# Literature Review on Use Cases for Generative AI in organizations

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## Abstract

*Generative AI (GAI) is one of the fastest growing technologies ever, with the potential to have a significant impact on organizations. Organizations can build competitive advantages by enhancing efficiency and productivity through the implementation of GAI. It is crucial for management to assess the impact of GAI and identify potential use cases for their organization. This systematic literature review aimed to present the current state of research on GAI use cases in organizations. A total of 21 overarching use cases spanning seven organizational functions were identified. The use cases range from virtual service agents to boost customer support, optimizing operations, automatically generate code from natural language input up to identifying fraudulent transactions in finance systems. When implementing these applications, it must be ensured that legal and ethical risks such as IP right infringements and biased algorithms are avoided.*

*Keywords: Generative AI, Generative AI in Organizations, Generative AI Business Applications, Generative AI Use Cases*

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# 1    Introduction

Generative Artificial Intelligence is one of the fastest-growing technologies in recent years, with adoptions observed from private consumers and research labs up to large corporations. The technology became broadly available with the release of ChatGPT by OpenAI in November 2022, reaching over 100 million users in the first two months. This achievement positions it as the fastest-growing application in consumer history, as reported by Reuters (Hu 2023). Generative AI is not a novel concept; its original development traces back to the 1960s (Chen et al. 2023). However, the breakthrough was made possible through advancements in technology, computing power, vast amount of data, and a new class of AI models. This new class of models is mostly based on Large Language Models (LLMs) and the transformer architecture (Huang 2023). Utilizing the "attention mechanism", the transformer model assigns weights to the words in the input sequence based on their relevance to the output sequence. This capability empowers the model to comprehend and generate human speech (Huang 2023, Yosifova 2023). Additionally, alongside OpenAI's latest GPT-4 model, other digital giants are developing their own models, such as PaLM 2, which powers the Google Bard chatbot (Chui et al. 2023a). Many different applications emerged since the prominent release of ChatGPT, such as DALL-E or Midjourney for image generation, Synthesia for video creation, Vall-E for speech generation or GitHub Copilot or Alpha-Code for code generation (Beheshti et al. 2023, Hiter 2023). The adoption of Generative AI models significantly influences companies by automating processes, leading to increased efficiency and improved resource utilization. A recent McKinsey study suggests that applying GAI in business organizations across all industries has the potential to add a value of $2.6 to $4.4 trillion USD in economic benefits (Chui et al. 2023a). GAI is currently adopted across industries with a wide range of use cases ranging from software development, content creation, contract drafting to marketing optimization (Dwivedi et al. 2023).. Another study by McKinsey (QuantumBlack) on the adoption of GAI reveals that already one-third of organizations are implementing GAI use cases in at least one function. The study anticipates a drastic growth in the number of adopters in the coming years (Chui et al. 2023b).

The rapid evolution of Generative Artificial Intelligence (GAI) and its widespread adoption across various sectors, as evidenced by the success of applications like ChatGPT and the emergence of diverse use cases from image and speech generation to code creation, underlines the impact of this technology. This literature review seeks to explore and analyze the current research landscape of GAI use cases in organizations. Given that research in this area is relatively novel and more studies are continually emerging, conducting a literature review will help to provide a comprehensive understanding of the application of GAI. This study focuses on use cases in businesses and excludes potential applications in sectors such as education and healthcare. Taking these objectives into account, the research question for this study is:

> *"What is the current state of academic literature regarding Generative Artificial Intelligence (GAI) use cases in organizations?"*

Investigating this research question, the study begins with a systematic literature review of current research landscape on the topic of GAI uses cases in organizations. Afterwards I present the results and findings from the selected literature. In the end, I discuss the findings, point out similarities and key points in the literature and offer insights to practical implications and possible directions for future research.

# 2    Literature Review

The systematic literature review follows a three-step methodology, with first the searching process, second the selection and last the analysis of the selected literature (chapter 3). This process aims to systematically compile qualitive literature which articulates use cases of GAI within organizations, to provide a comprehensive overview of the current state of research in this domain.

