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THE STRUCTURAL-SEMANTIC FEATURES OF COMPUTER TERMS IN ENGLISH

Abstract

The article is devoted to the study of the structural and semantic characteristics of computer terms in English. The peculiarities of the word-formation process and the functioning of English computer terms are analysed.

Keywords: terms; morphological word-formation; affixation; compounding; conversion; reversion; blending; abbreviation

1 Introduction

The end of the twentieth century was characterized by rapid scientific and technological progress which led to the 'information revolution'. The dynamic development of science and technology is invariably accompanied by so-called 'terminological explosions' — intense increases in the number of new terms as a result of the emergence of new branches of knowledge (Aitchison, 2001).

The branch of information and communication technologies is one of the most advanced in terms of innovations. Most of the inventions in this field appear in the US, so naturally they receive their nomination in English. However, the global nature of computerization has led to the internationalization of computer vocabulary. Many computers are not only used in professional life, but also in everyday life. Consequently, many computer terms have transferred from the sphere of specialized language to that of ordinary language. As a result, computer slang is formed. The acquisition of computer vocabulary occurs simultaneously alongside the use of information and communication innovations. This simultaneous integration of realia and nomination leads to rapid awareness, memorization, and further language response. Thus, the terminological and common lexes constantly influence each other and as a result a process of terminologization and determinologization occurs. According to Kizilʹ (Kizilʹ, 2015), the creation of a term is a process in which a common word aquires the characteristics of a term (for example, command, icon, error, input, link, display, etc.). Determinologization is the process of transferring a completed term from one branch to another, with its full or partial rethinking and transformation into an interbranch homonym; the process of expanding the meaning of the terms and their transition to a system of literary language (for example, control panel, protocol, assembler, etc.).

The relevance of the present study derives from the fact that computer terminology is not static. Instead, it is constantly in dynamic development, evolving and enriching itself with new terms. British English is constantly being enriched by computer-related Americanisms, but some computer terms have not yet been reflected in specialized dictionaries. Despite numerous academic works devoted to computer vocabulary and its translation (V. Akulenko, F. Baranov, I. Bolshakov, D. Crystal, N. Gritsak, V. Karaban, O. Medvid, Y. Pylypovych, R. Pronin, A. Savina, R. Syndega, V. Tabakanova, A. Fedorov, M. Chernyshov and others), structural differentiation of terms (D. Barannik, R. Dubuc, K. Gaivenis, T. Kiyak, Z. Kudelko, S. Pavel, E. Yenikieva, M. Kochergan, etc.), word-formation methods and term systems (N. Bezgholova, L. Verba, N. Vinogradova, M. Volodina, O. Galichkina, V. Danilenko, A. Nikolaeva and others), there has been no comprehensive study of computer terms in English based on their structural and semantic features.

The purpose of this article is to expose, summarize and analyse the structural and semantic features of computer terms in English.

The object of the study is computer terminology in English.

The subject of the study is the structural and semantic characteristics of English computer terms.

The objectives of the study are:

1. To analyse the concept of computer term systems and the characteristics of the terms.

2. To conduct a semantic and structural analysis of the computer terms in the sample.

2   The features of computer terms in English

The emergence and evolution of specialized terms is directly related to the intensity of how a particular field of science and technology develops. It is clear that a highly developed field has a large number of special terms.

According to Kocherhan (Kocherhan, 2006), changes in a terminological system occur under the influence of linguistic and extralinguistic factors. Linguistic factors include changes in the vocabulary of the language related to the tendency to unify, the systematics of the linguistic means, as well as variations of nominations with different motivations and tasks of emotional and stylistic expressiveness. Extralinguistic factors include changes in the world that are related to rapid development in various fields of science and technology and innovations in the cultural and social spheres and everyday life of mankind. In particular, Kizilʹ (Kizilʹ, 2015) notes that extralinguistic factors that influence the development of the computer term system include informatization, the computerization of English-speaking societies and the entire world community as a whole, the creation and dissemination of the internet sphere and cyberspace, as well as the processes of globalization, the expansion of English, the priority of the linguistic coding of concepts and the realities of computer-mediated realias by its means. Thus, language reflects the changes taking place in the surrounding world.

Terms can only exist as a component of a term system. Shelov (Shelov, 2004) states that a term system is based on the classification of a system of concepts of a certain, already-formed sphere of knowledge. Vasenko (Vasenko et al., 2008) defines a term system as a system of terms in a certain field of scientific or technical knowledge, which serves a scientific theory or scientific concept. Furthermore, a term system is an ordered set of terms with fixed links between them that reflect links between term concepts. Superanskaia (Superanskaia, 1999) notes that a term system is an ordered set of terms that adequately expresses the system of concepts of a specific sphere of human activity, between which there is a compulsory and indispensable connection.

Therefore, computer terminology is a system of terms in the field of information technology. This term system is one of the youngest term systems, since its formation and development started at the end of the twentieth century, a period of rapid innovation in the field of information technology.

Kvitko (Kvitko, 1976) states that a term is a word or a word complex that relates to the concept of a certain organized field of cognition (science, technology) which enters into systemic relations with other words and word complexes, forming with them a closed system characterized by high informativeness, uniqueness, accuracy and expressive neutrality in each individual case and at some times.

