Management of generation Z staff in the digital economy

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Abstract. This article is a continuation, which examines the difference between generations and their common qualities for forming a successful team, but with a focus on generation Z. Materials on the comparison of generations X and Y are published in the journal Vestnik PNIPUV in the article Team building in the digital economy [1]. This article presents an analysis of the current state of generations X and Y with the relevant research points and recommendations for team building of personnel of generations X and Y. In 2019, at the time of the publication of the first part of the article, our team started a project to conduct their research in the part of Generation Z. Participants in this study were young people born between 2003 and 2005. The study ended in January 2021. A total of 1,14 people were interviewed during the period: high school students, university students, and first-and second-year students of universities in the cities of Moscow, Samara, Nizhny Novgorod, Novokuibyshevsk, Syzran.

1 Introduction

According to experts from the Boston Consulting Group (BCG), the Fourth Industrial Revolution is now taking place. Its features include the following:

a) formation and development of fully automated industries interacting with each other and with consumers using artificial intelligence and cloud services.

b) exponential growth of the number and scale of innovations, generated solutions of non-relevant industries.

c) exchange of ideas and experience within the framework of the onset of the digital economy and changing the perception of the company-client links.

This revolution was first mentioned by German industrialists at the Hanover Fair in 2011. Then it was said that the fourth industrial revolution is now beginning, where Germany must play a leading role. This statement is not justified, since from the creation of the European Union, the German economy has been acting as its “locomotive”. To accelerate the internetization of production, the industry development strategies “Platform Industry 4.0” and the state program “Industry 4.0” have been developed and launched. This is also the predicted beginning of this trend for our economy.

2 Materials and methods

Any development begins with a foundation. Let us take a look at the main stages of the Industry 4.0 (Fig.1).

Fig. 1. Main stages of the Industry 4.0

The development and subsequent formation of the Industry 4.0 requires the results of the third industrial revolution (Fig. 1., first two stages).

Stage 1. Computerization.

This term refers to the provision of all major components of production with means for real-time digital control. The use of modern equipment initially allows switching to digital control, in the event of the use of outdated or analogue equipment, its modernization or replacement is necessary.

Stage 2. Networking. This implies the combination of isolated technologies into a single shared environment. Network interaction allows combining automatic design and production procedures with process control tools, organizing remote maintenance, etc.

Stage 3. Visibility. This concerns the creation of a digital alter ego of an enterprise for correct forecasting of situations in the future and rapid response in the present. The main difficulty in this aspect is not so much technical, but the reliability of data collection both in case of multiple data sources and in the absence of the ability to collect without human participation.

Stage 4. Transparency.

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Stage 5. Forecasting.

Stage 6. Adaptability.

Stages 4, 5, 6 may be separated for description only, since their implementation is interconnected. Transparency means linking digital display to analytical systems. It (link) allows competently extracting knowledge, patterns from the data array. This opens up the possibility of adapting analytics to production technologies (forecasting). Forecasting ability opens up the possibility of automating functions related to adapting a business to changing external conditions (adaptability).

When entering the path of the fourth industrial revolution, it is necessary to change the mentality of each individual: from performer to managers and the whole company. The cultural and social atmosphere that makes it possible to realize the advantages of the Industry 4.0 is based on two major milestones:

1. Ready for change. Openness to innovations, continuous professional growth (this concept must be distinguished from the career growth), commitment to change.
2. Free social interaction at all levels. It is ensured by a democratic style of leadership, the opportunity to openly express views and active participation in the evolutionary process.

3 Results and discussion

Analyzing the current situation with the generation Z in Western companies and comparing it with the situation with the Generation Z in Russia, we should address the peculiarities of the mental model of behavior of employees of the Generation Z in Russia.

The modern Generation Z requires a special approach in organizing their professional activities in Russian companies, which is based on the focus on emotional orientation in the management of employees of the Generation Z.

The study carried out by successful executives and companies revealed that emotionally intelligent or competent leaders achieve far greater results than those who rely more on intellectual intelligence or management knowledge. According to the results, "emotionally reasonable companies" understandable to people are increasingly superior to companies without such understanding. Today, the representatives of the Generation Z have already entered the market. The time has come to understand the peculiarities of the mental model of behavior of the Generation Z for the successful management of its development and effective management in Russian companies.

In 2019, at the time of the release of the first part of the paper, the authors started a project to conduct their research in part of the Generation Z. The participants in this study were young people born between 2003 and 2005. The study ended in January 2021. In total, 1 thousand 14 people were interviewed during the period: high school students, students of secondary educational institutions and first and second year students of higher

educational institutions from Moscow, Samara, Nizhny Novgorod, Novokuybyshevsk, Syzran.

