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The Labor Resources of Trade Enterprises in the Context of Digitalization: Comparative Analysis of the Russian Federation and the Czech Republic

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Abstract. Changes in the demographic situation in the world lead to a change in the enterprises staff. These changes are associated with a life expectancy increase and, as a consequence, an increase in the economically active population over 65 years old. However, the significant increase in the number of active older generation people is directed opposite to the level of the information technology use by them. For example, the older generation is not keen on making online purchases. Thus, in the trade, the working places for older employees are retained. The paper presents a comparative analysis of the trade enterprises labor resources in Russia and the Czech Republic. We have used methods of statistical data analysis and formalized survey. The study results have showed the similar trends in the trade sector labor markets in Russia and the Czech Republic. In addition, the results of the study have revealed the directions of the older labor force use. The older people can be involved in activities with a large communication load and high value of professional experience. Older workers often act as mentors, transferring their experience to the young colleagues. Thus, the interactions between workers of different generations can accelerate the development of trade enterprises.

1. Introduction

The field of trade in modern Russia is one of the fastest growing areas of the economy. At the same time, field of trade is one of the most sensitive to changes, both from the side of innovative technologies and the demographic trends of the modern society. On the one hand, the information technologies development allows retail to take advantage of new opportunities and prospects. Over the past ten years, digitalization of retail has shown rapid growth. On the other hand modern trade has to solve new problems associated with changes in demography and an increase in the life expectancy of the population and, as a consequence, its aging.



In the field of trade, the response to external changes must be quick and accurate, which provides a competitive advantage in the market. Russian trade, as well as world trade, seeks to increase sales by attracting new customers, relying on digitalization. This is due to the fact that nowadays there is an increase in the number of consumers who are actively using information technology. Russian retail is actively applying innovative technologies used in sales. Retail chains actively use different information technologies on the global scale: Big Data, artificial intelligence, blockchain, etc.

The process of implementation and use of information technology is currently significantly determines the interaction between retail sales staff and customers. The digitalization of Russian retail is explained by the retailers desire to expand the consumer segment, based on current trends in interaction with customers. Modern customers seek time saving, convenience and an individual approach in service. In order to adapt to this customer request, retail is developing a systematic approach to innovations implementation taking into account the interests of all participants. If 5 years ago the main task of information technologies introducing was development of a system for analyzing and forecasting customer behavior and optimizing business processes of retail chains, now the emphasis is shifted towards changing the requirements for the retail personnel to provide an individual approach in serving customers with different tastes and needs. The vast majority of people do not use a one shopping channel. The consumer seeks to get as much information as possible from various sources in the minimum time. However, the most part of buyers do not refuse individual consultations with the seller. Thus, the communicative component in the work of retail personnel does not decrease, but changes its format.

The digitalization of retail is usually associated with a reduction in sales staff and increased customer independence. Experts in digital technologies and economics agree that in the coming decades automation will significantly affect the labor market. The McKinsey Global Institute estimates that up to 50% of workflows will be automated in the world by 2036 [1]. This will lead to a significant demobilization of workforce, a reduction in the number of jobs requiring intermediate qualifications, and an increase in the difference in wage levels. However, we do not rush to conclusions. Modern trade has responded to the population aging with new trends in assortment and advertising for the older generation. The next step may be using of the resources of the employable older generation in customer service. The older people can be involved in activities with a large communication load and high value of professional experience. It is also relevant for tourism and service sectors [2,3,4].

To sum up we can distinguish the main trends in the development process of Russian trade:

- implementation of information technology to optimize business processes;
- detailed analysis of the preferences of the target audience;
- formation of a professional team that providing effective interaction with customers.

The competitiveness increasing of the trading company is possible requires the development of all three areas:

- digitalization increases the speed of service and attracts modern consumers who actively use the information technologies;
- analysis of the preferences of the target audience allows retailers to expand the range of goods and services;
- hiring qualified workers with a high level of responsibility allows the effective work team forming for achieving the company's goals.

Thereby the formation of the retailer's labor potential is one of the key for achieving a competitive advantage on a market. Furthermore this formation should take into account the modern demographic changes. Demographic changes in the labor market are associated with an increase in the older population. Most often, these changes in the labor market are considered as a negative factor that reduces the rate of economic development in the future. However, the older generation can become a powerful resource for the development of a new type of the economy.