Pearson (Pearson, 1998, p. 23) claims that a term is a word or phrase which has been assigned an agreed meaning and has been officially approved and published in a standard.

Terminology is part of the vocabulary of a language. However, it differs from the common lexis in a number of characteristics. In particular, according to Kocherhan (Kocherhan, 2006), terms are characterized by the following features:

1. A systematic character (each term belongs to some term system and gets its meaning in this system);

2. The existence of a definition (the term is not interpreted but defined);

3. A tendency towards monosemanticity (within its terminological field, that is within the limits of a certain science, the term should have only one meaning);

4. An absence of expression;

5. Stylistic neutrality.

Therefore, terms are words or phrases that are distinguished by their consistency, uniqueness, precision, conciseness, stylistic neutrality, and context independence.

According to Shelov (Shelov, 2004, p. 123), terms are characterized by the following features:

1. It is the concept denoted by a lexical item (a word or word combination) that makes this item a term;

2. The 'termness' of an item (the quality of being a term) is determined by all items necessary for the identification of its concept within the whole system of definitions (explanations) of these items, belonging to the domain under consideration;

3. The greater the amount of information required in a definition (explanation) to identify a concept denoted by a certain item, the higher the degree of "termness" of this item.

Gaivenis (Gaivenis, 2002, p. 30) also emphasizes that terms are characterized by the following features: preciseness, grammatical correctness, wide applicability, shortness, and stylistic neutrality.

Dubuc (Dubuc, 1997, p. 42) states that besides being accurate and adequate, a term should also reflect an essential characteristic of the concept and avoid any ambiguity.

However, computer terms are closely related to common lexis, and therefore acquire certain specific features such as expressiveness, imagery, stylistic nuances and attitudinal meaning (for example, garbage collection, firewall, fire button, hotlist, burst speed, bottleneck, etc.).

Thus, computer terms are words or phrases that have a specific, well-defined meaning in the field of information technology. An important feature of these terms is that they accurately express the concepts, processes and names of things that are distinctive to information technology.

According to Jaleniauskienė and Čičelytė (Jaleniauskienė & Čičelytė, 2011, p. 122) "computer language" is a special language, formed in the subject field and technologically related to the production of personal computers and their software.

IEnikieieva (IEnikieieva, 2006) notes that a feature of computer terms is that, as a result of the deep insinuation of computer technology in all spheres of society, they gradually lose their highly technical character and become part of ordinary language. This is not true for other technical term systems.

According to Kizil' (Kizil', 2015), computer terms are also defined as lexical units characterized by the structural-semantic interdependence of their components, within which both information-substantial and cognitive-figurative experiences in the field of informatics, computer technology and internet communication are actualized.

There are two main approaches to exploring terms: normative and descriptive. The normative approach involves the study of terms as words (or phrases) of a specific sphere of use, which is the name of a specific concept and requiring definition. Thus, a term in its structural and semantic characteristics is different from common lexis. The descriptive approach involves the study of terms as any lexical unit with a special function.

The computer term system consists of terms that can be divided into the following groups:

1. Terms that are correlated with common words. Such terms are formed by the fact that commonly used words acquire meanings specific to IT. In this case, the term is a common word (for example, card, chat, break, drive, default, button, edit, copy, disable, page, account, alias, application, cookies, assembler, backdoor, cable, click, bus, bug).

2. General terms that function not only within the computer term system but also within other fields of science and technology (for example, the term driver, which in a computer context means the program that manages the input and output of information but in other fields of science and technology has dozens of meanings).

3. Special terms which are specific to computer only. Examples include terms such as cyber-security, cybernetics, hardware, software, cyberprofilers, technomedia, e-cabinet, e-money, webfare, cybercrook, cybernerd, e-surfer, shareware, subnet, e-wallet, hyperlink, hypertext, cyberspace, microblog, cybercommuter. In such cases, the meaning of the word and the meaning of the term coincide, because the word serves only to express one special concept, that is, the term and the semantics of the word are adequate to the meaning of the term.

4. Terms that have two or more meanings in the computer industry. For example, the term 'server' is the name of a computer as a device to access the internet, as well as an application that provides access to the internet; the term 'display' as a verb means to display, to show, and as a noun it means a screen or monitor; 'format' means a standard menu and the command of formating; 'file' signifies a document, a stand-alone unit of information, and a standard menu of applications responsible for file operations.

According to Baliuta and IEnikieieva (Baliuta & IEnikieieva, 2001), all terms are divided by their morphological structure into:

1. Simple (for example, file — a piece of information with a name; disk — a circular plate with a magnetic layer for storing information; program — a computer program; card — game, registration or credit (depending on context); button — a button on a system block; cable — a connecting cable; chat — communication between computer users through the internet or other computer networks);

2. Complex (for example, hotlist — a list of addresses that need to be saved for the future; keyword — a main word; bottleneck — a critical element that limits system performance; desktop; workstation; firewall; chipset; database; bookmark; clipboard);

3. Terms, combinations of words (for example, burst speed — the highest speed at which a device can operate; fire button — the button to start a program; address map — a reflection of logical and physical addresses; code review inspection — a systematic and periodic analysis of code to find errors not found in the early stages of software development; garbage collection — an operation to delete unnecessary data; data type — data type in programming; full screen — full screen mode; general protection fault — a general security error in all Windows programs; link editor — a system program that builds from object modules, project libraries, and libraries of translator absolute or portable boot module.

