

COLLECTIVE MONOGRAPH

MODERN  
SCIENTIFIC  
STRATEGIES OF  
DEVELOPMENT

COMPILED BY  
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CHAIRMAN OF THE EDITORIAL BOARD  
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GS PUBLISHING SERVICES  
SHERMAN OAKS  
2022

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Cover design: Publisher «GS Publishing Services» ©

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Publisher «GS Publishing Services»  
15137 Magnolia Blvd, # D,  
Sherman Oaks, CA 91403, USA.

**ISBN 978-1-7364133-9-5**  
**DOI: 10.51587/9781-7364-13395-2022-008**

Scientific editors-reviewers: Bobrovnyk S., Bondar Yu., Cherep A.,  
Glukhovskiy P., Hovorov P., Kuznetsov Yu., Lazurenko V.,  
Moiseienko V., Omelianchuk L., Protsiuk R., Virna Zh.

**Modern scientific strategies of development** : collective monograph / Compiled by V. Shpak;  
Chairman of the Editorial Board S. Tabachnikov. Sherman Oaks, California : GS Publishing  
Services, 2022. 349 p.

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## RECRUITING 4.0: TRANSFORMATION IN CONDITIONS OF DIGITIZATION AND GENERATIONAL CHANGE

Advanced robotics, artificial intelligence, Internet technologies, cloud computing, big data analysis, and 3D printing are far from a complete list of the benefits of modern life that pervade SMART homes and cities, online stores and banking services, car sharing, and remote work. All this forces people to more actively master the skills of working with digital tools, possess the necessary knowledge and qualifications, requires new flexible skills for work from employees and managers. Today, during the transition of countries to the digital economy, when there is a gap between the mass distribution of artificial intelligence, digital tools and the readiness of personnel to use them, problems have arisen in the labor market in finding a sufficient number of qualified personnel. Modern approaches of organizations to the formation of human resources are undergoing significant changes. This happens for a number of reasons:

1) the change in the labor market situation and the strengthening of the imbalance between the parameters of demand and supply of labor complicate the turnover of personnel, the search for qualified workers;

2) there is a change in labor resources belonging to different generations, and, therefore, a change in the dominant qualities and values of labor resources, their target requests to the labor organization<sup>1</sup>;

3) mass implementation of digital tools for the implementation of staffing procedures in terms of diagnosing professional suitability and making managerial decisions regarding the hiring of applicants. This entails the transformation of work tactics for attracting and selecting targeted candidates for positions<sup>2</sup>.

The change in approaches and tools to the implementation of HR procedures raises the reverse problem of the readiness of personnel management systems

1 HR Trends for 2018. URL : <https://hrtrendsinstitute.com/2017/11/27/8-major-hr-trends-for-2018>.

2 Recruitment in the digital age. URL : <https://www2.deloitte.com/content/dam/Deloitte/ru/Documents/human-capital/russian/podbor-personala-v-cifrovuyu-ehpohu.pdf>

themselves to work with other value preferences of employees, to adapt personnel management tools to the targeted requests of applicants<sup>3</sup>.

Business today is dealing with a new challenge – the change of generations. Generation Y has entered the labor market, the young generation Z has begun to enter the labor market and will continue to enter the labor market en masse in the coming years. This is not the first generational change in the labor market – it moves in a spiral, but for some reason it remains relevant and worries employers. The fact is that the young generation is very different from their parents, it is different, new. With the onset of the third millennium, humanity was divided. On the one hand, there are those who gravitate to the values of the past and to material goods, on the other – a new, more spiritual and high-tech generation. Innate character traits and abilities that they inherited from their parents are transformed under the influence of ultra-fast transformations of progress, socio-economic relations and existing norms of life. Thus, society is rapidly developing, and even the older generation does not always understand young people, their values, attitudes and motives.

In 1991, the book «Generations: A History of America’s Future, 1584–2069»<sup>4</sup> by economist and demographer Neil Howe and historian William Strauss was published, in which they describe the theory of generations starting from 1584. In 1993, a book by these authors was published «Gen 13: Abort, Repeat, Ignore, Fail?»<sup>5</sup>, and in 1997, the book «The Fourth Transformation: An American Prophecy», in which scientists reveal the essence of the four-part generational cycle<sup>6</sup>. In the 20th century, researchers identified several generations in the United States, which are presented in Table 1.

Table 1

### Dynamics of development of archetype of generations in the USA<sup>7</sup>

Name of the generation	Generation archetype	Years of birth	Significant events that contributed to the transformation
1	2	3	4
The Great Generation	Heroes	1901–1924	Recession: The First World War. Dry law in the USA
The Silent Generation	Artists	1925–1942	The Great Depression. Second World War

3 Recruitment in the digital age. URL : <https://www2.deloitte.com/content/dam/Deloitte/ru/Documents/human-capital/russian/podbor-personala-v-cifrovuyu-ehpohu.pdf>

4 Howe N., Strauss W. (1991). Generations: The History of America’s Future, 1584 to 2069. New York: William Morrow & Company.

5 Howe N., Strauss W. (1993). 13th Gen: Abort, Retry, Ignore, Fail? Vintage Books.

6 Howe N., Strauss W. (1997). The Fourth Turning: What the Cycles of History Tell Us About America’s Next Rendezvous with Destiny. – New York: Broadway Books.

