

STANDARDIZATION AND ADAPTATION OF COMPUTER TERMINOLOGY TO THE  
NATIONAL LANGUAGE

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**Annotation:** The article examines the processes of standardizing and adapting computer terminology in the context of the Uzbek language. It discusses the theoretical foundations of terminology standardization, the influence of the English language on modern Uzbek computer lexicon, and the challenges of linguistic and cultural adaptation. The study emphasizes the importance of national language identity in integrating global technological terms and provides linguistic recommendations for effective terminological unification. The analysis also considers semantic shifts, transliteration practices, and the role of linguistic policy in developing a standardized IT lexicon in Uzbekistan.

**Keywords:** computer terminology, standardization, linguistic adaptation, national language, transliteration, semantic equivalence, linguistic policy, terminology management.

**Introduction.** In the era of globalization and rapid technological advancement, computer terminology has become a universal linguistic phenomenon. The English language, as the dominant medium of information technology (IT), has greatly influenced the lexical systems of many national languages, including Uzbek. As a result, thousands of computer-related terms such as *software*, *browser*, *database*, *login*, and *server* have entered everyday communication in Uzbekistan.

However, the uncontrolled influx of borrowed terms has raised concerns about linguistic purity, semantic transparency, and national identity. Thus, the standardization and adaptation of computer terminology to the Uzbek language is both a linguistic and cultural necessity.

This article aims to analyze the current state of computer terminology in the Uzbek language, explore standardization mechanisms, and propose ways to balance linguistic innovation with cultural integrity.

*1. Theoretical Background of Terminology Standardization.* Terminology standardization is a process of establishing uniform terms and definitions within a particular field to ensure clarity and mutual understanding. According to the International Organization for Standardization (ISO 704:2009), terminology standardization involves the identification of concepts, the formulation of terms, and their consistent usage in communication.

In linguistic terms, standardization contributes to:

- a) Systematizing lexical units within a terminological field;
- b) Preventing synonymy and polysemy in technical vocabulary;
- c) Facilitating accurate translation and intercultural communication.

In the context of computer science, the rapid development of new technologies continuously generates new concepts, creating an ongoing need for terminological updating and regulation.

*2. The Influence of English on Uzbek Computer Terminology.* English has served as the primary source of IT terminology for most modern languages. Uzbek, as a developing linguistic system, has adopted a significant number of English computer terms either directly or through Russian mediation.

Examples include:

- a) Direct borrowings: *server*, *login*, *password*, *browser*, *smartphone*

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b) Indirect borrowings (via Russian): *kompyuter* (computer),  *fayl* (file), *klaviatura* (keyboard), *printer*

In recent years, English-based neologisms such as *cybersecurity*, *database*, *upload*, *download*, *AI* (artificial intelligence) have entered Uzbek without translation. While such borrowings promote technological integration, they also risk disrupting the linguistic harmony of the national lexicon.

3. *Linguistic and Cultural Challenges in Adaptation.* The adaptation of computer terms into Uzbek encounters several linguistic challenges:

A. Phonetic and Orthographic Adjustment: Borrowed terms often undergo partial phonetic modification (e.g., *kompyuter* from *computer*). However, orthographic inconsistency is still common — for instance, *login/log-in*, *brauzer/browser*, and *onlayn/online* coexist in written discourse.

B. Semantic Transparency: Some borrowed terms lose their metaphorical or cultural meaning when adapted. The English term *bug* (meaning “error”) carries a metaphorical sense rooted in the culture of early programming, but this nuance is rarely understood in Uzbek.

C. Cultural Neutralization: The cultural background of terms such as *firewall*, *cookie*, and *cloud* becomes neutralized when transliterated, causing loss of conceptual richness.

D. Lack of Standardization Policy: The absence of an official linguistic authority responsible for IT terminology in Uzbekistan has led to inconsistent term usage across institutions and educational materials.

4. *Principles of Standardizing Computer Terminology.* Standardization should be guided by a set of clear linguistic principles to ensure effective adaptation. Based on international and national linguistic practices, the following principles are proposed:

- **Systematicity:** Each term must belong to a well-structured lexical system and relate logically to other terms in the field.
- **Transparency:** Terms should be semantically clear and easily understandable to users.
- **Brevity and Usability:** Overly complex translated equivalents should be avoided.
- **Consistency:** Once standardized, the same term must be used uniformly across all contexts (education, media, IT documents).
- **National Relevance:** Where possible, native equivalents should be created instead of direct borrowings (e.g., *ma'lumotlar bazasi* for *database*).
- **International Compatibility:** Uzbek equivalents should remain understandable in global communication contexts.

5. *Practical Strategies for Adapting IT Terminology.* The following strategies can be applied to align Uzbek computer terminology with international standards while preserving linguistic identity:

### 1. Transliteration and Phonetic Adaptation

Used when the term lacks an appropriate Uzbek equivalent.

*Example: browser → brauzer, server → server (unchanged)*

### 2. Calquing (Loan Translation)

Creating a direct translation using native linguistic resources.

*Example: database → ma'lumotlar bazasi; software → dasturiy ta'minot*

### 3. Semantic Extension

Expanding the meaning of existing Uzbek words to include new technological concepts.

*Example: tarmoq (network), bulut (cloud), dastur (program).*

4. **Hybrid Formation**

Combining Uzbek and foreign elements to form new terms.

*Example: internet tarmog'i, mobil ilova (mobile app), elektron pochta (email)*

5. **Institutional Standardization**

Establishing national committees or linguistic councils to regulate terminology, similar to the *British Standards Institution (BSI)* or *ISO Technical Committee 37 (Terminology and other language and content resources)*.

6. *The Role of Linguistic Policy and Education.* National linguistic policy plays a decisive role in the success of terminological standardization. Government institutions, universities, and media organizations must collaborate to develop and disseminate standardized term lists.

Educational materials should reflect unified terminology to ensure consistency in IT education and professional communication. Moreover, creating an **electronic Uzbek IT terminology database** would facilitate reference and translation accuracy.

**Discussion.** While English continues to dominate global computer discourse, linguistic diversity should be preserved. Standardization is not merely a linguistic task but a cultural one: it reflects how a nation integrates modern technology without losing its linguistic heritage.

Uzbek, as a developing national language, demonstrates strong adaptability; however, standardization efforts must be proactive, scientifically grounded, and supported by digital lexicographic tools.

**Conclusion.** The standardization and adaptation of computer terminology to the Uzbek language are essential for linguistic modernization and cultural preservation. Standardization ensures terminological consistency, while adaptation allows the integration of new concepts without compromising national identity.

A balanced approach—combining transliteration, calquing, and linguistic innovation—should guide future practices. To achieve this, coordinated efforts among linguists, IT specialists, and policymakers are required. The creation of national termbanks and official glossaries will not only unify professional communication but also strengthen the role of the Uzbek language in global technological discourse.

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