

МОВОЗНАВСТВО. ЛІТЕРАТУРОЗНАВСТВО

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SEMANTIC DEVELOPMENT OF MODERN ENGLISH IT TERMINOLOGY

The article examines the peculiarities of the evolution of the IT language and its interaction with the environment, which is manifested by the constant appearance of new words and expressions that arise when describing technological phenomena. These terms act as contemporary symbols, embodying the influence of innovations and carrying not only technical connotations but also eliciting emotional responses.

The significance of this study is underscored by exploring alterations in vocabulary enrichment strategies within the fields of information technology and the Internet. A profound grasp of this terminology aids communication, knowledge exchange, and fosters cross-border integration.

The aim of the research is to study the peculiarities of semantic development of modern English IT terminology.

The dynamic process of modern IT terminology development in English is driven by technological advances, global communication, and the need for precise expression of complex concepts. This phenomenon is influenced by multiple factors, including technological progress, which spawns many neologisms, as well as metaphorical terms. Abbreviations facilitate communication among experts, while also entering common language due to technology's pervasive role.

The interdisciplinary nature of IT leads to the integration of terms from various fields, while cultural and global factors further influence IT terminology development. English's global impact results in the adaptation of terms across languages. Simultaneously, foreign languages influence English IT vocabulary.

User interaction and accessibility drive the development of user-friendly IT terminology. Recognizing users' needs for simplicity and inclusivity. The IT industry's terminology aligns with mental models, enhancing user confidence in technology interaction.

Organizations like the Internet Engineering Task Force (IETF) play a big role in standardizing IT terminology to bridge linguistic and cultural gaps. Their commitment to fostering cross-cultural collaboration via clear communication promotes the unity of a global community. The collaboration demonstrated in the harmonization of IT terminology across cultures testifies to language's adaptability and its role as a unifying force in the realm of technology.

Key words: *IT terminology, IT vocabulary development, neologisms, metaphorical terms, abbreviations, user-friendly terminology, cross-cultural collaboration.*

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СЕМАНТИЧНИЙ РОЗВИТОК СУЧАСНОЇ АНГЛОМОВНОЇ ІТ ТЕРМІНОЛОГІЇ

У статті розглянуті особливості еволюції ІТ-мови та її взаємодія з навколишнім середовищем, що проявляється через постійну появу нових слів і виразів, які виникають під час опису технологічних явищ. Ці терміни діють як сучасні символи, які втілюють вплив інновацій і несуть не лише технічні конотації, а й викликають емоційну реакцію.

Важливість цього дослідження підкреслюється вивченням змін у стратегіях збагачення словникового запасу в сферах інформаційних технологій та Інтернету. Глибоке розуміння цієї термінології сприяє спілкуванню, обміну знаннями та сприяє транскордонній інтеграції.

Метою дослідження є вивчення особливостей розвитку семантики сучасної англійської ІТ-термінології.

Динамічний процес розвитку сучасної англійської ІТ-термінології зумовлений технологічним прогресом, глобальною комунікацією та необхідністю точного вираження складних понять. На це явище впливає безліч факторів, у тому числі технічний прогрес, який породжує безліч неологізмів, а також метафоричних термінів. Абревіатури полегшують спілкування між експертами та входять у спільну мову завдяки поширеній ролі технологій.

Міждисциплінарний характер ІТ призводить до інтеграції термінів з різних галузей, тоді як культурні та глобальні фактори ще більше впливають на розвиток ІТ-термінології. Глобальний вплив англійської мови призводить до адаптації термінів в різних мовах. Водночас іноземні мови впливають на лексику англійської ІТ.

Взаємодія з користувачем і доступність сприяють розробці зручної ІТ-термінології. Визначаючи потреби користувачів у простоті та інклюзивності. Термінологія ІТ-індустрії узгоджується з ментальними моделями, підвищуючи впевненість користувачів у технологічній взаємодії.

Такі організації, як Internet Engineering Task Force (IETF), відіграють велику роль у стандартизації ІТ-термінології для подолання мовних і культурних прогалів. Їхнє прагнення сприяти міжкультурній співпраці через чітку комунікацію сприяє єдності глобальної спільноти. Співпраця, продемонстрована в гармонізації ІТ-термінології між культурами, свідчить про адаптивність мови та її роль як об'єднуючої сили в сфері технологій.

Ключові слова: ІТ-термінологія, розвиток ІТ-лексики, неологізми, метафоричні терміни, аббревіатури, зручна термінологія, крос-культурна співпраця.

