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ANALYSIS OF THE PERSONNEL COMPOSITION OF THE IT INDUSTRY OF THE VINNYTSIA REGION

Romanyuk O.N.

Doctor of Technical Sciences, Professor.
Vinnytsia National Technical University

Zemlyakov O.O.

LLC "Forest Service"

Abstract. The article provides a comprehensive analysis of the personnel composition of the IT industry of Vinnytsia region, characterizes its age, gender, and professional structure, as well as educational sources of specialist training. The role of local universities, private initiatives, dual education programs, and certifications in the formation of competitive human capital is considered. The problems and challenges of development are analyzed, in particular, personnel migration, the lack of senior specialists, and the limited business education. As a result, recommendations are proposed to improve the effectiveness of personnel policy in the region.

Keywords: IT industry, Vinnytsia region, human resource potential, IT education, digitalization, dual education, certification, labor market.

Introduction . In today's conditions of rapid development of digital technologies and digitalization of all spheres of public life, the IT industry occupies a leading place in the formation of the innovative potential of the state. Information technologies not only ensure the growth of productivity in other industries, but also act as a driver of economic development, national security and competitiveness of the country in the global market. Therefore, the human resource potential of the IT sector [1-7] acquires special importance, because it is precisely qualitatively trained specialists who determine the ability of regions to adapt to changes and form high-tech products.

Research results. Vinnytsia region is one of the dynamic regions of Ukraine, which demonstrates the sustainable development of the IT industry [3]. Despite the lack of the status of a large metropolis, the region is actively integrating into the digital economy, increasing the number of IT companies, improving the level of educational training of specialists and forming a competitive environment for the implementation of innovative projects. In such conditions, there is a growing need for a systematic analysis of the IT industry workforce, researching its structure, development dynamics, challenges and prospects.

The relevance of the chosen topic is due to the need to form an effective personnel policy in the field of information technologies at the regional level, develop tools to

support young specialists, integrate education and business, and adapt educational programs to the needs of the labor market. In this context, studying the experience of Vinnytsia region is an important step towards forming a balanced model of personnel development in the IT sector in Ukraine.

The purpose of the study is to determine the main characteristics of the human resource potential of the IT industry of Vinnytsia region, assess the factors influencing its formation and development, and identify current problems and prospects for human resource management in the context of digital transformation.

The personnel composition of the IT industry of Vinnytsia region is characterized by gradual growth in both quantitative and qualitative aspects. Vinnytsia region, despite its remoteness from metropolitan centers, is actively integrating into the digital economy of Ukraine and demonstrates positive dynamics in the formation of highly qualified IT personnel. In the city of Vinnytsia, there are more than 150 IT companies [2], covering such segments as web development, mobile applications, business automation, software development, information security, technical support and outsourcing of services. Leading companies of the region – Playtika, EPAM Systems, Delphi Software, Onseo, Spilna Sprava, Rarog Soft – are creating demand for highly qualified specialists.

The workforce is predominantly young: about 65% of employees in the industry are specialists under the age of 35. This age distribution is due to the high level of digital competence of the younger generation and the large number of internships and practices that IT companies conduct in cooperation with universities. There is a certain imbalance in the gender structure - men make up about 70–75% of all employees in the industry, although the number of women in IT in the region is steadily growing, especially in the areas of software testing, UI/UX design, analytics, and management.

Regarding the professional structure, the largest share of those employed in the regional IT industry is made up of programmers (40–45%), data analysts and testers (QA) — about 20%, DevOps engineers, system administrators and security specialists — another 15%. Project managers, business analysts, UI/UX designers and marketers occupy about 10–15% of the total workforce. This indicates a gradual complication of the structure of IT teams and an orientation towards the full cycle of product development, including analytics, design, implementation, support and promotion.

The industry has a high level of English proficiency, as most IT companies in the region operate in international markets: over 80% of IT products and services are exported. This factor also affects the competitiveness of personnel, determines the demand for English courses, as well as the use of English-language learning platforms: Coursera, Udemy, EdX, Pluralsight.

