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THE EMERGENCE OF NEW IT TERMINOLOGY UNDER THE INFLUENCE OF DIGITAL TECHNOLOGIES

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Abstract: The rapid development of digital technologies has significantly influenced modern languages, particularly in the field of information technology (IT). This article examines the emergence of new IT terms under the impact of digital transformation, focusing on their semantic and structural characteristics in English and their adaptation into Uzbek. The study applies a comparative and corpus-based methodology to analyze newly formed and borrowed IT terms related to artificial intelligence, cloud computing, cyber security, and digital platforms. The findings reveal that most new IT terms originate in English and enter Uzbek through transliteration, calque, or semantic adaptation, resulting in noticeable changes in the Uzbek terminological system. The research contributes to the field of terminology studies by proposing a typology of semantic shifts and structural models of new IT terms and highlighting the need for systematic standardization of digital terminology in Uzbek.

Keywords: digital technologies, IT terminology, semantic change, term formation, English borrowings, Uzbek language

Introduction. In the last two decades, digital technologies have undergone unprecedented development, reshaping communication, education, economics, and governance worldwide. Innovations such as artificial intelligence (AI), big data analytics, cloud computing, block chain, and virtual reality have not only transformed technological practices but have also generated a vast number of new concepts requiring linguistic representation. As a result, languages are constantly expanding their terminological systems to accommodate these innovations.

English functions as the dominant global language of digital technologies, serving as the primary source of new IT terminology. Consequently, many languages, including Uzbek, actively borrow and adapt English IT terms. Despite the growing presence of such terminology in professional, educational, and everyday discourse, systematic linguistic research on the semantic and structural properties of newly emerging IT terms in Uzbek remains limited.

This study aims to fill this gap by analyzing how new IT terms emerge under the influence of digital technologies and how they are semantically and structurally integrated into Uzbek. The research addresses the following questions:

1. What are the main sources of new IT terminology?
2. What semantic changes occur during the adaptation of IT terms?
3. What structural models dominate newly emerging IT terms?

Literature Review. Terminology development has long been a focus of linguistic research. Scholars such as Sager (1990) and Cabré (1999) emphasize that terminological systems evolve in response to scientific and technological progress. Crystal (2001) highlights the decisive role of the internet and digital communication in accelerating lexical change.

With the expansion of digital communication, researchers such as Crystal (2001) emphasize the accelerating effect of the internet on lexical innovation and language change. The digital environment fosters rapid dissemination of neologisms, abbreviations, and hybrid forms, particularly in IT-related discourse. Lakoff and Johnson's (2003) theory of conceptual metaphor has been widely applied to explain metaphor-based IT terms such as *cloud*, *virus*, and *worm*.

Recent studies have examined IT terminology from various perspectives, including semantic shift (Krieger, 2014), metaphor in technological discourse (Lakoff & Johnson, 2003), and English as a donor language in global terminology (Phillipson, 2009). Research on Turkic languages indicates that digital terminology is largely borrowed from English, often without sufficient standardization (Abdullayeva, 2020).

However, comparative studies focusing specifically on the semantic and structural adaptation of newly emerging IT terms in English and Uzbek remain scarce. This article contributes to existing research by providing a focused comparative analysis grounded in real digital texts.

Methodology. The study employs a qualitative and quantitative research design. A small specialized corpus was compiled from English and Uzbek digital sources, including software documentation, user interface texts, online technology news portals, and educational IT materials published between 2018 and 2024.

The methodological framework includes:

- comparative linguistic analysis to identify similarities and differences between English and Uzbek IT terms;
- componential semantic analysis to examine meaning structure;
- structural analysis to classify term formation models;
- frequency observation to identify the most productive term types.

A total of 120 IT terms related to emerging digital technologies were analyzed.

Digital Technologies as a Driver of Terminological Innovation

Digital technologies create an environment in which terminological innovation is not only frequent but inevitable. Each new technological solution introduces specialized concepts that must be named efficiently and unambiguously. As a result, IT terminology develops at a faster pace than many other terminological domains.