Dubuc (Dubuc, 1997, pp. 38–39) also suggests dividing all terms into three groups: simple terms (consisting of one word formed of a stem, with or without affixes), complex terms (consisting of two or more words with a grammatical relationship) and terminological phrases (consisting of a group of words).

According to Gaivenis (Gaivenis, 2002, p. 25), terms can be grouped by their subject matter, form, function, etc., or by terminological sources — native words (when already existing words become terms), neologisms (when new terms are created) and loanwords (when terms are borrowed from other languages), or by the category they belong to.

Dubuc (Dubuc, 1997, pp. 134–135) suggests four main methods used to create new terms: semantic change, in which an established word is given a new meaning; morphological change, in which a term is formed by shortening an existing word or by joining existing words and formative elements; conversion, in which a term is coined by changing the grammatical class of an existing word; and by borrowing from other languages. In computer terminology, however, there is no borrowing because the early development of computer science took place almost exclusively in English-speaking countries (Dubuc, 1997, p. 133).

3 The semantic characteristics of computer terms in English

At present, there is no unanimous agreement among linguists regarding the appropriateness of terms in any particular part of speech. Some linguists believe that terms can only be nouns because they are nominative (Akhmanova, 2007). Another group of scholars suggests that a term may refer to any principal part of speech if it expresses a specific concept, has a precise definition, and performs the functions of sign systematization, scientific communication, gnoseological and heuristic functions, and is characterized by accuracy, brevity and ease of derivative term creation.

Four main categories of terms, based on their affiliation with a particular part of speech, have been identified:

1. Terms denoting objects — nouns.

2. Terms denoting processes and phenomena — verbs.

3. Terms denoting qualities — adjectives.

4. Terms denoting magnitudes — adverbs.

There are different approaches to the semantic analysis of terminological units. To investigate the semantic features of computer terms in the present study, a nominative criterion was used. This implies the separation of semantic groups, by which it is meant a set of paradigmatically related lexical units that are joined by a commonality of content and reflect a conceptual, subjective and functional similarity of marked phenomena.

The study of computer terms is a complex process that consists of several stages, each of which is aimed at studying a particular aspect of computer terminology and requires careful analysis combined with a comprehensive application of general scientific and linguistic methods.

In the first stage of the research, the theoretical basis of the scientific problem was formed and English-language computer terms were singled out. The theoretical foundations of the study are based on the application of general scientific methods, namely: the descriptive method, and the methods of observation, generalization, induction and deduction. This ensured the selection of the most significant theoretical information on the selected issues for their detailed analysis and description, as well as the establishment of certain characteristics and consistent patterns. The selection of factual material was undertaken on the basis of English lexicographical sources, and specialized dictionaries led to the use of the continuous sampling method and definition analysis.

In the second stage of the study, the semantic features of computer terms were revealed. At this stage, the sampling method was used to distinguish certain semantic groups on the basis

of common features. The comparative method, the method of classification, the descriptive method, quantitative analysis, and systematic and statistical methods were all used to identify the quantitative ratio of the number of semantic groups.

For the study, 650 English-language computer terms were selected (they comprise 100% of the sample), using the continuous sampling method, from lexicographic sources and specialized dictionaries.

In this stage of the semantic analysis, the following groups were generalized, based on common semantic features (for the full list of examples see Appendix A):

1. Lexical units that denote types of computers and computer components (port, system unit, hardware, multi-user, disk controller, technomedia, technotyre, technoklutz, subnotebook, minicomputer, LCD — Liquid Crystal Display, RAM — Random Access Memory, ACPI — Advanced Configuration and Power Interface, bus, button, cable, card, chip, device, memory, mouse, screen, server, slot, socket, tower, sound blaster, etc.);

2. Lexical units that denote computer language types, symbols, and signs (shareware, interlace, subclass, superclass, subroutine, kerning, spacing, folder, outliner, half-word, four-digit, two-spot, BASIC — Beginner's All-purpose Symbolic Instruction Code, CGI — Common Gateway Interface, HTML — Extensible Hypertext Markup Language, zip-code, etc.);

3. Lexical units that denote computer software (antivirus, browser, subdirectory, submenu, interface, webware, wrapper, codec, driver, editor, explorer, spyware, trialware, BIOS — Basic Input Output System, DOS — Disk Operating System, script, web service, etc.);

4. Lexical units that denote computer work related to actions and commands (programming, delete, reformat, reboot, redirection, verrun, disconnect, authorization, overlocking, defragmentation, cyberhacking, point-and-click, drag-and-drop, spam, click, scan, tweak, type, garbage collection, etc.);

5. Lexical units that denote users and programmers (computerman, user, programmer, application developer, program analyst, cybercrook, cyberthief, cyberboteur, cyberchondriac, cyberaddict, cyberjunkie, cybercitizen, cybernerd, cybersurfer, technotycoon, hacker, caller, gamer, moderator, lamer, screenager, hacktivist, hackman, netizen, etc.);

6. Lexical units that are connected to the Internet (internet, dot com, hyperlink, unfriend, cybercrime, e-cash, e-money, e-scam, e-government, e-shopping, e-retail, technofear, subdomain, e-wallet, e-commerce, e-banking, hyperlink, cyberspace, cyberlife, hyperspace, microblog, IRC — Internet Relay Chat, SMTP — Simple Mail Transfer Protocol, etc.).