7 Howe N.; Strauss W. (2000). Millennials Rising: The Next Great Generation. Knopf Doubleday Publishing Group.

*Continuation of table 1*

1	2	3	4
Baby Boomers	Prophets	1943–1960	Pax Americana (American Peace) – a period of economic and socio-political stability
Generation X	ravelers	1961–1981	Awakening The revolution of consciousness
Generation Y	Heroes	1982–2004	Recession: The Culture Wars. Postmodernism
Generation Z	Artists	2005 – по сьогодні	World economic crisis (since 2008). Climate change. Fight against terrorism. People are aware of themselves as members of a single large group – Earthlings.

The authors<sup>8</sup> concluded that society develops in cycles, within which the social archetypes of generations change, which force the world to change. Of course, there is a close connection between the types of generations and historical events. Historical events (economy, politics, historical events, family) shape the values of the younger generation (up to 12-15 years old), and the mature generation shapes history. Values work as filters of perception of the world.

The speed of generational change is influenced by the development of artificial intelligence and the average life expectancy of people. As for cultures, the change of generations in different countries occurs with a difference of a couple of years, and it is not only the development of information technologies that affects it. If a purposeful genocide is taking place in the country – the young generation is being destroyed (Ukraine, 2022, war with Russia), then the change of generations may be delayed. In the same way, we can talk about epidemics that can fall under both the older and the younger generation. As for basic values, they are universal among generations of all countries (cultures) of the world. Representatives of borderline generations have the values of two generations and often achieve great success in life.

Consider the characteristics of generations. Starting with generation Y, the Ukrainian generation is formed, for the most part, under the influence of general world events, rather than national factors. However, an important aspect of the theory of generations remains the study of the process of formation of value characteristics of national generations that were formed before the beginning of the globalization process, since this process must be considered based on specific historical features and the local socio-economic and political situation.

<sup>8</sup> Howe N., Strauss W. (1993). *13th Gen: Abort, Retry, Ignore, Fail?* Vintage Books; Howe N., Strauss W. (1997). *The Fourth Turning: What the Cycles of History Tell Us About America's Next Rendezvous with Destiny*. New York: Broadway Books.

That is why, based on the use of the emic approach (culturally specific), the theory of generations was adapted by domestic researchers such as T. Lepeiko, S. Glivenko, A. Yermolenko and others. As a result of the adaptation of this theory for modern Ukrainian generations, it was determined that the time limits of the birth of Ukrainian generations differ significantly from the corresponding generations of representatives of the US society, which were studied by N. Howe and V. Strauss<sup>9</sup>, by 3–5 years.

Table 2

**Main characteristics of generational culture  
of modern Ukrainian generations**

Name of the generation	Generation archetype	Significant events that contributed to the transformation	National generational values
1	2	3	4
The Silent Generation	1924-1945	Stalinist repressions (early 1930s 1953) Industrialization (late 1920s 1941) World War II (1939-1945) Post-war devastation (1945-1953) Holodomor 1946-1947 discovery of antibiotics in the USSR (1942) Death of Stalin (1953)	silence, devotion, respect for authority, patriotism, responsibility, discipline, law-abiding, tolerance, hard work, thrift, modesty, honesty, family orientation, sacrifice, diligence were formed before 1953
Baby Boomers	1946-1965	Post-war boom (1945-1965) first flight into space (1961) Soviet «thaw» (mid-1950s mid-1960s) world superpower status for the USSR (Mao Zedong's «Three Worlds» theory 1960s) «Cold War» (1945-1991)	optimism, victory at all costs, rationalism, activity, inquisitiveness, cult of success, striving for leadership, interest in personal growth and reward, collectivism
X	1964-1983	Afghan War (1979-1989) Perestroika (1985-1991) Chernobyl (1986) Period of total deficit (1980-1990s) The End of the Cold War (1991) AIDS in the USSR (1989) The collapse of the USSR and the declaration of independence of Ukraine, 1991	global consciousness, pragmatism, independence, adaptability, flexibility, ignoring authorities, individualism, freedom, choice, creative realization, purposefulness, family orientation, lack of patriotism

<sup>9</sup> Howe N.; Strauss W. (2000). *Millennials Rising: The Next Great Generation*. Knopf Doubleday Publishing Group.

*Continuation of table 2*

1	2	3	4
Y	1984-2000	Perestroika (political and economic restructuring of the Soviet Union), terrorism and wars, Chernobyl Disaster. Soviet Union collapse; Tumultuous '90s, independence declaration by Ukraine and start of privatization, global financial crisis. Development of mobile communications and Internet, IT, social networks, digital media	naivety, high self-esteem, freedom of choice, morality, optimism, positivity, civic duty, patriotism, responsibility, sociability, publicity, ability to obey, need for immediate reward, but tolerance for corruption. The digital and technological literacy of generation Y has a different (natural) nature, unlike previous generations.
Z	1995-1998 2010-2020	Orange Revolution and Revolution of Dignity, Annexation of Crimea, beginning of the military mobilization due to war in Eastern Ukraine. IT development, period of economic growth and stabilization, hryvnia freefall. Web 2.0 and mobile technology Development	Gifted, poorly oriented without GPS, interested in science, technology, art. Representatives of generation Z literally want to change the world, they are not characterized by infantile behavior. They think in the format «everyone is unique», with this knowledge they interact with each other. Generation Z is supposed to be economical and environmentally friendly. They see success in diversity and life satisfaction, they can work quickly with big data, in multitasking mode, come up with non-standard and creative solutions, but they are not ready to take responsibility.
Alpha	After 2010	Orange Revolution and Revolution of Dignity, Annexation of Crimea, beginning of the military mobilization due to war in Eastern Ukraine. IT development, period of economic growth and stabilization, hryvnia freefall. Web 2.0 and mobile technology Development the coronavirus epidemic (COVID 2019); war with Russia (2022 p.) ecological crisis	in the future, Alpha people will be more balanced, positive and less aggressive. They will spend most of their formative years completely immersed in technology, inclined to self-discipline, trying to adhere not to structures and organizations, but to lifestyles and thoughts. This is the transforming generation - their education will begin earlier and continue throughout their lives will not accept formal statuses, duties and rituals. They will be tolerant and flexible in their views, they are characterized by social responsibility, self-awareness, and resource conservation.



