Insight into the Latest Computer and Internet Terminology

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Abstract. Information technology is an exceptional field where new terms seem to be popping up everyday. The rate of new words being added to the English language is about 15 words a day, whereas in the field of information technology there are up to 5 words added. The field presents not only a great increase of new terms but also quick changes in its terminology. In addition, information technology terms have some exceptional features: they tend to be lively and colourful, simple, fresh, playful, user-friendly and sometimes even humorous.

For the present article, the latest computer and Internet terms were taken from *Webopedia*, an online computer and Internet terminology source. The main aim was to overview trends in their structure and formation. The results have shown that there are about three times more complex terms consisting of two and more words than simple ones consisting of just one word. In the formation of the latest computer and Internet terms, two main methods have been observed: semantic change, which accounts for 26 % of all terms, and morphological change accounting for the rest 74 % of terms. Compounding being the most frequent process of morphological change suggests that the meaning of terms consisting of two and more words is often narrowed and clarified. Also, the meaning is often transparent from the composite parts of a term. Other methods like conversion and borrowing have not been observed in the analysis.

Key words: *information technology (IT); computer and Internet terminology; term structure; simple terms; complex terms; term formation; semantic change; morphological change.*

Introduction

A language is an ever-changing organic system with new words coming in and going out all the time. Besides, the meanings of already existing words undergo evolution. This is especially true of English because of its role as an international language. Spoken around the world as a primary, auxiliary and business language by 1.53 billion people, it has already become the first truly global language.

According to the Global Language Monitor (GLM), the English language has already passed the "million word" mark. Moreover, to quote GLM president and chief word analyst Paul J. Payack, one of the "momentous trends occurring in the English language today" is

"an explosion in word creation — English words are being added to the language at the rate of some 14.7 words a day. The last time words were being added […] at this rate was during Shakespeare's time" (http://www.languagemonitor. com/no-of-words).

Therefore, language has been evolving and its lexicon is broadened very quickly. The most influential factor that speeds up the need for new terms is technological change.

Science and technology advance has brought about the need to name new concepts (ideas specific to a certain field or discipline); consequently, a number of terms which "designate concepts specific to subject fields" (Dubuc, 1997, p.38) have to be created. A lot of new terms from different areas, including telecommunications, IT, computer science and genetics, have been entering the English language and enriching its vocabulary. In addition to the creation of new terms, Robert Dubuc states that a lot of words from the general language are

"constantly being borrowed by different disciplines to name new concepts and designate new realities. In the process, their meaning is broadened, narrowed or otherwise changed" (Dubuc, 1997, pp.39–40).

As a result, a new discipline of linguistics called terminology studying terms and concepts was introduced.

It is useful to note that motivation plays a significant role in creating new terms in special subject fields. Beside being accurate and adequate, a term should also "reflect an essential characteristic of the concept" and avoid any ambiguity (Dubuc, 1997, p.42). Motivation helps to "strengthen the relationship between term and concept by making it less arbitrary" (Dubuc, 1997, p.43). Yet, some terms are created in a haphazard way without any connection between a term and a concept.

Jennifer Pearson claims that although in some cases it is difficult to differentiate between a term and an ordinary word, words become terms when they are included in "special subject domains" (Pearson, 1998, p.3). Another criterion, standardization, also helps to distinguish ordinary words from terms, involving "official recognition and acceptance of a term and its meaning" (Pearson, 1998, p.22). Her definition of a term sounds as follows:

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

However, in reality not all terms are standardized; therefore, a definition of a term should include non-standardized terms, or, as Pearson suggests calling them, subject-specific terms (Pearson, 1998, p.25).

In addition, S. D. Shelov characterizes the nature of the term in the following way:

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

b. The "termness" of an item (=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,

c. 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. (Shelov, 2005, p.123)

Terms and ordinary words can also be distinguished by studying their usage in the general language, which means that the rarer a word or phrase in the general language is, the more specialized it is and the more likely it will be called a term. As Stasys Keinys explains, a term is "only such a word that has a defined and limited meaning and an established area of usage" (Keinys, 1980, p.14). Yet, there are such cases when the same word has a general meaning in everyday language and a specific one in a specialized context (Pearson, 1998, p.27). Besides, Kazimieras Gaivenis, another Lithuanian terminologist, claims that many terms are not included in special vocabularies and belong to the general language (Gaivenis, 2002, p.22). He also suggests some characteristics of a term: it should be "precise, grammatically correct, widely applicable, short and stylistically neutral" (Gaivenis, 2002, p.30).