The previous paper presents the analysis of the current state of the Generations X and Y with the corresponding research areas and recommendations for team building of the Generations X and Y [1, 2, 3].

Some publications reflect the disadvantages of the theory of generations, below are two main ones and the description of how they were taken them into account in this study.

1. *The theory of generations was created by American scientists following American experience, but the United States is large in order to equally describe generations from respectable areas of California, and, for example, residents of Iowa, where farmers historically lived.* In our study, we expanded the geography of the sampling from Syzran to Moscow, while trying to maintain the same type of groups of young respondents (for example, the interviews were conducted in ordinary general academic schools: not lyceums and gymnasiums).

2. *In addition to the historical circumstances forming the personality, it is influenced by a huge number of other factors that may completely offset the first.*

Table 1. Study of the current state of generations.

Research area	Generation		
	X	Y	Z
What does it mean to be happy?			
Enjoy the respect of people	13%	7%	0%
Have a good and interesting job	33%	20%	4%
Have a good family	27%	33%	31%
Feel free	7%	13%	31%
Living well, in abundance	20%	27%	35%
What is the means of achieving the goals?			
Initiative, entrepreneurship, ability to express oneself	17%	22%	46%
Respect for traditions	3%	3%	4%
Personal efforts	6%	6%	27%
Mutual assistance, trust in people	11%	11%	0%
Family	19%	19%	0%
Professionalism	22%	17%	8%
Material security	8%	8%	4%
Responsibility	14%	14%	12%
Conditions for success?			
Good education	22%	22%	15%
Material security	19%	17%	4%
Useful contacts	11%	14%	19%
Luck (occurrence, concurrence of circumstances)	8%	8%	7%
Freedom to fulfil one's needs and abilities	14%	19%	43%
Legality as a state-mandated procedure	3%	6%	0%
Stability in the country	17%	11%	4%
Respect for moral principles	6%	3%	8%

Note:

Generation X born in 1962-1981

Generation Y born in 1986-2002

Generation Z born in 2003-2005-present

In order to reduce the statistical error from the influence of other factors, we increased the sampling to 1 thousand 14 people, which made it possible to reduce the level of influence of such factors as family, environment, financial level on the results of the study.

The authors decided to conduct their research for several reasons: firstly, to try to identify differences in generations that may affect the work efficiency of a team compiled from different generations.

Secondly, to determine the values of generations and find the causes of conflicts between their representatives.

Thirdly, to conduct studies of our citizens from our cities with our mentality in order to eliminate the influence of the differences in Western and Russian culture.

The format of earlier studies by our colleagues (described in the previous part) was taken as the basis for the present study to comply with the correctness of data comparison in the future.

Let us give a brief description of generations paying more attention to the Generation Z as the representatives of this generation are already beginning to enter the age of labor relations.

The characteristics of the generations X and Y is given in the previous paper [1]. Below are the main abstracts for these generations and their comparison with the Generation Z.

During the study, the roles of participants were determined according to the classification of R.M. Belbin.

Let us briefly describe the roles for this classification.

Type: Implementer.

Character traits: Conservative, executive.

Positive qualities: Leadership potential, practicality, energy, self-discipline.

Acceptable disadvantages: Lack of flexibility, resistance to unverified ideas.

Type: Coordinator.

Character traits: Calm, confident, manageable.

Positive qualities: Good listening skills, ability to consider and evaluate the merits of all proposals. Strong motivation to achieve the goals.

Acceptable disadvantages: Common in terms of intelligence and creativity.

Type: Motivator.

Character traits: Very nervous, responsive, dynamic.

Positive qualities: Internal drive and willingness to fight inertia, inaction and self-deception.

Acceptable disadvantages: Tendency to discontent, irritability and impatience.

Type: Idea generator.

Character traits: Individualist, serious, unorthodox.

Positive qualities: Giftedness, ingenuity, intelligence and knowledge.

Acceptable disadvantages: "Has head in the clouds", underestimates the practical details or the need for a protocol.

Type: Provider.

Character traits: Extrovert, enthusiastic, inquiring, sociable.

Positive qualities: Contacts people well and develops something new, shows resilience in a difficult environment.

Acceptable disadvantages: Loses interest in work when its initial attractiveness passes.

The study revealed the following correlation of roles (total study participants – 1,014).

Fig. 2. Generation Z role behavior

The main findings of the study are as follows:

Similar to past generations, the new generation continues to correlate family values and wealth with the criteria of happiness, but the significance of feeling free has significantly grown. At the same time, recognition by people does not matter at all for the representatives of this generation.

As a means of achieving goals, the modern generation does not principally consider such tools as professionalism, family, mutual assistance and trust. The main focus of the generation is on initiative, entrepreneurship, personal efforts and responsibility. The main condition for success for the young generation is freedom to realize its needs and abilities. At the same time, the importance of education, material security and stability of the outside world has significantly decreased, compared with both the Generation X and the Generation Y.