The results of the quantitative analysis of computer terms according to semantic groups are represented in Table 1 (p. 7).

According to the study, the largest semantic group is the group that includes lexical units that denote computer work related to actions and commands (35.1%). The smallest semantic group is that includes lexical units that denote users and programmers (3.4%). However, there are many slang words in English that refer to computer users and programmers. For example, geek, luser, bagbiter (incompetent users of information and communication technology); jock, hacker (people who are competent users); cyberbody (an internet interlocutor); admin (the administrator, the person or department involved in the organization); troll (a user who posts provocative posts on forums and more).

Table 1: The results of the quantitative analysis of computer terms according to semantic groups

№	Semantic groups	Number of cases	The amount in percentage
1	lexical units that denote computer types, the components of computer structure	95	14.6%
2	lexical units that denote computer language types, symbols, and signs	86	13.2%
3	lexical units that denote computer software	125	19.2%
4	lexical units that denote computer work related to actions and commands	228	35.1%
5	lexical units that denote users and programmers	22	3.4%
6	lexical units that are connected to the Internet	94	14.5%
7	Total	650	100%

4 The structural characteristics of computer terms in English

In the third stage of the study, the structural characteristics of computer terms were highlighted. At this stage, the following methods were used: the sampling method, word-formation analysis (to distinguish productive and unproductive ways of forming English-language computer terms), the comparative method, the method of classification, the descriptive method, quantitative analysis, and systematic and statistical methods (to identify the quantitative ratio of different ways of forming computer terms).

The fourth stage focuses on the generalization and comparison of research results and involves the use of the systematic method.

Structural analysis of computer terms is impossible without taking into account their semantic features. Thus, the semantic and structural characteristics of terminological units are interrelated.

Linguists do not agree unaminously on how best to determine the performance of a word-building model. According to Kizilʹ (Kizilʹ, 2015), a model is considered to be productive if dozens or hundreds of derivatives are derived from it. Linguists have proposed a distinction between high-performing, medium-performing, and low-performing models.

In order to identify the productivity of the various ways of creating computer terms, a classificational, structural, word-formation and comparative analysis of the terminological units of the computer term system was performed.

Word-formation is defined the means of nomination and replenishment of the vocabulary of a language with new words to indicate the latest phenomena and concepts of human civilization and culture, which both cause the development of the language and the updating of its lexical-semantic composition.

The types of morphological word-formation of computer terms are as follows: morphological (affixation [suffixal, prefixal, and prefixal-suffixal], abbreviations, acronyms, etc.), syntactic (the formation of terminological compounds), and morphological-syntactic.

Affixation is the formation of a new lexical unit by adding an affix (suffix, prefix, interfix, infix, etc.) to the stem. The most common ways of computer term affixation are:

1. Prefixation, a way of forming a new lexical unit characterized by the addition of a prefix, the affix that stands before the stem, with the most common examples being "cyber-",

"e-", "hyper-", "micro-", "mini-", "multi-", "sub-", "super-", "techno-" (for example, cyberaddict, deactivate, e-banking, hyperlink, interface, macroassembler, microblog, minicomputer, multiaccess, overload, redirection, subdirectory, superclass, technofear, etc.).

2. Suffixation, a way of forming a new lexical unit characterized by the addition of a suffix, the affix, which stands between the root of the word and the ending, with the most common suffixes being "-er", "-ware", "-ise", "-ing", "-(a)tion", "-ish", "-ese" (for example, scanner, webware, processor, hackish, smiley, hackerese, crockhood, hacking, boofer, kerning, application, cursor, mailware, authorize, authorization, minimize, etc.).

3. Prefixal-suffixal, a way of forming a lexical unit characterized by the addition of both a prefix and suffix (for example, reassignment, disintermediation, co-registration, outliner, refactoring, encoder, supersampling, destructor, deauthorise, overlocking, defragmentation, cyberhacking, multinetting, etc.).

Another way of building computer terms is compounding — a combination of two or more stems into one word, distinguished by integrity (for example, motherboard, hardcoded, workstation, netdead, wirehead, barfmail, rollover, laptop, craftsmanship, flatworm, user-friendly, keyboard, background, etc.).

A distinction is made between types of compounding, such as "one-component compounding", "two-component compounding", etc. Some linguists propose a distinction between complex words and complex phrases based on their semantic, morphological, orthographic, phonetic, and other features. Regardless of how many word compounds they consist of, they have the same meaning and make up one lexical unit. Klymenko (Klymenko, 1998) interprets this phenomenon as the compounding of stems of several words characterized by the combination of two or more components without connecting vowels.

