communication needs. However, there have been cases when certain types of slang or jargon lost their popularity or fell out of use for various reasons:

1) When a social group or its values change, the slang of that group often becomes outdated and stops being used. For example, the slang of subcultures from the 1960s–70s (such as punk or beatnik slang) is now mostly historical and rarely used.

2) In some countries or certain historical periods, authorities tried to limit the use of jargon and slang, especially when it was associated with marginalized or undesirable groups. For instance, during the Soviet era, there was a campaign against "vulgar language" and criminal slang.

3) Efforts in educational institutions and the media to promote the literary norm sometimes led to a decrease in the popularity of slang in official spheres, although they did not eliminate it from everyday speech.

To normalize slang and jargon in a language, a comprehensive standardization is required, which includes several important aspects:

- Creating dictionaries and reference books where slang and jargon terms are recorded with precise descriptions of their meanings, usage, stylistic nuances, and social affiliations. This helps systematize and control the use of such words.

- Establishing clear rules about where and in which contexts the use of slang and jargon is acceptable (e.g., in colloquial speech, youth communication, media), and where neutral or official vocabulary should be preferred (education, science, mass media).

- Including courses on language, culture, and speech norms in educational programs, explaining the differences between slang, jargon, and standard speech. This will help young people consciously choose their communication style depending on the situation.

- Actively promoting the richness and expressiveness of the standard language through literature, media, and culture, so that slang is not perceived as the only or main way of self-expression.

- In IT and other rapidly developing fields, it is necessary to create official terms that are understandable to a wide audience and carefully introduce them to reduce excessive borrowing and stylistic distortions.

- Language academies, institutes, and cultural communities should monitor linguistic innovations, correct, and recommend the use of new words, including slang, if they become widespread and stable.

5. Discussion

IT slang is a vibrant, evolving subset of technical language. While its informal nature presents challenges for formal communication and standardization, it is also a testament to the creativity and dynamism of the tech community. Recognizing, documenting, and integrating such terms into formal terminologies helps bridge the gap between expert and non-expert users and ensures clarity in global digital communication.

5.1. Slang, Jargon, and Standard Terminology in IT

The categorization of IT terms into slang, jargon, and standard IT terminology is critical for understanding how language is adapted to different levels of formality and technical specificity. Slang and jargon serve as valuable shorthand for professionals within the IT community, aiding in faster and more efficient communication. However, the informality and context-dependence of slang can also hinder its universal adoption, highlighting the need for a transition from slang to formal terminology as technology becomes more mainstream. The evolution of slang into standard IT terminology, such as "bug", "cloud", and "hack,=", reflects a key mechanism in how language adapts to technological advancements. As these terms become widely recognized, they enter formal lexicons, bridging the gap between informal communication within tech communities and formal documentation and standards.

5.2. Challenges in IT Terminology Standardization

One of the primary challenges identified in the study is the pace of technological advancement outpacing the formalization of terminology. New concepts, particularly in

emerging fields, such asartificial intelligence, blockchain, and quantum computing, introduce a constant need for new terminology. Despite efforts by standardization bodies like ISO/IEC and regional institutions, the standardization process often lags behind the rapid innovation in technology. This challenge is compounded by the multilingual nature of the global tech industry. While English remains the dominant language in tech discourse, non-English-speaking regions face difficulties in adapting and standardizing terms. Many terms are borrowed without sufficient cultural or linguistic adaptation, leading to discrepancies in meaning and usage across languages. As a result, there is an ongoing need for collaboration between international standardization bodies and linguistic communities to ensure consistent and precise communication across cultures.

5.3. Technological Tools in Terminology Management

The application of AI, NLP, and machine learning in terminology management is an emerging trend that shows great promise. The study highlights how these tools are already streamlining the term extraction process, helping to automate the creation of multilingual glossaries and ensuring consistency in translations. However, while these technologies improve efficiency, they are not yet fully capable of replacing human terminologists, especially in terms of understanding nuanced cultural meanings and the evolution of language. This suggests a continued need for human oversight in the development of IT terminology.

5.4. Commercial Influence on IT Terminology

Another significant finding of the study is the commercial influence on IT terminology. Major tech companies, such as Microsoft and Google, shape the IT landscape with proprietary terms that may not always be neutral or universally accepted. This corporate-driven language can complicate the process of creating standardized, neutral terminology, as some terms may be closely associated with specific brands or technologies.

The influence of commercial interests highlights a crucial point: while standardization efforts aim for neutrality, the dominance of certain companies in the global market often leads to the widespread use of their terminology, creating potential challenges for standardization bodies.

5.5. Industry Feedback on Terminology Standardization

The feedback from industry professionals reinforces the idea that while there is consensus on the need for standardized terminology, the existing standards are often seen as outdated. Sixty percent of respondents indicated that outdated standards delay product development and international projects. This feedback underscores the need for continuous updates to terminology frameworks and the importance of keeping pace with technological advancements.