## 2.1    Literature Search

To conduct the systematic literature, I followed the search approach of Webster and Watson 2002. The initial keyword search with the keywords "Generative AI Use Cases" and "Generative AI Business Applications" returned a very narrow literature batch and the keywords were therefore further iteratively developed. To incorporate terms used synonymously or related to "business" and "generative AI", the final search string was significantly expanded. It was found that more precise and relevant literature was retrieved when different keywords were used for the title and abstract search. The databases AISel, EBSCO Business Source Complete, Google Scholar, IEEE Xplore, and Web of Science were searched.

**Title Search String:** *"Generative AI" OR "GenAI" OR "GAI" OR "Generative Artificial Intelligence"*

**Abstract Search String:** *"Business Use Case" OR "Business Application" OR "industry applications" or "enterprise applications" OR "industrial" OR "business" OR "application" OR "enterprise" OR "industry"*

## 2.2    Literature Selection

The initial search results were filtered to select the relevant literature before undergoing analysis. First, the scope of publications was restricted to literature published after 2018. This criterion was employed to incorporate recent works illustrating use cases in organizations, while excluding literature primarily centred on theoretical frameworks for developing GAI models. In alignment with this study's scope, the next step involved excluding literature that explores use cases in sectors like healthcare or education. Following that, every title, abstract and, where available table of content, of the remaining search results was read. The literature chosen for the more extensive analysis was determined by two criteria. Firstly, it was considered how well the identified literature aligns with the research question and scope of the review in terms of relevance and coverage. Secondly, the source quality was considered, with a focus on academic journals and papers. Given the limited availability of academic journals and papers, articles stemming from reputable magazines and reports from consultancies were also included. As a last step, I applied the two-way search, backward and forward, from Webster and Watson 2002 to identify further literature. The backward search involves analysing the referenced papers in the chosen literature, while the forward search consists of identifying papers that cite the selected literature through a database search. In the end, a total of 25 papers were selected (see Figure 1), with the cut-off date November 25, 2023.
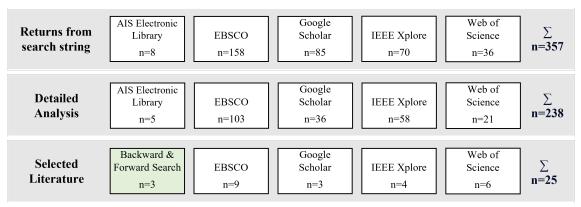
| | AIS Electronic Library | EBSCO | Google Scholar | IEEE Xplore | Web of Science | |
|---|---|---|---|---|---|---|
| **Returns from search string** | n=8 | n=158 | n=85 | n=70 | n=36 | Σ **n=357** |
| **Detailed Analysis** | AIS Electronic Library n=5 | EBSCO n=103 | Google Scholar n=36 | IEEE Xplore n=58 | Web of Science n=21 | Σ **n=238** |
| **Selected Literature** | Backward & Forward Search n=3 | EBSCO n=9 | Google Scholar n=3 | IEEE Xplore n=4 | Web of Science n=6 | Σ **n=25** |

Figure 1            *Literature Selection Process*

# 3    Findings

This chapter presents the results of the systematic literature analysis. To better understand how GAI is applied in organizations, this literature review categorizes use cases based on their organizational

functions. This categorization approach is commonly found in the literature. The individual contributions to the respective categories of each paper can be found in the conception matrix (Appendix 1). A total of 21 use cases were found across seven different functions (see Table 1). This chapter examines all use cases except for those falling under the category of "employee utilization", as they are largely self-explanatory and already briefly discussed in the other categories.

| Marketing & Sales | Operations Management | IT & Software | Finance Management | Product R&D | HRM* | Employee Utilization |
|---|---|---|---|---|---|---|
| Generating Insights | Optimization | Code Generation | Generating Financial Insights | Innovation Management | Recruiting | Translation Tasks |
| Content Creation | Quality Management | Software Development | Fraud Detection | Product Design | HR Service Agent | Create Summaries |
| Virtual Service Agents | Supplier Management | Field Service Tasks | | | | Drafting Documents |
| Personalized Marketing | | Synthetic Data Generation | | | | Search & Question answering |

*Table 1.*      *Identified Use Cases from the Literature Review categorized by business function, *HRM = Human Resource Management*