Technical terminology is the specialized vocabulary of any field. It exists in a continuum of formality. Precise technical terms and their definitions are formally recognized and documented. Other terms are of a more colloquial nature, coined and used by practitioners in the field, and are similar to slang. The boundaries between formal and slang jargon are quite fluid. This is especially true in the rapidly developing world of computers. For instance, in the beginning the term *firewall* was a technical slang. With the growing importance of *firewalls*, the word was widely accepted and included into formal terminology (http://en. wikipedia.org/wiki/Technical_terminology).

The problem of this article focuses on a brief overview of the structure and formation of the latest IT terms. Since new terms in computer and Internet world outnumber those of all other fields, having a better understanding of terms may help not only to follow the especially rapid development of this field but also to understand the process of their translation into Lithuanian, which is still very problematic.

The main aim of the present article is to investigate the main trends in structure and formation of the latest IT terms employing descriptive method. This article restricts itself to the linguistic dimension of the theory of terminology related to the term structure and formation.

First, some exceptional features of computer and Internet terminology are presented. Then, the article provides a rough introduction of the situation of how the latest English terms of IT are translated into Lithuanian. Finally, the classification of terms according to their structure and formation is explained. The practical part presents the results of the quantitative analysis.

Practical analysis material comprises 128 latest computer and Internet terms taken from *Webopedia,* an online computer dictionary and Internet search engine for Internet terms and technical support. This free online dictionary provides words, phrases and abbreviations related to computer and Internet technology which are gathered by its editors from standards bodies, leading technology companies, universities, professional online technical publications, white papers and professionals working in the field. The dictionary was chosen since it is regarded as one of the most popular among the users of computer knowledge. Besides claiming itself No. 1 online encyclopedia of computer technology, About.com ranks it as No. 3 among the top 10 most useful websites in 2010 and Google pagerank of it is No. 8 (http://netforbeginners.about.com/od/readerpicks/ss/useful_sites_8.htm, http://themecraft.net/www/webopedia.com). The terms of IT examined in this article were collected from this particular dictionary from all new entries on randomly chosen days in 2010.

General Features of Computer and Internet Terminology

Information technology (IT) is the specialized field where new terms seem to be popping up everyday. Glossaries on the Internet provide lists of thousands of computer terms, some of them advertising more than 20,000 terms in their databases. For instance, *Webopedia*, an online encyclopedia of computer technology, provides up to 5 new entries in its sections "Term of the Day", "Recent Terms" and "New Terms" almost each day. The biggest online source providing Lithuanian translations of computer and Internet terminology is the portal www.likit.lt, which contains about 11,000 IT terms. Thus, it can be assumed that the increase of new terms related to IT possibly outnumber those related to all other fields.

IT presents not only great increase of new terms but also quick changes in its terminology. For instance, some terms have become obsolete, such as *floppy disk* or *diskette*. Other commonly used terms become stabilized and find their translation in other languages. However, the majority of terms are more or less adopted directly from English.

The features listed below are based on the ideas of Dr. I. Meyer, Associate Professor, from University of Ottawa:

> Some computer terms have similar forms in every language (*computer, information*).

> A number of terms are lively and colourful (*snail mail, hotspot, clickjacking*).

> Terms are usually proposed by young people who avoid cumbersome, scientific-sounding language in favour of words that are simple, fresh, playful and even humorous (*last mile, spit, facebook, cookies*). Unfortunately, this may sometimes result in a term coined in a nonchalant and casual manner. Therefore, at first, these new words are not considered as terms.

> Every culture promotes user-friendliness in everything, including their languages, which means that it is more common to use simple words to describe technical concepts (for example, it is easier to use *mouse*, rather

than an *X-Y position indicator*, which is what it was originally called).

Many computing words are metaphors, which are words or phrases used in an imaginative way to describe sb/sth else, in order to show that the two things have the same qualities. For example, a computer *firewall* allows limited access to an internal network from the Internet which prevents intruders from stealing or destroying confidential data in the same way as a firewall stops fire spreading from one area to another. The computer's *memory* holds information like people's memory. Similarly, *cloud computing* suggests an idea of storing information on the clouds. More examples of metaphors used in IT are: *notebook, cut, paste, virus, bug, mouse*, *voicemail*.

Computer words tend to use some word patterns (forms) that continue to reoccur. Some of these forms contain frequently used prefixes and suffixes. For example, web- (*webcam, webcast, weblog, webmaster*); e- (*e-pal, e-commerce, e-tailer, e-signature, e-cycle*); cyber- (*cyberculture, cybercriminal, cyberslacker*); -ware (*firmware, freeware, spyware, shareware*); techno- (*technobabble, technophobia*) and -log (*weblog, keylog, splog*).

Most computer words are usually not only short but also abbreviated forms with the first letters of each word used (*DVD, IT, LAN, RAM*). Moreover, some words, such as *the Net* (*the Internet*), are simply shortened.

