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TRANSFORMATION OF HUMAN RESOURCES MANAGEMENT IN THE ERA OF DIGITAL ENTREPRENEURSHIP

Introduction

Modern companies operate in a dynamically changing digital environment which has a significant impact on human resources management (HRM). As a result of digital transformation, the development of online platforms and an increasing automation of HR processes, traditional employment models are subject to change. Flexible forms of work, such as the gig economy and crowdsourcing, play an increasingly significant role and redefine relationships between employers and employees.

The changes cause numerous challenges regarding the adaptation of personnel management. Particularly, the gig economy, based on short-term contracts and crowdsourcing, which enables cooperation with a wide group of specialists on a project basis, influences the ways of recruiting, motivating and engaging employees. Consequently, it is necessary to develop new models of human capital management that are adapted to the specific nature of the digital work environment.

The aim of the article is to analyze the impact of the gig economy and crowdsourcing on HRM in the era of digital entrepreneurship. Emphasis was placed on changes in the employment structure, new HR challenges and ways of adapting personnel strategies to the dynamically changing labor market. The article is an attempt to answer the following research questions:

- How do the gig economy and crowdsourcing affect HRM models?
- What challenges and benefits result from the growing popularity of digital platforms in the HR area?
- How can organizations effectively adapt HR strategies to the conditions of digital entrepreneurship?

The first part of the article discusses the significance of digital entrepreneurship and its impact on new work models. Then the role of the **gig economy** and **crowdsourcing** in human

resources management is analyzed. The next part focuses on the challenges and opportunities associated with the implementation of these concepts in HR.

1. Digital entrepreneurship and new work models

Digital entrepreneurship¹, which is the result of a dynamic development of information and communication technologies, significantly changes the way organizations operate. An increased implementation of the Internet and digital platforms is one of the key aspects in business operations. This phenomenon results in the creation of new business models that are based on innovative technologies and transform traditional market structures. Nowadays, digital technologies set new standards in business; therefore, entrepreneurs must not only understand them, but also use these technologies to achieve market success, which is to maintain or strengthen their market position. Compared to traditional business models, digital entrepreneurship enables a more flexible, fast and effective approach to management, sales and communication.

The characteristic features of digital entrepreneurship include:²

- innovativeness – the use of modern technologies to create unique products, services and business models,
- flexibility – the ability to adapt quickly to changing market and technological conditions, providing benefits to both entrepreneurs and customers. This is a key feature in a dynamic digital environment as it enables efficient response to changes and optimal use of new opportunities,
- global reach – the ability to reach customers and markets around the world, using digital tools, which significantly increases the market potential of the products and services,

¹ Digital entrepreneurship is generally defined as a pursuit of business or opportunities based on the use of digital technologies. Cf. E. Davidson, E. Vaast, E., *Digital entrepreneurship and its socio-material enactment*, [in:] 43rd Hawaii International Conference on System Sciences (HICSS) 2010, pp. 1–10, IEEE 2010. Digital entrepreneurship is the use of digital technologies to create and develop companies as well as to conduct business in innovative ways - European Commission, „Digital entrepreneurship: European Commission actions to promote startups and scaleups,” 2016. In this article, the authors understand digital entrepreneurship as the process of using digital technologies to create, develop and manage innovative enterprises in order to improve the efficiency and quality of operations and achieve success in the dynamic and competitive business environment of digital economy.

² Based on: <https://barrazacarlos.com/pl/przedsiębiorczosc-cyfrowa/> (accessed: 06.02.2025.); A. Skowronek-Mielczarek, *Gospodarka cyfrowa a funkcjonowanie współczesnych przedsiębiorstw na rynku polskim*, „Nauki Ekonomiczne” 2021, Vol. 33, pp. 23-36.

- low entry barriers – low start-up costs compared to traditional businesses, thanks to access to technology and digital platforms.

Digital transformation, which includes the development of such technologies as artificial Intelligence (AI), Internet of Things (IoT) and big data analysis, significantly affects the labor market, transforming both the employment structure and the required employee competencies. In 2025, gig workers will account for 15% of employees worldwide and 20% in Poland.³ This process involves both new opportunities and challenges that require adaptation on the part of employers, employees and educational institutions. The implementation of automation in sectors such as production, logistics, financial services and retail leads to a reduction in the number of jobs that require routine and repetitive activities. According to the 2017 McKinsey Global Institute report *A Future That Works: Automation, Employment, and Productivity*, up to 45% of current jobs could be partially or completely automated by 2030.⁴ **In parallel with the elimination of some positions, new professions related to advanced technologies are emerging.** The World Economic Forum (WEF) report indicates that in the coming years 97 million new jobs related to digital technologies will be created, while at the same time approximately 85 million positions may be replaced by automation⁵.