## 3.1    Marketing & Sales

**Generating Insights** – GAI introduces new use cases for leveraging data to identify trends, analyse performance and to understand and enhance sales. The early identification of trends plays a crucial role in marketing, using GAI algorithms can help to identify new global social megatrends (Wang and Wang 2023). Dwivedi et al. (2023b) identify a use case for the tourism and hospitality industry by analysing local trends before opening a restaurant, using GAI to analyse social media data to learn about preferences. GAI can also be used to gain insights to future demand and purchase behaviours through analysing large amounts of unstructured historical and present data (Dogru et al. 2023). Especially the e-commerce sector can benefit from the technology, GAI can assess a websites performance through collection more unstructured data than traditional AI systems (Dwivedi et al. 2023a). This collected data can also enhance the accuracy of attribution by enabling faster processing of more touchpoints (Ooi et al. 2023). GAI also provides access to new metrics, such as customer sentiment, offering valuable insights for marketing campaigns and identifying growth opportunities (George et al. 2023). A further prominent use case found in the literature is the identification of cross-selling or upselling opportunities through analysing and combining internal e.g. historic customer conversations and social media influencer with external market information (Chui et al. 2023c, Dwivedi et al. 2023b).

**Content Creation** – The generation of content is a frequently mentioned and widely known use case in the literature. GAI can create various content types which can be used for marketing purposes like text, video, audio and images (Ebert and Louridas 2023). The application of text generation can be utilized for creating blog or social media posts, news articles, product descriptions and email newsletters (Beheshti et al. 2023, Dogru et al. 2023, Dwivedi et al. 2023a, Ebert and Louridas 2023Kar et al. 2023). Tools like DALL-E or Synthesia are capable of creating visual content (e.g. images, videos, logos) which can be used for marketing campaigns (Beheshtri et al. 2023, Ebert and Louridas 2023). Visual content can also be generated according to the target groups aesthetic preference to boost engagement (Kshetri 2023). GAI can automate content production and reduces the need for extensive human involvement, resulting in both faster production rates and reduced marginal production costs (Kanbach et al. 2023, Kshetri 2023). Yet, McAfee et al. (2023) stresses that companies are presently cautious regarding IP right violations associated with GAI applications, choosing to wait for initial court decisions.

**Virtual Service Agents** – Virtual agents, typically in the form of chatbots, represent the most frequently observed use case in the selected literature. Chatbots can take over customer service tasks, such as answering common queries and handle routine tasks. By putting service chat bots in place, trained service agents have more time for complex service interactions with the customer (Beheshti et al. 2023, George et al. 2023, Kanbach et al. 2023). Ikea, for example, retrained its service agents to transition into the role of interior design advisors, with the AI agent 'Billy' handling the majority of more simple customer support inquiries (Orchard and Tasiemski 2023). GAI chatbots are more efficient, constantly polite and patient (Chen et al. 2023), available 24/7, are able to provide personalized answers and can significantly reduce labour costs (Dogru et al. 2023, George et al. 2023, Kanbach et al. 2023, Richey et al. 2023). Baig et al. (2023) McAfee et al. (2023) suggest to finetune GAI chatbots with sector specific knowledge and in-context learning to enable the handling of complex tasks and constantly improve the service quality. Dwivedi et al. (2023a) also note that GAI chatbots are progressing towards "general intelligence" through the capability to embody a brand image, brand position, employ domain-specific language and to identify and respond to various sentiments. GAI chatbots have a multitude of positive effects on the customer: increased service quality, enhanced customer satisfaction, increased customer retention and engagement, ability to communicate in multiple languages and an overall improved customer experience (Dogru et al. 2023, George et al. 2023, Richey et al. 2023).

**Personalized Marketing** – GAI enables real one-to-one personalization, aligning with the trend of hyper personalization (Dogru et al. 2023, Kshetri 2023). Customers can get personalized product recommendations, service offers, marketing campaigns, social media posts and customized products (Chen et al. 2023, Dogru et al. 2023, Kshetri et al. 2023, Ooi et al. 2023). While generic recommendation systems are based on collaborative filters and predictions based on other groups, GAI personalization utilizes more data such as search history, past purchases, individual preferences or sentiments to enable real one-to-one personalisation (Kshetri et al. 2023, Ooi et al. 2023). Specific use cases could be personalized travel recommendations during the booking process based on travel history and real-time parameters such as weather (Dogru et al. 2023, Ooi et al. 2023), or personal financial advice based on monetary data (Kanbach et al. 2023). Customers can benefit from personalization by saving time and receiving tailored products/services, while businesses can generate more revenue and foster increased customer interest and engagement (Dogru et al. 2023, Mondal et al. 2023).