5.6. Innovation and Language Evolution

Slang often reflects creativity, social change, and cultural trends. It introduces new words and expressions, keeping language dynamic and responsive to contemporary life. Many slang terms eventually become part of the standard language. Slang and jargon reflect societal values, subcultures, and generational differences. Studying them helps linguists and sociologists understand social dynamics and cultural shifts.

5.7. Exclusion and Elitism

Excessive use of jargon or slang can exclude outsiders or intimidate newcomers. Legal, medical, or technical jargon may confuse laypersons. Youth slang can create generational gaps or alienate older individuals. Slang is often ambiguous or context-dependent, which can lead to misunderstandings. A word may mean one thing in one region or community and something else entirely elsewhere.

5.8. Professional Barriers

Overuse of jargon in formal or public communication can reduce clarity and accessibility. A government website filled with bureaucratic jargon may be unusable for citizens without specialized knowledge. In academic or professional settings, slang may be seen as unprofessional or careless, affecting credibility. This is particularly important in education, diplomacy, and formal writing. Some slang terms are associated with negative stereotypes or subcultures and can lead to bias or discrimination. Certain slang associated with

marginalized groups may be unfairly stigmatized in broader society.

6. Conclusion

The development and standardization of IT terminology is a continuous and collaborative effort. It requires coordination between echnologists, linguists, standardization bodies, and end-users. Clear, standardized terminology supports innovation, enhances international cooperation, and ensures accurate communication in a rapidly evolving field. This study highlights the dynamic and evolving nature of IT terminology, particularly the complex interplay between standard IT terms, jargon, and slang. IT terminology reflects not only technological progress but also the culture and communities that shape its development. The findings suggest that while significant strides have been made in standardizing IT terms through institutions like ISO and the Kazakh Language Institute, the rapid pace of technological innovation presents ongoing challenges for standardization efforts.

The distinction between IT terms, jargon, and slang is critical to understanding the diverse linguistic landscape within the tech industry. Standard IT terms are essential for clarity and precision, ensuring that technical communication remains effective across professional environments. However, jargon and slang play crucial roles in fostering community identity, enabling quick communication among professionals, and adapting to the ever-changing landscape of technology.

Slang, while initially informal, has proven to be an efficient way of coining terms for new concepts. Over time, these terms gain acceptance and often transition into standardized terminology, as seen with words like “bug” and “cloud.” However, the transformation from slang to accepted terminology is not without its challenges. The need for brevity and precision drives the adoption of slang, but its evolving nature can lead to ambiguity and exclusion, particularly for newcomers and non-native speakers.

Technological advancements, particularly in AI and NLP, offer promising tools for managing and standardizing IT terminology. These tools have streamlined the creation of multilingual glossaries and improved consistency in translation. However, they are not yet a complete replacement for human expertise. The need for ongoing human involvement in terminological research and standardization remains crucial, especially as new technologies like quantum computing and AI introduce fresh challenges.

Moreover, the influence of commercial interests, such as proprietary technologies from major companies, further complicates the creation of neutral, universally accepted terms. This underscores the importance of collaboration between industry stakeholders, institutional bodies, and linguistic communities to navigate these challenges and ensure the continued growth and adaptability of IT terminology.

In conclusion, while there has been considerable progress in the development and standardization of IT terminology, challenges remain due to the rapid pace of innovation, multilingual issues, and commercial influences. To address these challenges, ongoing collaboration across linguistic and technological boundaries is essential. The future of IT language will likely continue to be shaped by the intersection of technology, culture, and community, requiring a flexible and dynamic approach to terminology management.

Author Contributions

A.A. conceptualized the research idea, supervised the study, and contributed to the theoretical framework. S.K. and A.F. conducted the literature review and participated in the data collection and analysis, responsible for drafting the initial manuscript and interpreting the results. A.B. contributed to the methodological design and revised the manuscript critically for important intellectual content. A.O. managed reference compilation, formatting, and assisted with final proofreading and editing. All authors read and approved the final version of the manuscript.

Funding

Funded within the scope of the scientific project BR21882249 “Improvement and Expansion of the National Corpus of the Kazakh Language as a Means of Intercultural Communication” at A. Baitursynuly Institute of linguistics of the Ministry of science and higher education, Republic of Kazakhstan. The article was discussed and approved by the Academic Council of the Institute of Linguistics. Minutes code No. 1 01/28/2025.

Institutional Review Board Statement

The data used in this study are available from the corresponding author upon reasonable request. Due to the nature of the research, some data may not be publicly available for confidentiality or copyright reasons. Additional information required to verify the study findings can be provided upon request.

Informed Consent Statement

Informed written consent was obtained from all participants of the study.

Data Availability Statement

The data used for the study are available from the correspondence author upon reasonable request.

Confict of Interest

The authors declared no conflicts of interest.

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