Today, representatives of all five generations, with different motivations, values, and ages, work under the supervision of managers. Due to different resource and value capabilities of employees, conflicts often arise in the team.

Generation Z workers are annoyed by the older generation's lack of gadget and social networking skills. Baby Boomers may resent Millennials wanting to be successful overnight, and eager to make a good impression for the sake of management respect or rewards. The «silent generation» requires attention to itself and recognition of past merits from colleagues and management. Representatives of the Bemi-boomers generation prefer a structured system, a clear hierarchy, conservatism, and recognition of their achievements in the working environment. Most of them are at the stage of retirement, so it is worth integrating them into the mentoring system. Personal workplace, social package, all kinds of incentives are important for them.

In their professional activities, generation X adheres to the motto «our whole life is a struggle». They do not have much humanism and use authoritarian management methods. But at the same time, they devote a lot of time to establishing interpersonal business communication, recognize the value of corporate culture and a unified team.

New young employees who have joined the age group very often get into a conflict situation, because they are more capable and motivated by career growth, confidence in the future, self-realization, as well as the opportunity to learn. They like complex non-standard projects, ambitious tasks, they really appreciate additional conditions (insurance, car, credit, etc.) and the possibility of earning more than their salary.

Generation Y will change office work in the near future: they prefer a flexible approach and remote work. They want efficient offices, quick promotions and are not ready for standard rules, they know technology well, have entrepreneurial skills and are ready to cooperate, but they often need a mentor to reveal their talent, they understand tasks with clear instructions and deadlines, however, they do not see a long-term perspective. New tasks and projects, non-standard setting of tasks is the main tool for managing their effectiveness.

When interacting with employees – representatives of different generations, it is necessary:

1. Correctly reinforce the values of employees, based on awareness of their needs and characteristics;

2. To explain to the employees the value of each of them for the company and the corresponding quality criteria;

3. Prove and cultivate in employee's corporate values, partnership style of communication in the team

4. Use an individual approach in working with employees. For each employee of different generations, you need to choose your words, talking about the same thing. The leader needs to consider how the same words can be perceived by different communities. Yes, the older generation can usually filter out information and perceive only the most important. And the younger generation is used to working with large flows of information and prefers to form a picture of their world, which is always isolating and structuring information.

5. It is appropriate to use the institute of mentoring. At the same time, there is a mutual enrichment of experience and skills between the older and younger generations.

With the development of artificial intelligence, a situation arises when digital transformations become massive, and the system of professional education and the system of the labor market are not rebuilt. Against this background, one can simultaneously observe a shortage of personnel of certain professions/qualifications and the problem of unemployment. This requires employees to urgently acquire digital competencies and their continuous development throughout their professional life.

The necessary digital competencies that apply to all employees include the following: analytical data and work with big data, flexible thinking, creativity, multitasking, transdisciplinary. For managers, this is systematized knowledge of the basics of the digital economy, hybrid transdisciplinary management competencies, organizing teamwork and obtaining a synergistic effect through the use of diversity and collective work opportunities, profitability orientation with cyber security in mind.

Implementation of the achievements of scientific and technical progress into practice leads to the fact that the activities of employees become less specialized and more diverse. The possibility of using artificial intelligence allows you to form groups and teams of employees who are in different cities and countries. This requires the transformation of existing approaches to organization and remuneration, when it is necessary to take into account not only the level of qualifications of employees, but also their ability to work collectively, orientation to results and other behavioral

competencies. At the same time, it should be noted that there is no unequivocal definition of digital competencies and what competencies need to be developed for successful work in the digital economy.

In addition to training, fast and high-quality recruitment is important for providing personnel for the digitalization of the economy. At the same time, the mutual influence between recruitment and digitalization should be noted.

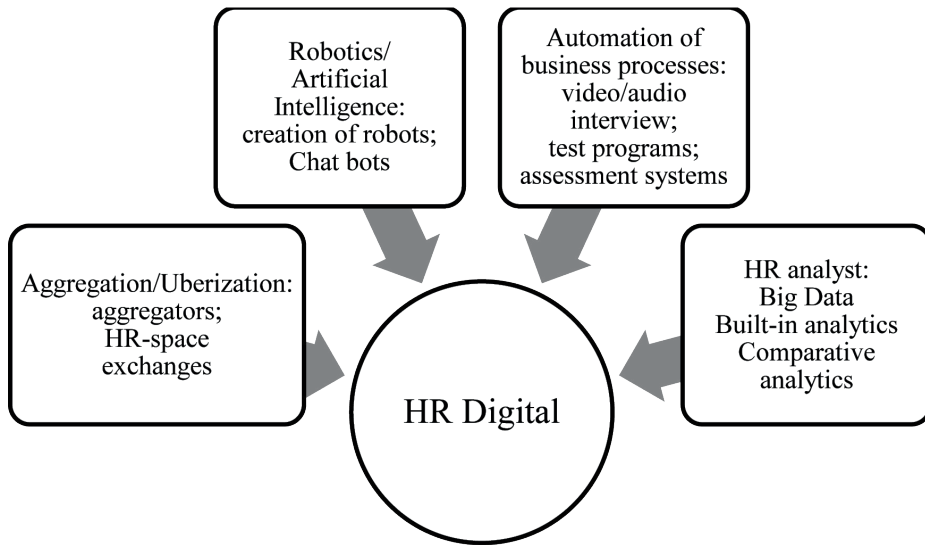
Recruiting technologies actively use the latest advances in information technology: cloud technologies, big data analytics, machine learning, digital assistants, artificial intelligence, block chain, chat bots. Deloitte research notes that «work efficiency and attractive positioning in the labor market require employers to use modern methods in working with future employees – this is the active use of social networks, referral recruiting (selection based on recommendations), the introduction of digital technology, the use of methods of predictive analytics and robotic of business processes»<sup>10</sup>. In this study, the authors identify the main directions for the transition of recruiting to the digital sphere (Figure 2).

