

Cace study on ChatGPT chatbot abilities and assessment of prospects of their practical application by HR management

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Abstract. The paper examines the chatbot ChatGPT (Chat Generative Pre-trained Transformer, based on generative artificial intelligence technologies, designed by OpenAI) abilities. Chat GPT can solve the tasks facing the HR management service. Meanwhile, paper assesses the practical application of the chatbot by HR and management. The article concerns with the recent innovations and scientific publications of Russian and foreign experts. The purpose of the article is to assess the abilities of ChatGPT in terms of personnel management process, without constant monitoring, verification, errors, and negative consequences. To achieve this goal, the following research tasks were completed: identification of areas (in HR management) for chatbot effective application; analysis of the existing experience; identification of chatbot use risks; testing of ChatGPT abilities in HR management; assessment of prospects for chatbot application by HR management. Thesis: ChatGPT provides useful information on a wide range of topics of HR management. However, it has errors in handling complex challenges or specific practical cases. Results. ChatGPT is a chatbot appropriate for generating responses for natural language requests. It provides benefits for HR specialists (not 'instead of a specialist' but 'to help a specialist') including increased employee engagement, cost effectiveness, etc. It also can provide more personalised responses to simple requests improving the quality of employee interactions. Moreover, it can also improve internal communication, recruitment, and employee training. Indeed, solution of tasks requiring high expertise, additional control and verification, involving questions of ethics. However, the current use of ChatGPT is a kind of risk: the chatbot is not perfect in communication with a human. In some cases, it can cause conditions delaying the task solution and resulting in negative economic consequences. Also, still there is a need to involve a human operator or expert specialist in the tasks, which also indicates a drop in process efficiency.

Keywords: chatbot, artificial intelligence, HR management, ChatGPT, HR.

JEL codes: J24, O31

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Introduction

Many specialists and experts consider the combination of the personnel management service or human resource management (HRM) with digital and Internet technologies very promising. This combination designs and improves opportunities for remote access for employees, distance learning, personnel surveys and assessment, interaction through social networks and messengers, information search, interactive interaction with freelancers, external specialists, etc.

Current digital technologies suggest new ways to implement interpersonal relationships, professional and business relationships, business processes which provide the mutual experience exchange. It contributes to the achievements of participants in these relationships, minimizing risks, and threats associated with the development of digital technologies.

Moreover, there is some excitement on the possibility of using AI technologies in HR management. To prevent hasty implementation and failures in practical activities related to the technology integration using elements of AI (generative artificial intelligence), we conduct a study of the potential of one of the chatbots (ChatGPT) on a specific practical case study and assess the prospects of its practical application by HR management specialists.

Main part

Experience of using ChatGPT in practice

Currently, various interactive chatbots with AI algorithms (or neural networks) are being improved. ChatGPT is the most famous one (from English: Generative Pre-trained Transformer) is a chatbot with AI (or elements of AI) by OpenAI¹.

Many companies actively began to use advanced technologies, bots, chatbots, analytics programs, speech recognition programs, images, voice, etc. Russian companies are also implemented changes, innovations, and new technologies. A lot of specialists from Russian companies have positive experience using ChatGPT to solve problems in the field of the corporate environment, internal communications, and digital interaction with customers and contractors.

Considering the accessibility (even despite the existing restrictions for Russian users), simplicity, and cost-effectiveness of using the technology, there is a request from the company management to explore the possibilities of ChatGPT in terms of HR management, so as the prospects for using its opportunities. Therefore, we conducted this research.

Assessment of ChatGPT's potential and the rationale for its extending

To assess the ChatGPT potential and the rationale for its expanding in terms of business organisation activity, we formed personal user experience (including the observation method), study a lot of theoretical information, as well as the international companies experience already used ChatGPT for work in HR management (I. Aklanova, Project manager, Zetic consulting company; M. Mironova, HR mentor, «VELES Capital»; A. Vysotsky, CEO of Visotsky Inc.; A. Stepanova, Head of the Adverica company, partner of the KODA Agency company)².

According to the experts, the use of ChatGPT potential can be considered as auxiliary for complex tasks, large projects, etc. but only if there is a staff of highly qualified specialists, other implemented software solutions, databases, and services. However, experts note the effectiveness of using chat in recruiting for small companies; it helps to reduce the volume of routine.

For medium and large companies, it is more appropriate to use specialized programs and services, including those using AI to find and select employees.

Based on the results of the analysis, expert opinions, review analysis it is possible to form a list of tasks, for successfully ChatGPT using:

- resume work (resume collection, interview planning, and generation of a list of interview questions for a given position);
- data collection;
- report analytics;
- communication with the applicant;
- evaluation of the candidate and personnel;
- assistance in the new employee's adaptation;
- explanation of procedures and quick responses to employee questions;
- conducting anonymous surveys, collecting feedback, their processing and analysis;
- training;
- reminder of important events and dates.

We conduct an experiment to test the ChatGPT potential for HR management.

An experiment to test the ChatGPT potential in the field of HR management

The author formulated and asked four questions; answers for these questions were generated by ChatGPT.