## 3.2    Operations Management

**Optimization** – GAI algorithms demonstrate the capability to optimize transport routes by assessing and integrating real-time data, such as weather conditions, traffic data and fuel prices. This results in shorter transport/lead times and cost reductions (Dwivedi et al. 2023b, Richey et al. 2023, Trivedi 2023). In addition, GAI can optimize the warehouse inventory by leveraging advanced real-time forecasting models, which enable more accurate demand predictions and therefore optimized inventory levels (Trivedi 2023, Richey et al. 2023). Richey et al. (2023) also adds that, with the capability to continuously monitor and forecast demands, GAI could autonomously manage stocks by following flexible inventory level policies and thereby facilitate lean, just-in-time warehouse operations. Furthermore, the deployment of GAI allows for the generation of an optimal warehouse layout. The routes of intralogistics could be optimized based on the consideration of various information (e.g. product dimension) (Richey et al. 2023, Sarkar and Saha 2023). Another application domain for operational optimization using GAI is highlighted by Karapantelakis et al. (2023). The technology can optimize mobile networks by incorporating, for instance, different traffic estimation scenarios and geographical conditions.

**Quality Management** – The ability of GAI to combine and assess massive amounts of unstructured and structured data from various sources can be used for quality management. By integrating real-time sensor data (e.g. humidity), visual data (e.g. product pictures) and textual data (e.g. maintenance manuals), GAI in production can assess product quality, identify anomalies, monitor health, and predict defects

(Beheshti et al. 2023, Li et al. 2023, Ooi et al. 2023). This results in fewer manual inspections being required, leading to an increase in product or manufacturing quality and enabling companies to save money (Ooi et al. 2023). Karapantelakis et al. (2023) state that GAI could also be used for automatically drafting troubleshooting reports and automatic classification and prioritization of errors. Another application area could involve the analysis of sentiments in product reviews or social media posts to determine the perceived product quality (Kar et al. 2023).

**Supplier Management** – GAI can improve the supply chain collaboration and transparency between businesses and their suppliers (Wang and Wang 2023). Kar et al. (2023) references the FedEx chatbot in this context, which provides personalized real-time information, such as the status of customs processing or estimated delivery schedules. GAI can also be employed to initiate automated communication with suppliers, providing early notice in the event of future demand spikes and securing possible capacities (Sarkar and Saha 2023). The capability to combine various datasets enables GAI to continually analyse supplier portfolios based on factors such as product quality, reliability, efficiency, insolvency risks and sustainability. If necessary, GAI can then suggest supplier changes (Richey et al. 2023). In addition, GAI could also suggest or automize (Sarkar and Saha 2023) contract clauses and price negotiation tactics based on supplier data and behaviour (Richey et al. 2023).

## 3.3    IT & Software Management

**Code Generation** – The generation of code with GAI was the second most frequently observed use case in the literature review after virtual service agents (3.1). I identified three distinct use cases in the literature that can be categorized within the context of code generation. First, GAI can be used to generate code from natural langue. Programmers can describe the features or requirements the code should embody and GAI translates these requirements into code accordingly (Chui et al. 2023c, Ebert et al. 2023, Orchards et al. 2023, Sun et al. 2022). Second, GAI is being utilized for auto-completing code. Tools like GitHub Copilot analyse previously written code and code from other programmers to predict and suggest the next lines of code in real-time (Beheshti et al. 2023, Chui et al. 2023c, Ebert et al. 2023, Karapantelakis et al. 2023, McAfee et al. 2023, Orchards et al. 2023, Sun et al. 2022). Thirdly, GAI has the capability to translate legacy code into modern programming languages (e.g. Python). Businesses thereby have the opportunity to reduce their technical debt and modernize legacy systems (Baig et al. 2023, Ebert and Louridas 2023, Kanbach et al. 2023, Orchards et al. 2023, Sun et al. 2022). With these three use cases, software development becomes much faster and more cost-effective (Kanbach et al. 2023, Sun et al. 2022). Baig et al. (2023) state that the development of new code with GAI is 30-50% faster and code refactoring 20-30% faster. However, software engineers need to be kept in the loop to mitigate the risk of implementing bugs and security gaps (Chui et al. 2023c, McAfee et al. 2023).

