ICT Professional Job Titles in Croatian Language and Society

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Abstract: ICT (IT) technologies are globally the most wanted job vacancies nowadays, and ICT job descriptions are the same across the world, at least in the World Wide Web. To some extent, they can be adjusted to a particular market. The market of our interest is Croatia with the characteristics of its own, providing ICT specialists not only for its own market, but also for a more developed, mostly European market. As a result, there is a lack of ICT specialists for Croatian market and not enough time for fully qualified workers. A common characteristic of global ICT market is the use of the English language as a lingua franca. The official language in Croatia is Standard Croatian. The law allows company names to be in Croatian and any other official EU languages. English as a first foreign language in Croatian schools has subsequently become a means of business dealing. The lack of IT specialists accompanied by a lack of time for the Croatian language to adapt to new circumstances as well as English being widespread in the real and digital world has resulted in a different use not only of English, but Croatian, too. English is used in its US form properly, and it is also used in its Croatian version (as borrowed words and phrases adapted more or less on phonological, morphological and orthographic level), or – according to the principles of Standard Croatian (regarding mostly purism, principle of analogy), in Croatian translation. Discrepancy between market demands and time necessary for the Croatian language to adapt leads to jargon phrases, which are becoming new technical terms. The question is whether Standard Croatian, Croatian society (law) and its market include these terms as necessary borrowed words that are adapted on phonological and morphological levels, or whether there are still tendencies of purism in Croatia and the Croatian language to calque these English words and phrases in the ICT context in order to preserve the individuality and distinctiveness of Croatian from an encompassing influence of English?

Keywords: ICT Technologies, Global Market, English, Croatian, Croatian Market, English ICT Terms, ICT Croatian Job Titles

1. Introduction

Implementing new words naming objects (merchandise) from the other society and language is a part of the human civilization history. One society opens to the influence of another, which can change native language of the first society [1]. Trading in goods and words up to the 1990s was primarily oriented to a geographically closer society, which is in accordance with a definition of an *adstratum* in contact linguistics [2]. After the change of a political system, mostly in European countries, as well as on a global scale, societies ceased to function only as local entities, and a new global society based on the market economy was formed [1, 3, 4]. A new global economy focuses on new technologies, that enable forming one global society. ICT technologies and its market can exist and function within only one state, but also on a global scale. ICT technologies in the 21st century influence the process of generating new jobs in the world market using English as a means of communication. Croatia as a southeast European country is one of both local national and global world economy market depending on local and world geopolitical and economic factors (for a more detailed economic predication [5]). A need for ICT specialists leads to new types of jobs, the titles of which are anglicisms, borrowed English words, that are relatively adapted to Croatian, or they enter Croatian society and language as calques. These ICT professional job titles, depending on employer and job advertising, are a part of Croatian economic market context, whether they are original English words and phrases or to a certain degree adapted neologisms. Our question is whether

English is becoming a *superstratum* in ICT technologies in the Croatian society, or whether we have some kind of pidgin language or jargon [1], or whether the Croatian language in its standard and non-standard forms is managing to preserve its identity and characteristics?

2. Market Demands Against State and Language Laws

According to Croatian law (The Commercial Companies Code), a name of the company has to be written in Latin characters in Croatian or in one of the official languages of the EU member state [6]. The exit of Great Britain from the EU in 2020 made country a non-member of the EU, therefore, according to Croatian law the English language should not be the official EU language. According to EU laws, English is still the official language [7]. Furthermore, the same law [8] says, that every other aspect of business activities should be in Croatian as it is also stated in the Article 12 of the Constitution of the Republic of Croatia [9]. Thus, professional job titles should be in Croatian, amongst them ICT professional job titles, too. Accordingly, the Croatian law of 2010 brought a job classification in general, including job titles within information and communication technologies [10] with an updated and expanded list of 24 professional job titles composed of words based on Croatian roots and internationalisms fully adapted on phonological and morphological level. Croatian words represent general words illustrating some kind of a specialist (see Croatian words stručnjak = specialist, inženjer = engineer in job classification [10]). More details about ICT specialties are given in the rest of a job description. Public and civil service [8] can have rules of recruitment and job titles of their own, which are not listed in the job classification of 2010, like, for instance, the job title *informatički referent* ≈ secretary and IT technician. According to the job description [11]), this job and job title encompass three jobs from 2010 classification: administrator/administratorica sustava (system administrator), tehničari/tehničarke informacijske i komunikacijske tehnologije za podršku radu i korisnicima (IT technician) and monteri/monterke, serviseri/serviserke informacijsko-komunikacijskih uređaja (technical IT installer). Public and civil service can also have Croatian job title with its English equivalent [12, 8] without any English morpheme in Croatian title: Stručnjak za sigurnost podataka i zaštitu na radu / Data Protection and Safety at Work Officer; Voditelj službe informacijsko-komunikacijskih i tehničkih poslova / ICT Manager; Stručni suradnik za informatičke poslove / IT Specialist. On a job-posting site, representing ICT sector [13], visited on November 17th 2022, we can simultaneously find ads for one job both in English and Croatian. In these ads, Croatian job titles have one English component, usually an acronym IT, functioning as an adjective with a zero morpheme for a suffix and ending in Croatian, which is not common in the standard Croatian language (e.g. sales manager - IT distribution (m/ž) / prodavač/ica IT opreme). We can find job