The following examples are represented in the sample:

Two-component:

Adj. + N = N (for example, abstract class, actual argument, Bad Clusters, control panel, full screen, general options, recycle bin, etc.).

N + N = N (for example, user account, Alpha-channel, code review, command prompt, data type, garbage collection, link editor, machine code, sound bluster, source code, web service, web site, etc.).

Participle II + N = N (for example, advanced option, lost clusters, managed code, run time, etc.).

Three-component:

Adj. + N + N = N (for example, general protection fault, Active Server Page, Base Class Library, etc.).

The largest group is the N + N = N group.

According to Andrusiak (Andrusiak, 2003), conversion is the formation of a new stem from an already existing stem via a simple reinterpretation of the latter without any change in its form. It is a non-affixal type of word transition to another domain of the language (for example, to download, to boot, to freeze, to sleep, to login, to bookmark, to mailbomb, to text-message, to spam etc.).

Reversion, or reverse word formation, is the formation of new words by clipping affixes (for example, doubleclick — double-clicking, download — downloading, flood — flooding, etc.).

Blending is the impact of one word on another, resulting in the emergence of a new form which contains the features of both words (for example, netizen, webliography, hackintosh, hacktivist, netiquette, screenager, twiddle, webisode, advermation, anticipointment, slacktivism, etc.) For a list of examples of the most common ways of computer term formation by affixation and compounding, see Appendix B.

Abbreviation is the process of truncating a word by apocope, apheresis, or syncope. Abbreviations are divided into:

1. Graphical abbreviations which are used only in writing. In oral language the word or phrase is reproduced completely (for example, etc — et cetra);

2. Lexical abbreviations which are truncations (shortened words).

The following truncation groups have been distinguished: words with a truncated ending, or apocope (for example, rehab — rehabilitation, Del — delete, INS — insert, avail — availability); words with a truncated initial part, or initial truncation or apheresis (for example, NET — internet); words truncated at both ends — mixed truncation; words with a truncated middle — syncope.

Abbreviation is when shortened words are formed from the first letters or other parts of words that are part of a name or concept. They are used in oral and written languages (for example, PC — Personal Computer, CLS — Clear Screen).

Abbreviations are divided into:

1. Acronyms (for example, DIVOL — Digital-to-Voice Translator);

2. Acoustic acronyms (for example, PC — Personal Computer).

Volokh (Volokh, 1996) classifies abbreviations into three groups: partial, initial, combined.

Acoustic abbreviations are acronyms that must be pronounced according to the alphabetical name of the letters.

An acronym is an abbreviation whose phonetic structure coincides with the phonetic structure of common words. To form acronyms, parts of words that are part of the original terminological words or correlates are used. See Appendix C for more information on the abbreviations and acronyms represented in the sample.

The analysis of the sample shows that computer terms are also formed in a lexical-semantic way via the re-meaning (metaphor and metonymy) of existing words and phrases. This is known as secondary nomination or transposition (for example, bug, skyscraper, firewall, garbage, bus, button, cookies, driver, editor, field, file, flash, link, mirror, memory, page, player, root, etc.).

The results of the quantitative analysis of the ways of computer term formation are represented in Table 2.

Table 2: The results of the quantitative analysis of the ways of computer term formation

№	Semantic groups	Number of cases	The amount in percentage
1	Affixation	212	32.6 %
	— Suffixation	107	16.5%
	— Prefixation	93	14.3%
	— Prefixal-suffixal	12	1.8%
2	Compounding	108	16.6%
3	Conversion	26	4%
4	Reversion	6	1%
5	Blending	12	1.8%
6	Abbreviations and acronyms	96	14.8%
7	The lexical-semantic transposition	190	29.2%
8	Total	650	100%

As the quantitative analysis of the sample shows, affixation (32.6%), lexical-semantic transposition (29.2%) and compounding (16.6%) are the most productive ways of forming computer

terms. The least productive ways of creating computer terms are reversion (1%), blending (1.8%) and conversion (4%).

5   Conclusion

Computer terms differ from other specialized term systems in that they are transferring intensively from a narrow application to a common one. In addition, these terms are characterized by certain specific features, such as expressiveness, imagery, stylistic nuances and attitudinal meaning.

Following a study of common semantic traits, six semantic groups were distinguished within computer terms: lexical units which denote types of computer and computer componenet; lexical units which denote computer language types, symbols, and signs; lexical units which denote software; lexical units which denote computer work related to actions and commands; lexical units which denote computer users and programmers; lexical units which are related to the internet. A quantitative analysis of computer terms has revealed that the largest of these six groups is the semantic group consisting of lexical units that denote computer work related to actions and commands. The semantic group which denotes users and programmers is the smallest in number.

A structural analysis of computer terms shows that affixation, lexical-semantic transposition and compounding are highly productive ways of word-formation. The least productive ways of word-formation were reversion, blending and conversion.

An analysis of the structural-semantic features of computer terms makes it possible to provide them with the most adequate translation.

