

## CHANGES OF COMMUNICATIVE BEHAVIOUR IN ICT OF SENIORS IN THE CZECH REPUBLIC

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### ABSTRACT

*The aim of the article is an analysis of communicative behavior changes in ICT for people over 55 years of age in terms of psychological and demographic segmentation. To fulfill the article's objective, a secondary data analysis was performed on the professional literature and studies dealing with this issue. As the primary data source there are used the results of a survey that examined the impact of ICTs on the behavior of seniors in the Ústecký Region of the Czech Republic. The survey takes into account the age, gender and social status of seniors. Most seniors trust television, 54% of respondents use the computer, which is primarily used to store information. Almost a quarter of respondents use a smart phone; 43% of respondents do not use the internet, it being mostly people within the group older than 66 years of age. More than a third of internet users from 55 up to 65 years of age are registered on social networks. The conclusions indicate that increasing age in older people and their social status have an impact on their attitude to ICT.*

**Keywords:** Seniors, Information And Communication Technology, Internet, Social Networks

**JEL Classification:** M15, M39

### INTRODUCTION TO THE ISSUE

The world population is aging fast. 2014 data from the World Health Organization states that between 2000 and 2050 the proportion of the world's population over 60 years of age will double from about 11% to 22%. The absolute number of people 60 years of age and over is expected to increase from 605 million to 2 billion over the same period. Statistics clearly argue that the growth of the older generation should not be ignored. The number of seniors 55+ is not only increasing, but there is also growing importance in the global economy. They are living longer and better than ever in recorded history. Aging can take various forms, involving a variety of factors – genetic predisposition, personal involution, environmental factors, lifestyle, psychological characteristics, diseases and injuries. In

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economically developed countries with new aging generations life expectancy is being prolonged in the long-term (Čevela, et al., 2014).

Aging is manifested mainly in a decline in sensory functions, generally related to perception and psychomotoric functions. Further, the amount of information processing in a short time period is reduced in comparison to younger people. With this is also combined a decrease in the speed and capabilities of information processing in older people (Zheng, Hill, Gardner, 2013; Yoon, 1997). On the other hand, we live in an information society, emphasizing that people must orient themselves in a wide flood of information and handle at least a minimum of information technology, without excluding seniors.

While the older population is as diverse in many ways as the rest of the population, many of them have mutual information needs at certain stages of their late-life (Roberts, Bauman, 2012). These include information concerning the possibility of retirement, information about active aging as well as basic social and communication information. Information literacy is generally defined as a set of skills required to access, review, organize and use information from different sources. Information sources may be television, print and nowadays the internet and social media. This work presents the investigative results concerning the importance of the impact of various information sources on seniors. It deals with the changes in the perception of information resources for older people.

## **1. MEDIA RESOURCES**

Various age groups of people receive a different scope and functions of the media. The study by the authors Goot and Beentjes (2015) states that the explanation for these differences in age media perception is both individual human development and generation development, which means that people who were born in a certain period accept a model for media usage. Using media is associated with the cognitive, mental, social and emotional development of the individual's lifestyle throughout their life.

Within the general characteristics the most effective forms of advertising are television, newspapers and radio. Television has long been the main medium for the visual perception of messages (Buresh, Gordon, 2013). Older people belong to an important market segment because they are major media customers, especially of television, which combines conventional forms of advertising with unconventional themes (Ramos, 2013). Most communities support newsletters and newspapers. Although many of these newspapers exist purely for advertising opportunities, they are picked up and read by seniors. Mainly flyers are an effective tool for targeting the elderly segment (Mates, 2003). In the perception of advertising older people still prefer printed media before other media (Tathar, et al, 2004; Kennedy, 2012). Nowadays it is a high probability that a reader will find the printed version of newspapers and magazines online, often for free. Therefore, a group of seniors who previously had resistance to computer technology is more or less forced to adapt to the information development in society.