**Software Development Tasks** – In addition to code generation, GAI can undertake various tasks in software development. Documentation can be automatically generated, simultaneously to the code generation (Baig et al. 2023, Ebert and Louridas 2023, Kanbach et al. 2023, Mondal et al. 2023, Sun et al. 2022). Furthermore, GAI can automate the software testing procedure by generating and simulating test scenarios for the requirements. This allows bugs to be identified much faster and more reliably, with generating immediate suggestions for resolution (Baig et al. 2023, Ebert and Louridas 2023). Ebert and Louridas (2023) also suggests that GAI can generate recommendations or ideas for software requirements and features, while also predicting features that may arise in the future.

**Field Service Agent** – Similar to Virtual Service Agents in the field of marketing (3.1), GAI can also be applied in the context of IT operations as a field service agent. GAI can handle simple inquiries, e.g. password resets or basic diagnostics, develop standard operating procedures and generate IT performance reports. This frees up time of human service agent to take over non-routine complex tasks. (Baig et al. 2023).

**Synthetic Data Generation** – The growth of AI depends on having vast amounts of data available and certain industries may encounter difficulties due to the shortage and limited accessibility of data (Sasiaowapak et al. 2023). Financial institutions, for example, encounter challenges in managing sensitive data (e.g. customer financial information) and may face privacy issues when using such data for algorithm training (Chen et al. 2023). Using GAI to generate synthetic datasets enhances overall data sample size and variability without sacrificing privacy protection (Ebert and Louridas 2023, Ooi et al. 2023, Sasiaowapak et al. 2023). Synthetic Datasets have a high level of similarity through learning patterns and relationships from the actual data. They can be used as training data to improve the accuracy of AI models (Sasiaowapak et al. 2023). A further use case would be the simulation of stress tests and disruptive scenarios (Ooi et al. 2023) or creating synthetic fraudulent transactions to train security algorithms in finance (Chen et al. 2023).

## 3.4 Finance Management

**Financial Insights** – Similar to its applications in marketing, GAI can generate valuable insights within the finance domain. By analyzing various financial data sources, such as financial transactions, balance sheets, or income statements, GAI can generate automated financial reports (Chen et al. 2023, George et al. 2023). GAI-supported data analysis makes it easier to process real-time data, allowing for quicker and more information-based decision-making (Chen et al. 2023, George et al. 2023, Kar et al. 2023). Further it allows to improve financial forecasting to predict market trends, currencies or stock prices through analyzing external sources such as income reports or newspaper articles (George et al. 2023, Ooi et al. 2023, Wang and Wang 2023). Kar et al. (2023) also states out the possibility to automate trading with GAI, to directly use emerging market situations.

**Fraud Detection** – Besides generating insights from data, the literature also frequently discusses the use case of identifying fraudulent transactions in finance systems with GAI (Beheshti et al. 2023, Chen et al. 2023, George et al. 2023, Kanbach et al. 2023, Kar et al 2023, Ooi et al. 2023, Wang and Wang 2023). By analysing patterns and anomalies in finance transactions, GAI is capable of identifying and highlighting fraudulent activities (Beheshti et al. 2023, Ooi et al. 2023). This can reduce the risk and impact of financial crime and can save costs for human labour (Beheshti et al. 2023, Wang and Wang 2023). This use case is closely connected to the use case of generating synthetic fraudulent data to train AI algorithms (3.3) (Chen et al. 2023).

## 3.5 Product R&D

**Innovation Management** – GAI can be used in the product development department to generate new product ideas (Dogru et al. 2023, Kar et al. 2023, Ooi et al. 2023). Dogru et al. (2023) breaks down GAI's innovation capability, highlighting that brainstorming with GAI can generate significantly more ideas. This is possible because GAI can access a vast amount of information sources that a human cannot consider in the brainstorming process. In addition, GAI can also conduct market research and identify gaps and potential innovations (Kar et al. 2023). Organizations cold thus develop product innovations faster and respond faster to market trends (George et al. 2023). Simultaneously, the innovations process becomes more cost efficient and accessible for organizations without a dedicated research department (Dogru et al. 2023). However, the sole reliance in GAI as innovator can potentially hinder groundbreaking innovations, as GAI still relies on trainings patterns and data (Dogru et al. 2023).