An analysis of the possibilities of using the older generation labor force in the context of digitalization on the example of the trade sector demonstrates the relevance and importance of the aging

population problem. The use of the older generation as a labor resource of the enterprise has positive results:

- financial independence of the older people;
- increase in tax revenues to the state budget;
- reduction of expenses on pensions;
- improving the living standards of the older people.

Thus the increase in life expectancy, combined with the use of the labor potential of the older generation, will help to reveal new opportunities for economic development. The purpose of the study is to explore the possibilities of using the potential of the aging generation in trading enterprises, taking into account the digitalization process. The hypothesis of the study is that the labor potential of the older generation allows the use of modern information technology in a new aspect.

The purpose defines the following research objectives:

- study of the growth rate of e-commerce in Russia;
- analysis of the use of different sales channels;
- identification of prospects for the use of electronic systems and software in the trade sector in the current demographic situation;
- study of the representation of the older generation in the field of trade;
- identification of the key factors of older generation labor activity in the trade sector;
- identification of prospects for the use of the older generation labor potential in the trade sector in the conditions of digitalization;
- comparison of the digitalization process at the enterprises of Russia and the Czech Republic.

2. Methodology

We have used the method of statistical analysis of the official data from Federal State Statistics Service of the Russian Federation for assessment the labor resources of trade enterprises and representation of the older generation. To collect empirical data on the use of online shopping, we have used the special questionnaire. The survey involved students of the Graduate School of Service and Trade of the Institute of Industrial Management, Economics and Trade of Peter the Great St. Petersburg Polytechnic University. The survey involved 34 students, 24 of them were girls and 10 were young men. The questionnaire contained 7 questions corresponding to the main objectives.

To analyze the social activity and value orientations of the older generation, we used the data of the Federal State Statistics Service of the Russian Federation, as well as the results of sociological studies of older workers presented in previous articles [5, 7]. The study allowed us to make the conclusions about the labor potential and value orientations of the older generation [6, 8, 9].

A sociological study involved 452 people: 175 of them (39%) were 56-62 years old; 258 people (57%) were 46-55 years old and 19 people were over 62 years (4%). The survey was conducted anonymously, in a group and individually. As the main methodological tool for the study of value orientations, an adapted questionnaire for assessing factors of labor attractiveness was selected. It included 68 questions. The following values were chosen as the main factors of labor attractiveness: creative and interesting work; good working conditions; positive relationships with staff; respect on the job; self-realization; monetary and social rewards; integrity and rigor in working relations; development of responsibility; active life; rational organization of work; success of work; achieving personal goals; health; differences in the views of team members. The methodology used the concept of value orientations as a factor determining the attractiveness of professional activity.

The article also attempts to use the comparison method. The performed analysis of empirical and statistical data is complemented by a comparison method. Specifically, the situation in Russia is compared with the situation in the Czech Republic. The reason for this choice was the fact that in the field of digitization the Czech Republic acts as a slightly above-average country within the 28 EU countries (for more see Chapter 4).

3. Results and Discussion

It is very difficult for a retail company to find a competitive advantage in modern market. The opportunities for the intensive growth of trading enterprises are almost exhausted. In this regard, competition is moving to a new level and covers the field of innovation and staff. Most often, these two directions are combined. The pricing policy of customer loyalty formation is almost the same in all trading enterprises. Therefore, most enterprises strive to find potential competitive advantage in improving the quality of customer service. The implementation of the information technology facilitates customer service improvement. Therefore large analytical companies (Digital McKinsey, Boston Consulting Group) are considering online trading as the most actively developing economic sector in Russia [10]. Analysis of statistics on the development of internet commerce in the Russian Federation is presented in Figure 1.