The implementation of AI and automation forces workers to develop new technological skills. According to the study *The Nature of the Digital Skills Gap* published in 2022 by AND Digital, 81% of managing directors admit that the lack of digital skills negatively affects their organizations⁶. According to the World Economic Forum 2020 report *The Future of Jobs Report 2020*, 50% of all workers will require retraining by 2025 as the technology adoption increases. Critical thinking and problem solving are the first skills that employers believe to gain in significance over the next five years. What is new are the skills related to self-organization, such as active learning, stress tolerance and flexibility.⁷ Digital transformation requires continuous learning and updating of competencies to keep up with the changing labor market. Online courses and micro-certificates offered by platforms such as Coursera, Udemy or edX are gaining popularity, enabling quick acquisition of new qualifications. Remote work became a standard in many sectors, which forces companies to implement new tools of team

³ <https://nowymarketing.pl/pandemia-i-polski-lad-napedzaja-gigekonomie-w-polsce-dane-z-raportu-gig-on-nowy-lad-na-rynku-pracy/> (accessed: 24.02.2025).

⁴ https://www.mckinsey.com/pl/~media/McKinsey/Locations/Europe%20and%20Middle%20East/Polska/Raporty/Ramie%20w%20ramie%20z%20robotem/Rami-w-rami-z-robotem_Raport-McKinsey.pdf (accessed: 01.02.2025.).

⁵ https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf (accessed: 01.02.2025).

⁶ <https://www.and.digital/spotlight/lack-of-digital-skills-jeopardising-business-growth> (accessed: 03.02.2025).

⁷ https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf (accessed: 03.02.2025).

management. According to the McKinsey Global Institute 2021 report *What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries*, hybrid models of remote work are likely to remain after the pandemic, particularly among highly qualified and well-paid employees. The report indicates that the COVID-19 pandemic accelerated the adaptation of remote work and many companies (approx. 70%) are planning to continue hybrid work models in the future.⁸

Digitization leads to the emergence of new organizational models different from traditional hierarchical structures. The new models include:

- **platform-based organizations** – a platform is a business model that generates value by facilitating interactions between two or more interdependent groups, typically consumers and suppliers. To make such exchange possible, platforms build and leverage large, scalable networks of users and resources that are available on demand. A platform strategy focuses on creating favorable conditions for ecosystem participants so that they can benefit from the presence of other users. Traditional strategies assume that customers can independently assess the value of a product or service and determine their willingness to pay. Nowadays, this operating model is a key reference point for modern enterprises. Companies such as Uber or Airbnb operate as intermediaries, connecting service providers with customers through digital platforms. This model enables scaling a business without the need for traditional resources.⁹
- **project work and virtual teams** – more companies create project teams that collaborate remotely; the teams are often multinational. This approach makes it possible for businesses to respond to changes more quickly and manage projects more effectively.¹⁰
- **gig economy** – this model is based on short-term assignments, where workers (referred to as *gig workers*) perform tasks for various clients, frequently via online platforms.

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https://www.mckinsey.com/pl/~/_media/McKinsey/Locations/Europe%20and%20Middle%20East/Polska/Raporty/Polska%202030/Raport%20Polska%202030%20McKinsey%20Forbes.pdf (accessed: 03.02.2025).

⁹ <https://www.magazynyanywhere.pl/zmiany-na-rynku-pracy-platformizacja-cyfryzacja-i-gig-economy/> (accessed: 03.08.2024).

¹⁰ Ł. Sienkiewicz, M. Sidor-Rządkowska, *Cyfrowy HR. Organizacja w warunkach transformacji technologicznej*, Wolters Kluwer Polska SA, Warszawa 2023.

These new models require organizations to adapt in terms of management, communication, and development of employee competencies to function effectively in the digital environment.