Sometimes computing words become used in the general language (for example, the word *bug* appears frequently in other contexts than in computing) (Meyer, 2002, pp.LA 10–11).

Likewise, David Crystal explains that the Internet is "one of the most creative lexical domains in contemporary English" (Crystal, 2001, pp.81–82). He distinguishes these features of computer and Internet terms and provides examples:

Combinations of two and more separate words are used to make a new word or compound (*mouseclick, click-and-buy*).

The word *at*, often written as symbol @, is often used as prefix of the terms (*@-address*). Other common prefixes and suffixes or words used as prefixes and suffixes are these: hyper (*hypertext, hyperlink*), bug (*bugtracker*), net (*netnews, Usenet*), bot (*mailbot*), V [virtual] (*V-chat*), -ity (brevity), -itude (*winnitude*).

Terms are often shortened into letter-plus-number combinations such as *W3C* (*Word Wide Web*), *P3P* (*Platform for Privacy Preferences*).

Although the usage of capital letters is quite random, a distinctive feature can be noticed: one capital letter is initial, while another is medial (*ScienceDirect, PowerBook*).

Some computer-related terms have a permanent presence, when they designate screen areas and functions and specify user options and commands (*file, edit, back, insert*).

Some terms are only used when things are going wrong. Then they appear in the form of error message (*forbidden, illegal operation, error 404*).

A lot of terms associated with the operations of hardware are also long-living (*lock, down, crash*) (Crystal, 2001, pp.81–86).

A Brief Overview of the Situation Regarding Translation of Computer and Internet Terms in the Lithuanian Language

With regard to the theme covered in the article, it is relevant to overview the situation how the newest English computer and Internet terms are translated into the Lithuanian language. The biggest online source providing Lithuanian translations of computer and Internet terminology is the portal www.likit.lt designed to analyse problems of the Lithuanian language and their solutions in IT (http://www.likit.lt/indexw.php?i=EN). It contains several online dictionaries: the encyclopedic computer dictionary (~4000 words) and the related "English — Lithuanian computer dictionary" (~7000 words). However, since no thorough research has been carried out on exact numbers of translated terms into the Lithuanian language, the situation can be evaluated only roughly.

The Commission of the terms of informatics and information technologies (Informatikos terminijos komisija) is responsible for the translation of terms in Lithuania. It comprises 22 highly qualified specialists from several institutions: Vilnius University, Kaunas University of Technology, Institute of Mathematics and Informatics, "Open Source for Lithuania", Institute of the Lithuanian Language and the State Commission of the Lithuanian Language (Valstybinė lietuvių kalbos komisija) (http://ims.mii.lt/terminai/komisija.html). For the first time, the Commission met on 13th May, 2004 and was certified by the State Commission of the Lithuanian Language to carry out the tasks of storing and standardizing terms of IT. After that, terms have to be approved by the State Commission of the Lithuanian Language and transferred to the Lithuanian Republic Term Bank (Lietuvos Respublikos terminų bankas) where approved translations of terms can be found.

It is clear that many aspects have to be considered when translating terms from English into Lithuanian. The specialists analyse the suitability of terms after their literal translation, the functions they serve, word building, semantic principles for term formation, how terms are translated into other languages, what their meanings in other fields are and in certain cases even the public opinion. For example, the portal www.likit.lt conducts online surveys on translated Lithuanian terms in IT to find out the reaction of respondents towards one or another translated term.

It also happens that in certain cases the State Commission of the Lithuanian Language has to reconsider and replace the accepted Lithuanian translation with a new one. For example, according to the site of the Commission, *World Wide Web (the Web, WWW)* was initially translated as

žiniatinklis, while at present it is replaced with *saitynas* (http://www.vlkk.lt/lit/88519). Similarly, the term *file* initially used as *rinkmena* in Lithuanian has ultimately been approved as *failas* (http://www.vlkk.lt/lit/1105).

However, both term translation and standardization tends to be very slow as terms undergo long processes until their translation into Lithuanian is approved. This can be observed when trying to find new terms in the Lithuanian Republic Term Bank. For instance, despite the fact that the terms *cloud computing* and *botnet (robot network)* appeared quite a long time ago, their have not acquired the status of the approved Lithuanian translation so far.

According to wikipedia.org, for the first time the term *cloud computing* was used in 1997 (http://en.wikipedia.org/wiki/Cloud_computing). At present, it is still translated into Lithuanian differently. The portal elektronika.lt translates it as *debesų kompiuterija* (http://www.elektronika.lt/news/events/26133/), while Lrytas.lt gives it as *skaičiavimo debesis* (http://www.lrytas.lt/-12300243781 228796751-p1-it-verslas-ima-sl%C4%97ptis-skai%C4%8 Diavimo-debesies-%C5%A1e%C5%A1%C4%97lyje.htm). In a similar way, the term *botnet* has been on the Internet since 1997. Professor Antanas Čenys from Vilnius Gediminas Technical University simply gives it as *botnet'as* (http://www.vgtu.lt/konfer/bumf/antanas%20cenys.ppt#25 6, Botnet tinklų evoliucija ir keliamos grėsmės). Of course, the ideal cases could be the official translations given in the Lithuanian Republic Term Bank; however, neither this source nor www.likit.lt presents the translations of these terms.