The IT market of Vinnytsia region is characterized by a low level of staff turnover (according to HR research estimates, at 8–10% per year), which indicates relative job stability, employee satisfaction with working conditions and competitive salaries. The level of wages in IT companies of the region ranges from 1,000–3,000 USD per month,

depending on qualifications, experience and position, which corresponds to the all-Ukrainian trends.

Vinnytsia Regional Council and local administrations in partnership with the Association of IT Companies of Vinnytsia actively support the development of the industry's human resources. Dual education programs are in place, regular conferences are held (IT Weekend Vinnytsia, DEV Challenge), hackathons, meet-ups and startup incubators are held. For example, in 2024, together with the city council, the Digital Vinnytsia initiative was implemented [3], within the framework of which more than 200 young specialists underwent internships in local IT companies.

Among the challenges facing the regional IT industry in the context of human resource development, it is worth mentioning: competition with other regions for talent (especially with Kyiv and Lviv), migration of specialists abroad, insufficient number of seniors and experienced R&D specialists, as well as uneven development of related educational areas. At the same time, the development of new IT clusters, the creation of modern IT parks, and the attraction of foreign investors can significantly improve the situation in the future.

Thus, the human resource potential of the IT sector of Vinnytsia is competitive, dynamic and flexible, with good prerequisites for development. The high level of educational base, the activity of the business environment, support from local authorities and focus on export markets create conditions for further expansion of the industry and preservation of leadership positions among the regions of central Ukraine.

One of the important factors in the formation of the human resource potential of the IT industry [5] in Vinnytsia region is the integration of education, science and business. Universities in the region actively cooperate with IT companies within the framework of the concluded memoranda, joint educational projects and dual education programs. In particular, Vinnytsia National Technical University implements joint training programs with EPAM, Sigma Software, Delphi Software and others, within which guest lectures, workshops, courses in modern programming and development languages, such as Java, Python, JavaScript, as well as artificial intelligence, DevOps and Data Science, are held.

An important place in the training of IT specialists is also occupied by the Donetsk National University named after Vasyl Stus, which has a faculty of information and applied technologies and trains specialists in the educational programs "Computer Science" and "Cybersecurity". Among other state educational institutions, it is worth noting the Vinnytsia National Agrarian University, where the faculty of economics and information technologies provides training in the specialty "Computer Science". IT directions are also presented at the Mykhailo Kotsiubynskyi Vinnytsia State Pedagogical University, in particular at the faculty of mathematics, physics and technologies. Among educational structures with an IT direction, it is worth mentioning the Vinnytsia Institute of Trade and Economics (a branch of the Kyiv National University of Trade and Economics), which offers programs in information technologies in business and economics. In the field of technical communications and

telecommunications, the Vinnytsia branch of the Odessa National Academy of Communications operates, which also provides training for IT specialists. Additionally, it is worth mentioning the Vinnytsia branch of the European University, which has a specialty in "Information Systems and Technologies" and trains analysts, developers, and cybersecurity specialists.

Private educational initiatives that provide additional professional training in the IT sphere are actively developing in Vinnytsia. The most famous are Vinnytsia IT Academy, New IT School, Artinov School, and IT Step Computer Academy, which offer courses in web development, software testing, UI/UX design, DevOps, cybersecurity, etc. Thus, the ecosystem for training IT specialists in Vinnytsia encompasses both classical university education and practice-oriented private sector programs, which allows for the formation of competitive human resources for the regional IT cluster.

In addition to formal education, alternative ways to enter IT are extremely popular, including online courses, bootcamps, certification programs, and self-study. Among the most popular areas that beginners master: Frontend development (HTML/CSS, JavaScript, React), Backend (Node.js, Java, PHP), automated testing, working with databases (SQL, MongoDB), as well as the basics of cybersecurity and cloud technologies (AWS, Azure). Such multi-vector training allows you to flexibly respond to market needs and quickly fill the niche of mid-level specialists.

