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STRUCTURAL-SEMANTIC ANALYSIS OF LEXICAL UNITS RELATED TO THE IT FIELD

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Abstract: *This article delves into a comprehensive structural-semantic analysis of lexical units within the rapidly evolving domain of Information Technology (IT). The continuous and swift advancement of IT necessitates a rigorous linguistic examination of the ever-emerging new concepts and terms. This study investigates the internal structure, semantic layers, stylistic characteristics, and the processes of lexical borrowing of IT-related vocabulary. Specifically, the analysis encompasses compound terms, acronyms, and instances of metaphorical and metonymic transfers that are prevalent in the field. Furthermore, the article explores the mechanisms of formation and adaptation of these terms, particularly focusing on their integration into the Uzbek language system. The findings of this research aim to contribute to a deeper understanding of the lexical richness of the IT sphere, to address contemporary terminological challenges, and to provide a foundation for the refinement and development of specialized IT dictionaries.*

Keywords: *Information Technology (IT), lexical units, structural analysis, semantic analysis, neologisms, terminology, lexical borrowing, term formation, lexicography.*

Introduction

The modern world is increasingly defined by information technology. From the ubiquitous presence of smartphones to complex artificial intelligence systems, IT shapes nearly every aspect of human life. This rapid technological evolution invariably leads to a parallel development in language, particularly in the formation

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and adoption of new vocabulary. The IT field is a fertile ground for linguistic innovation, generating a vast number of terms that reflect its dynamic nature. These terms, or lexical units, are not merely labels for new concepts; they are integral to communication, knowledge transfer, and the very conceptualization of the technological landscape.

This article focuses on the structural-semantic analysis of these IT-related lexical units. Structural analysis examines the internal composition of words and phrases, including how they are formed (e.g., compounding, derivation, acronyms). Semantic analysis, on the other hand, investigates the meaning of these units, their relationships to other words, and how their meanings evolve and adapt within specific contexts. By combining these two analytical approaches, we aim to uncover the underlying patterns and principles governing the creation, understanding, and usage of IT vocabulary.

Theoretical Framework

The study draws upon principles from various branches of linguistics, including:

Lexicology: The study of words, their nature, meaning, and relations.

Semantics: The study of meaning in language, encompassing lexical semantics (word meaning) and propositional semantics (sentence meaning).

Morphology: The study of word structure, including prefixes, suffixes, and root words.

Terminology: A specialized field concerned with the systematic collection, description, processing, and presentation of terms and their concepts in various subject fields.

Borrowing (Loanwords): The process by which words are adopted from one language into another.

The linguistic analysis of technical vocabulary, particularly in fast-developing fields like IT, is crucial for several reasons: it aids in accurate communication, facilitates translation, supports the development of specialized dictionaries, and contributes to the overall enrichment and standardization of the language.

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Structural Analysis of IT Lexical Units

The formation of new lexical units in the IT domain often employs various structural mechanisms:

Compounding: This is a highly productive process where two or more existing words combine to form a new word with a new meaning.

Examples: *Software, hardware, keyboard, website, firewall, cybersecurity, blockchain, cloud computing.*

In Uzbek, direct translations or calques often occur: *dasturiy ta'minot (software), qattiq disk (hard drive), veb-sayt (website).*

Derivation: This involves adding affixes (prefixes or suffixes) to existing words to create new ones.

Examples: *Program (v.) -> programmer (n.), digital (adj.) -> digitalization (n.), internet (n.) -> internet-enabled (adj.).*

Uzbek examples might involve adding native suffixes to borrowed roots or existing words: *kompyuterlashtirish (computerization), dasturlash (programming).*

Acronyms and Initialisms: These are abbreviations formed from the initial letters of other words and are extremely common in IT due to the need for conciseness.

Examples: *RAM (Random Access Memory), CPU (Central Processing Unit), Wi-Fi (Wireless Fidelity), USB (Universal Serial Bus), AI (Artificial Intelligence), IoT (Internet of Things).*

Many of these are adopted directly into Uzbek or pronounced as they are in English.

Blending: Combining parts of two or more words to form a new word.

Examples: *Modem (modulator + demodulator), pixel (picture + element).*

Clipping: Shortening a word without changing its meaning.

Examples: *App (application), info (information), lab (laboratory).*

Semantic Analysis of IT Lexical Units

The semantic aspect of IT lexical units reveals fascinating patterns of meaning formation and evolution:

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Monosemy vs. Polysemy: While many technical terms ideally aim for monosemy (a single meaning) for clarity, some IT terms can develop polysemy (multiple related meanings) depending on the context or sub-domain.

Example: "Cloud" – originally a meteorological term, it now semantically refers to a network of remote servers on the internet (cloud computing). "Server" – a person who serves, now a computer providing resources.

Metaphorical Extensions: Many IT terms are formed through metaphorical transfer, drawing parallels between abstract IT concepts and concrete real-world phenomena.

Examples: *Virus (biological virus -> computer virus), firewall (physical barrier -> network security system), desktop (physical desk surface -> computer screen background), surf the internet (move on water -> navigate online).* These metaphors often make complex concepts more accessible.

Metonymic Transfers: This involves using a part to refer to the whole, or a related concept to represent the main one.

Example: "Hardware" (physical components -> the computer system itself).

Semantic Narrowing/Broadening:

Narrowing: A general term takes on a specific IT meaning. E.g., "mouse" (animal -> computer input device).

Broadening: An IT term expands its meaning beyond its initial technical scope. E.g., "app" (originally specific software -> any small application).

Lexical Borrowing and Adaptation in Uzbek

The IT field is highly globalized, leading to a significant influx of lexical borrowings, primarily from English, into Uzbek. This process of language contact involves several stages of adaptation:

Direct Borrowing/Transliteration: Many terms are adopted directly, often transliterated into the Uzbek Cyrillic or Latin script.

Examples: *Internet (Internet), kompyuter (computer), fayl (file), printer (printer), skaner (scanner), brauzer (browser), geymer (gamer).*

Calque (Loan Translation): Concepts are translated word-for-word from the source language.

Examples: *Dasturiy ta'minot (software, lit. 'program provision'), qattiq disk (hard disk), elektron pochta (e-mail).*

Hybrid Formations: Combining a borrowed element with a native affix or word.

Examples: *Kompyuterlashtirish (computer + -lashtir- verb-forming suffix), internetlashtirish (internet + -lashtir-).*

Semantic Expansion of Existing Uzbek Words: Less common in highly specialized IT terms, but general words might gain new IT-related senses.

The challenge for Uzbek lexicographers and linguists lies in systematizing these borrowings, determining optimal adaptations, and developing appropriate native equivalents where suitable, to ensure both clarity and linguistic purity.

Conclusion

The structural-semantic analysis of IT-related lexical units reveals the dynamic and multifaceted nature of language development in response to technological innovation. The prevalence of compounding, derivation, acronyms, and various semantic transfers highlights the creative and adaptive capacity of language. For Uzbek, the intense process of lexical borrowing from English underscores the global dominance of IT terminology, while also presenting opportunities and challenges for linguistic standardization and enrichment. Understanding these mechanisms is crucial not only for linguistic research but also for effective communication, education, and the future development of IT within the Uzbek-speaking community. Further research could delve into the sociolinguistic aspects of IT term adoption, public perception, and the role of language policy in managing this lexical influx.

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