2. Gig economy as an element of labor market transformation

The gig economy is an economy model based on short-term, flexible forms of employment in which employees (referred to as gig workers) perform single tasks or projects instead of traditional, long-term full-time employment. The gig economy is a dynamic market dominated by services provided via digital platforms, such as Uber, Upwork, Fiverr or TaskRabbit.¹¹

It includes two main types of work:¹²

- work-on-demand via apps – e.g., personal transport (Uber, Bolt), deliveries (Glovo, Uber Eats),
- crowdworking – work performed by freelancers virtually, e.g., graphic design, programming, translations.

Table 1. Distribution of gig economy workers in EU by sectors

Sector	Share (%)
Personal transport and deliveries	63
Minor repairs and cleaning	19
Qualified specialists	7
Graphic designers and freelance professions	6

Source: based on <https://businessinsider.com.pl/praca/gig-economy-przyszlosc-rynku-pracy/fgpk3gj> (accessed: 22.02.2025).

As shown in Table 1, the largest group of gig economy workers in EU are people providing personal transport and delivery services, which constitutes as many as 63% of all gig economy workers. The popularity of applications such as Uber, Bolt, Glovo, Uber Eats significantly contributed to the increase in demand for transport and delivery services. 19% of EU gig economy workers are engaged in minor repairs and cleaning services. Applications such as TaskRabbit or Handy facilitate access to services such as repairs, assembly and cleaning, which attracts both customers and workers. Due to the increased importance of remote work

¹¹ EY & GIGLIKE report, „GIG on. Nowy Ład na rynku pracy”, EY People Advisory Services, 2021.

¹² De Stefano V., *The rise of the ‘just-in-time workforce’: On-demand work, crowdwork and labour protection in the ‘gig economy’*, „Comparative Labor Law & Policy Journal” 2016, 37(3), pp. 471-503.

and the digitization of economy, specialists can provide their services remotely around the world – 7% of the gig economy workers in EU are qualified specialists, including professionals with advanced skills in IT, business consultants, digital marketing experts. The popularity of creative platforms facilitates cooperation between graphic designers and clients – 6% of gig workers are graphic designers and representatives of freelance professions such as graphic designers, copywriters, translators and photographers. The possibility of implementing projects for clients from all over the world increases the competitiveness and diversity of orders.

Characteristic features of the gig economy:

- Flexible and short-term work arrangements - employees decide themselves when and how much they work, and clients have no permanent obligation to employ them full-time. The possibility of remote work from anywhere (an increased popularity of digital nomads).¹³
- Platformization of the labor market – the development of digital platforms enables easy connection between clients and workers and reduces barriers to enter the labor market.¹⁴ Popular platforms are Uber, Fiverr, Upwork, Amazon Mechanical Turk.
- Self-employment and the lack of traditional employee relationships – the gig economy is dominated by self-employment and B2B contracts instead of traditional employment contracts¹⁵ (no social security, leaves, or income guarantees).
- Dynamic increase in the share in the labor market – according to the Deloitte 2018 report, approximately 57 million employees participate in the U.S. gig economy, which accounts for 36% of the U.S. workforce. It is estimated that by 2027 this “alternative workforce” may become the majority of the US workforce.¹⁶ The data in the Statista service indicate that the number of freelancers in the US in 2027 will reach 86.5 million, which will constitute 50.9% of the total workforce in the country.¹⁷ In Poland, it is estimated that by 2025 the gig economy will cover over 1 million employees.¹⁸ The figures presented in Table 2 show a dynamic increase in the value of the global gig economy market in recent years and ambitious forecasts for the future.

¹³ EY & GIGLIKE report „*GIG on. Nowy Ład na rynku pracy*”, EY People Advisory Services, 2021.

¹⁴ M. Kenney, J. Zysman, *Work and Value Creation in the Platform Economy* [in:] S.P. Vallas, A. Kovalainen (ed.), „Work and Labor in the Digital Age (Research in the Sociology of Work)” 2019, Vol 33, pp. 13-41.

¹⁵ EY & GIGLIKE report, „*GIG on. Nowy Ład na rynku pracy*”, EY People Advisory Services, 2021.

¹⁶ <https://www2.deloitte.com/us/en/pages/operations/articles/future-of-gig-economy-shared-services-delivery-model.html> (accessed: 03.02.2025.).

¹⁷ <https://www.statista.com/statistics/921593/gig-economy-number-of-freelancers-us/> (accessed: 03.02.2025).