Finally, it can be observed that very few new computer and Internet terms are translated. In addition, with regard to all terms that already exist in IT, a quarter or even more seems not to be translated into Lithuanian at all. Nevertheless, the number of terms translated by the Commission of the terms of informatics and information technologies seems to be quite high, i.e. they have been quite prolific in comparison with commissions working in other fields. To sum up, IT is a field facing the emergence of new terms at a rate higher than in other fields.

Classification of Terms According to Their Structure

There are a lot of ways to classify terms since many linguists suggest their own classification. For example, Gaivenis states that terms can be grouped according to their "subject matter, form, function, etc." (Gaivenis, 2002, p.25). Then, terms can be grouped according to 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) (Gaivenis, 2002, p.51). They can also be classified according to the category they belong to.

In this article, IT terms are first analysed according to their structure (form) or the number of words they consist of (Figure 1). **Simple** terms are those that consist of one word with or without affixes *(link, interconnection)*. **Complex** terms consist of at least two words, such as *user-friendly* and *computer-aided design*. It is pointed out that complex

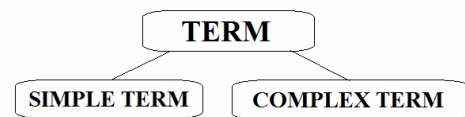terms constitute the majority of all terms in a language (Gaivenis, 2002, p.134).

Figure 1. Classification of Terms According to Structure.

Gajda, a Polish terminologist, also distinguishes these types of terms: simple and complex terms. Complex terms are further subdivided into two groups: terms consisting of two words and terms consisting of three words and more words (2002, p.134).

Silvia Pavel gives her own classification of terms which consists of five groups: simple terms, complex terms, abbreviations, acronyms and initialisms (http://www.termiumplus.gc.ca/didacticiel_tutorial/english/lesson1/page1_2_5_e.html). Her division is similar to Dubuc's ideas.

In Dubuc's classification terms fall 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) (Dubuc, 1997, pp.38–39). The major drawback of the classification presented by Dubuc is that the difference between complex terms and terminological phrases is not quite clear. In the present research, it has been decided to group complex terms and terminological phrases into one category.

Classification of Terms According to Their Formation

It is generally agreed that terms are created in many ways: linguists add new meaning to existing words, change the morphology or grammatical class and borrow from other linguistic systems. Also, different subject fields may exhibit their own characteristics of term formation. For example, it is widely known that the fields of biology, zoology, philosophy and pharmacy have many borrowings from Latin.

Dubuc suggests four main methods used in creating new terms: **Semantic change**, in which an established word is given 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. (Dubuc, 1997, pp.134–135; (*bold in the original*))

Semantic change modifies the meaning of an existing word, but does not alter its morphology or grammatical class. The processes of semantic change include *adoption* (changing the meaning of a word by giving it a new specific meaning, but one within its established general meaning), *expansion* (broadening the meaning of a word by giving it a new meaning, but one that bears little relation to its established meaning), *metaphor* (process by which a word is given a new meaning by analogy with its established meaning; metaphors often use the names of animals, insects or body parts and are based on analogy of

form, function or position), *metonymy* (use of the name of one thing for something it is closely associated with) and *eponymy* (widening of a proper name into a common noun) (Dubuc, 1997, pp.135–136).
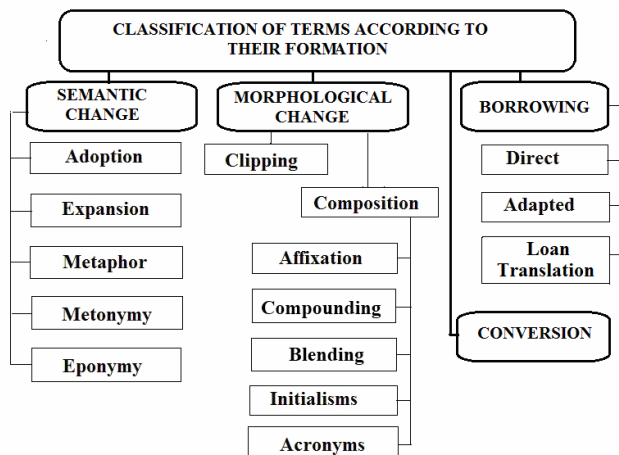

Figure 2. Classification of Terms According to Their Formation Based on Dubuc.