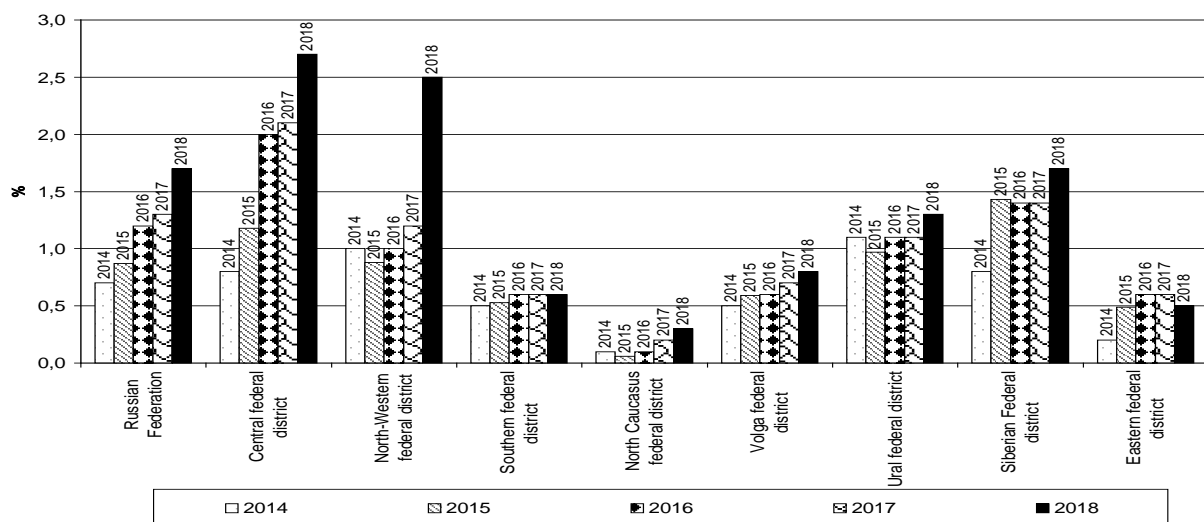


Figure 1. The growth rate of sales via the internet by region of the Russian Federation (Source: Rosstat, <http://www.gks.ru>)

The data presented in the analytical report of Rosstat show an active growth in online commerce in 2018 compared to 2017 in the North-West region (1.3%) and the Central region (0.6%) [11]. The remaining regions of the Russian Federation demonstrated the less increase of the Internet commerce share in the total retail turnover. This can be explained by the fact that the key online purchases audience consists of young and middle-aged people, and it does not increase due to current demographic situation in Russia. A survey of 2nd year students of the Graduate School of Service and Trade has shown that online purchases are made once per two months or less. More often online purchases are made by girls. Student survey data are presented in table 1.

Table 1. Results of the internet shopping survey among students of the Graduate School of Service and Trade

	% of respondents who made purchases in the online store			
	Product category			
	Food	Clothing	Cosmetics	Electronics
Women	8%	52%	70%	0%
Men	0%	0%	0%	24%

We can conclude that online trading has slowed down for the following reasons:

- customer audience is stable and expanding slightly;

- average purchase price is not high;
- traditional retail in stores remains the main purchase channel for the Russian consumer.

The following directions of the business process digitalization are the most popular in the retail industry:

- special software for managing the procurement of goods;
- special software for managing sales of goods;
- ERP systems;
- CRM systems.

Figures 2 and 3 show the results of monitoring the development of the information society in the Russian Federation by the use of special software to manage the procurement and sales of goods (Data of the Federal State Statistics Service of the Russian Federation).



Figure 2. The share of organizations that used special software for procurement management, in the total number of organizations surveyed (Source: Rosstat, <http://www.gks.ru>)



Figure 3. The share of organizations that used special software for sales management in the total number of organizations surveyed (Source: Rosstat, <http://www.gks.ru>)

A comparison of the monitoring results shows a stable indicator of the use of special software for sales management. At the same time the use of software for procurement management experienced several periods of decline over 8 years and recovered only by 2018. This can be explained by the fact that retail sales are more significant for maintaining a market position. Moreover, in a situation of economic crisis, trade enterprises use reliable and traditional supply channels, reducing the risks of the innovative technologies introducing.

Figures 4 and 5 show the results of monitoring the use of ERP-systems and CRM-systems (Federal State Statistics Service of the Russian Federation).