In recent years, the region has seen a positive trend in job creation in the IT sector. According to the analytical portal DOU.ua, as of 2024, Vinnytsia will have over 5,000 IT specialists [2], and in the last three years alone, the number of employees in this sector has increased by 28%. This growth is associated with both the expansion of existing companies and the opening of new branches, as well as the relocation of businesses from the war zone to the central regions of Ukraine. As a result, the need has increased not only for programmers, but also for specialists in organizing teamwork, management, layout, digital design, and customer support.

At the state level, there is also strategic support for the digitalization of regions, which contributes to the expansion of the IT sector. In particular, in 2023, the Digital Transformation Strategy of Vinnytsia Oblast was approved, which provides for the modernization of digital infrastructure, the creation of conditions for the development of IT education and the attraction of investments in the field of technology. Within the framework of this initiative, such events as the Digital Education Forum, IT Career Days, Smart Region Hackathon are held, which unite students, employers and local authorities around the idea of building a modern digital ecosystem of the region.

It is worth noting the growing role of women in the field of information technology in Vinnytsia region. There are specialized educational initiatives such as Women in Tech Vinnytsia, which popularize IT among women, conduct courses in testing, graphic design, project management. In 2024, within the framework of the STEM Girls in Ukraine initiative, the first circles for girls interested in technology were

opened in Vinnytsia schools, which has the prospect of a long-term increase in the gender balance in the industry.

Another vector of human resource development is the involvement of specialists in international certification programs. Companies encourage employees to obtain certificates such as AWS Certified Developer, Microsoft Azure Administrator, ISTQB Foundation Level, Scrum Master Certified, etc. This not only increases the professional level of personnel, but also contributes to the integration of the local market into the global ecosystem.

Among the key problems of developing the human resources potential of the IT industry in Vinnytsia region, one can single out the insufficient level of development of business education in the IT context, the lack of training programs in the areas of product management, technological entrepreneurship, as well as the limited number of incubators for the development of startups. Despite high technical training, some graduates do not have sufficient skills in project presentation, building business models, and risk management. This creates limitations for the formation of mature IT products focused on global markets.

In order to increase the effectiveness of personnel policy in the industry, it is advisable to implement systematic approaches to monitoring competencies and market needs. Among the possible methods are regular regional IT audits, surveys of employers and graduates, and analysis of technology development trends using big data analytics. This approach will allow adapting educational programs to real business needs, minimizing the gap between employers' expectations and graduates' knowledge, as well as increasing the mobility and competitiveness of IT specialists in Vinnytsia region.

In the future, an important direction will be to strengthen the specialization of the region. Given the available educational and scientific resources, Vinnytsia can develop clusters in such areas as medical information systems, agroinformatics, financial technologies, smart city solutions, and cybersecurity. Electronic medical document management systems, CRM solutions for agricultural enterprises, and integrated services based on artificial intelligence are already being developed in Vinnytsia. The focus on interdisciplinarity and practice-oriented projects will help expand the spectrum of employment for IT personnel, and will also allow attracting investors to niche, high-tech projects.

Thanks to the active participation of educational institutions, private business initiatives, support from local authorities, and a focus on practical competencies, the region has every chance of establishing itself as an important information technology center in Central Ukraine, capable not only of exporting services, but also of forming its own competitive products on the global market.

Comparative table of the IT industry in the regions of Ukraine

Region	Number of companies	IT Number of (thousands)	IT professionals Average salary (\$)
Vinnytsia	150	5	1800
Kyivska (Kyiv city)	2500	85	2500
Lvivska	550	25	2200
Kharkiv	700	30	2100
Odesa	400	18	2000

Vinnytsia region is home to a number of powerful IT companies that play a key role in the development of the regional digital space, creating new jobs and building human resources. One of them is Playtika, which has one of the largest offices in Ukraine, namely in Vinnytsia. It specializes in developing mobile games that are successfully promoted on the global market. Playtika's Vinnytsia office is distinguished by a high level of automation, the scale of R&D developments and a powerful team of engineers, designers and analysts. A significant feature of the company is its focus on Big Data, machine learning and user behavior analytics, which makes it a leading player in the entertainment software industry.