Against the background of the above, the results on determining roles in the team are quite self-contradictory. The respondents least want to be motivators and generators of ideas, although it is these roles that are inherent in the need for self-realization and freedom. Denying the importance of professionalism, education and respect among people, the representatives of this generation more want to be implementers and coordinators in teams.

This contradiction makes it possible to put forward a hypothesis – either this generation has not yet decided on its roles due to its low age, or it, in principle, does not want to be determined and does not see any meaning in this. As a result, some company executives conclude that it is easiest to not deal with the employees of the Generation Z. In fact, this new generation includes thinking employees, ready to work with excessive inclusion in activities, capable of solving super-complex

tasks and ready to implement ambitious projects in a rapidly changing external environment. Only a competent approach is needed in managing the employees of the Generation Z.

Recommended approaches to the human resources management of the Generation Z

The companies, especially in the field of information technology, are interested in the efficiency and professionalism of the activities of the employees of the Generation Z.

The personnel market in IT until 2020-21 has maintained stable indicators of demand for personnel. The development of IT technologies, their applicability in previously atypical areas for them and the automation of processes hold IT specialists as one of the most popular in the labor market. The number of vacancies for remote work and development outsourcing has significantly increased.

The employees of the Generation Z are characterized by the rejection of higher education and the ability to obtain the necessary knowledge from sources that they have been taught to use since childhood. Besides, they are skeptical of the curricula of higher educational institutions and choose exactly what they really need. The combination of initiative and entrepreneurship as a means of achieving the goal (expressiveness – 47%) gives them entrepreneurial abilities. Moreover, for the sake of realizing their goal, they are ready to work from a position of excess activity, performing more in the process of activity than is prescribed by the job description.

Every new employee of the Generation Z who comes to the company must understand that for him personally the work of the company is a chance to succeed. In this, the employee of the Generation Z relies solely on his own efforts, these efforts shall only be addressed in the right direction of innovative technologies and improving the efficiency of the company. To this end, HR service of the company needs to implement a number of measures taking into account the peculiarities of the mental behaviors of this generation:

- to assign to a new employee Z a mentor – a professional with significant production experience in the company, the so-called “carrier of corporate culture”;

- a professional mentor together with HR employees conduct an interview with a novice about the prospects for development and advancement within his personal career and possible prospects overcoming his misunderstanding of mutual assistance and lack of trust in people.

Practice shows (Rosatom – Greenatom, LLC VF Tanker of the Volga Shipping Company) the feasibility of creating a site that forms a new employee’s understanding of the career path, for example, the analysis of the Career Tree with key competencies necessary for career growth for each type of career:

- each new employee of the Generation Z is included in the career planning system;

- the company should cultivate a talent management program in which to recognize, evaluate, develop, rotate

are one of the main areas of activity in the effective management of employees of the Generation Z.

- HR service of the company assigns a development manager to each new employee, who assesses the level of his adaptation to the new operating conditions, performs monthly and then quarterly monitoring at the initial stage;

- it is desirable to create a retention system with new employees of the Generation Z taking into account the main indicator of the mental model: “Freedom to realize your needs and abilities” while achieving successful adaptation.

It is impossible to cheat and manipulate them. Quite often, the attempts to focus their activities from the standpoint of generally accepted laws and regulations (KPI system and grades) acceptable to categories X and Y are unsuccessful, result in failures for the HR service and the categorical exit of employees of the Generation Z if they were not explained their preferences from using this system openly and intelligently.

To retain a new employee of the Generation Z it is necessary to give him the opportunity to fulfill his great desire to become a realizer or integrator in projects with mandatory personal growth through increasing his personal competencies, self-development and self-actualization in project management, team building, effective communications, time management, stress management. All this should be included in the personal development plan of the new employee of the Generation Z. Thus, it is possible to eliminate the loss of interest in the work of employees of the Generation Z when its initial attractiveness passes. One important feature of personnel management in large Russian companies may lead the Generation Z employees to spontaneous exit. According to the results of the international study of personnel engagement (2011) by Gfk Tushman, uncomfortable working conditions in large corporations are a feature of Russian business in companies where the number of employees is 1000 or more. So, pressure from the company to work for many hours in a row is 33%, and stress at work is 47%, while in Western companies these figures are 23% and 37%, respectively.