Computers represent a medium for broadcasting and accessing information, through which people can create and express themselves. Computers enable people to transmit, access, represent, and manipulate information in many new ways (Resnick, 2002). Computer technology has become integral to communication, social interaction, information retrieval, and daily living. Using computers among older people supports a sense of personal control over their lives, the ability to learn new things and actively collaborate with others (Gatto & Tak, 2008). With the emergence and expansion of the internet essential computer literacy has

become inevitable (Association of College and Research Libraries, 2000). Seniors are using the internet to communicate with more people than before, feeling less isolated and lonely. Nevertheless, the use of computers in this group does not limit human contact outside communication technology (Bosch, Currin, 2015). Social networks represent a new form of communication that also allows seniors to expand communication channels in satisfying their social needs, supportive relationships with family and friends, and facilitating information sharing. (Second-hand and Choi, 2014; Papacharissi & Mendelson, 2011). Many studies have repeatedly pointed out that the relationship of older people to computers and the internet, compared with the younger generation, remains uneven (PENG, 2010; PLAISANT, et al, 2006), the percentage of elderly people who are online increasing (Jones, Fox, 2009).

## **2. WORK METHODOLOGY**

Today's market population of 55+ years of age represents interesting potential for retailers and marketers. Older people are more experienced, more confident and more sensitive to the effects of marketing activities. In their free time this segment is more concerned about the media world. This article aims to analyze changes in communicative behavior in ICT people over 55 years of age in terms of psychological and demographic segmentation. Fulfilling the aim of this work is the question whether the increasing age and social status of older people of the chosen area in the Czech Republic has an effect on their attitude to information technology. To fulfill the research question information was used from secondary and primary sources. Secondary information was primarily drawn from professional literature and foreign studies from multiple researchers. To determine the behavioral changes of seniors in communicative behavior there was used primary data collection through written questionnaires. Before assembly the survey an in-depth interview with six representatives of the target group was conducted. The following variables were selected: the popularity of advertising media, the credibility of information sources, the extent of computer literacy and the level of ICT use. The data collecting site was the Czech Republic, more precisely the Ústecký Region. This region is classified among the regions with the highest proportion of people aged from 40 to 64 years: 34.4% (CSO, 2014a). The purpose of obtaining information from the local level is the ability to update information for better adaptation to the requirements of a specific area. On the other hand, it is possible to show that the information from a particular territory can inspire other regions.

The answers of the respondents were classified based on an analytical scale, which allowed examining the relationships and dependencies between findings. Two programs were used for data analysis – Microsoft Excel spreadsheets and software for statistical data analysis: IBM SPSS STATISTICS 23.

The starting point for examining changes in communicative behavior was to determine the age range, employment status and educational attainment. The expert sources describe the biological segmentation of seniors (Śniadek, 2006; Westerhof, et al, 2003, R. Ward, 2013). While dividing the monitored segment, we were inspired by dividing from other studies and the fact that people from 55 years of age actively had no experience with computers in their youth.

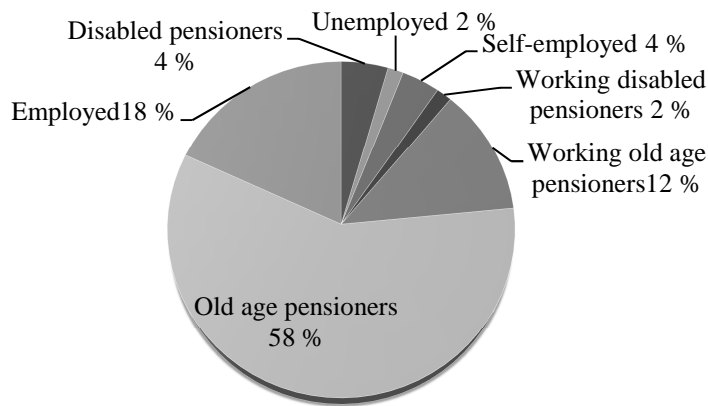
603 seniors took part in the survey, respondents divided into four groups of 55-60 years of age, 61-66 years of age, 67-74 years of age, 75 years of age and over in order to compare the communicative behavior among age groups with respect to their employment status. The age structure of respondents is represented in Table 1.

**Tab. 1 Age structure of the respondents**

	Age				Total
	55 – 60 years	61 - 66 years	67 – 74 years	75 years and over	
Men	59	59	71	62	251
Women	80	92	94	86	352
Total	139	151	165	148	603

**Source:** Authors

Of these, 21% have basic education, 70% secondary and 9% completed their university studies. The structure of respondents according to social status is described in Graph 1.