Another important company is EPAM Systems, a global leader in software development and IT consulting, which has offices in many cities of Ukraine, including Vinnytsia. The company implements large-scale projects in the fields of finance, healthcare, trade, telecommunications and cloud technologies, actively cooperating with customers from North America and Europe. EPAM provides Vinnytsia specialists with opportunities for professional growth, certification and participation in global developments, and also actively interacts with local universities, attracting young people to internships.

Among the notable players in the regional market is also Delphi Software - the Ukrainian division of a global holding company, which works on innovative solutions in the field of automotive electronics, telemetry and IoT. The company in Vinnytsia has a high-tech laboratory and involves both experienced engineers and young specialists in projects. Special emphasis is placed on the real application of embedded systems, deep testing and engineering accuracy.

Another well-known company is SoftServe, one of the largest IT employers in Ukraine, which has a branch in Vinnytsia. SoftServe specializes in digital transformation of businesses, working with such areas as artificial intelligence, cloud technologies, cybersecurity and UX design. The company's Vinnytsia office mainly focuses on specialists in .NET, Java, Python and DevOps, and the Data Science and medical technologies areas are also actively developing. SoftServe has its own educational platform, SoftServe University, which allows Vinnytsia specialists to constantly improve their qualifications.

No less important is the company Onseo, which is actively working in the field of game development, web services and mobile applications. The Vinnytsia office of

Onseo specializes in the full development cycle - from idea and design to testing and support. The company's feature is a flexible organizational structure, support for young teams, as well as strong expertise in JavaScript, Unity, PHP, Kotlin. It is an example of a regional startup that has transformed into an international company with offices in Ukraine, Israel, the USA and Moldova.

Spilna Sprava, although less well-known in terms of scale, makes a significant contribution to the development of local IT business by creating socially oriented projects, e-democracy platforms and open data tools. It cooperates with civil society organizations, government agencies and international donors, ensuring the implementation of transparent digital services in the region.

It is also worth mentioning Astwellsoft, a company engaged in the development of web systems, CRM/ERP solutions, and blockchain technologies. It has implemented over 250 international projects and is an example of the successful integration of Vinnytsia development into global digital economy chains.

In general, the IT sector of Vinnytsia region is represented by both branches of global companies and regional development studios specializing in the gaming industry, fintech, automotive industry, healthcare, e-commerce and government services. The development of the industry is supported by local universities, incubators, IT clusters and a favorable investment climate, which makes the region one of the leaders of digital transformation in Ukraine.

In Vinnytsia region, the largest IT companies implement a number of high-tech projects covering various industries - from the gaming industry and healthcare to automotive electronics, education, finance and public administration. Among the most famous projects of Playtika, which has one of the largest offices in Vinnytsia, it is worth highlighting the mobile games Slotomania, House of Fun, World Series of Poker, which are among the top in their category on the world market. Within the framework of these projects, Vinnytsia specialists provide both the development of the client part and a powerful analytical infrastructure using Big Data, which allows you to track player behavior, conduct A/B testing and predict profitability. The development of internal advertising networks and monetization systems has become another direction implemented in Vinnytsia.

EPAM Systems is working on complex digital transformation projects. These include the development of an electronic medical records platform for American clinics that complies with the HIPAA standard, the creation of fintech systems for processing transactions with an increased level of security for Mastercard and other financial institutions. In addition, the Vinnytsia office of EPAM is involved in the creation of a global educational platform with adaptive learning, which is used in schools in the USA and Canada, as well as in the project to migrate the IT infrastructure of a large retailer to the Google Cloud Platform. In some projects, EPAM implements solutions based on artificial intelligence - in particular, for automatic analysis of financial risks and detection of fraudulent transactions.