The employees of the Generation Z distinguish 2 performance management poles that sufficiently provide control from the professional mentor and at the same time form a sense of freedom and trust in the employee so necessary due to his mental model of behavior. Control is possible with the help of trackers, which act as a regulator in the teamwork, as well as between employees, and between an employee and a mentor. At the same time, it is possible to monitor working time, physiological indicators, control the desktop, content, as well as control the history of the browser. Such sensitive and not obvious control is easily accepted by the employees of the Generation Z. However, it is obvious that at any time the employee’s activities may be monitored, and this deprives the employee of the opportunity to violate the requirements imposed on him.

Today, due to the circumstances associated with the pandemic, many employees work in remotely using instant messengers and cloud technologies. The personal

responsibility of staff members is of great importance in these circumstances. Despite the absence of a tight schedule, a system of trust in the employee is formed, when the result is monitored and not the process of activity itself. A state of continuous presence at work is formed, always in communication, which, nevertheless, allows perceiving this situation as a feeling of independence and the opportunity to live our lives, which is extremely important for Z-category employees: “We believe that you know how and what to do and trust you”.

4 Conclusion

Continuous communication, open discussion with the employees of the Generation Z in organizing all complex issues are the main tools of HR managers and mentors. At the same time, the employees of the Generation Z do not need a lot of communication. This is especially important when setting a task. The instructions should be short with a specific follow-up algorithm and specific indicators of the desired result for all items of the proposed action algorithm. All this should be communicated to the employee of the Generation Z verbally and in writing. Communication should be short, more through social networks and video services.

The employees of the Generation Z need a qualified and competent professional – a leader who must constantly demonstrate his “advancement” in modern means of communication so that not to lose confidence and respect as a leader. But this is not enough for the employees of the Generation Z. They are oriented towards the principle of “equality” considering it possible to behave “on equal terms” with their direct supervisor if they realize their own high level of professionalism and competence. Often, they do not recognize the existence of traditional levels of management and mandatory subordination to the immediate manager. All this must be explained to the employees of the Generation Z quite patiently and logically.

Even if there is no “hot news” on the agenda it is necessary to hold scheduled meetings, individual interviews on specific results of activities and possible achievements of high results in activities for the employees of the Generation Z. It is necessary to make sure that the employees of the Generation Z feel continuous support and understanding at all levels of management provided absolute transparency and openness of information. Even with the slightest concealment of information, the employees of the Generation Z may permanently lose confidence in company management [4, 5].

The assessment of professionally important and personal qualities of the employees of the Generation Z showed that high motivation to achieve successful results in the activity is formed in the process of implementing ambitious projects, which are based on complexity on the verge of real opportunities and appropriate remuneration (Freedom to realize their needs and abilities – 43%, Initiative, entrepreneurship, ability

to express oneself – 46%). Often the employees of the Generation Z accept the “Principle of long reins”. At the same time, under no circumstances should the immediate leader loose these “reins”.

Besides, it should be understood that the existing system of benefits and compensation for most employees, including the Generations X and Y, may be absolutely indifferent to the Generation Z.

The assessment of professionally important and personal qualities of working employees of the Generation Z showed that high motivation to achieve successful results in the activity is formed in the process of implementing ambitious projects, which are based on complexity on the verge of real opportunities and appropriate remuneration (freedom to realize their needs and abilities – 43%, initiative, entrepreneurship, ability to express oneself – 46%).

The means of achieving these goals include initiative, entrepreneurship, the ability to express themselves, and orientation to their own efforts. Here it is important to consider the competent formation of their internal motivation to achieve successful results in their activities through the formation of high self-esteem and a high level of goals [6, 7].

Fig. 3. Internal motivation for successful performance

The combination of a high level of self-esteem when the employee of the Generation Z sees himself as capable of achieving significant success, taking a leading position and displaying perseverance and tenacity in achieving difficult tasks, active, able, entrepreneurial, and high-level goals, when the employee of the Generation Z has a large goal in life formed for several years and constantly achieves it or the main goal for life, a number of intermediate goals that facilitate the achievement of the main, then he becomes a good specialist, active, entrepreneurial, may be a leader, harmonious and productive in work, and all these combined “condemns” the employees of the Generation Z to success.

$$\text{Self - esteem} = \frac{\text{Success}}{\text{Aspirations}}$$

Self-esteem is a positive part of the self-concept, i.e. the system of views and ideas of an employee of the Generation Z about himself. How to increase self-esteem? Reducing aspirations is an unconstructive path. The development of self-justifying trends (external causal attribution) is absolutely inappropriate and not characteristic of the employees of the Generation Z. Psychological barriers lead the individual to

deconstructive behavior (aggressiveness, social apathy, “red eye syndrome”).

The orientation of the employees of the Generation Z to the success associated with the development of the personality, i.e. the way to realize himself, self-actualization, makes them effective and competent, which in turn increases the efficiency and creates the key and leading competencies of the company, thus making it successful in conditions of fierce competition.

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