**Graph 1: Structure of respondents according to social status**

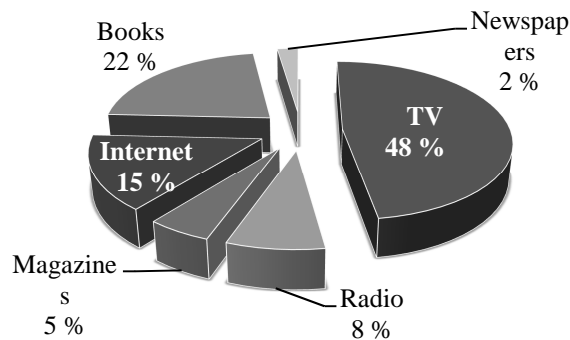
**Source:** Authors

### 3. RESEARCH RESULTS

The starting point of effective media planning is choosing the most effective media strategies that would effectively reach a target group. The results of a local survey show that the respondents critically pay attention television and radio advertising. Almost 70% of the surveyed men and women most consistently pay attention to television advertising, especially in the form of short commercials promoting a product or service. Television advertising appeals to most (73%) respondents aged 55-66 years of age and slightly less (65%) in the 67+ category. Radio was in second place, mainly spots and jingles reaching 25% of respondents, men 2% more than women. It is effectively the same for seniors 75+ (30%) and the category of 67-74 years of age (27%), less so in a lower age group (22%). Conversely, other advertising media has the least appeal: leaflets (2% women and 0.8% men), advertising in newspapers and magazines (1.2%), posters (0.7% of men, women not at all), billboards and online advertising.

How respondents answered the question of which information source they consider trustworthy is collectively displayed in Graph 2. Television gained the most trustworthiness. Women were confident about this source of information (49%) more than men (46%).

**Graph 2: The most trusted information sources**



**Sources:** Authors

Television broadcasts were deemed to be the most trusted source by old-age and disability pensioners, 52% identically, the least by (i.e. 22%) working disabled pensioners, 43% of employees and a third of unemployed and working old-age pensioners.

Second place in the hierarchy of trusted information sources were books at 22% (both men and women). Books mostly appeal to seniors in the group of 67-74 years of age, at least the youngest and oldest segments. Books represent a crucial source of information for a third of working disability pensioners, both for 30% of disability pensioners and the self-employed, 11% for the unemployed and 22% for both old-age pensioners (and workers)

The internet is a crucial information medium for 15% of the surveyed seniors. It is preferred by one in five men and 12% of women. Most employed trust the internet – almost a third, then 27% of pensioners whose only income is a pension, 18% of working old-age pensioners and 6% of the self-employed. Only 4% of unemployed and working disability pensioners consider this medium the most trustworthy.

Radio is considered the most trustworthy source of information by 8% of respondents – twice more women than men. It mostly appeals to seniors in the age category of 67+, least of all to the 61-66 years of age group. This medium is identically favored by 11% of disabled people and the unemployed, 8% of old-age pensioners (also working) and 6% of employees, not appealing at all to working disability pensioners.

For only one-twentieth of those surveyed seniors were magazines a main source of information, this medium trusted by women two times more than men. It is most important for the old-age pensioner group – 7%. Newspapers are only a main source of information for 4% of men and 1% of women. This medium is trusted by 4% of respondents with disability pensions, 3 % of old-age pensioners and 2% of employees. Newspapers do not appeal at all to other segments according to social status. Other sources of information (leaflets) were preferred by only two respondents.