SoftServe, which also has an office in Vinnytsia, is actively implementing projects in the healthcare sector. One example is Healthcare Intelligence Suite, a platform that allows collecting, analyzing, and visualizing patient health data, including risk predictions based on machine learning algorithms. Another example is a project for a large energy company from the US, which created an energy consumption forecasting system that integrates data from IoT devices. In addition, SoftServe is working on platforms for virtual training of medical personnel using VR/AR technologies, as well as on cyber security services for the banking industry. Vinnytsia specialists are actively involved in creating architecture and writing software for global corporations.

The Vinnytsia office of Delphi Software (now part of Aptiv) specializes in the development of embedded systems for the automotive industry. In particular, projects are implemented here for BMW, Mercedes-Benz and other European automakers, which include the creation of electronic control units, modules for telematics, infotainment systems and ADAS (driver assistance systems) components. Vinnytsia engineers are also working on cybersecurity solutions for internal automotive infrastructure, including isolation and protection of the CAN bus from attacks. One of the innovative projects that specialists in Vinnytsia are working on is an emergency situation prediction system using neural network processing of data from sensors.

Onseo is focused on developing gaming products, among which the mobile game Poker Arena stands out, which has gained considerable popularity in the European market. The Vinnytsia Onseo teams also created an online bingo platform focused on the US market. Another project developed a series of interactive mobile games with augmented reality elements that use GPS and the device's camera. In addition to gaming, Onseo is involved in the development of web applications and CRM systems for businesses from the UK and Israel, creating full-fledged platforms with custom UX/UI design.

Astwellsoft is also known for its active project activities. Its flagship solution AstwellCRM is used by small and medium-sized businesses in Ukraine and abroad to automate sales, logistics, and customer support processes. In addition, the company has implemented blockchain projects for customers from EU countries - in particular, the creation of wallets and smart contracts for internal payments. One of the important areas is the development of an electronic document management system for municipalities, which has already been implemented in several regional centers. The company also developed an eCommerce platform with full integration of logistics and payment services for a Swiss client.

All these projects indicate that Vinnytsia is not only a regional center of the IT industry, but also a full-fledged participant in the global digital space. The high level of projects implemented in the city, the diversity of industries and the technological complexity of the products on which local IT specialists work, confirm the sustainable growth and international integration of the Vinnytsia IT sector.

Conclusion. Thus, the human resource potential of the IT industry of Vinnytsia region is currently at a stage of sustainable growth and development. Thanks to the

active participation of educational institutions, private business initiatives, support from local authorities and a focus on practical competencies, the region has every chance of establishing itself as an important information technology center of Central Ukraine, capable not only of exporting services, but also of forming its own competitive products on the world market.

List of sources used

1. On the digital economy: Law of Ukraine dated 15.12.2021 No. 1667-IX [Electronic resource]. – Access mode: <https://zakon.rada.gov.ua/laws/show/1667-20>
2. DOU.ua. Rating of Ukrainian cities by the size of IT communities [Electronic resource]. – 2024. – Access mode: <https://dou.ua>
3. Digital Strategy of Vinnytsia Region for 2023–2027. – Vinnytsia: VOCIT, 2023. – 46 p.
4. Yarchuk O. A. The information technology market of Ukraine: analytical review / O. A. Yarchuk // Economy and State. – 2023. – No. 12. – P. 45–51.
5. Barsukova S. IT education in the regions of Ukraine: indicators of effectiveness / S. Barsukova // Public management and administration in Ukraine. – 2022. – No. 3(37). – p. 89–95.
6. Melnyk I. V. Peculiarities of development of the regional IT services market / I. V. Melnyk // Information technologies and learning tools. – 2021. – Vol. 83, No. 3. – p. 137–145.
7. Strategy for the development of the IT cluster in Vinnytsia region until 2030. – Vinnytsia: Association of IT companies of the region, 2023. – 29 p.

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