As mentioned above, recruiter robots are increasingly being used in the recruitment process by companies, making it possible to increase the efficiency of recruiting procedures and free recruiters from routine operations. They can, in a short period of time, make a selection of resumes from job sites according to the requirements of the vacancy, call candidates using the latest technology, ask questions, analyze the answers received on-line, and even answer applicants' questions. Thus, the robot is able to cope with the work that until recently was done by employees who perform technical work on searching and entering resumes into the database, and making initial phone calls to candidates.

Modern recruitment services are able to find information about candidates in social networks (using information that is publicly available), organize and save correspondence with the candidate, comments, synchronize appointments in calendars, and provide recruitment analytics.

Currently, the direction in recruitment is in demand – aggregation, which makes it possible to combine into a single database of applicants who have posted their profiles on job search sites, and those who have their profiles in social and professional networks. Our service is Ukraine, Indeed.com. HRspace/exchanges, services for interaction between employers and recruiters, similar to the Uber

<sup>10</sup> Recruitment in the digital age. URL: <https://www2.deloitte.com/content/dam/Deloitte/ru/Documents/human-capital/russian/podbor-personala-v-cifrovuyu-ehpohu.pdf>



*Fig. 1. Digital recruiting*

model, when employers post vacancies and recruiters send their offers, will be very in demand in order to provide personnel for the digital economy. These services include HRspace (Headhunter service), Jungle Jobs, Stafory, etc.

Another feature of recruitment in the context of digitalization is the search for personnel through social networks, which, on the one hand, is associated with an increase in the number of users of social networks, on the other hand, they are the most important resource of up-to-date information about candidates. Consequently, the formation of social media user skills is becoming a requirement of the digital economy.

Another source of providing the necessary personnel for the digital economy is the actively developing remote or remote employment, which allows you to actively attract and use labor regardless of location.

The development of information technology has led to the widespread use of not only traditional communication channels, but also the mobile Internet. As a result, the number of people working remotely is steadily growing. Remote work requires a «virtual workplace» from which network access to the necessary information is provided from any place from any device, including a mobile phone. Such a workplace is actually virtual machines located on a remote server.

Remote work is very attractive both for employers (resource savings, the ability to attract experts, the introduction of a flexible approach to organizing

work) and for employees (the ability to more freely manage time, the ability to find work in another area, comfortable working conditions, combining work, opportunities for population version).

An important direction of distance employment is virtual employment in the Internet environment. A feature of virtual organizations is a flexible, adaptive, dynamic network structure, which is created by information integration of partners' resources. It can be dynamically rebuilt depending on external conditions and take the form that at the moment is most consistent with the goals of the organization. Social and labor relations between employees and the organization are not subject to strict regulation, unlike traditional companies, administrative methods of influencing personnel are minimized.

Distance employment in the world is developing in several directions; freelance, office work, agency work, virtual employment, flexible forms of employment, crowdsourcing.

The implementation of several projects by virtual organizations at once and the opportunity to participate in several at once attracts employees. It should be noted that the employees of a virtual organization work on their own equipment, using mobile communications, gadgets and other electronic equipment of their choice in their work activities, the information computer technologies used are common to them. This leads to a decrease in the alienation of workers from the means of production, which is also due to the possibility of obtaining information technologies independently from the Internet, as well as developing and applying their own. At the same time, the number of employees in virtual organizations is growing, including on the basis of secondary employment. The functionality of traditional professions begins to change when their carriers move into the virtual space.

Another area of remote employment, which will also provide the digital economy with the necessary personnel, including through training, is crowd recruiting. Crowdrecruiting is a technology for searching, selecting and evaluating new personnel using a specially developed project, and is carried out by means of the Internet on a specialized platform. The introduction of crowd-recruiting can be presented in the following stages:

- creating a database for the project;
- attracting and informing potential candidates about the project;
- project launch;

- development of own ideas and participation in surveys;
- team work.

Interaction with employers. An important point is that the goal of a crowd-recruiting project is not to make a profit from solving a specific problem, but to find employees.

Therefore, it can be said that this direction is developing quite actively, it can be said that the digital economy is characterized by the expansion of atypical forms of employment, the use of a project approach, the transformation of social and labor relations in the process of implementing social and commercial projects, when the work of the self-employed is widely used and crowdsource volunteers.

However, as the analysis of practice shows, there are still many problems and «bottlenecks» that prevent the effective use of crowdsourcing. Among them, it should be noted the shortcomings of the regulatory and legal framework regulating social and labor relations when conducting crowdsourcing activities. The implementation of crowdsourcing requires significant costs from the employer, which is why its prevalence is so low for small and medium-sized businesses. The insufficient development of this technology reduces the activity of its use in the country.