¹⁸ EY & GIGLIKE report, „*GIG on. Nowy Ład na rynku pracy*”, EY People Advisory Services, 2021.

The market value went up from USD 296.7 billion in 2020 to USD 455.2 billion in 2023, which represents an increase of 53% in just three years. The forecasts for the coming years indicate further intensive market development. The value of the gig economy is predicted to reach USD 556.7 billion w 2024, which represents a 22% growth as compared to the previous year. Even more impressive are the predictions for 2032, when the market value is expected to exceed USD 1.8 trillion, which is more than a fourfold increase compared to 2023. Such a high increase is expected due to the ongoing digitization of the economy and growing demand for flexible work models, especially among younger generations of employees.

Table 2. The growth of the global gig economy market

Year	Market value (USD billion)
2020	296,7
2021	347,0
2022	400,0
2023	455,2
2024	556,7
2032	1 847,0

Source: based on: data for 2020–2023: <https://www.statista.com/statistics/1034564/gig-economy-projected-gross-volume/> (accessed: 03.02.2025), data for 2024 and 2032: <https://www.businessresearchinsights.com/market-reports/gig-economy-market-102503> (accessed: 03.02.2025).

In recent years, there has been a dynamic development of digital platforms which change the methods of work organization and employment. Platforms such as Upwork, Fiverr and TaskRabbit enable cooperation between freelancers and clients around the world, shaping the modern gig economy model. This phenomenon affects labor markets, employment structures, and legal and tax regulations. The EY & GIGLIKE report *GIG on. Nowy Ład na rynku pracy*¹⁹ shows a growing significance of platform work on a global scale. Employment in the gig economy is increasingly popular, especially in IT, marketing, graphic design and home services sectors. Digital platforms allow for easier access to work, flexible hours and ability to provide services worldwide. On the other hand, the lack of stable employment forms and limited social security for freelancers remain a challenge.

The data in Table 3 show that the labor market flexibility index grew from 4.5 in 2023 to 5.1 in 2024, which constitutes a 13% increase in one year. This is a clear sign of increased flexibility in the labor market, which directly correlates with the development of the gig

¹⁹ EY & GIGLIKE report, „*GIG on. Nowy Ład na rynku pracy*”, EY People Advisory Services, 2021.

economy and the popularity of flexible forms of employment, such as self-employment, remote work and short-term contracts.

Table 3. Labor market flexibility index in Poland²⁰ (GIGbarometr)

Year	Flexibility index
2023	4.5
2024	5.1

Source: based on GIGbarometr, *Barometr elastyczności rynku pracy*, Warszawa 2024.

Another aspect is the impact of digital platforms on work organization and value creation in the gig economy. A key element of this process is the centralization of access to orders through algorithms and rating systems, which allows for effective matching of job offers to available freelancers. These platforms change the traditional model of the relationships between employer and employee, introducing new methods of managing work, such as automatic selection of offers or dynamic setting of pay rates based on demand.²¹ The number of job offers on digital platforms is growing rapidly and their geographic distribution changes as technology and regulatory policies evolve. The development of digital platforms is changing the face of the modern labor market, creating new employment opportunities but it also brings challenges related to regulation, employee protection and income stability. A crucial challenge for tax systems is to find the optimal balance between labor flexibility and ensuring an adequate level of social security for those working in the gig economy.

The gig economy, i.e. the economy based on short-term contracts, is changing traditional employer-employee relationships. In this model, employees are often not employed under employment contracts but provide services on terms similar to self-employment. This model has both advantages and disadvantages – flexibility and independence on the one hand, but the lack of income stability and social benefits on the other.²² In the classic approach, the employee is bound to the employer by a long-term contract, which provides him/her with employment stability, social security and other benefits. The gig economy introduces a new model in which digital platforms function as intermediaries between contractors and clients; this means that

²⁰ Labor market flexibility in the context of **GIGbarometru** means the capacity of the labor market to quickly adapt to the changing economic and technological conditions, and the preferences of employees and employers.

²¹ M. Kenney, J. Zysman, *Work and Value Creation in the Platform Economy* [in:] S.P. Vallas, A. Kovalainen (ed.), „Work and Labor in the Digital Age (Research in the Sociology of Work)” 2019, Vol. 33, pp. 13-41.