Semantic change also includes different types of neologisms (use of new words or phrases or new meanings for old words). Pavel states that

> "the most important factor in the acceptance of neologisms is their motivation: the term should reflect the characteristics of the concept it designates. Its lexical components should provide an idea of the concept itself" (http://www. termiumplus.gc.ca/didacticiel_tutorial/english/lesson2/page2 _5_4_e.html).

New words, for instance, are *netiquette* and *phishing*. Examples of giving old words new meanings can be the word *computer* from the old word *compute* or giving new meaning to the old word *virus*.

Morphological change includes these processes: *clipping* (reduction of a word to one of its parts like *mike* from *microphone* or *synch* from *synchronize*) and *composition* ("affixation or derivation, compounding, combining, blending, acronymy and initializing") (Dubuc, 1997, pp.137–143).

The processes of composition can be further classified into these categories:

1. **Affixation** or derivation shows that a prefix or suffix is added to a stem to form a new word (*debug*: *debug*, *ripper*: *ripper*).

2. **Compounding** is the process of word formation when a unit is formed from two or more words. They are written in three ways: as two or more separate words (*address bus*), as two words joined with a hyphen (*stand-alone*) or as one word (*keypad).* To make compound nouns, the two parts may be: noun + noun (*mail merge*), adjective + noun (*high-speed*), verb + noun (*scrollbar*) and verb + particle (*plug-in*). To make compound adjectives (normally with a hyphen between two words), a past participle is used as the second part (*computer-aided*) or noun + present participle (*space-saving*) and noun + adjective (*hands-free*).

3. **Blending** is the process when words are formed from the parts of two separate words such as *podcast* (*Ipod broadcast*) or *satnav* (*satellite navigation*).

4. **Initialisms** are terms formed from the initial letter or letters of several words or parts of words and pronounced letter by letter (*HTML, DNS, LCD, OS, CD*).

5. **Acronyms** are also formed from the initial letter or letters of several words or parts of words, but pronounced as one word (*CAD, CAT, BASIC, WAN*, *MIDI*).

Finally, some of the terms may experience more than one process of word formation. For instance, *CD-ROM* undergoes multiple processes, from initialism to acronym.

Dubuc suggests that composites are the first

> "in numerical importance as a source of new terms in special languages". The statistics show that "composites account for some 40 to 70 % of all new terms, depending on the subject field" (Dubuc, 1997, p.132).

Very often composites help to grasp the meaning of a term from its component parts.

The third method suggested by Dubuc is **conversion**, a process in which a new term is created by changing the grammatical class of an established word — and necessarily its meaning — but not its morphology. Examples of conversion might be noun-verb (*photograph* (a picture) represents "the act of taking a picture" in its verbal form), noun-adjective, adjective-noun, verb-noun, etc. (Dubuc, 1997, p.143). An example of conversion in IT terminology is *to google* (v) which is made from *google* (n).

The last method of term formation, **borrowing**, is further classified into *direct borrowing* (when a term is adopted from a foreign language with no modification), *adapted borrowing* (when spelling and pronunciation of a borrowed term are adapted to a language) and *loan translation* (when components of a foreign-language word are literally translated into a language) (Dubuc, 1997, pp.143–144). According to Dubuc, historically

> "English has borrowed primarily from Latin, Greek, French and German — languages which are strongly represented in law, medicine, science and technology" (Dubuc, 1997, p.133).

In computer science, by contrast, "there is no borrowing because the early development of the field took place almost exclusively in English-speaking countries" (Dubuc, 1997, p.131). Although in the analysis of IT terms some cases of prefixes borrowed from other languages have been noticed, such examples are not considered as borrowings, as they are not separate words.

The following sections present the analysis of IT terminology based on the theoretical part. First, the statistical data of terms according to their structure is given. Then, the analysis of terms according to their formation is presented.

Classification of IT Terms According to Their Structure

This section deals with the classification of terms into simple and complex. Figure 3 shows the number of simple and complex terms together with the number of words constituting complex terms.
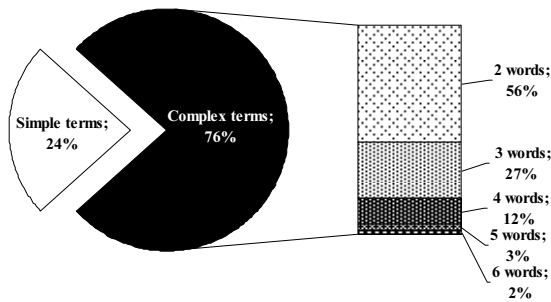
Figure 3. Classification of Terms According to Their Structure and Classification of Complex Terms.