Appendix A

The generalization of computer terms on the basis of common semantic features

1. Lexical units which denote types of computers and computer components: port, system unit, hardware, multi-user, disk controller, technomedia, technotyre, technoklutz, subnotebook, minicomputer, miniport, minitower, macrocell, macroprocessor, macroassembler, supercomputer, superfloppy, printer, computer, scanner, processing, processor, cursor, cluster, connector, controllers, jumper, modem, plotter, router, scheduler, supersampling, laptop, keyboard, clipboard, webcam, motherboard, hardwired, chipset, cartridge, desktop, gamepad, notepad, LCD — Liquid Crystal Display, RAM — Random Access Memory, ACPI — Advanced Configuration and Power Interface, CD-ROM — Compact Disk Record Only Memory, CD-RW — Compact Disk Rewritable, CD-R — Compact Disk Recordable, CMOS — Complementary Mental-Oxide Semiconductor, DAO — Disk at Once, DSP — Digital System Processor, DIP — Dual In-Line Package, DVD — Digital Video Disk, PC — Personal Computer, FDD — Floppy Disk Drive, CLS — Clear Screen, HDD — Hard Disk Drive, ISA — Industry Standard Architecture, PCMCIA — Personal Computer Memory Card International Association, SCSI — Small Computer System Interface, SSI — Server Side Include, SSL — Secure Socket Layer, TWAIN — Technology Without Any Interesting Name, bus, button, cable, card, chip, device, memory, mouse, screen, server, slot, socket, tower, sound blaster, etc.;

2. Lexical units which denote computer language types, symbols, and signs: shareware, interlace, subclass, superclass, subroutine, kerning, spacing, avatar, folder, raster, outliner, half-word, four-digit, two-spot, background, spreadsheet, keyword, hotlist, full-duplex, hotdot, database, bitmap, backdoor, password, readme, shortcut, startup, taskbar, toolbar, filename, digital to analog, dual in line, twiddle, break-in, BASIC — Beginner's All-purpose Symbolic Instruction Code, CGI — Common Gateway Interface, CMYK — Cyan Magenta Yellow Black, CIL — Common Intermediate Language, CLR — Common Language Runtime, CLS — Common Language Specification,

COH — Common Object Model, CSS — Cascading Style Sheets, HTML — Hyper Text Markup Language, MFLOPS — Million Floating Point Operations Per Second, LINQ — Language Integrated Query, PERL — Practical Extraction and Report Language, SQL — Structured Query Language, UML — Unified Modeling Language, VRML — Virtual Reality Modeling Language, XHTML — Extensible Hypertext Markup Language, XML — Extensible Markup Language, XSL — Extensible Stylesheet Language, XPath — Extensible Markup Language Path Language, constant, cookies, directory, file, icon, language, location, mode, options, paragraph, performance, picture, properties, Python, recycle bin, root, string, subject, task, template, time, traffic, view, managed code, zip-code, etc.;

3. Lexical units which denote computer software: antivirus, software, Microsoft Excel, browser, subdirectory, submenu, interface, multimedia, hypertext, hypermedia, deluxe, webware, router, boofer, mailware, bookware, postcardware, wrapper, formatter, adapter, assembler, codec, complier, configuration, constructor, customize, driver, editor, explorer, linker, paser, player, server, session, settings, spyware, trialware, encoder, destructor, workstation, flatworm, imagesetter, newsreader, platesetter, hardcoded, firewall, framework, traceroute, plug-in, database, demo, DIVOL — Digital-to-Voice Translator, ASCII — American Standard Code for Information Interchange, BCL — Base Class Library, BBS — Bulletin Board System, BIOS — Basic Input Output System, DAE — Digital Audio Extraction, DLL — Dynamic Link Library, DMA — Direct Memory Access, DOM — Document Object Module, DOS — Disk Operating System, DPMS — Display Power Management System, DTD — Document Type Definition, DTP — Desktop Publishing, EDO — Extended Data Out, GUI — Graphic User Interface, HSB — Hue Saturation Brightness, HTTP — Hyper Text Transfer Protocol, IDE — Imbedded Drive Electronics, JDK — Java Development Kit, JPEG — Joint Photographic Experts Group, MPEQ — Motion Pictures Experts Group, MSDN — Microsoft Developer Network, ODBC — Open Database Connectivity, OEM — Original Equipment Manufacturer, PGR — Pretty Good Privacy, RSS — Really Simple Syndication, SIMM — Single In-line Memory Module, SMART — Self-Monitoring Analysis and Reporting Technology, SOA — Service-Oriented Architecture, SOHO — Small Office Home Office, SPD — Serial Presence Detect, SVGA — Super Video Graphic Adapter, UTF — Unicode Transformation Format, VBA — Visual Basic for Application, advanced, argument, array, construction, field, flash, folder, layer, manual, method, program, sample, script, shell, system, tools, utilizes, version, wave, abstract class, actual argument, advanced option, Alpha-channel, control panel, data type, general options, link editor, general protection fault, lost clusters, machine code, Microsoft Visual Studio, source code, web service, etc.;