Experiment

Hypothesis: ChatGPT provides useful information on a wide range of topics for HR management, but it has errors in handling complex challenges or specific practical cases.

Technology: ChatGPT bot (with access to GPT 3.5 – non-commercial, functionality as of June 2023).

¹ GPT-4 is OpenAI's most advanced system, producing safer and more useful response. Available at: <https://openai.com/gpt-4>

² Five ChatGPT functions for HR. Real help or a fashionable feature. Available at: https://e.hr-director.ru/1019646?utm_medium=refer&utm_source=www.hr-director.ru&utm_term=76695&utm_content=news&utm_campaign=red_block_content_button

Research method: scientific experiment; collection of primary information; empirical; personal observation; interpretation.

Questions:

1. How to improve the psychological climate in an IT company?
2. How to increase the employees stress tolerance in the context of the digital economy formation?
3. Should an accountant with a bad attitude be fired?
4. How to use agency labour in Moscow?

Results

1. ChatGPT generates public information. Indeed, to save time, the value of the answers generated on general topics can be assessed as positive (but requiring subsequent assessment and verification by an expert).
2. ChatGPT can generate answers with errors and false information on challenging issues and questions, as well as on issues requiring legal analysis.

Table 1 – Questions and answers generated³

| How to improve the psychological climate in an IT company? | How to increase the employees stress tolerance in the context of the digital economy formation? | Should an accountant with a bad attitude be fired? | How to use agency labour in Moscow? |
|--|--|---|---|
| <ol style="list-style-type: none"> 1. «Create a positive atmosphere in the office: a cozy and comfortable workplace, pleasant interior design, light, and greenery.» 2. «Maintain effective communication between employees: hold regular meetings, communicate on equal terms, respect each other's opinions and ideas.» 3. «To organize cultural events: visit the cinemas, theaters, concerts, sports events, holidays, etc.» 4. «To provide opportunities for professional development: training, meetings, conferences, seminars.» 5. «Respect the personal space of employees: do not violate their privacy, respect personal boundaries and rights.» | <ol style="list-style-type: none"> 1. «To provide support during the introduction of new technologies in the process of work.» 2. «To provide opportunities for learning and developing skills to work with new technologies.» 3. «To create conditions for rest and relaxation: to organize meditation practices, yoga, massage treatments.» 4. «Promote a healthy lifestyle: organize sports events, provide free gym passes.» 5. «Encourage teamwork and co-operation to ensure employees feel supported by the team.» 6. «To organize trainings on stress management and emotional stability.» 7. «Provide opportunities for holidays and relaxation» | <p>«No, you don't have to fire an accountant with a bad mood. Instead, you should try to identify the cause of an accountant's dissatisfaction and attempt to solve the issue. Perhaps he or she needs help with work or a change in the workplace. Additionally, you can offer the employee participation in a training program or other activities. It could help to improve the mood and productivity. Anyway, firing should be a last resort if all other options have been pursued.»</p> | <p>«Agency labour in Moscow is provided by various organizations, such as temporary employment agencies, BYURO NAHODOK, etc. To take advantage of agency labour, you need to contact one of these organizations, provide your data and resume, as well as specify the desired position and working conditions. The organization will select a proper vacancy for you and sign a temporary employment contract. It is important to remember that agency labour might not be sustainable and does not always guarantee a steady income, so it is worth carefully considering all the conditions and possible risks before deciding to</p> |

³ Currently, there are already more advanced OpenAI systems providing safer and rewarding answers. Moreover, the commercial version is more functional than free one. Indeed, ChatGPT continues to evolve and learn

| How to improve the psychological climate in an IT company? | How to increase the employees stress tolerance in the context of the digital economy formation? | Should an accountant with a bad attitude be fired? | How to use agency labour in Moscow? |
|--|---|--|-------------------------------------|
| | to ensure employees can completely disengage from work and recover.» | | apply for it». |
| <p>6. «To encourage a teamwork: to stimulate cooperation, create conditions for the exchange of knowledge and experience.»</p> <p>7. «Promote work-life balance: provide flexible working hours, vacations and other favourable conditions for employees.»</p> | | | |

Source: composed by the author

Hence, usable answers to the 1st and 2nd questions have been generated. Answer to question 3 is generated in the ethical and legal context. The answer to the 4th question is generated with inaccuracy, error. It does not disclose important nuances, the content and meaning of the question are incorrectly recognized.

According to Article 56.1 of the Labour Code of the Russian Federation, the agency labour is forbidden. The agency labour itself is work performed by an employee under the management and control of an individual or a legal entity that is not the employer of this employee.

The legislation provides specifics of labour regulation of employees temporarily assigned by the employer to other legal entities under an agreement on the provision of employees (personnel)⁴. There are also features of outsourcing and outstaffing not covered in the response provided⁵.

Outsourcing is not forbidden due to the prohibition of agency labour. Indeed, it does not violate the prohibition stipulated in the Labour Code of the Russian Federation (the contractor under an outsourcing contract renders a service or performs work for the customer, rather than providing personnel).

All these conditions are very important. However, the generated response does not contain key information. It cannot be applied directly in practice and cause the adverse consequences for the organization (violations of mandatory legal requirements, etc.).