The spread of information and communication technologies has made it possible to use such a resource for ensuring the digital economy as self-employment. Thanks to digitalization and the emergence of digital platforms, it has become possible for the self-employed to legalize their activities. A new category of self-employed has emerged and become widespread – electronic freelancers (e-lancers). This is due to the increase in the volume of work on the production and processing of information, as well as the further development of information and communication technologies, the state policy in this direction. At the same time, one cannot fail to note the negative practice in the development of self-employment. Thus, the practice of registering workers as self-employed emerged.

Firms are guided by an obvious goal – saving on taxes and insurance premiums. At the same time, the registration of the employee takes place not under an employment contract, but as self-employed through private recruitment agencies. It is on the latter that the risks of being held accountable by the state as a regulator of relations in the field of taxes and fees fall. Employees also suffer certain losses: they are deprived of the right to leave and social guarantees, because. enter into civil law contracts with recruitment agencies.

The digitalization of the economy is an objective process and is typical for most world economies. However, Ukraine still lags far behind developed countries in terms of the main indicators of digitalization and the information and communication technologies used, as well as the level of development of digital competencies among employees. In addition, there is a death of some professions and specialties, the emergence of other completely new ones, as well as a change in the content of the work of existing ones, which causes serious problems in providing the digital economy with the required personnel.

In this regard, training is being organized in the country to eliminate the digital divide and form the necessary digital competencies.

At a time of slowing economic growth and continued instability, many countries are looking for policies that will stimulate growth and create new jobs. Information and communication technology is not only one of the fastest growing industries, directly creating millions of jobs, but it is also an important driver of innovation and development, introducing new ways to serve customers and new tools for finding and selecting workers<sup>11</sup>.

In the context of the digitalization of the economy and constant competition in the market for goods and services, organizations are trying to find a competitive advantage, which is the staff. At the moment, traditional recruitment tools are undergoing change and becoming modern, but there are those that have been and are still being used by employers around the world. However, these recruitment and selection methods are simply not enough to find highly qualified personnel in a technological age.

Consider some modern tools used by recruiters: HR Space, social networks. Job sites have become a classic tool for any recruiter, they allow you to find candidates who are currently looking for a job and are interested in qualifying for vacancies. Headhunter the most used platform. The new digital era has created a need for automation and robotic of HR processes. Companies are just getting started with artificial intelligence and machine learning, automation and HR software, while the world's leading companies have been implementing these new technologies for several years. It is necessary to systematize knowledge about existing and developed automated and robotic software, to identify growth areas of the Ukrainian market of HR technologies for comparing foreign and domestic practices. It is also

<sup>11</sup> Kvochko E. Five ways technology can help the economy. World Economic Forum Agenda; available at. URL: <https://www.weforum.org/agenda/2013/04/five-ways-technology-canhelp-the-economy>.



necessary to predict RPA and implement automated applications in the activities of the HR departments of the enterprise.

The scope of artificial intelligence is practically unlimited. Now it is difficult to imagine such an area of activity, which would not have been touched by a smart device.

Today, artificial intelligence and machine learning methods are actively penetrating the business sphere: from simplifying the functions of staff and customer comfort to the «somatization» of business systems.

Nowadays, artificial intelligence is used solely as an assistant and complement to the human mind. Artificial intelligence is capable of solving only highly specialized tasks. It is actively developing in the areas of language processing, pattern recognition and communication. Unlike humans, robots do not rely on intuition, but act solely on the comparison of data with samples, they can analyze thousands of kilobytes

Digital transformation is not about how to deliver technology, it's about how to implement technology so that it shows efficiency, helps mine employees do their job faster and better. This is primarily a cultural change, not a technological one. The biggest challenge for HR is to determine what makes an effective employee in a team. Traditionally, when hiring, HR specialists are guided by the employee's work experience, asking for feedback about him.

But in fact, an effective employee is determined by a very large amount of data: the personality of a person, how much his values correspond to the values of the company, how he communicates with colleagues and other teams and departments, how convenient it is for him to get to the office, and a huge number of factors.

Artificial intelligence is good because it allows you to determine the relationships that create an effective employee. This is the great potential of artificial intelligence. Also, this technology can be applied in automation to reduce the amount of routine tasks.

For the HR department, the most important task of introducing artificial intelligence is understanding how to build an effective team and HR specialists will already be able to implement this task.

Reasons to automate HR processes:

- lack of experienced specialists in the labor market;
- the need to develop new competencies among employees;



- large companies tend to standardize HR processes in all branches in order to minimize the costs of broadcasting the chosen technology of personnel management;
- a large amount of unstructured data, which makes it impossible to minimize manual labor;
- errors in forecasting the financial capabilities of an HR strategy;
- the work of the HR department that is not clear to a wide range of employees;
- long-term obtaining information on the data stored in the system, as well as analyzing these data or providing reports;
- employees do not receive prompt feedback from HR specialists about their rights, responsibilities, tasks and career development plans, as well as changes in the internal structure.

Artificial intelligence is a useful tool that will change HR processes such as goal setting for employees so that the company achieves the highest results, management and organization of work, search and selection of personnel, individual motivation. Artificial intelligence is good because it allows you to determine the relationships that create an effective employee. This is the great potential of artificial intelligence. Also, this technology can be applied in automation to reduce the amount of routine tasks.

Now in the market of «smart» HR technologies there are many automated applications: HRM, TMS, LMS and others.

Consider, for example, TMS. The Talent Management System (TMS) is a set of integrated software applications that provides automated tools for solving problems in such areas as search and selection of talents, personnel performance management, training and career development, and compensation generation. The main difference between TMS and HRM (Human Resources Management), an application for managing HR processes, is a focus on the long-term development of the organization by optimizing and building human capital, and from LMS (Learning Management System), an application for automating the process of personnel training, so that TMS stores all data on training and development of employees, internal courses for advanced training and building competencies, and also makes it possible to upload reports. The most common talent management software on the market are: SAP Success Factors, Oracle Taleo Cloud Service, Lumesse, Dynamics 365 for Talent.