4. Lexical units which denote computer work related to actions and commands: programming, handshaking, disabled, delete, hung, grovel, non-blocking, reformat, reuse, unbalance, reboot, redirection, underflow, overrun, multi-access, multiclick, deactivate, decode, delink, deregulate, undo, delist, technostrike, default, disconnect, display, multithreaded, overload, overview, refresh, remove, repair, request, restart, retail, subscribe, hackish, hackishness, crockish, crockhood, hacking, conversation, queryable, formatting, computation, application, emulation, encryption, flooding, authorize, symbolize, computerize, automize, globalize, hackerish, authentication, authorization, hasting, minimize, protection, phishing, purge, ranking, scrolling, reassignment, refactoring, deauthorize, overlocking, defragmentation, cyberhacking, multinetting, two-input, store-and-forward, point-and-click, drag-and-drop, rollover, craftsmanship, user-friendly, handshake, bottleneck, download, online, offline, downshift, update, upgrade, backup, charset, plugin, setup, troubleshooting, webdesign, web-programming, ready-to-use, clear-to send, downloading, flooding, tabulation, address, double clicking, advermation, anticipointment, slacktivism, process, backpack, freeze, bomb, hang, mailbobmb, sleep, email, blog, spam, chip, audioblog, TELEX — Teletypewrite Exchange, CMS — Content Management Solution, FM — Frequency Modulation, FTP — File Transfer Protocol, IRQ — Interrupt Request, OCR — Optical Character Recognition, SEO — Se-

arch Engine Optimization, TAO — Track at Once, abort, acceleration, accept, action, add, adjust, arrange, back, boot, break, bug, cancel, change, chat, check, clear, click, command, compression, continue, convert, copy, correct, default, direct, enumeration, enter, error, exception, exchange, fail, find, flame, format, free, game, go, help, hit, ignore, incorrect, input, insert, install, join, keep, level, link, load, lock, mail, minimize, move, open, paste, play, print, prompt, protection, quick, receive, record, registration, remove, repair, run, save, scan, search, security, select, send, set, show, skip, sound, speed, spelling, start, stretch, support, swap, test, transform, tweak, type, zoom, code review, command prompt, garbage collection, run time, shut down, etc.;

5. Lexical units which denote users and programmers: computerman, user, programmer, application developer, program analyst, system administrator, cybercrook, cyberthief, cyberboteur, cyberchondriac, cyberaddict, cyberjunkie, cybercitizen, cybernerd, cybersurfer, technotycoon, hacker, caller, gamer, moderator, lamer, screenager, hacktivist, hackman, netizen, etc.;

6. Lexical units which are related to the Internet: engine, spider, dot com, Internet, spam, search, hyperlink, e-book, unfriend, paywall, cybernetics, cybersavy, cyberinequality, cybercrime, sybersecurity, technostress, e-cash, e-money, e-cabinet, e-surfer, e-scam, e-government, e-shopping, e-retail, technofear, subdomain, subnet, e-wallet, e-commerce, e-banking, hyperlink, cyberspace, cyberlife, cyberchat, cybermarket, cyberlove, hyperspace, hyperactive, microblog, cybersurf, cybercommuter, cyberprofiler, e-trading, e-sales, e-business, e-mail, smiley, Internetise, register, login, mirror, site, barfmail, snail-mail, bookmark, website, webpage, paywall, netdead, newsgroup, network, weblog, webring, netiquette, webisode, webiography, datastamp, ASP — Active Server Page, ARPANET — Advanced Research Project Agency Network, VR — Virtual Reality, WAN — Wide Area Network, IRC — Internet Relay Chat, GIS — Geographical Information System, ISDN — Integrated Services Digital Network, LAN — Local Area Network, RIP — Routing Internet Protocol, SMTP — Simple Mail Transfer Protocol, URL — Uniform Resource Locators, WWW — World Wide Web, account, alias, application, attachment, favourite, host, message, mirror, news, policy, post, profile, protocol, rules, session, thread, user account, web site, etc.

Appendix B

Examples of the most common ways of computer term formation via affixation and compounding

1. Prefixation: cyberaddict, cyberchat, cyberchondriac, cybercitizen, cybercommuter, cybercrime, cyberinequality, cyberjunkie, cyberlife, cybermarket, cybermediary, cybernerd, cybernetics, cyberprofilers, cybersecurity, cyberspace, deactivate, decode, default, delink, deluxe, deregulate, disable, disconnect, display, e-banking, e-book, e-business, e-cabinet, e-cash, e-commerce, e-government, e-mail, e-market, e-money, e-retail, e-sales, e-scam, e-shopping, e-surfer, e-trading, e-wallet, hyperactive, hyperlink, hyperspace, hypertext, interface, interlace, macroassembler, macrocell, macroprocessor, microblog, microsite, minicomputer, miniport, minitower, multiaccess, multiclick, multimedia, multithreaded, overload, overrun, overview, redirection, reformat, restart, reuse, subdirectory, subdomain, submenu, subnotebook, subroutine, superclass, supercomputer, superfloppy, technofear, technoklutz, technomedia, technostress, technostrike, technotycoon, technotyre, underflow, unfriend, etc.