### **3.1. Relation of seniors to ICT**

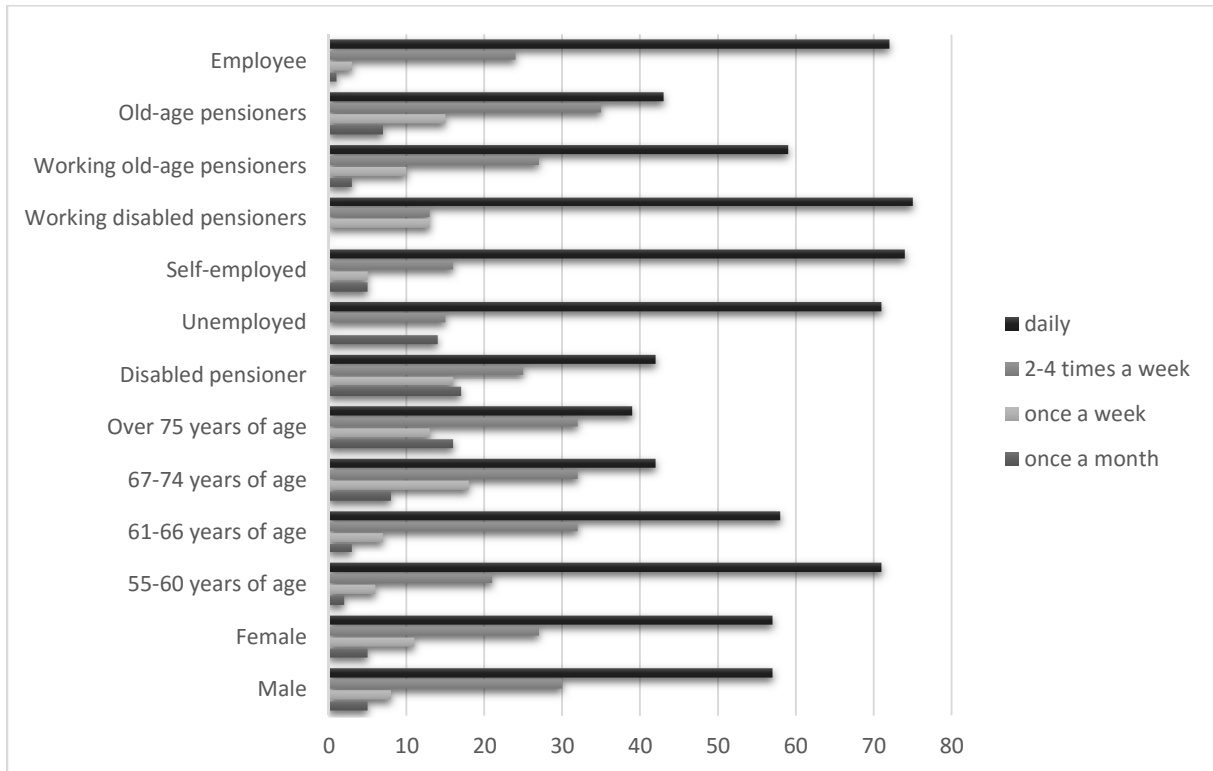
Computers or tablets are used by 54% of senior respondents, men 58%, women 51%. The frequency of computer use logically decreases with increasing age. While in the 55-60 segment it is used by 85% of respondents, in the following (61-66 years of age) it is two-thirds, in the next (67-74 years of age) almost half, and in the group of 75+ it is one in five. For PC users who have signed up nearly 90% of respondents are working disability pensioners, over 86% self-employed and employees, 78% are working age pensioners, two-thirds are unemployed, 44% are disability pensioners and more than a third are pensioners whose only income is a retirement pension. The survey showed that computer literacy is also dependent on the level of educational attainment. The computer is used by a third of respondents with primary education, almost 60% being high school and 82% university graduates. The most common use of the computer or tablet by respondents was for storing information (60%), one-fifth for entertainment, 8% for the processing of pictures, or films and as a comfortable writing machine. More often, men use it to store information and process photos and movies, women often playing and working with a text editor. Only 3% of respondents of both genders are doing family budgets on the computer. Most of the respondents who use a personal computer to store data are those with higher education, i.e. 71%, 57% other. Conversely a third of seniors with basic education and one fifth with high school education use it for entertainment purposes. It is considered a comfortable writing machine by 11% of university students, 9% of high school students and 3% of seniors with basic education. Most high school students work with photo and video editors, i.e. 9%, 6% of respondents with elementary education and 4% of university students.

Smart phones are used by 23% of seniors (30% of men and almost every fifth woman), 6% of respondents (8% of men and 4% of women) listen to MP3s. Use of these carriers decreases with the age of the respondents. In the category of 55-60 years of age without a smart phone, or MP3s are not more than two-fifths, or 11% of seniors, in the group of 61-66 years of age it is a third, or 6% of respondents, in the 67-74 year of age segment it is 16%, or 3% and over 75 years of age it is 3%, or 4% of seniors. A similar trend is evident in terms of educational attainment, smart phones being used by 56% of university graduates and two-fifths of respondents with lower education, MP3s: 13% of university students and a tenth by remaining seniors.