An automated system for talent management is undoubtedly a bargaining chip when it comes to successful search, selection and hiring. This system allows you

to automate both external and internal recruitment. TMS reduces the time spent by recruiters on receiving an application to close a vacancy from a hiring manager, searching for an effective recruitment channel, selecting candidates, tracking candidates during the processing period, interviewing, filling out paper reports.

One of the channels for attracting candidates is the referral program, which also operates on the basis of SF. The referral program provides an opportunity for employees to recommend their professional acquaintances to open vacancies of the Bank and receive remuneration for a successful recommendation. Each employee of the Bank who has access to SF can go to his personal account and attach a resume of his candidate to a vacancy or to the database.

In addition to the search and selection function, TMS allows you to manage the adaptation of newcomers, employee training, conduct an online assessment of competencies, and create an individual development and career development plan for each employee.

In his personal account, a bank employee can see the structure of both his department and the organization as a whole. The system indicates transparent career growth for each employee. SF notifies employees in real time about the courses that they have to take in the current quarter, and also conducts assessments on competencies. Success Factors stores all information about employees, on the basis of which a personnel reserve and succession plans are created.

In an ever-evolving marketplace, these applications help employers stay competitive, from recruitment generation to employee retention. In addition, SF integrates vacancies into job sites, after the recruiter writes a job description, it is automatically uploaded to active job sites. Candidates also have access to Success Factors through the career portal website.

We can say that the Ukrainian market of HR technologies is rather poorly developed, only large companies can afford to implement automated software. These systems not only allow to attract and develop talents in the organization, but also to build a long-term plan for the development of human resources. Undoubtedly, automated systems are one of the best assistants to a bank's HR specialist, as they allow minimizing routine work, creating the necessary database that is convenient to use online, and reducing the costs of unnecessary operations.

Robotics and the introduction of machine learning and artificial intelligence methods, for example, Joint Stock Partnership Commercial Bank «PrivatBank» started later than the automation of HR processes. But there are already devel-

oped products that have already shown their effectiveness. This is an active use of Chabot's to solve various kinds of HR requests. Most Chabot's are integrated into common applications for all Bank employees, such as Success Factors, SAPHR or their mobile versions. A Chabot can help answer questions about calculating bonuses, sick leave, pay slips, recommendations of your candidate, and many other questions for all categories of employees.

Thus, the Chabot is actively used in the My Candidate referral recruiting program. It helps the referral program administrator not to answer repeated questions from referees (for example, how much will I get for a recommendation, when will my referral bonus be paid, what stage of processing is my referral at, how can I recommend a candidate, where can I read the rules of the program). It is enough to enter answers to frequently asked questions of recommenders once, as a self-learning bot began to respond in real time to more than 200 requests per day. This helped to significantly optimize the work of the referral program administrator, reduce the number of assistants answering these requests, and also increased loyalty to the program by more than 40%.

One of the systems that help optimize the search and selection process for mass vacancies, an intelligent management system, was introduced in 2017. This algorithm works in the following way: it collects applications for vacancies from internal recruiters of the Bank and goes to job sites to collect all suitable resumes, takes them from job sites to the internal resource of SF Bank through a special window, providing recruiters with a list of candidates most suitable for their requirements.

Also, Privatbank has implemented a system such as Skillaz, a database in which personnel are searched and recruited for the Bank's massive vacancies, such as a call center operator, branch consultant, sales manager, etc. In this system, candidates go through a video interview with a bot, recording on camera their answers to questions asked about work experience, education, skills, and desires. This system analyzes video interviews and offers the recruiter a specific funnel of candidates for further hiring decisions.

The bank's HR department is currently developing a new automated and robotic product called MARHR (HR Marketing). This system is being developed as part of the redesign (improvements in certain project steps) of channels for attracting candidates. MARHR is designed to help the recruiter choose a channel to attract a candidate. So, the recruiter received an application from the hiring manager to

close the vacancy, in this case, the recruiter needs to form the correct description of the vacancy and place it on the resource that is optimally suitable for attracting this particular candidate. Thus, Privatbank recruiters have a choice between such channels for attracting candidates as job sites, social networks, and lead generation. MARHR will help reduce the recruiter's time to find the best acquisition channel, as well as reduce the likelihood of errors and unnecessary costs (for example, to conduct a targeted promotion campaign for a specific vacancy). This system is designed in such a way that the recruiter enters Success Factors, from where he goes to the MARHR platform, then he drives in the vacancy that he needs to close and indicates two parameters – the urgency of closing and the budget for closing this vacancy, then the system based on retro data provides a ready-made solution for a recruiter with advanced analytics.

It can be emphasized that these are not all robotic programs of Privatbank in the field of HR. Currently, the development of our own methods of machine learning and artificial intelligence is being actively carried out. The market is analyzed daily for possible successful integration of such systems into the activities of the bank's HR department.

One of the main automated resources of Privatbank is the SAP Success Factors system, which helps to optimize the work of not only HR specialists, but also all Bank employees, as well as candidates.

Now the Bank has already optimized such HR processes as search and selection of candidates, adaptation and training of employees, HR analytics, calculation of personnel motivation and stimulation, management of personnel efficiency, involvement, career and personal development of employees and many other HR functions.