2. Suffixation: scanner, formatter, webware, printer, programmer, hacker, banner, processor, caller, dicider, hackish, crockish, smiley, hackerese, crockhood, hacking, user, computer, boofer, kerning, formatting, processing, computation, spacing, application, emulation, cursor, flooding, buffering, mailware, bookware, software, authorize, computerize, automize, globalize, wrapper,

formatter, hackerish, adapter, assembler, authorization, avatar, browser, cluster, complier, configuration, connector, constructor, customize, driver, editor, explorer, folder, hasting, jumper, lamer, linker, login, minimize, moderator, parser, phishing, plotter, purge, raster, router, scheduler, scrolling, server, settings, trialware, etc.

3. Prefixal-suffixal: reassignment, disintermediation, co-registration, outliner, refactoring, encoder, supersampling, destructor, deauthorise, overlocking, defragmentation, cyberhacking, multinetting, etc.

4. Compounding: motherboard, hardcoded, workstation, netdead, wirehead, barfmail, rollover, laptop, craftsmanship, flatworm, user-friendly, keyboard, background, spreadsheet, handshake, hotlist, keyword, bottleneck, bookmark, clipboard, imagesetter, platesetter, webcam, website, webpage, paywall, hotdot, database, hardcoded, hardwired, backdoor, chipset, charset, desktop, firewall, framework, gamepad, hotkeys, joystick, newsgroup, password, readme, plugin, setup, shortcut, startup, taskbar, toolbar, trackroute, troubleshooting, weblog, webring, webdesign, filename, etc.

Appendix C

Computer terms: abbreviations and acronyms

The following abbreviations and acronyms are represented in the sample: ASCII — American Standard Code for Information Interchange, ACPI — Advanced Configuration and Power Interface, ASP — Active Server Page, ARPANET — Advanced Research Project Agency Network, BASIC — Beginner's All-purpose Symbolic Instruction Code, BCL — Base Class Library, BBS — Bulletin Board System, BIOS — Basic Input Output System, CGI — Common Gateway Interface, CMYK — Cyan Magenta Yellow Black, CIL — Common Intermediate Language, CMS — Content Management Solution, CLS — Clear Screen, CLR — Common Language Runtime, CLS — Common Language Specification, COH — Common Object Model, CSS — Cascading Style Sheets, CD-ROM — Compact Disk Record Only Memory, CD-RW — Compact Disk Rewritable, CD-R — Compact Disk Recordable, CMOS — Complementary Mental-Oxide Semiconductor, DIVOL — Digital-to-Voice Translator, DAO — Disk at Once, DSP — Digital System Processor, DIP — Dual In-Line Package, DVD — Digital Video Disk, DAE — Digital Audio Extraction, DLL — Dynamic Link Library, DMA — Direct Memory Access, DOM — Document Object Module, DOS — Disk Operating System, DPMS — Display Power Management System, DTD — Document Type Definition, DTP — Desktop Publishing, EDO — Extended Data Out, FDD — Floppy Disk Drive, FM — Frequency Modulation, FTP — File Transfer Protocol, HDD — Hard Disk Drive, HTML — Hyper Text Markup Language, XML — Extensible Markup Language, HSB — Hue Saturation Brightness, HTTP — Hyper Text Transfer Protocol, IDE — Imbedded Drive Electronics, ISA — Industry Standard Architecture, GUI — Graphic User Interface, IRC — Internet Relay Chat, ISDN — Integrated Services Digital Network, IRQ — Interrupt Request, GIS — Geographical Information System, JDK — Java Development Kit, JPEG — Joint Photographic Experts Group, LAN — Local Area Network, LINQ — Language Integrated Query, LCD — Liquid Crystal Display, MPEQ — Motion Pictures Experts Group, MSDN — Microsoft Developer Network, MFLOPS — Million Floating Point Operations Per Second, ODBC — Open Database Connectivity, OEM — Original Equipment Manufacturer, OCR — Optical Character Recognition, PERL — Practical Extraction and Report Language, PC — Personal Computer, PCMCIA — Personal Computer Memory Card International Association, PGR — Pretty Good Privacy, RAM — Random Access Memory, RSS — Really Simple Syndication, RIP — Routing Internet Protocol, SIMM — Single Inline Memory Module, SMART — Self-Monitoring Analysis and Reporting Technology, SOA — Service-Oriented Architecture, SOHO — Small Office Home

Office, SPD — Serial Presence Detect, SVGA — Super Video Graphic Adapter, SEO — Search Engine Optimization, SQL — Structured Query Language, SCSI — Small Computer System Interface, SSI — Server Side Include, SMTP — Simple Mail Transfer Protocol, SSL — Secure Socket Layer, TWAIN — Technology Without Any Interesting Name, TAO — Track at Once, TELEX — Teletypewrite Exchange, URL — Uniform Resource Locators, UTF — Unicode Transformation Format, UML — Unified Modeling Language, VBA — Visual Basic for Application, VRML — Virtual Reality Modeling Language, VR — Virtual Reality, WAN — Wide Area Network, WWW — World Wide Web, XSL — Extensible Stylesheet Language, XPath — Extensible Markup Path Language, etc.

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