The internet is used by 57% of respondents, more men, i.e. 61%, and over half of women. The internet is most widely used in the youngest segment (86%), 69% of users in the 61-66 years of age segment, more than half in the 67-74 years of age group, every fifth respondent using the internet in the oldest category. Most internet supporters are work disability pensioners, employees and the self-employed.

57% of users have daily contact with the internet 57%, 28%: 2-4 times a week, 10% once a week, and 5% once a month. Details of the frequency of internet use in various segments are presented in Graph 3.

**Graph 3: Frequency of internet according to status, age and gender in percent**



**Source:** Authors

43% of respondents do not work with the internet, i.e. 39% of men and 47% of women who, in most cases (77%), state that they do not need it for their lives. This reason is considered decisive by (83%) seniors in the 75+ segment. 12% of non-internet users have tried to work with it, but failed because of the complexity; it is the cause of lack of interest in this medium especially in the group of 61-66 years of age, in which every fifth non-user using the internet gave up because of its demands. For almost 5% of non-internet users the connection was expensive and almost 3% did not have an opportunity to become familiar with this medium, but expressed adequate interest. Three seniors are provided the necessary information through their children. Only one respondent stated a lack of the appropriate connections, or signal.

21% of all respondents, or 37% of internet users are registered on social networks; more than two thirds of them on Facebook (irrespective of gender), 14% on Google+ (a fifth men, a tenth women), 7% on Skype. Only individuals were dedicated to other networks. On Facebook there are registered three-quarters of respondents aged 55-60 years of age and 75+, in other segments two-thirds of internet users; respondents aged 75 years of age are not registered on Google+ and Skype. Three-quarters of university graduates are registered on Facebook, 15% of high school respondents and those with primary education on Google+, one in five from this age group on Skype, where only 5% of high school and university students are registered. In homes for the elderly respondents are not registered on social networks at all. 81% of registered Facebook users live in a household with children, or with a partner, two-thirds being single.

Overall, the survey shows that for the 55+ segment television remains a key medium, mainly for old-age and disability pensioners. Most respondents seeing advertisements in this medium are age range 55-66 years. The least trustworthy medium are magazines, because most older people perceive this medium as tabloids, not "serious" periodicals. Nowadays seniors read periodicals on the internet. Mainly these are people still employed, and therefore in contact with the internet every day.

The relationship of seniors to information technology and the use of mobile phones is commonplace even to this age group. Higher technological level handsets – i.e. smart phones – are used mainly by people in the 55-66 years of age group. Working on the computer is mostly preferred by young "seniors" who work and have achieved secondary or university education. This segment considers the computer as mainly data storage. That also shows that older people who own a computer use the internet as well. Seniors who have not used a computer and the internet in a working relationship or have no relation to technology at all find it hard find their way with these technologies.

The relationship of seniors to social networks is also interesting. Those who indicate that they are internet users are also registered on a social network; especially nowadays on the popular social networking site for young people, Facebook, because of contact with family, or friends, information on social events, etc.

The results of the survey are also backed up by a whole-republic survey made by the Czech statistical office (2014b), which affirms that the percentage of seniors using personal computers has risen 2,5 times in the last four years.

#### **4. DISCUSSION**

In the discussion we compared the survey of examined indicators in the Czech Republic, with research in the EU and the USA. It can be assumed that the level of development regarding seniors and resources will have the same development.

There an increasing number of older users are utilizing the quick progression of technology, which has brought significant improvements in its application. Many manufacturers of information technology design their products for seniors, such as the size of the product itself, changing fonts, etc. (Zheng, 2012). Currently the most common information and communication media is definitely the mobile telephone and this is also reflected in older people. A Pew Research Center study shows that 77% of people over 65 years of age actively use a mobile phone. In this age group, about 27% own a tablet, while only 18% are owners of a smartphone. In 2014 in the Czech Republic, mobile phones were used by 87% of the senior population. The smallest amount of mobile phone users in this age group were over 75 years of age. The greatest increase in the number of users was demonstrated even in this age group. While in 2006 only a quarter of people over 75 years of used a mobile phone, seven years later, in 2013, the figure was 70%. In comparison with EU countries, the use of mobile phones among people in the group of 55-74 years of age is classified in the CR as average.