ads in Croatian following language rules of Standard Croatian (e.g. stručnjak za zaštitu od kibernetičkih napada = cyber security specialist). Then, ICT job titles can be found in some version of pidgin Croatian: first part of a job title is partly adapted to Croatian standard rules, and partly uses borrowed English titles adapted on phonological level with a zero morpheme for an ending (sistem < system). The same job title uses Croatian word (inženjer), an internationalism "engineer" (borrowed in Croatian from German "ingenieur", in German from French "ingeniéur"). The rest of a job title includes English acronym IT as an adjective with a zero adaptation on orthographic, phonologic and morphologic level (IT). After an English word, which functions as an adjective, the Croatian adjective follows (written incorrectly), accompanied by Croatian synonym for a word "system" (e.g. sistem inženjer (m/ž) u IT Distribuiranim sustavima). These pidginized phrases usually include English words recognized as adjectives in Croatian. Zero morpheme for suffixes and endings in these new Croatian adjectives presents a rate of ICT development. It also underlines to some degree a rigid norm of the standard Croatian language resulting in the use of pidginized forms or jargon comprising technical terms written in English. This Croatian vernacular optimizes better understanding of ICT job itself, better mutual understanding of employees as well as understanding between an employer and employee (s). To confirm this conclusion, you can find more in the research on business experience of Croatian ICT graduates from the University of Osijek [14]; Osijek being a potential regional ICT hub [15]. Thus, market rules beat the rules of Croatian standard language.

3. ICT Professional Job Titles from a Linguistic Point of View

Croatian classification job of 2010 [10] lists 24 professional job titles, which can be related to ICT. These titles are in descriptive form, depicting all possibilities that one can perform. This is a way to incorporate future jobs, so it should not limit Croatian (EU) job market to expand. Only two titles are represented by a binary combination of words without details (see analitičari/analitičarke sustava, administratori sustava/administratorice sustava in [10]). The rest of the job's title text gives a complete information: the first component represents some level of qualification; a specialty is described in the rest of the title. These first components are all Croatian words with Croatian or non-Croatian root. Three of them have Croatian root: the word *stručnjak* (= specialist), the word *knjižničar* (= librarian) and *nastavnik* (= teacher). The word stručnjak is used for seven types of jobs; the difficulty level of qualification is depicted in the rest of the job title. The word knjižničar is described as an information specialist, too, as the job of a librarian encompasses work with digital bases within a scope of informatologija [14]. The word nastavnik is included in the ICT job list due to the fact that the education is taking place out of public schools. Other Croatian words have non-Croatian root, but all of them are adapted on phonological

(pronunciation, Croatian phonemes) and morphological level (Croatian suffixes and endings added to a word base). If they are adapted on phonological and morphological level, they are written in Croatian alphabet with diacritics (Croatian Latin alphabet has some diacritical letters, but it does not have following letters: x, y, w, q [16, 17]), therefore, they are adapted on an orthographic level, too. If we look at the top ten most preferable list of IT job titles / jobs in the world (visited on November 19th 2022, ranked by popularity from first to tenth: Data Scientist, Software Developer, Information Security Analyst, Computer Systems Analyst, Web Developer, Sales Engineer, Information Technology Manager, Computer Research Scientist, Network and Systems Administrator, Computer Support Specialists) we can conclude that the ICT job classification in the Croatian law of 2010 is not an outdated one, even within private business. The 2010 classification, with its depictions of a wide range, can be extended to new ICT jobs, mentioned in the top ten list. Croatian job title equivalents are presented in Standard Croatian by adding suffixes to words which are defined as adjectives, using word order of its own by placing word defined as a noun in postposition and adding an ending for a Genitive case, both for masculine and feminine gender, adding suffix to a noun representing a feminine gender (see Croatian administratori / administratorice sustava for English System Administrator). The list does not encompass real English titles, that became technical terms in ICT context and can be found in ads for ICT jobs, ads in English for Croatian market, mentioned in Chapter 2. ICT job titles such as *sistem administrator*, *programer*, *DevOps stručnjak* or *DevOps inženjer* are not found in 2010 Classification, nor in job-posting site representing ICT sector [13], although they are used in both public service and private business as adapted English words / binary combinations (e.g. Croatian system administrator according to English System Administrator). They are used as adapted Croatian words on orthographic, phonological and morphological level (e.g. Croatian programer according to English programmer; the semantics is also expanded, according to ICT development: a programmer (Croatian programer) becomes a developer not only of computer software, but also of mobile devices applications). These words are listed as Croatian translations of English titles on a web site comparing salaries in the ICT [19]. *Data Scientist* is not translated; the Croatian transliteration in Standard Croatian, Podatkovni znanstvenik, can be found on a job-posting site of European Personnel Selection Office [20]. On this site we notice not only transliteration, but full adaptation of the ICT term: Information and Communication Technologies becomes Informacijska i komunikacijska tehnologija, by correctly using singular form tehnologija as a collective noun in Standard Croatian, but narrowing and wrongly interpreting the ICT sector as only digital Internet sphere. The 2010 job classification including 24 ICT professional jobs and their titles does not comprise a general Croatian term for ICT specialist – word *informatičar*, nor for one general term regarding IC technologies – *informatika*, as in [21]. The word informatičar is listed as one of the lower posted ICT jobs on a web site comparing salaries in the ICT [19], representing worker without subspecialty. None of these sites and documents include jargon term ajtijevac for a male person, and ajtijevka for a female person; they are used in digital world on forums and in real life as an umbrella term for ICT specialist with a more qualification than informatičar. The word ajtijevac / ajtijevka are motivated with an acronym IT in its phonological form as a word base for a noun in Croatian with a suffix -c- for a male gender, and a suffix -k- for a female gender; also with a zero ending for a male gender, and an -a ending for a female gender. These words are fully croatized and perfectly adapted to a declination noun system, but they are not recognized by the standard Croatian norm even though they semantically cover ICT sphere in its nowadays-developed form (s). An acronym IT also functions as an adjective in Croatian ICT professional job titles, but, unlike words ajtijevac i ajtijevka, it is not adapted according to Croatian language norm: Croatian adjectives have suffixes and endings presented by phonems; zero ending is not common for adjectives, like in job title IT analitičar or IT sistem administrator. ICT job title IT system administrator in Croatian version can be substituted by a general term informatičar; it can be substituted for a jargon term sistemac, an outdated one, but made according to Croatian laws, or, most frequently, by a word admin, which is used in English jargon, too. In Croatian ICT jargon the word sysadmin does not exist which might be due to semantic associations (sis shorten for sisa (sg) or sise (pl) = boob, boobs). The word admin is accepted not as a shorten form borrowed from English, but because it reminds of a male name and it is associated mostly with forum editors.