Problem setting. In modern era of digital revolution and constant innovations, computer technologies have become an integral part of our life. This process leads to the enrichment of our language with new terms and expressions born in the conditions of information technologies. Scientists from the field of linguistics use the term "terminological explosion" (Д'яков та ін., 2000: 7) to describe the intensive growth of scientific and technical terminology. Linguists have always been interested in studying linguistic and sociolinguistic aspects of vocabulary development and enrichment.

The analysis of these aspects provides an opportunity to understand the trends of the general development of the language, to shed light on the issue of interaction between the language and its environment (Скоп'юк, 2005: 59). This relationship is revealed through a continuous flow of new words, terms and expressions that arise in the process of describing and explaining technological phenomena. Such words become a kind of "symbols" of modernity, reflecting the impact of innovations on our lives. They acquire a deeper meaning, expressing not only technical characteristics, but also the emotional perception they evoke in us.

Analysis of recent research and publications. The relevance of this work is determined by the importance of conducting a comprehensive analysis of phenomena and processes occurring in the lexical composition of the English language at the beginning of the XXI century. The study of changes in approaches and means of vocabulary enrichment in the field of information technologies and the Internet, as well as the formation of new derivational elements that have become active during the last decade, are especially relevant. The increasing complexity of the extralinguistic environment requires a sociolinguistic analysis of innovative processes, the identification of specific social factors that have the greatest influence on these processes, and the disclosure of the role of the information revolution in changes in the semantics and vocabulary of the language (Ситенко, 2019: 43).

The study of the issues related to the expansion and enrichment of modern English language has been pursued by scholars from Ukraine and other countries, including N. G. Ishchenko, L. G. Verba, O. L. Harmash, T. T. Vrabel, A. E. Levitsky, O. V. Rebriy, O. V. Tkachik, N. V. Rogovska, J. Swift, E. G. Balyuta, V. I. Zabotkina, Y. A. Zatsny, K. G. Kovalenko, R. K. and others. The development of English IT terminology has been a subject of exploration by researchers such as I. Shylinska, Yu. Molotkina, O. Sytenko, and others.

The issue of semantic development of modern English IT terminology deserves special attention, since information technology is a key sector of the global economy and scientific research. Clarifying the principles and features of the formation of English IT terminology is important for further scientific and practical research in this area. An in-depth understanding of the terminology of this field can facilitate communication, exchange of knowledge and contribute to the further integration process between countries.

Setting objectives. The aim of the research is to study the peculiarities of semantic development of modern English IT terminology. The realization of the set goal involves the following tasks: to investigate the origin and adoption of neologisms, to explore cultural adaptation of IT terms, to assess user-friendly terminology in IT, to examine the role of globalization in IT vocabulary, to explore language and technology convergence, to monitor and analyze the ongoing evolution of IT terminology, identifying emerging trends in vocabulary development, linguistic borrowing, and technology-driven language changes.

Presenting the main material. The semantic development of modern terminology in the field of information technology (IT) in the English language is a dynamic process caused by the rapid pace of technological innovation, global communication and the need to express increasingly complex concepts. This process is characterized by several key factors. The first is technological progress. After all, new technologies,

tools and methodologies are constantly introduced. As these advances occur, there is a need for precise terms to describe and differentiate these new concepts.

The development of technology leads to the creation of new words - neologisms. For instance, terms like "cloud computing," "blockchain," and "selfie" emerged as a result of technological innovations and have become widely used IT vocabulary. The IT industry often uses metaphors to make complex concepts more accessible for a wider audience (Овчаренко, 2013). In terms like "bug," "firewall," "cookie," and "virus," common language is employed to convey abstract IT ideas to non-experts.

The IT field is also saturated with abbreviations and shortcuts such as "HTTP," "URL," "HTML," "CSS," "API," "GUI," etc. These abbreviations play a significant role in facilitating effective communication among experts in this domain. They condense complex technical concepts into concise forms, enabling professionals to convey information efficiently and accurately.

Furthermore, these IT-related abbreviations have extended beyond their initial technical context and have permeated everyday language. With the growing integration of technologies into various aspects of daily life, these terms have become recognizable to a broader audience. This integration has made these abbreviations a natural part of conversations, even among non-specialists, highlighting the profound impact of technology on modern language.

IT is not limited to one field but intersects with different fields such as mathematics, engineering, psychology and business. This interdisciplinary nature leads to the borrowing and adaptation of words and concepts from other fields, e.g.: 'algorithm' and 'binary' from Mathematics, 'circuit' and 'bandwidth' from Engineering, 'cognitive computing' from Psychology, 'Enterprise Resource Planning' and 'dashboard' from Business, 'syntax' and 'semantics' from Linguistics.