From the analysis of the current automated applications in the HR department of the bank, it can be concluded that the introduction of a system for optimizing the schedule of employees will bring profit by reducing unnecessary costs. Using the example of the proposed WFM case from MTS, it is possible to analyze the need for a time slot for each bank branch, determining the need for the number of consultants, sales managers and other mass positions of branches. The planned result is a reduction in the time for customers to queue, an increase in the satisfaction of the department's work, a decrease in the load per employee with an increase in revenue, and optimization of labor costs. And for a more efficient selection of creative specialists, you can use interactive games with tasks for candidates,

avoiding ordinary interviews. The continuous development of employees is a priority for HR, so the bank's HR service can be offered to build a training system through interactive videos with the participation of real employees of the Bank, 3-D modeling of situations and VR technologies.

Thus, it can be noted that the introduction of smart technologies in the Ukrainian market is carried out mainly by large companies with more than 15,000 employees. At the same time, foreign practice shows that the introduction of artificial intelligence and automated software is functioning in companies with less than 100 employees. The conditions of the digital economy are transforming all aspects of staffing. The latest recruiting is out of our sight, but its trends can be observed today:

- Evolution of costly recruiting into profitable recruiting;
- Collapse (and possibly bankruptcy) of recruitment agencies and labor exchanges;
- Abolition or reorganization of job search sites;
- Recruiting with the use of external partners and crowdsourcing;
- Development of paid mobile applications and exclusive communities;
- Attractiveness of hiring provided by recruiting gamification;
- The opinion of the crowd determines the rating of the company.

Summarizing existing recruitment options.

The updated recruiting represents a huge evolutionary leap that pushes recruiters and HR out of their comfort zone. Updated recruiting calls for a focus on the «best of the best». In addition, the thesis is at the forefront: «everyone is a potential candidate, and the main goal is to involve people». Updated recruiting pushes for building transparent relationships and two-way communication between employer and candidate. Key points of the strategy: a working brand of the employer, marketing and PR.

Updated recruiting focuses on building communities. In an era of cutting-edge recruiting, it will be possible to fully appreciate the significance and value of these communities. Recruiting as such is a costly column. Combined with ad campaign costs, this churn can be devastating. Many of the leading companies are very dependent on the work of recruitment agencies and work sites. Ridding companies of this dependence requires certain advantages and resources, and sources of passive candidates are just fine for this. Moreover, it is large corporations that can get the most out of these sources, although small and medium-sized companies are much faster to master all kinds of innovations.

The newest recruiting will move from cost to profit. It won't be tomorrow, but in a few years, but it won't be as long as some might think.

In the world in which you and I happen to live, value is determined in different ways. Companies like LinkedIn, Facebook, Zynga have a rating that far exceeds their real value. This ranking is determined by their current achievements as well as their potential achievements in the near term. We live in the information age: the power is in the web. The network is data. Data is power. And data is money. We all crave information, especially recruiters and marketers. So how does an online community (roughly speaking, data = importance = value = monetization) become a real profit?

There are a number of factors that make recruiting profitable:

1. Reducing the cost of recruiting to a minimum (reducing the number of people employed in hiring internal specialists, almost zero use of the services of recruitment agencies and job sites);
2. Creation and development of a truly high-quality corporate Internet community, a strong working brand, and attractive social networks. Connecting competitors and introducing a predictable pipeline of great professionals for key recruitment channels;
3. Turning the community into an autonomous structure where staff can be recruited through crowdsourcing. HR is getting busier in creating recruitment channels. Everyone can use the social network. So why not involve personnel officers in this too?
4. The cost of the community is determined by internal and external advertisers – this provides additional income for recruiting;
5. People are willing to pay for a feeling of increased importance in connection with belonging to a community or part of this community (VIP);
6. Game forms (creation and participation) increase the sense of belonging and attractiveness of the site, opening up great opportunities for monetization;
7. Casual games, cartoons and other content is what makes people come to the community again and again.

Let's take a closer look at some of the factors.

1. Traditional advertising is no longer effective. On the Internet, people not only digest news on their own, but also participate in their «live» discussion. At the same time, recruiting networks are expanding. By combining our own databases with information available in social networks and media, email addresses associated with specific companies or products, we get a real understanding of the growing market value of information.

2. Knowledge available to recruiting, but not available to the marketing department. Most marketing departments underestimate the importance of databases as they are not only a treasure trove of information, but also a real goldmine for additional profit. Therefore, it is worth allowing external advertisers to advertise in the community (remembering the protection of data from third-party encroachment). The name becomes a guarantee of protection of rights, and advertising that generates income allows not only to recoup the community, but also to use free funds for effective recruitment.

3. The death of recruitment agencies. At the same time, large companies' spending on recruiting will decrease. Dependence on recruitment agencies and their employees will dramatically decrease as soon as companies create their own databases of talent, using both their own employees, social networks and online communities. Actually, there will also be fewer corporate recruiters: personnel officers will become much more skillful in searching using the latest technologies. This will also help cut costs.

4. The future of recruitment agencies directly depends on their ability to adapt to new realities, when companies are fully aware of the need to look outside the sample for active candidates (10%) among passive candidates (90%). Traditionally, employees of recruitment agencies compete among themselves for the right to be the first to submit resumes of people from 10% of active candidates. If adaptation goes by attracting and entering 90% of passive candidates into databases, as well as creating our own communities, final death will only be a matter of time.

