

# How companies use ChatGPT

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**ChatGPT is currently very popular. The AI can answer questions in seconds, summarize entire texts or create programming code. On the one hand, there are many advantages for the economy and society, on the other hand, experts warn of dangers and call for regulation. It is therefore interesting to see whether and for what purposes companies are already using ChatGPT.**

The launch of ChatGPT by OpenAI in November 2022 has sparked a heated debate about the benefits, risks, and regulatory needs of generative artificial intelligence (AI). Generative AI is used to create new content such as text or images. As a chatbot, ChatGPT finds precise answers to any questions, can summarize and create texts or write programming code. The algorithm uses huge amounts of data of all texts available on the internet up to September 2021 (ChatGPT-4). It calculates the probabilities with which words occur in succession on the internet and selects the word order with the highest probability based on the respective question. ChatGPT thus does not “know” the answer but generates the answer from existing texts on the internet that is most likely.

This is also a core point of criticism of ChatGPT and the desire for regulation: There is no guarantee that the respective answers are correct. Furthermore, in the education sector, for example, the concern arises that, due to the respective individual answers from ChatGPT, students could have entire term papers or theses written by ChatGPT without this coming to light via plagiarism checks.

Besides the risks, ChatGPT has potential for the economy and society. For example, Microsoft, as one of the largest investors in OpenAI, plans to integrate AI more strongly into its Office programs in the future (Microsoft, 2023). This could allow results of a meeting to be summarized automatically or complete emails as well as presentations to be created based on keywords. In addition, companies can use ChatGPT outside of existing applications, for example for their own research, for text generation or for the creation of programming code. According to a Bitkom survey conducted in spring 2023, however, none of the 603 companies with 20 or more employees in Germany surveyed has used ChatGPT to date (Bitkom, 2023). Nonetheless, 17 percent are planning to use AI applications such as ChatGPT for text generation and a further 23 percent can imagine using them.

It is therefore worth analysing current job advertisements to see if ChatGPT appears in them. Job advertisements are considered a direct indicator of human capital investment by companies. If they plan to use ChatGPT, it is advantageous for them to have employees with the appropriate skills in the company.

The following analysis is based on data from the provider Textkernel, which compiles online job advertisements from the first quarter of 2023 in Germany from over 60,000 sources such as various job portals. During this period, companies posted a total of more than 4.2 million job advertisements nationwide. A keyword search for “ChatGPT” and the language models behind

# Relevance of ChatGPT in the German labour market

Number of ChatGPT-related job advertisements in Germany; first quarter 2023 by calendar week



it, such as “GPT-4”, as well as a subsequent manual review of the job advertisements, yields 146 hits (Figure).

As a result, companies rarely mention ChatGPT in job advertisements so far. However, demand is steadily increasing in the individual calendar weeks of the first quarter of 2023. It should be noted that ChatGPT is a very specific term. Companies might demand ChatGPT tasks from new employees, but not necessarily write this in job advertisements, just as they would not mention a handling of search engines like Google. Therefore, the 146 job advertisements form a kind of lower boundary. In these job advertisements there is a particularly strong focus on ChatGPT. From this, initial trends for the use of ChatGPT in companies can be derived. Specifically, three trends emerge.

## 1. ICT and research as pioneers

33 job advertisements are posted by companies from the ICT sector. New employees are expected to generate programming code using ChatGPT, for example. ChatGPT also triggers further innovation impulses in the companies: For instance, chatbots are to be developed that are comparable to ChatGPT or based on it. Another

ICT company wants to develop an application like ChatGPT to generate legal texts automatically. 31 Job advertisements come from the education and research sector. They are mostly from universities or non-university research institutions that want to investigate generative AI in the context of ChatGPT as well as identify application contexts. In addition, one position is advertised for the development of OpenGPT-X, a European answer to ChatGPT. 17 other job advertisements come from business-related service providers, 13 from industry and technology, and 11 from retail. For example, the potential of ChatGPT in the production of an industrial company is to be evaluated.

It should be noted that so far the sectors of the advertising companies have been considered. However, if we look at the specific professions in the job advertisements, the areas of marketing and media communication in particular stand out. Especially for the creation of text contributions in social media or on company websites, employees are supposed to use ChatGPT. It is also noticeable that a new competence – so-called prompting – is required in some job advertisements. It describes the ability to communicate effectively with ChatGPT and to be able to make the appropriate search

queries. Occasionally job advertisements even contain the abbreviation “written by ChatGPT”. Although these companies are not looking for specialists with the appropriate skills, they apparently use ChatGPT in their recruitment.

## 2. Generative AI for everyone

In contrast to older large language models, which could only be used with high technical expertise and high computing capacities or cloud computing costs, ChatGPT is ready to use and easy to operate. As a result, it is not surprising that knowledge around ChatGPT is even slightly more frequently requested by small and medium-sized companies with fewer than 250 employees (53 percent of job advertisements) than by large companies with more than 250 employees (47 percent). Start-ups are also frequently represented among the companies that already want to use ChatGPT (27 percent of all job advertisements). This is because ChatGPT promises enormous efficiency gains in the implementation of projects, especially for smaller teams with less specialized personnel. For example, ChatGPT can be used to identify new product features, create pricing models, or develop entire marketing strategies at the push of a button.

## 3. Cautious approach by companies

Despite all the advantages of ChatGPT and its growing popularity, companies are approaching the new technology rather cautiously. In concrete terms, competencies related to ChatGPT have rarely been requested in job advertisements, even though demand is increasing. A further indication of the cautious approach to ChatGPT in German companies becomes clear when looking at the type of employment relationships: More than a quarter of ChatGPT jobs are internships, while the proportion for all job advertisements is only about 4 percent. It is also apparent from the full texts of the ChatGPT jobs that many companies are not yet clear whether and how the technology is to be used. From the companies’ point of view, internship positions are therefore apparently well suited as a test of the extent to which ChatGPT can be beneficial for their own business model, since internship positions are not cost-intensive and are limited in time. Companies’ reluctance may also arise if they perceive legal uncertainty. In the

future, the EU plans to regulate generative AI under the AI Act (European Commission, 2023). In this act, various AI applications are to be divided into different classes depending on the risk to the economy and society and regulated to varying degrees. Which class generative AI such as ChatGPT falls into and what impact this will have on the using companies has not yet been clearly clarified. In this context, rapid legal certainty would be important for companies to know how they can use ChatGPT in the medium to long term. However, the legal framework should be designed in a way that the potential of ChatGPT remains usable for the economy and the society.

## Literature

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