Cultural and global factors also have no small influence on the development of IT terminology. English is the lingua franca of IT, and this global influence has led to the adaptation of English terms in different languages and cultures. For example, the English term "email", a short form of "electronic mail", is widely used throughout the world to denote electronic communication: "e-mail" in French, "correo electrónico" in Spanish with phonetic adaptation. Here is another example: "firewall" in English, "cortafuegos" in Spanish, "pare-feu" in French, "firewall" in German.

At the same time, other languages influence the English IT vocabulary as terms are borrowed, translated or adapted. Such words as 'kaizen' and 'über'

have also found their place in IT. Another example is "cache" (from French 'cacher' meaning 'to hide'). In computing, a cache is a high-speed data storage layer that stores a subset of data so that future requests for that data are served up faster.

The introduction of emoji graphic symbols into digital communication has been a remarkable development, showcasing the intersection of technology and language across cultures. Originating in Japan, these simple pictorial representations have transcended linguistic barriers and become a universal means of expressing emotions and ideas. Emoji, derived from the Japanese words "e" (meaning picture) and "moji" (meaning character), were initially used in Japanese mobile phones in the late 1990s. They provided a creative way to enhance text-based messages and convey emotions that might otherwise be lost in digital communication. The concept quickly gained popularity in Japan and soon started spreading to other regions and now are used in languages around the world to convey emotions in digital communication.

The meanings of words can change as they move from a technical context to a more general usage. For example, the term "server" originally referred to a computer system, but now it is commonly associated with data hosting services. A "profile," originally used in databases, referred to a set of characteristics associated with a user. Currently, the concept of "profile" has been expanded to include descriptions of individuals, particularly on social networking platforms, to indicate personal information, interests and activities. One more example, in computing, "download" involves transferring data from a remote server to a local device. In general usage "download" has extended to mean acquiring files, content, or information from the Internet or other sources.

We can also notice such an important factor influencing the development of modern IT terminology as user interaction and accessibility. The IT industry aims to make technology accessible to a wide range of users. Which prompts the development of user-friendly terminology and intuitive interfaces that simplify complex concepts. Here are some examples which demonstrate how interaction and accessibility have influenced modern IT terminology:

Dashboard vs. Control Panel. "Control Panel" was a term that might elicit images of complex machinery. Many platforms now use "Dashboard" to describe the main interface for users, making it sound less intimidating and more intuitive. The term "Dashboard" is now widely used to describe the main user interface, which sounds understandable and less intimidating.

App vs. Application Software. "Application software" has shrunk to "app." with the rise of smartphones and tablets.

Chatbot vs. Automated Online Assistant. The term "Automated Online Assistant" sounds formal and technical compared to "Chatbot", which is more accessible and clearly conveys the content of a chat-based interface.

Swipe, Pinch, Tap: These terms arose when touch screens appeared. They were adopted for brevity and intuitive understanding instead of the complex terms "horizontal drag", "two-finger contraction" or "single touch activation".

Streaming vs. Real-time Data Transmission: Instead of "real-time transmission of audio and video data", the term "streaming" has become widely used.

The push for more user-friendly terminology in the IT industry stems from recognizing the vast and diverse user base. As technology becomes integral to daily life, terms must evolve to be inclusive, intuitive, and welcoming to both seasoned experts and newcomers.

Users' recognition of convenient and intuitively understandable terminology stimulates demand for clear and enjoyable technologies but also for the terms that reflect their essence. When users encounter terminology that aligns with their understanding and simplifies complex concepts, it creates a sense of comfort and confidence in their interactions with various technologies.

Furthermore, the use of user-friendly terminology also enables users to make informed decisions. When terms align with users' mental models and expectations, they can confidently make choices, navigate interfaces more effectively, and resolve issues more easily.

Since the IT industry operates on a global level, the need to standardize its terminology and create a common vocabulary that would help overcome linguistic and cultural barriers becomes of great importance.

In response to this need, influential organizations such as the Internet Engineering Task Force (IETF) (Internet Engineering, 2023), an open international community of network designers, operators, vendors, and researchers, assume a pivotal role. This organization, which operates under the auspices of the Internet Society, actively engages in the development and maintenance of protocols, technologies, and terminologies that form the backbone of the modern digital ecosystem. Their efforts extend to not only fostering technological advancements but also to ensuring clear and consistent communication within the IT field.

The Internet Engineering Task Force's dedication to preserving and standardizing IT terminology has made a significant contribution to promoting effective cross-cultural collaboration. By establishing and maintaining terminology standards, they facilitate communication between IT experts, researchers, developers and practitioners worldwide. These standards cross language barriers, ensuring that technical discussions and documentation are comprehensible, regardless of the native languages of those involved.