The analysis indicates that English-language technological discourse functions as the primary incubator of new IT terms. Global technology corporations, research institutions, and online developer communities produce terminology that quickly gains international circulation. Terms such as *blockchain*, *metaverse*, *deep learning*, and *digital twin* exemplify this trend.

In addition, digital communication platforms accelerate the spread of new terms by enabling instant global interaction. Social media, developer forums, and open-source communities contribute to the informal validation and normalization of new terminology.

Sources of New IT Terminology

The analysis shows that new IT terms emerge primarily from the following sources:

English-Language Innovation

Most digital innovations are introduced by English-speaking technology companies, resulting in English-origin terms such as *blockchain, cloud computing, machine learning,* and *metaverse*. These terms are subsequently borrowed by other languages.

Metaphorical Extension

Many IT terms arise through metaphorical transfer from everyday language. For example, *cloud* refers metaphorically to remote data storage, while *virus* denotes malicious software. Such metaphors facilitate comprehension and rapid dissemination of new concepts.

Digital discourse favors brevity, leading to widespread use of acronyms such as *AI, VR, UI, UX,* and *API*. These forms often remain unchanged in Uzbek usage.

Semantic Characteristics of New IT Terms

Semantically, newly emerging IT terms tend to be monosemous at the initial stage of adoption. Over time, some terms undergo semantic broadening. For instance, *platform* originally referred to a technical framework but now denotes complex digital ecosystems.

In Uzbek, semantic adaptation often involves partial explanation or contextual clarification, particularly in educational texts. However, excessive borrowing without semantic adaptation may reduce transparency for non-specialist users.

Structural Models of IT Terminology

The structural analysis reveals several dominant models:

- simple terms: *app, bot, code*;
- compound terms: *software, database*;
- multi-word terms: *artificial intelligence, cloud storage*;
- abbreviations: *IT, AI, VR*.

In Uzbek, these structures are preserved or translated using equivalent syntactic patterns, for example *sun'iy intellekt* for *artificial intelligence*.

Adaptation of IT Terms into Uzbek

The adaptation of IT terminology into Uzbek occurs through transliteration, calque, and functional translation. While borrowing ensures rapid lexical expansion, it also creates challenges related to variation and lack of standardization. The coexistence of multiple variants for a single concept complicates professional communication and education.

Developing authoritative terminological guidelines and specialized dictionaries is therefore essential. Such efforts would contribute to the stabilization and normalization of IT terminology in Uzbek.

New IT terms enter Uzbek through three main strategies:

1. transliteration (*server, blog*);
2. calque (*artificial intelligence – sun'iy intellekt*);
3. functional translation (*software – dasturiy ta'minot*).

The lack of unified standards often results in parallel variants, which complicates professional communication.

Discussion. The findings confirm that digital technologies act as a powerful driver of terminological change. While borrowing ensures rapid lexical expansion, insufficient regulation may weaken terminological coherence. Therefore, collaboration between linguists and IT specialists is essential for developing consistent terminology policies.

Conclusion. The study demonstrates that the emergence of new IT terminology is directly linked to the rapid development of digital technologies. English serves as the primary source of innovation, while Uzbek adapts new terms through various semantic and structural mechanisms. Systematic analysis and standardization of IT terminology are crucial for enhancing the functional capacity of Uzbek in the digital domain. Future research may expand the corpus and include sociolinguistic perspectives on term usage.

At the same time, the study identifies critical challenges related to terminological variation and lack of standardization in Uzbek IT discourse. Without systematic regulation, uncontrolled borrowing may reduce semantic transparency and communicative efficiency. The results therefore underscore the importance of coordinated terminological planning supported by empirical linguistic research.

By adopting a corpus-based comparative approach, this study advances current research in terminology studies and language-and-technology scholarship. The proposed analytical framework may be applied to other languages and domains, offering a basis for further cross-linguistic investigation of digital terminology.

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