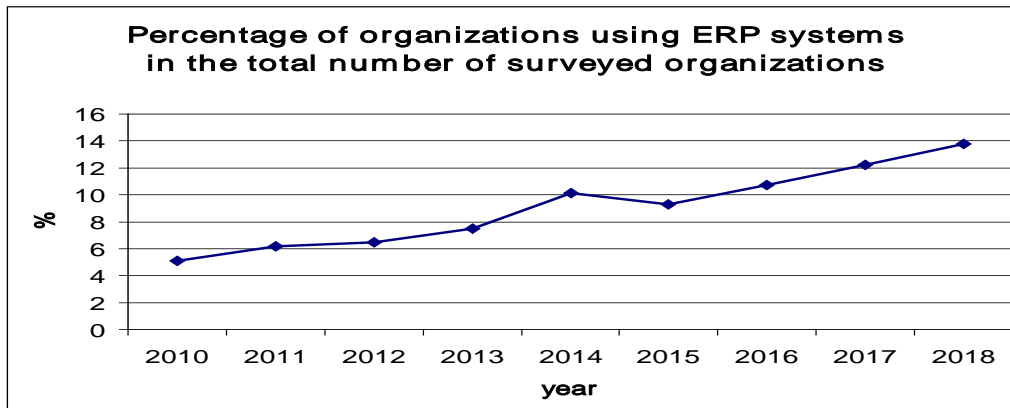


Figure 4. The share of organizations used ERP systems in the total number of organizations surveyed (Source: Rosstat, <http://www.gks.ru>)

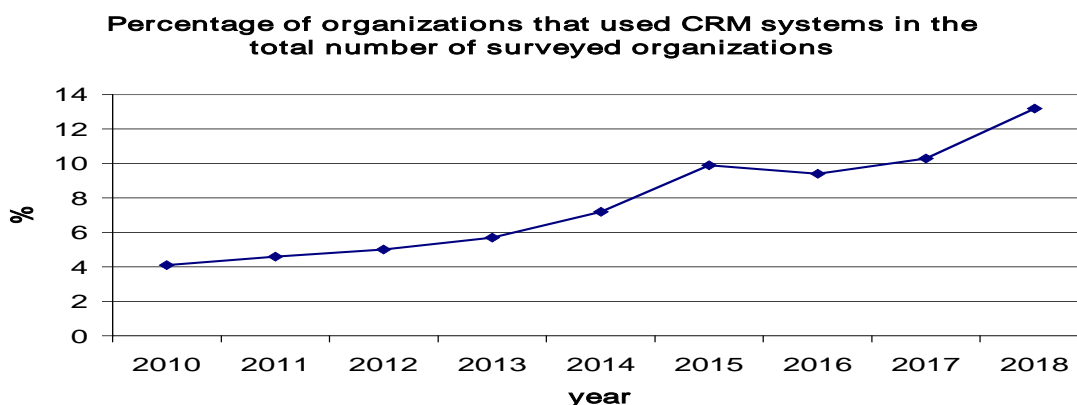


Figure 5. The share of organizations used CRM systems in the total number of organizations surveyed (Source: Rosstat, <http://www.gks.ru>)

The growth in the use of both ERP-systems and CRM-systems is stable. Moreover, the growth of CRM-systems is slightly ahead of the introduction of ERP-systems. This can be explained by the functionality of CRM systems, which can be used both in large retail chains and in small enterprises. In addition, the cost of CRM systems is more flexible and affordable for retailers [12,13].

The analysis of digitalization of trade enterprises in the Russian Federation allows us to draw the following conclusions:

- the slowdown in the development of online commerce can be explained by the fact that a modern buyer prefers a variety of channels for purchasing goods [14];
- retail consistently uses software to manage sales and purchases, which greatly facilitates the work of staff, but also requires special qualifications;
- there has been an increase in the use of ERP systems and CRM systems for optimizing business processes in trade. The use of data from these information systems requires highly qualified personnel, responsibility and experience in the field of trade [15];
- the population aging may remain offline shopping and direct relations between customer and retailer salesperson or consultant as the main way for everyday goods buying.

Analysis of the labor potential of trade enterprises according to the Federal State Statistics Service of the Russian Federation shows the following age structure of workers (Table 2).

Table 2. - The structure of employees aged 15-72 years in the field of services and trade

Total	Age cohort					
	15-19	20-29	30-39	40-49	50-59	60-72
100	0.8	24.5	28.9	23.3	18.3	4.2

Workers over the age of 50 make up 22.5% of the total staff in the field of services and trade. The total number of people employed in the field of trade in the Russian Federation is 16% of the total working-age population. Statistical data allow us to conclude that the possibility of using the older generation in trade is high due to the great social activity of the modern older people [16, 17]. Data on social activity are presented in the analytical report of the Federal State Statistics Service of the Russian Federation. The number and level of participation of people aged 15 years and older in various forms of labor for the production of goods and services by age groups shows that 949000 people older than 50 work as volunteers. This is 38% of the total volunteer movement. The data are presented in table 3.