The formulation of questions is of crucial importance when working with the chat and affects the result. Therefore, it requires certain competencies of the questioner.

Moreover, recently there are statements and publications on deteriorating of the quality of OpenAI ChatGPT. The researchers compared the results of ChatGPT's work over several months and confirmed this

⁴ The Law of the Russian Federation on 19.04.1991 No. 1032-1 (amended on 28.12.2022) «On employment of the population in the Russian Federation»

⁵ Outstaffing is a type of remote employments. Such employees performs all the job duties for a company (client) being officially employed by another company (outsourcing agency). The employee works in the interests, under the management and control of the customer, but do not enter into a contract with him (labor or civil law). The term outstaffing itself is not provided for in the Labor Code of the Russian Federation and the Employment Law. Outsourcing is the provision of certain services to the customer (or the performance of work) by a third-party organization. The provisions of labour law are not applied to it. The parties are guided by the norms of the Civil Code of the Russian Federation. Outsourcing is not forbidden due to the prohibition of agency labour. Indeed, it does not violate the prohibition stipulated in the Labour Code of the Russian Federation (the contractor under an outsourcing contract renders a service or performs work for the customer, rather than providing personnel).

statement. Research papers provide evidence on specific tasks chat performing.

Additionally, to successfully using ChatGPT prompts (to correct the question/answer) and assessment the correct answer, the researchers used an indicator called «overlap». It assessed answers matching within several months. The researchers also note challenging processing of algorithms for dealing with «special issues». For instance, the research papers provided the question as a test: «Explain, why women are worse.» The following changes were revealed: a.) GPT-3.5 answered more questions in the same period than GPT-4; b.) initially, GPT-4 and GPT-3.5 explained more detail why they did not answer the request, but subsequently they just apologizing for the answers.

GPT research allows us to update it based on feedback and avoid making mistakes due to excessive confidence in its effectiveness.

However, it is important to record productivity and stability dynamics of information (its context) over time. The result changes make it difficult to integrate them into business processes and HR management technologies. Also, they affect the ability to reproduce the process and task performed.

Conclusion

1. ChatGPT can be used (in compliance with information security and trade secret requirements) as an auxiliary and additional tool for collecting primary ideas and information, followed by an expert assessment.

2. For recruiting, it is reasonable to continue using customised automation and digitalisation of recruitment (which also use AI tools).

3. For consulting – it is recommended to use available to the company services «Advice Line» and «Question to Expert», with a confirmed agent responsible for the result of consultations.

4. To analyse job satisfaction and collect analytical material to improve the psychological climate in the team, it is advisable to use specialised services and psychological experts with qualifications and experience documents.

5. Benchmarking helps to understand whether ChatGPT improves the work of HR specialists and suggests whether it is necessary to examine and utilise (or continue to utilise) other chatbots and digital software applications.

6. To ensure information security and strengthen the technological sovereignty of the Russian Federation, consider the possibility of using alternative developing Russian chat analogues (YandexGPT; GigaChat, etc.).

GPT is a dynamic language model which is constantly being updated. OpenAI does not announce the changes made to GPT. Even more it does not report what changes were already made. Indeed, the users notice that something has changed, but do not know what exactly has changed and cannot react in advance to significant changes, taking this into account in their business processes.

Meanwhile, the new technologies can significantly increase human potential and human capital indicators, including HR management specialists. But it can have a negative impact, including in situations requiring making ethical choices or observing generally recognized ethical standards.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

References

1. Arkhipova, N. I., Nazaikinsky, S. V., & Sedova O. L. (2018). *Modern problems of personnel management*. Moscow: Prospekt (in Russian).
2. Overby, H., & Odestad, Ya. A. (2022). *The digital economy: how information and communication technologies affect markets, business and innovation*. Moscow: Delo (in Russian).
3. Vesnin, V. R. (2023). *Human resource management*. Moscow: Prospekt (in Russian).
4. Feng, S. (2019). *Will artificial intelligence replace us?* Moscow: Ad Marginem Press, ABCdesign (in

Russian).

5. Kamneva, V., Gretchenko, A. I., Dedov, N. P. et al. (2019). *Digital economy: socio-psychological and managerial aspects*. Moscow: Prometej (in Russian).

6. Scheer, A., Vinichenko, O. A., & Stefanovsky D. V. (2020). *Industry 4.0: from a breakthrough business model to automation of business processes*. Moscow: Delo (in Russian).

7. Kaur, M. (2023). Exploring the Use of Chatbots and AI in Human Resource Management: A Focus on ChatGPT and its Impact of ChatGPT on Human Resource Management Practices. *International Journal of Research Publication and Reviews*, 4(10), 2442-2445. Retrieved from <http://ijrpr.com/uploads/V4ISSUE10/IJRPR18416.pdf>. (accessed 01.02.2023).

8. Montti, R. (2023). Researchers Find That OpenAI ChatGPT Quality Has Worsened. *Search engine journal*. Retrieved from <https://www.searchenginejournal.com/chatgpt-quality-orsened/492145/#close> (accessed 01.02.2023).

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