²² G. Friedman, *Workers without employers: Shadow corporations and the rise of the gig economy*, „Review of Keynesian Economics” 2014, 2(2), pp. 171-188.

employees often do not have a single, permanent employer and their legal status is unclear²³. The development of the gig economy changes the traditional employment model, which leads to the weakening of the employer-employee relationship in favor of a model based on short-term assignments and intermediary platforms.

One of the key advantages of the gig economy is flexibility for both employees and employers. People working in this model can independently choose working hours and adjust their professional involvement to their individual needs, which helps maintain a better work-life balance.²⁴ The gig economy makes it also possible for many people to gain additional income by doing occasional work or providing services on various digital platforms. For some, it is the main source of income; for others it is a way to supplement their household budgets.²⁵ The gig economy reduces entry barriers to the labor market because it often does not require formal qualifications or experience; it opens up employment opportunities for people who may have difficulty finding traditional work such as students, seniors or people with disabilities.²⁶

On the other hand, the main challenge of the gig economy is the instability of income and the lack of a guarantee of permanent work. Employees are dependent on the number of available assignments and platform algorithms which can change the terms of cooperation, leading to financial uncertainty.²⁷ Many gig economy workers are not protected by traditional social benefits, such as health insurance, paid leave rights or protection against dismissal. Due to the lack of appropriate legal regulations, gig workers are exposed to higher economic risks²⁸. While the gig economy provides opportunities for professional development, it may also deepen income inequalities. Employees in different countries and on platforms may receive significantly varied remuneration of the same work, which leads to global wage competition and social inequalities.²⁹

²³ G. Friedman, *Workers without employers: Shadow corporations and the rise of the gig economy*, „Review of Keynesian Economics” 2014, 2(2), pp. 171-188.

²⁴ EY & GIGLIKE report, „GIG on. Nowy Ład na rynku pracy”, EY People Advisory Services, 2021.

²⁵ M. Graham, I. Hjorth, V. Lehdonvirta, *Digital Labour and Development: Impacts of Global Digital Labour Platforms and the Gig Economy on Worker Livelihoods*, „Transfer: European Review of Labour and Research” 2017, 23(2), pp. 135-162.

²⁶ J. B. Schor, W. Attwood-Charles, *The Sharing Economy: Labor, Inequality, and Social Connection on For-Profit Platforms*, „Sociology Compass” 2017, 11(8).

²⁷ Report of EY & GIGLIKE, „GIG on. Nowy Ład na rynku pracy”, EY People Advisory Services, 2021.

²⁸ M. Graham, I. Hjorth, V. Lehdonvirta, *Digital Labour and Development: Impacts of Global Digital Labour Platforms and the Gig Economy on Worker Livelihoods*, „Transfer: European Review of Labour and Research” 2017, 23(2), pp. 135-162.

²⁹ J. B. Schor, W. Attwood-Charles, *The Sharing Economy: Labor, Inequality, and Social Connection on For-Profit Platforms*, „Sociology Compass” 2017, 11(8).

3. Crowdsourcing as a human resource management tool

Crowdsourcing is a term that has several definitions which emphasize various aspects of this phenomenon. It is a process in which a given task or problem is solved by a large group of people usually not directly related to the contracting company or organization. Currently, it is the Internet users who most often participate in crowdsourcing.³⁰ **Summalinguae.com defines crowdsourcing as an online, digital, dispersed production or problem-solving model that meets the specific goals of the organizer.**³¹

Practically, crowdsourcing can have the following forms:³²

- creating content – engaging the community in creating materials such as articles, graphics or translations,
- generating ideas – organizing competitions for new products or process improvements,
- solving problems – inviting specialists and amateurs to propose solutions for complicated issues,
- crowdfunding –raising funds for projects from a large number of people,
- testing products – collecting feedback and making improvements before the product is fully launched.

In the context of HR, crowdsourcing can be used for talent acquisition, where employees and external parties recommend candidates for specific positions. An example is the Talentuno platform, which allows users to recommend potential employees in exchange for remuneration.³³

Crowdsourcing in HRM can significantly impact the processes related to talent acquisition, competence development and building employee engagement. The use of mechanisms based on recommendations allows for an effective search for new candidates, while increasing the effectiveness of recruitment and reducing the related costs. By sharing knowledge and experience, it is possible to create educational spaces that enable the development of competencies within organizations. Additionally, engaging employees in decision-making processes through open initiatives favors the implementation of innovations and the improvement of the company's functioning. This approach allows not only for effective

³⁰ <https://www.livecareer.pl/zycie-zawodowe/crowdsourcing> accessed: 30.10.2024).