As Figure 3 shows, 30 terms out of 128 are simple, while the rest 98 terms are complex. As simple terms account for 24 % of all terms, it can be seen that simple terms do not comprise the majority of terms in the field of IT. Examples of simple terms include corporate names (*Elina*), names of certain programs like viruses or malware (*Mariposa, Kneber, scareware*), slang terms (*twetiquette, netizen*), words related to Google search operator (*related, site, author*), search engine optimization (*delisting, adjacency*), techniques used by spammers (*tarpitting*), haptics (*tactile, kinesthetic*), online marketing (*sneezer*) and other terms (*stemming, backronym, trim, row*).

Complex terms consisting of **2 words** comprise the majority of all terms analysed: 56 % or 55 cases. It is interesting to note that 3 words out of 55 are written as one word (*savegame, HomeGroup, phonebook*), 2 words are connected with a hyphen (*active-active, Sarbanes-Oxley*), while the rest 50 terms are formed of separate words. They include online marketing (*ecommerce remarketing, conversion marketing, loyalty program*), corporate names (*Metaswitch Networks, Axera Network*), name of a smartphone (*Nexus One*), slang terms (*smoke testing, pink contract*), programs (*release candidate*), features in Microsoft's Windows 7 operating system (*Windows Touch, Play To*) and other terms (*smart grid, social routing, carbon footprint, garbage collection, internal cloud*).

Complex terms consisting of **3 words** comprise 27 % or 26 cases. These terms are often written in four ways: as one word (*allintitle, allinurl*), 2 words out of 3 are connected with a hyphen (*catch-all address*), separate words (*Ace of Penguins, inbox placement rate*), initialisms (*PMP — Portable Music Player*) or a simple word and initialism (*Green IT, cloud OS*). Most of the terms analysed are composed of separate words. They describe online marketing (*behavioral email marketing*), data management (*online data storage, data center container*), haptics (*Kinesthetic Haptic Interfaces*), security (*reputation-based security, access control entry*) and other terms (*helical-scan cartridge, Power Usage Effectiveness*).

Complex terms consisting of **4 words** comprise 12 % or 12 cases. These words are often written with a hyphen between 2 words (*power-on self test*), as separate words (*Microsoft Certified Systems Administrator*), initialisms (*NIST, SFLC*) or simple words and initialisms (*Organic SEO*). Examples of these terms also include *WAN optimization,*

Check Point Software Technologies, *Data Exchange Standard Organization* and *Social CRM*.

Complex terms consisting of **5 words** comprise 3 % or 3 cases. They are often written as initialisms (*ECCMA*) or complex words and initialisms (*Certified Wireless USB*).

Complex terms consisting of **6 words** comprise only 2 % or 2 cases and are written as half initialisms (*D-as-a-Service* — Disaster Recovery Software as a Service) or full initialisms (*NIST* — National Institute of Standards and Technology). Other IT terms that consist of 7 or more words have not been noticed.

In conclusion, it has been observed that simple terms consisting of one word are not very rare as they comprise 24 % of all cases. Yet, complex terms are the most frequent ones (76 %). Terms consisting of 3–6 words are rarer than those consisting of 2 words, which comprise the majority of all examined terms. Thus the result of our present research proves Gaivenis's idea of the frequency of complex terms.

Classification of IT Terms According to Their Formation

In this section IT terms are analysed according to their formation. They have been classified into 2 groups: semantic change and the rest undergoing morphological change since examples of conversion and borrowing have not been found (Figure 4).
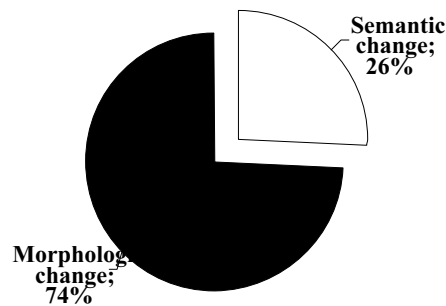

Figure 4. Classification of Terms According to Their Formation.

Semantic change. This sub-section examines terms which have been coined or whose meaning has been altered in different ways employing adoption, eponymy, expansion, metaphor and metonymy (Figure 5). These terms comprise 26 % or 33 cases.
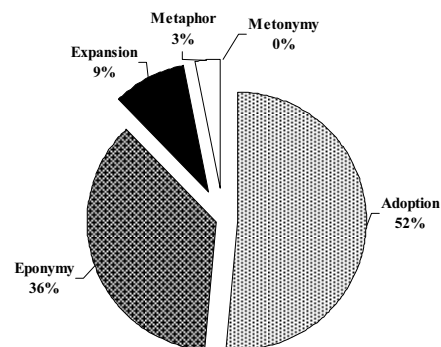

Figure 5. Types of Semantic Change.