Worse, the traditional business model of finding and selecting a company by the standards of our progressive time is completely illogical. The client pays for almost everything, and pays in advance. The irony is that their search marketing is based on their impeccable reputation as the last resort, which knows all the «golden names» in the requested fields. Their information base is a goldmine that seduces. But, if their databases are so good, and the search we need is their usual business, then why does it take 4-5 weeks each time? Perhaps few people have thought about this issue. Some might point out that recruitment agencies are second to none in evaluating candidates and conducting interviews. But isn't that what we do in our own company walls? So why pay more? This is all the more ridiculous if the list of contacts consists of alumni and is passed down within the agency almost from generation to generation. Widely developed social net-



works, in which qualified personnel in the profile indicate full information about themselves, including contact details, allows companies to limit themselves to the work of their own recruiters, and not pay employees of a recruitment agency for a detailed search procedure. Today's recruitment agencies do not work for the future, but for a momentary financial result;

5. Abolition of work-sites. Coupled with the decline of recruitment agencies, work-boards and job banks are waiting for the abolition or imminent restructuring. Companies are already building their own hiring databases today. But much more important is the fact that in their communities they can actively use creative approaches to the sources of talent. It makes no sense to pay a work site to select active candidates if a self-growing community can attract passive candidates. Therefore, in the conditions of the latest recruiting, on the contrary, work-sites will earn money by placing ads of independent communities of companies, realizing their potential;

6. The internal direction will change the external one: using communities and crowdsourcing. In communities, special statuses and rewards will be introduced for attracting talents, as well as their monetization through cash bonuses, trips, laptops and iPads;

7. Work of external partners through crowdsourcing. Already today, recruiting is actively learning from crowdsourcing. Simply put, crowdsourcing is the delegation of certain functions to an indefinite circle of persons on the basis of an open competition that does not imply the conclusion of an employment contract, or by an individual. What is important is an open format and a large network of potential employees. The winner is rewarded in one way or another, but the ultimate goal of the company is to get a working idea for its own benefit. For example, Facebook has been using crowdsourcing since 2008 to create different language versions of its site. The company claims this is the most effective method for adapting the site to «local» cultures. General Electric uses crowdsourcing in the competition to find new, revolutionary ideas to create cleaner, more efficient and cost-effective technologies, and to accelerate the adoption of smart technologies. IBM crowdsourced over 37,000 ideas for potential innovation in 2006 by brainstorming the company's customers, employees and their families. L'Oreal uses crowdsourcing to track the effectiveness of advertising messages and to identify new and fresh advertising ideas;

8. Premium paid content. Speaking of the updated recruiting, I had to admit the fact that recruiting is a rather boring business. Job seekers visit the corporate



page of the company one time, presenting a list of vacancies – most likely there will not be a second visit. Many companies use social media as a replacement for job sites, posting a hyperlinked list of jobs there. But this is not the most interesting content either.

Recruiting has been redesigned to offer a network of interesting communities whose key feature is engaging content that keeps people coming here on a regular basis. And this is by no means a list of free positions offered by the company.

It creates and promotes its own working brand, attractive and even seductive for those who are not familiar with it. The task of a working brand is to attract new employees or potential brand promoters within the created community.

In the era of updated recruiting, the number of interesting communities is growing, and the mass of attractive content is increasing. The next step is the era of the latest recruiting, providing VIP access and exclusive content for community members. People who are truly involved in the community, interested in it, will be willing to pay to be part of the privileged zone. This is a community monetization opportunity and a potential income channel for recruiters. Merging all social media channels, for example, a standalone blog, is the first step. All this can and should be collected on a corporate website. All in one window for regular visitors. Premium content on social media sites should be positioned as exclusive access behind the scenes of your company and communication with its representatives.

DOI: 10.51587/9781-7364-13395-2022-008-82-103

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## РИЗИКИ БАНКІВСЬКОГО КРЕДИТУВАННЯ ПРОМИСЛОВИХ ПІДПРИЄМСТВ ТА МАКРОЕКОНОМІЧНІ ДЕТЕРМІНАНТИ ЇХ ВИНИКНЕННЯ

У науковій літературі поняття «ризик» зустрічається часто. Важливого змістовного значення це поняття набуло в теорії фінансів, та не втрачає актуальності по сьогоднішній день. Поняття «ризик» тісно пов'язане із такими поняттями як «невизначеність», «виклик», «загроза», «безпека», «небезпека». Наукові дискусії щодо змістовного співвідношення цих понять тривають. Така полеміка серед науковців зумовлена потребою у визначенні крайнього ступеня порушення стану безпеки, в тому числі джерела порушення стану захищеності інтересів.

Зокрема, одна група вчених вибудовує логічний ланцюг таким чином, що саме «загроза» розцінюється як стартове явище порушення безпеки. Інша група науковців вважає саме «небезпеку» джерелом порушення безпеки. Водночас, в одному науковці погоджуються: загальним у змісті загрози та небезпеки є їх можливість порушення безпеки.

Так, на думку Л. В. Калашнікової<sup>1</sup> «невизначеність» слід розглядати як стан неоднозначності тенденцій зміни об'єкта з плином часу. При цьому, невизначеність є джерелом ризику, який визначає ймовірність завдати шкоди об'єкту безпеки. «Виклик», з точки зору науковиці, означає мінімальний ризик, та відрізняється уявною готовністю заподіяти шкоду. Поняття «небезпека» Л. В. Калашнікова трактує як сукупність факторів, що негативно впливають на природу, людину, суспільство, технічні системи тощо. При цьому, «небезпека» характеризується гіпотетичніс-

<sup>1</sup> Калашнікова Л. В. Співвідношення понять «невизначеність», «ризик», «виклик», «загроза», «безпека», «небезпека» у контексті соціології безпеки життєдіяльності. Науково-теоретичний альманах «Грані». 2017. Т. 20. 5(145). 16-23. DOI: <https://doi.org/10.15421/171769>