³¹ <https://summalinguae.com/pl/technologie-jezykowe/crowdsourcing-definicja-przyklady-plusy-i-minusy/> (accessed: 30.10.2024 r.).

³² <https://natywna.pl/sloownik-marketingu/crowdsourcing/> (accessed: 15.12.2024).

³³ <https://hrpolska.pl/rynek-pracy/rekrutacja-i-selekcja/czy-crowdsourcing-to-tez-przyszlosc-rekrutacji> (accessed: 26.07.2024).

HRM, but also for strengthening the sense of community and responsibility for the development of the organization.³⁴ Its use involves both benefits and risks.

Benefits of crowdsourcing:³⁵

- The involvement of a wide group of people allows for many ideas and solutions to be obtained. Crowdsourcing involves the acquisition of many diverse ideas that are created on the basis of the knowledge, skills, creativity and experience of community members.
- Using crowdsourcing may be cheaper than traditional methods, especially in the context of recruitment and content creation. It allows not only to acquire innovative ideas and solutions but also build stronger bonds with clients and community.
- Employees feel more engaged when they have a real influence on company processes. Crowdsourcing is called volunteering of the 21st century. What “crowdsourcing volunteers” offer is not only time, but above all, intellect, creativity, experience, and knowledge.

Risk related to crowdsourcing:³⁶

- The need to effectively coordinate the activities of a large number of participants. Keeping them engaged and managing their expectations are challenges that can affect the success of a project.
- Issues related to the copyrights of created content or ideas. The threat of unfair practices, such as plagiarism or unethical use of ideas, requires proper protection mechanisms.

Crowdsourcing, as a modern work organization method, significantly differs from traditional models of human resources management. In traditional organizations, management structure is based on hierarchy, where each position is assigned specific responsibilities and tasks are distributed by superiors following the company’s internal rules and strategic goals. Permanent employees work within established procedures, which ensures operational stability and predictability of results.

³⁴ <https://hrpolska.pl/rynek-pracy/rekrutacja-i-selekcja/czy-crowdsourcing-to-tez-przyszlosc-rekrutacji> (accessed: 26.07.2024).

³⁵ Based on: <https://www.parp.gov.pl/component/content/article/56092%3Awady-i-zalety-stosowania-crowdsourcingu> (accessed: 23.11.2024.); <https://natywna.pl/slownik-marketingu/crowdsourcing/> (accessed: 15.12.2024).

³⁶ <https://natywna.pl/slownik-marketingu/crowdsourcing/> (accessed: 15.12.2024).

Crowdsourcing follows a completely different logic. Instead of assigning tasks to individuals in the organization, tasks are available to a wide group of recipients who may or may not be associated with the company. Crowdsourcing participants can be both experienced specialists or people without formal qualifications who engage in the project on a voluntary basis or for a specific remuneration. This approach allows for greater flexibility in task execution but at the same time limits the possibility of full control over the quality and consistency of results.

In the traditional work model, employee motivation is most often related to employment stability, regular remuneration and additional benefits or promotion opportunities. A clearly defined organizational structure provides employees with a predictable career path and the opportunity for long-term development, which encourages their commitment and loyalty to the employer.

In the case of crowdsourcing, the factors that motivate participants are much more diverse. For some people, taking part in such projects is a way to gain new skills and experience that can be used in their future career. Others are driven mainly by financial considerations, treating crowdsourcing as an additional source of income. There are also people who engage in this type of initiative for personal or social reasons and derive satisfaction from participating in projects that they consider valuable.

In traditional organizations, employees are personally responsible to their superiors for the performance of the tasks assigned to them. Companies implement various control mechanisms, such as performance assessment systems, audits and tools for evaluating work efficiency. This makes it possible to continuously check the quality of duties performed and the timeliness of their execution, which helps maintain high operational standards.

In crowdsourcing, control over task execution is significantly more difficult. Organizations using this model often do not have a direct influence on the way the assigned work is done and cannot fully enforce uniform quality standards. Although many crowdsourcing platforms introduce verification mechanisms, such as user rating systems or submission filtering, ensuring cohesion and a high level of results remains one of the key challenges of this form of cooperation.