4. Conclusion

The Croatian law of 2010 presenting general job classification that includes ICT sector may seem restricting and outdated one in 2022. However, new ICT jobs and their professional titles can be incorporated in one of 24 ICT jobs already listed in the 2010 classification, as a consequence of broad job descriptions within Croatian job titles. Using English not only for job titles, but also for job descriptions in Croatian advertising can be justified in relation to the joint EU market where English functions as a lingua franca. ICT sector uses English as a means of communication, developing necessary technical terms recognized and accepted globally. Globally used ICT English technical terms enable ICT sector to develop on a global level; global ICT market becomes locally recognized and accepted, making English technical terms a part of local language – in our case, Croatian. Croatian has its standard form restricted by its norm, based on principles of language purity and analogy. These principles are used in laws and public and civil service documents. In practice, Croatian standard equivalents for ICT sector and its professional job titles are too long and not precise enough to depict real needs of fast growing ICT sector. Private sector aims to obey the law and market mechanism. As a result, we have English job titles and technical terms used in their

original forms, they can be translated completely (more or less successfully interpreting ICT sector's characteristics), English words can be used as a base forming Croatian word (nouns and adjectives), either by suffixation and declination, or by a zero adaptation on a morphological level; on a phonological level English phonemes are substituted for Croatian ones. This kind of pidginization of the Croatian language leads to ICT Croatian jargon which fully respects Croatian language laws of word formation by adding necessary morphemes to English words which are used as base for Croatian ICT neologisms. These jargon ICT Croatian words are new technical terms used in ICT business among employees; if an employee is not a Croatian-speaking person, these technical terms become a part of the conversation in English. Croatian 2010 job classification respects the Croatian language in its standard form, but it does not restrict a development of ICT market: long professional job titles enable new jobs to be incorporated in the already existing ones.

Accordingly, answering to the question whether English is becoming a superstratum in ICT technologies in Croatian society we can confirm: the prestige of the English language means indeed that English is a global language [22], language of global business represented by ICT sector. Business market is also global, Croatian market tends to be globally recognized, and the English language enables it. The second question whether we have some kind of a pidgin language, can also be confirmed by the following statement: English words and phrases adapted on a zero morphological level represent some kind of pidginization of the Croatian language, but, they are not a part of the formal communication and legal texts, therefore, we characterize them as technical terms and phrases used to save necessary time, having in mind that the interlocutor will understand the information, and that both speaker and interlocutor are aware that these words and phrases are not adequate Standard Croatian forms and that they will not use them in formal communication. The last question whether there is a technical Croatian ICT jargon can also be confirmed. The reason to use the jargon is the same as for the pidginized version of Croatian, differing in the fact that jargon comprises neologisms completely adapted according to the Croatian standard form of language, with morphemes which enable these words to be a part of Croatian language system. As a base these new words comprise English ICT term, which Croatian language norm does not acknowledge yet as a legitimate internationalism. Finally, we can confirm that the Croatian language in its standard and non-standard forms manages to preserve its identity and characteristics in spite of all-encompassing influence of the English language as an ICT lingua franca.

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