Computer literacy in people in later life is improving, mainly among aging people who used the computer at a younger age. Computer use in Czech households, according to the Czech Statistical Office, has improved; in 2013, two-thirds of households were equipped with computers and the internet, being 68% of households (CSO, 2014c). According to the results of a 2003 Finnish Human Resource Centre research, almost half of respondents over 55 years of age considered their computer skills as good and another third described them as sufficient in dealing with their needs. Most computer illiterate people were in the age group of over 70



years of age (Vuori, Rytty, 2005). In an American study the authors Sanders, et al. (2013) found that 76% of older people own computers (laptops and PCs), but still half of them stated they did not have good experience with computers.

In an international comparison regarding internet use, the number of elderly people who have never used the internet is decreasing. In 2006 in the EU 80% of people 65-74 years of age had never used the Internet; in 2013, this rate fell by nearly two-thirds to 41%. Among older adults who use the internet, 71% go online every day or almost every day, and an additional 11% go online three to five times per week (Smith, 2014). Even the survey results of the author Fox (2004) confirm that from 2000 to 2004 internet usage increased by 47% for American seniors.

People between 50 and 58 years of age are more likely (62%) to be connected to the internet over a person older than 65 years of age (17%). 2013 research shows that the number of older users (79%) who could not imagine life without online connection is increasing (Smith, 2014). The behavior of older people on the internet is different than younger generations. This is confirmed by the research results of the author Goodrich (2013), who found that older people (aged 60 years of age) pay more attention to online banner ads than younger people along with the authors Droleta, Williams and Lau-Geske (2007), who add that older people are more responsive to rational ads, regardless of the type of product.

For many seniors it is starting to be characteristic to set up accounts on social networks so that they can stay in touch with friends and family (Hoyer, 2008). The rate of social network users among fifty years of age and older internet users is increasing. Almost half (47%) of internet users aged 50-64 years of age and 25% of users aged 65 and more use social networking sites: mainly Facebook and LinkedIn (Lai, 2011). According to the aforementioned 2013 study by the Pew Research Center the percentage of seniors over 65 who use social networks is unchanged (27%).

Considering the results of the survey, we can say that there is compliance between both the chosen area and the total population of the Czech Republic as well with the results of foreign surveys.

In terms of the research results, it is possible to say that there is compliance with the results of foreign studies. Television is still the primary medium for widely addressing the elderly. Interesting, however, is still a significant increase in the use of modern information technology in this target group. More companies are being forced to especially adapt the gains of modern information technology to the "younger" age group of older people, because this generation still actively participates in the work process. The older generation will probably never be able to control information technology like the younger age group, but it is a generation that faithfully approaches its work, as well as environmental responsibilities.

The conclusions of the literature review, studies and surveys can positively answer the research question we have set and that, there exist changes in the communicative behavior of ICT of seniors from the chosen area in the Czech Republic. The changes mainly concern people of 55-66 years of age, who, when they want to be a part of society, must adjust to its technological changes.

## **CONCLUSION**

One of the fundamental human rights is access to information and understanding it. The greatest emphasis is given so that every member of society is proficient in at least a minimum of information technology and is also well versed in a wide range of information

presented to them on a daily basis. Everyone should know where to find information, how to sort, process and distribute it, and of course command a wide variety of information technology. The penetration of information and communication technologies in all areas of life reduces the number of disabled people who have difficult access to ICT. Ensuring digital accessibility creates the necessary conditions for economic and social development. The problem of the informatization of society is therefore not just a technical issue, but especially entirely societal.

The increasing proportion of seniors in the population also creates pressure to extend and diversify the range of services and products that will meet the specific requirements and preferences of seniors in the area of ICT – e.g. optimizing the design and user interface. Seniors need to be integrated into society also through the use of modern communication technologies. The ignorance of seniors in this area may be the reason for their social exclusion. Seniors who use ICT are changing from a passive to active life, enriching it, bringing them satisfaction and personal realization. These are people standing in the digital divide and who are not socially excluded. It is clear to marketers that it is necessary to adjust the offer of information technology and their services to the age-related changes of consumers and changes in their sensory organs resulting from age.

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