As Figure 5 shows, **adoption** comprises 52 % or 17 cases. Dubuc explains that "computer science has borrowed [words] from the general language (*read*, *write*, *memory*, *program*, *job*)" (Dubuc, 1997, p.135; italics in the original) and added a slightly new meaning to them. This sub-section includes terms like *availability*, *adjacency*, *garbage collection*, *stemming* and *loyalty program*.

The second largest group of terms that belong to **eponymy**, comprises 36 % (12 terms) which stand for different names: corporate names (*Axerra Networks*, *Elina*), smartphone name (*Nexus One*) and names of viruses (*Kneber*, *Mariposa*). The third group, **expansion**, comprises 9 % or 3 cases (*smoke testing*, *sneezer*, *siphoning*). The last two groups are the rarest ones: **metaphor** includes only one term (*Octopus card*), while **metonymy** has no examples at all.

In short, examples of adoption comprise the majority of IT terms that have undergone semantic change. The second largest group of terms is eponymy, while expansion and metaphor include only 4 cases altogether.

Morphological change. This sub-section includes terms whose form has been altered in different ways (74 % or 95 cases). Terms are divided into the categories of clipping, affixation, compounding, blending, initialisms, acronyms and compounds with initialisms, acronyms, clipping or blending which are illustrated in Figure 6.
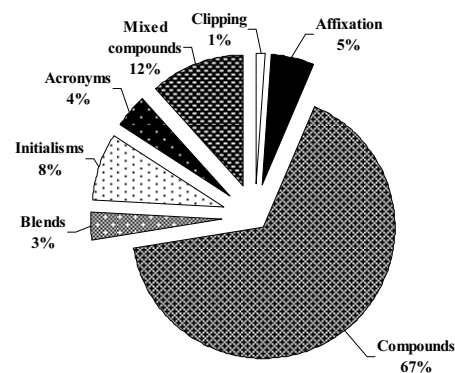

Figure 6. Types of Morphological Change.

As can be seen in Figure 6, the category of **clipping** includes only one term (*site*), which is a shortened form of *website*. The category of **affixation**, when a prefix or a suffix is added to the stem of a word, comprises 5 % and deals with 5 terms: *co-twitterer* (prefix co- and suffix -er), *multitenant* (prefix multi-), *delisting* (prefix de-), *twitter-ific* (suffix -ific) and *scareware* (suffix -ware). In addition, 2 terms *co-twitterer* and *twitter-ific* are slang terms. The category of **compounding** includes 66 % or 63 terms, whose classifications are illustrated in Figure 7 and Figure 8.

As Figure 7 shows, the majority of compounds comprise terms that consist of 2 words: 68 % or 43 cases (*calculated column*, *early adopter*). The last two sub-categories include terms that consist of 3 words (29 % or 18 cases: *Garden by eBay*, *behavioral email marketing*) or 4 words (3 % or 2 cases: *power-on self test*, *Microsoft Certified Systems Administrator*).
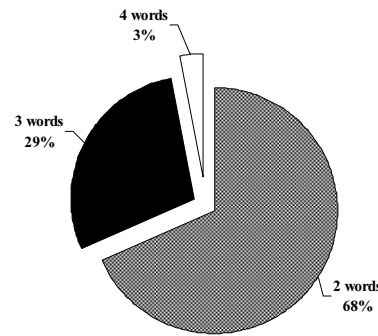

Figure 7. Classification of Compounds According to Composition.

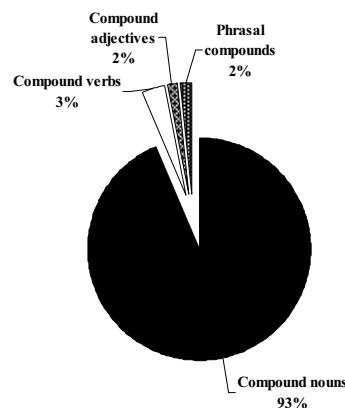Compounds have been further classified into several groups that are presented in Figure 8.

Figure 8. Classification of Compounds According to Grammar.

As can be seen from Figure 8, the majority of terms are compound nouns (93 % or 59 cases: *access control entry*, *network automation*, *business analytics*). The second group, compound verbs, includes only 3 % or 2 cases (*Say Where*, *Play To*), while compound adjectives (*active-active*) and phrasal compounds (*power-on self test*) comprise one case each.

After analysing some examples of compounds, such as *Energy Star*, *access control entry*, *Say Where*, *Windows Touch*, it can be observed that the meaning from their component parts can be grasped easily. For instance, it is clear that *Windows Touch* refers to a feature of pointing at what the users want and moving things around with fingers by simply touching the screen of the monitor. Another term *Say Where* describes a feature when users of iPhones can

> "speak the name of a place [...] and the application will show search results from a number of partners including Google Maps, MapQuest and others" (http://www.webopedia.com/ TERM/S/Say_Where.html).