In traditional organizations, employees often identify with their company's mission and values, which contributes to building a strong organizational culture. Long-term employment allows for the development of bonds between co-workers, strengthens commitment to the duties performed and facilitates effective cooperation within teams. Such a working environment

results in greater loyalty to the employer and stability in achieving the organization's strategic goals.

In contrast to the above, crowdsourcing does not have a positive impact on building long-term relationships between the participants and the company. People performing tasks usually work on a short-term basis, without a formal connection to the organization. Their involvement frequently depends on the current availability of projects and the payment offered, rather than on the sense of belonging to the company. This can be a challenge for organizations that rely on stable teams and long-term cooperation, especially in the context of maintaining cohesion of operations and operational efficiency.

4. Impact of the gig economy and crowdsourcing on modern HR

Modern HRM faces numerous challenges resulting from the dynamic development of the gig economy and crowdsourcing. These phenomena do not only change traditional employment models but also affect recruitment strategies, incentive systems and the management of diverse virtual teams. Moreover, the increasing importance of technologies such as AI and big data in the context of HR creates both new opportunities and challenges.

With the growing popularity of the gig economy, HR departments face new challenges. One of the key challenges is to ensure cohesion of the organizational culture in a situation where a significant part of the team consists of temporary or remote workers. Another challenge is to integrate these workers with the rest of the team and provide them with support and appropriate tools. **Uber** is an example of a company that effectively integrates gig economy workers. This platform allows drivers to work flexible hours while offering them access to training and technical support, which helps build loyalty and commitment.

Moreover, it is necessary to develop new incentive and benefit systems that will be attractive to freelancers. Traditional benefit packages may not meet their expectations, so HR must look for innovative solutions to attract and retain the best talents.

In response to changes in the labor market, HR departments must adapt their recruitment strategies. The use of digital platforms, social media and AI-based tools is becoming essential in the talent acquisition process. The automation of recruitment processes allows for faster and more effective access to the right candidates. **Unilever** introduced the Pymetrics platform, which uses neuroscientific games and AI algorithms to evaluate candidate predispositions,

allowing for more objective and effective selection; L'Oreal employees chatbots to conduct preliminary job interviews.³⁷

Incentive systems also need to be revised. In the case of gig economy workers, it is crucial to offer flexible forms of cooperation, development opportunities and access to a variety of projects. Personalizing the approach to each employee and considering their individual needs and expectations can significantly influence their commitment and loyalty. The **Upwork** platform offers freelancers access to a wide range of projects and professional development tools, which attracts and retains the best talents in the gig economy ecosystem. The **Toptal** platform, in turn, does not only connect freelancers with projects around the world, but also offers them access to exclusive networking events, workshops, and mentoring programs, thus supporting their professional development and building relationships in the industry. **99designs**, a platform for graphic designers, gives freelancers the opportunity to participate in competitions where they can win financial rewards and build their portfolios. Moreover, it offers support in project management and communication with clients, which makes work easier and increases satisfaction. The **Fiverr Elevate program** is an interesting solution, which provides freelancers with access to online courses, financial tools and business development guides, helping them improve their skills and effectively manage their activities.

Managing virtual teams, which consist of employees with diverse experiences and competencies, requires a new approach. It is crucial to ensure effective communication, build trust and create a cooperation-friendly environment. **GitLab, a fully remote company, leverages modern communication tools and project management platforms such as Slack and Trello** to ensure seamless collaboration among team members around the world. Another example is **Innerno Systems**, an integrator of teleinformatic systems, which, in the face of dynamic development and operations in various places in the country, decided to improve internal communication. Modern communication and group work tools were implemented, which allowed for a more effective flow of information between employees and optimization of costs related to business trips.³⁸ One should also mention training and development programs dedicated to virtual team leaders. Training companies such as **Human Skills** offer courses in effective management of virtual teamwork which help managers improve the skills necessary to effectively lead distributed teams.

³⁷ <https://www.bitrix24.pl/articles/sztuczna-inteligencja-w-hr-jak-ai-rewolucjonizuje-rekrutacje-zarzadzanie-talentami-i-rozwoj-pracownikow.php> (accessed: 25.08.2024).

³⁸ <https://itwiz.pl/bliskie-kontakty-na-odleglosc-czyli-sprawna-komunikacja-miedzy-zespolami-firmie> (accessed: 20.07.2024).