Table 3. The number and level of participation of people aged 15 years and older in various forms of labor for the production of goods and services by age groups in the II quarter of 2019 (thousands of persons)

Age cohort	Labor activity on production of goods for own use	Unpaid work in vocational training (internships)	Work activity of volunteers
15-19	859	31	269
20-29	2668	48	388
30-39	4512	29	498
40-49	4753	16	390
50-59	6092	11	473
60-69	5868	4	342
70 and older	2595	...	134
Total	27347	141	2494

The high social activity of the older generation is explained by other value orientations that guide the older generation. With increasing age of employees, responsibility for the work performed increases, fear of difficulties in work decreases that has a hidden potential in the trade sector. The unrealized potential of employees of the older age group can be used in the context of digitalization of trade in the following areas:

- creative application of information technologies in combination with rich professional experience and high qualifications;
- the older generation of workers can reveal their labor potential as specialist consultants, mentors [18,19];
- work of older personnel with customers using new information technologies can enrich interaction techniques and optimize conflict resolution;
- a wise attitude to life and an active life position of the older generation will make it possible to rally a team of different ages and qualifications, taking into account all interests.

Comparison of outputs with conditions in the Czech Republic

According to data from Eurostat and the Czech Statistical Office [20], on average, 19.5% of firms in the EU make electronic sales. Companies in the Czech Republic use electronic channels in this respect

in 24% of cases. In terms of purchases, almost 61% of companies use electronic computer networks (the EU average is 49% in this case). The process of digitization continues here, especially in the case of purchases (see Figure 6). In this case, small businesses have progressively behaved in which their share increased by 19 percentage points over the period under review (medium-sized enterprises and large enterprises recorded a similar increase of 15.5 percentage points). In the case of electronic sales, the situation in the Czech Republic is similar to that in Russia. Here too, the development is relatively stable and the share of companies using this sales path is similar.

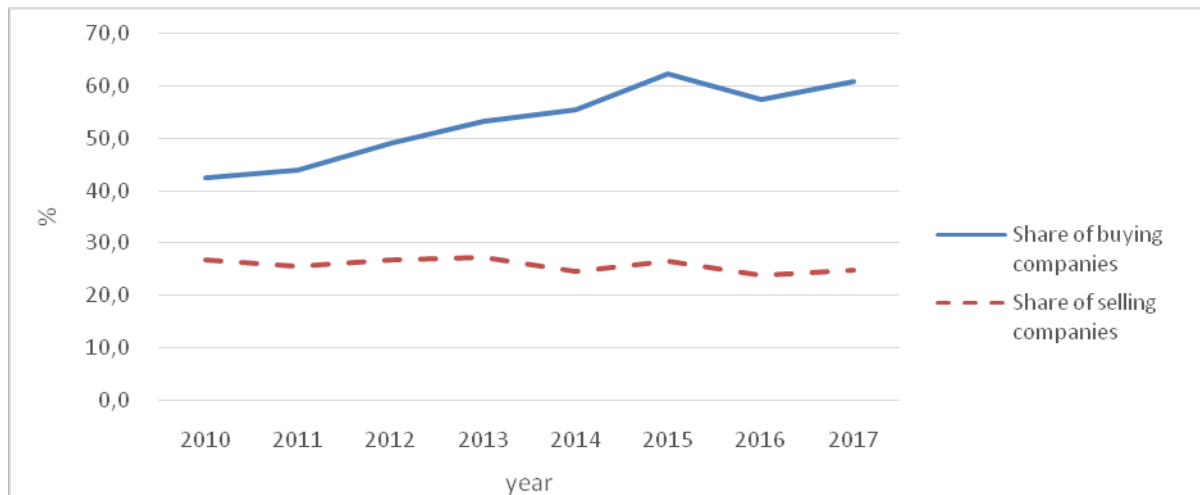


Figure 6. The share of organizations that use electronic ways for purchases and sales
(Source: CZSO, <http://www.czso.cz>)