The third category of morphological change, **blending**, comprises 3 % and includes 3 terms: *netizen* (internet + citizen), *twetiquette* (twitter + etiquette) and *attwaction* (attraction between two twitterers).

The fourth category, **initialisms and letter-plus-number combinations**, comprises 9 % or 8 terms (*ACHA*, *BSI*, *ACCMA*, *HTML5*, etc.) which are names of organizations,

devices or programs. Another category, **acronymy**, deals with 4 % or 4 terms (*DISA*, *NISO*, *SPICE*) which are also names of organizations. The last category, which includes 12 % or 11 terms, discusses **compounds together with initialisms, acronyms or letter-plus-number combinations** (9 cases: *Amazon EC2*, *NIC bonding*, etc.), **clipping** (1 case: *cloud app*) and **blending** (1 case: *CompTia Security+*).

Conclusion

In regard to the structure (form) of IT terms, it has been found out that there are about three times more complex terms (74 %) than simple ones (26 %). The more words are included in one term, the narrower and more precise the meaning of it is. Complex terms consisting of two words (44 %), most of which are separate words, comprise the majority of all complex terms; yet, there are also many complex terms in which the number of words is 3–6. This shows that it is often necessary to specify the meaning of a term by including more than one word in it. It can be concluded that the creation of complex terms is one of the latest trends in computer and Internet terminology.

After analysing the formation of IT terms, it has been noticed that only two methods are employed in the creation of terms: semantic change (26 %) and morphological change (74 %) being the method most frequently used. The most common way of term formation in semantic change is adoption (52 %), while the rarest one is the usage of metaphors (3 %). Morphological change is the most frequently used method because it includes different types of term formation: affixation, clipping, compounding, acronymy, etc. In morphological change, compounding (66 %) comprises the majority of all terms analysed. In addition, compound nouns (93 %) and compounds consisting of two words (43 %) are also the most numerous ones. Other processes, including initialisms (9 %), affixation (5 %), acronyms (4 %), blending (3 %) and clipping (1 %), are rare. Thus it can be concluded that compounding is one more dominant trend in the creation of the latest IT terms.

The results of the research also matches the percentage of composites suggested by Dubuc (40–70 %) as compounds account for 73 % of all analysed terms. Moreover, as there are so many composites, the meaning of terms is usually transparent from their component parts. This fact shows that a lot of terms have been created employing motivation thus reflecting essential characteristics of the concept.

Since there is an abundance of new technologies in IT and new terms outnumber those of all other fields, having a better understanding about the structure and formation of terms may help to follow the especially rapid development of the field. Any further research could be the investigation of not only primary naming of original concepts in English but also secondary term formation or translation.

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Evelina Jaleniauskienė, Vilma Čičelytė

Naujausių kompiuterijos ir interneto terminų apžvalga

Santrauka

Informacinių technologijų (IT) sritis yra ypatinga tuo, kad nauji terminai joje atsiranda kiekvieną dieną. Yra paskaičiuota, kad anglų kalboje per dieną atsiranda apie 15 naujų žodžių, iš kurių 5 yra susiję su IT. Ši sritis pasižymi ne tik naujų terminų gausa, bet ir greitais pokyčiais jos terminologijoje. Be

to, pastebimi ir kai kurie išskirtiniai IT terminų bruožai: vartojami tam tikri priešdėliai ir priesagos, daug žodžių sutrumpinimų bei metaforų, terminai dažniausiai yra lengvai įsimenami, patogūs naudoti, nesudėtingi ir netgi kartais žaismingi.

Šiame straipsnyje nagrinėjami naujausi terminai išrinkti iš kompiuterijos ir interneto technologijos terminų, posakių ir santrumpų žodyno internete Webopedia. Pagrindinis straipsnio tikslas yra apžvelgti svarbiausias terminų struktūros ir darybos tendencijas. Atliktos terminų struktūros analizės rezultatai parodė, kad sudėtinių terminų, sudarytų iš 2 ir daugiau žodžių, yra apie tris kartus daugiau nei vienažodžių terminų. Nagrinėjant terminų darybą, buvo pastebėti 2 dažniausiai pasitaikantys metodai: semantinė kaita (26 proc.) ir morfologinė kaita (74 proc.). Dūrinių, kurie buvo nustatyti kaip dažniausias morfologinės kaitos procesas, reikšmė paprastai yra siauresnė ir aiškesnė. Be to, dažnai termino reikšmę galima suprasti iš jo sudėtinių dalių. Kiti terminų atsiradimo būdai, t.y. konversija ir skoliniai, tarp kompiuterijos ir interneto terminų nebuvo rasti.

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