In the ever-evolving landscape of IT, the role of organizations like the IETF (Institute of Electrical and Electronics Engineers (IEEE) (IEEE, 2023), World Wide Web Consortium (W3C) (W3C, 2023), Open Source Initiative (OSI) (OSI, 2023) extends beyond technology development. They serve as custodians of a universal language that enables individuals from diverse linguistic and cultural backgrounds to communicate and innovate collectively. In this way, the standardization of IT terminology becomes a testament to the power of collaboration, as it fosters a global community united by a shared understanding of technical concepts and innovations.

Conclusions. In the era of digital revolution and constant innovation, computer technologies have seamlessly integrated into our lives, enriching our language with new terms. The "terminological explosion" illustrates the rapid growth of technical vocabulary. Linguists explore the evolving relationship between language and technology, revealing trends and insights into the interaction between the two.

Neologisms like "cloud computing" and "blockchain" exemplify technology's impact on language. Acronyms and abbreviations facilitate specialized communication while becoming part of everyday language. Cultural exchange and globalization shape IT vocabulary, with languages adapting terms to their contexts.

The universality of emojis transcends language barriers, enabling emotional expression in digital communication. User-friendly terminology bridges the gap between technology and users, fostering familiarity and confident interactions.

Standardizing IT terminology is vital due to the global nature of the industry. Organizations like the Internet Engineering Task Force promote cross-cultural collaboration by establishing and maintaining standards.

The symbiotic relationship between technology and language continually reshapes how we communicate, adapting to new realities and uniting a diverse world under shared understanding.

BIBLIOGRAPHY

1. Д'яков А. С., Кияк Т. Р., Куделько З. Б. Основи термінотворення: семантичний та соціолінгвістичний аспекти : монографія. Київ : Academia, 2000. 218 с.
2. Скоп'юк Т. Семантичний розвиток лексики сучасної англійської мови. URL: <http://dspace.nbuv.gov.ua/bitstream/handle/123456789/72794/08-Skopiuk.pdf?sequence=1> (дата звернення: 09.08.2023).
3. Ситенко О. О. Лексичні інновації у сфері інформаційних технологій англійської мови. URL: <https://r.donnu.edu.ua/xmlui/handle/123456789/997?locale-attribute=en> (дата звернення: 09.08.2023).
4. Овчаренко Н. І. Метафора як когнітивний механізм категоризації фахових знань. *Науковий часопис НПУ імені М. П. Драгоманова. Серія 10 : Проблеми граматики і лексикології української мови*. Київ, 2013. Вип. 10. С. 111–114.
5. Internet Engineering Task Force. URL: <https://www.ietf.org/> (дата звернення: 10.08.2023).
6. Institute of Electrical and Electronics Engineers. URL: <https://www.ieee.org/> (дата звернення: 10.08.2023).
7. World Wide Web Consortium. URL: <https://www.w3.org/> (дата звернення: 10.08.2023).
8. Open Source Initiative. URL: <https://opensource.org/> <https://www.w3.org/> (дата звернення: 10.08.2023).

REFERENCES

1. D'yakov A. S., Kiak T. R., Kudelko Z. B. (2000) *Osnovy terminotvorennya: semantychnyy ta sotsiolinhvistychnyy aspekty : monohrafiya* [Basics of term formation: semantic and sociolinguistic aspects: monograph.] Kyiv : Academia. – Kyiv : Academy. 218. [in Ukrainian].
2. Skopiyuk T. *Semantychnyy rozvytok leksyky suchasnoyi anhliyskoyi movy* [Semantic development of modern English vocabulary]. URL: <http://dspace.nbuv.gov.ua/bitstream/handle/123456789/72794/08-Skopiuk.pdf?sequence=1>. [in Ukrainian].
3. Sytenko O. O. *Leksychni innovatsiyi u sferi informatsiynykh tekhnolohiy anhliyskoyi movy* [Lexical innovations in the field of information technologies of the English language]. URL: <https://r.donnu.edu.ua/xmlui/handle/123456789/997?locale-attribute=en>. [in Ukrainian]
4. Ovcharenko N. I. (2013) *Metafora yak kohnityvnyy mekhanizm katehoryzatsiyi fakhovykh znan* [Metaphor as a cognitive mechanism of categorization of professional knowledge]. *Naukovyy chasopys NPU imeni M. P. Dragomanova. Seriya 10 : Problemy hramatyky i leksykolohiyi ukrayins'koyi movy*. - Scientific journal of the M.P. Drahomanov NPU. *Problems of grammar and lexicology of the Ukrainian language*, 10. 111–114.
5. Internet Engineering Task Force. URL: <https://www.ietf.org/>.
6. Institute of Electrical and Electronics Engineers. URL: <https://www.ieee.org/>.
7. World Wide Web Consortium. URL: <https://www.w3.org/>.
8. Open Source Initiative. URL: <https://opensource.org/> <https://www.w3.org/>.