If we compare the situation in both countries under review in the case of using ERP and CRM systems, then the growth for the monitored period 2010 to 2017 is lower in the case of the Czech Republic. The share of companies using ERP increased by 7 percentage points between those years (i.e. this share increased from 20.7% to 27.7%). In the case of using the CRM system, the increase is lower, from 15.4% to 20.8% [20]. Although the CZSO database lacks a comprehensive data series for both of the above-mentioned systems, we can still confirm that a similar scenario to that observed in Russia in that period followed in the Czech Republic. The conclusions of the third chapter are thus confirmed in the case of the analogue country. The process of digitization on the part of companies is continuing. So we can ask ourselves the same question as companies with human resources. For comparison, Table 4 gives an overview of the age structure of workers and its development. This overview indicates two essential features. One of them is the progressing process of population aging. In addition to prolonging life expectancy, the table also shows the impact of pension reforms, which include a gradual increase in retirement age for the award of old-age pensions. This process started in 2011 with the so-called small pension reform. There is also a gradual harmonization of the retirement threshold between men and women. A more detailed analysis also shows another trend. In the Czech Republic, the share of employed people aged 65 and over is growing at a slightly faster rate than the general increase in the number of employed. On the contrary, the share of the youngest age cohort decreases among the employed. Extending the period of study and further training for the future profession is also taking its toll.

The subject therefore implies that the digitization process carries with it skilled workers. As the process of digitization of business processes is increasing, it is necessary to ensure the required qualification in all employees in the Czech Republic. So if people want to be employed even at a late retirement age, it puts demands on their need for IT knowledge. Although statistics are not available about this situation, we can also see the growing generation of IT knowledge about IT as a consumer.

The statistical database in this situation is limited by the available years. The equipment of Czech households with information technology and information on the use of IT technologies for life has been monitored more regularly since 2013. The equipment of Czech households is constantly increasing. On average, 78% of Czech households were equipped with computers in 2018 (an increase of 10 percentage points since 2013) [20]. Up to 80% of Czech households use internet at home (year 2018). The gradual increase in the use of modern communication technologies is also reflected in households of people over 65 years of age. In this case, 37% of households use a computer at home and the Internet. However, the increase since 2013 is more than doubled in this respect. In 2013, the equipment of households of people over 65 years of age using this technique was around 14%. A similar trend then reflects the use of the Internet by older people to search for information on goods and services. While 13% of seniors' households used the Internet for the given activity in 2013, in 2018 it was already 30% of these households. 13.5% of seniors used the Internet as a shopping channel in 2018 [20].

Table 4. Evolution of the age structure of employed in the Czech Republic

Age cohort	Year		
	2010	2015	2018
15 – 19	0.5%	0.4%	0.4%
20 – 29	17.4%	15.9%	14.8%
30 – 39	29.3%	26.4%	24.1%
40 – 49	25.2%	27.8%	29.6%
50 - 59	22.3%	22.3%	22.2%
60 and more	5.3%	7.1%	8.8%
Total	100.0%	100.0%	100.0%

Source: CZSO, <http://www.czso.cz>

4. Conclusions

The results of the study allow us to draw conclusions corresponding to the tasks:

1. The slowdown in the development of online commerce can be explained by the fact that a modern buyer prefers different channels of purchase of goods. Traditional retail in stores remains the main channel for buyers.

2. Shopping and direct communication with the seller or consultant will remain the main way to purchase everyday goods for both young and middle-aged buyers and older buyers. Trade enterprises need to expand sales channels, and to make adjustments in the process of serving customers of different age groups.

3. The use of ERP-systems and CRM-systems increases optimizing business processes in trade. The use of data from these information systems requires highly qualified personnel, responsibility and experience in the field of trade. In the context of an aging population, it is necessary to expand the education of the older generation in this direction.

4. The unrealized potential of employees of the older age group can be used in the conditions of digitalization of trade for making non-standard decisions with standard information due to the rich professional experience and high qualifications. The older generation of workers can reveal their labor potential as specialist consultants and mentors.

5. Key factor in the labor activity of the older generation is a special combination of value orientations. With increasing age, the importance of responsibility for the work performed increases, the fear of difficulties in work decreases, the value of an active lifestyle increases. This value structure allows the older generation of employees of commercial enterprises to unleash their labor potential as professional consultants.

6. The work of older staff with customers using new information technologies can enrich interaction techniques and optimize conflict resolution. A wise attitude to life and an active life position of the older generation will make it possible to rally a team of different ages and qualifications, taking into account all interests.

7. A small comparison of the situation in Russia with the Czech Republic basically confirms similar tendencies. The process of digitization in companies and the aging process of the population are permeating the whole society on the Russian and Czech sides.

The increasing share of active seniors brings new challenges for companies, whether it is in relation to seniors as employees or seniors as consumers. In both cases, it is necessary to prepare for a situation where seniors will increasingly come into contact with information technologies. On the one hand, this will force companies to allow further education in this area. On the other hand, companies should look for ways to reach the older generation of their customers.

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