Using modern communication tools, project management platforms and regular online meetings can help integrate the team. At the same time, leaders must be aware of cultural differences and individual needs of team members to manage them effectively.

Technologies such as AI and big data are playing an increasingly more significant role in HRM. AI can support recruitment processes through the analysis of large sets of candidate data, which allows for faster and more precise matching of candidates to appropriate roles. Automation of HR processes, such as onboarding or performance assessment, leads to increased efficiency and cost reduction. **IBM** uses AI tools to analyze employee data, which helps identify talent within the organization and predict training needs, which in turn supports employee career development and increases their engagement.³⁹ Another example is **Grupa Żywiec**, which implemented an AI-based tool to analyze employee engagement. The system analyzes the data from employee questionnaires and other sources, identifying areas that require intervention and suggesting actions to improve team satisfaction and efficiency.⁴⁰

Big data enables the analysis of trends in the labor market, identification of training needs and monitoring of employee engagement. Thanks to this, HR departments can make more informed decisions and adapt their strategies to the dynamically changing environment. According to the report of the Polish HR Forum *HR TECH CHANGER 2024*, over 90% of HR professionals in Poland use tools that automate their work, and half of them use technologies supported by AI, and 70% of surveyed Poles believe that digital competencies will be crucial in the future labor market.⁴¹ This shows the growing adaptation of modern technologies in the area of HRM in Polish enterprises.⁴²

Recapitulation

Digital transformation, the rise of the gig economy and crowdsourcing significantly impact modern human resource management. Organizations must adapt their recruitment strategies, incentive systems, and virtual team management methods. The use of digital platforms, AI and big data optimizes HR processes, improving recruitment effectiveness,

³⁹ <https://www.bitrix24.pl/articles/sztuczna-inteligencja-w-hr-jak-ai-rewolucjonizuje-rekrutacje-zarzadzanie-talentami-i-rozwoj-pracownikow.php> (accessed: 25.08.2024).

⁴⁰ <https://przemyslprzyszlosci.gov.pl/nawigator-technologiczny/zastosowanie-grupa-zywiec-s-a/> (accessed: 07.02.2025).

⁴¹ <https://media.pracuj.pl/249953-polacy-o-cyfrowych-kompetencjach-w-pracy-i-rekrutacji> (accessed: 21.02.2025).

⁴² <https://polskieforumhr.pl/aktualnosci/materialy-dla-prasy/czy-polski-hr-jest-gotowy-na-ai-najnowszy-raport-polskiego-forum-hr-hr-tech-changer> (accessed: 07.01.2025).

onboarding and monitoring of employee engagement. The examples of Uber, GitLab, Grupa Żywiec and IBM show that these technologies can support both flexible employment forms and traditional HR models.

Conclusions:

- flexible labor models – organizations must implement new incentive strategies and benefit systems that are adapted to freelancers and remote workers,
- technologies in HR – AI and big data improve recruitment, engagement analysis and talent identification, increasing HRM effectiveness,
- integration of virtual teams – the use of digital tools and communication strategies is crucial to ensuring a cohesive organizational culture,
- regulations and the protection of gig economy workers – legal solutions are necessary to provide freelancers with income stability and access to social benefits,
- new approach to recruitment and talent management – companies should use digital platforms and automation to match candidates to their needs more quickly and precisely.

In conclusion, HR in the digital era requires innovative technological and strategic solutions to effectively manage the dynamically changing labor market.

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Abstract

Digital transformation, the rise of the gig economy and crowdsourcing significantly impact modern human resource management. Organizations must adapt their recruitment strategies, incentive systems, and virtual team management approaches to new work realities.

The gig economy promotes flexible employment models that replace traditional long-term collaboration structures. Crowdsourcing has become a tool for knowledge acquisition and problem-solving in a distributed work model. Companies use recruitment and recommendation platforms to select candidates and engage communities in innovative projects. Modern technologies, such as artificial intelligence (AI) and big data, play a crucial role in optimizing HR processes. AI supports candidate and employee data analysis, accelerates recruitment, and automates onboarding processes. In conclusion, the dynamic changes in the work environment require flexible HR strategies adapted to digital reality. Companies that effectively implement new employment models and leverage technology in workforce management can gain a competitive advantage in the market.

Key words

Gig economy, crowdsourcing, digital entrepreneurship, human resources management.