**Product Design** – In addition to idea generation, GAI can also take on product design tasks. With the assistance of GAI, existing designs can be optimized, such as reducing weight through alternative weight distribution or the use of new materials (Dogru et al. 2023, Mondal et al. Ooi et al. 2023). Furthermore, Gai can also generate entirely new product design, e.g. chip designs, mobile network designs (Karappentalakis et al. 2023), novel architecture style, material design or new drug/medication design (Ebert and Louridas 2023). GAI product design can be used across industries, enabling faster and more cost-

effective designing (Mondal et al. 2023). Ooi et al. (2023) adds the capability of generating multiple variants of products to adjust to different constraints (e.g. loads (physical) or corrosion resistance (mechanical)). This can be used to adjust products according to supplier specifications and therefore reduce dependence on certain suppliers.

## 3.6 Human Resource Management

**Recruiting –** AI is already being used in recruiting to handle large numbers of applicant and therefore increase efficiency (Budhwar et al. 2023). The additional use of GAI opens further possibilities in the recruitment process to achieve even more accurate and efficient results. GAI can automatically generate job descriptions, create skill requirements, prepare interview questions and help with the assessment of potential candidates (Budhwar et al. 2023, Kar et al. 2023, Ooi et al. 2023). Leveraging GAIs natural language processing (NLP) capabilities, enhances the precision of CV assessments and automatic suggestions of candidates can be generated for the recruiter (Budhwar et al. 2023, Ooi et al. 2023). Ooi et al. (2023) also emphasizes that reverse recruiting can be improved with GAI through more personalized job recommendations on platforms such as LinkedIn. However, the use of GAI in recruitment can lead to discrimination and inequality through biased models (Budhwar et al. 2023, Ooi et al. 2023).

**Digital HR Agent –** GAI can be used as a digital agent in HR, similar to marketing service agents (3.1) or field service agents (3.3), to give human like responses to queries (Budhwar et al. 2023, Ooi et al. 2023). A Digital HR agent handles tasks, which would usually be handled by HR service centers like managing personal data or queries on pay slips (Budhwar et al. 2023, Mondal et al. 2023). But GAI is not limited to standard service queries, Budhwar et al. (2023) and Kar et al. (2023) suggest that GAI can also provide answers to improve employee wellbeing, create HR documents (e.g. guidelines) and assists line manager with leadership skills and performance assessments. Overall, the use of GAI enables HR employees to focus on more core and strategic HR tasks (Budhwar et al. 2023).

# 4 Discussion

## 4.1 Features of the literature

Due to the novelty of the subject, there are currently no established and peer reviewed GAI frameworks for use cases in organizations and there is no widely cited foundational literature available. The literature is complementary and no contradictions could be found in the use cases. There are three works, George et al. (2023), Dwivedi et al. (2023) and Dogru et al. (2023), which have been frequently cited in other literature. A point that has been approached similar by the majority of the selected literature is the classification of use cases based on business functions (e.g. Dogru et al. 2023, Kar et al. 2023, Ooi et al. 2023). Furthermore, the most frequent addressed functions from the literature are Marketing & Sales and IT & Software Management. Less literature is addressing potential use cases in the Human Resource Management. Another similarity is that many use cases rely on GAI's capability to integrate and analyse various sources of structured and unstructured data.

## 4.2 Practical Implications

This research and the topic of GAI have a high practical relevance. As demonstrated by the presented use cases, GAI can be applied across all business functions and industries, leading to significant improvements in efficiency and productivity. According to a study by McKinsey (Chui et al. 2023a), 75% of the annual AI impact (percentage of functional spend) is expected to occur in IT & Software Management, Marketing & Sales, Customer Service, and Product R&D. The same study predicts that the productivity impact of GAI across industries (in relation to industry revenue) will be highest in the high-tech industry (4.8-9.3%), followed by the banking (2.8-4.7%) and pharmaceutics industry (2.6-4.5%). As mentioned in the introduction, GAI is one of the current fastest growing technologies and has the

potential to evolve into a significant competitive advantage in the digital era. Businesses will need to engage with this technology, identifying its potential and possible use cases. This study can assist management to gain an overview of potential use cases and ease the decision making. As emphasized by Chui et al. (2023c) CEO/CIOs should focus on building "lighthouse" projects and start implementing GAI. But the adoption of GAI on organizational level requires more than just identifying "lighthouse" use cases. Partially outlined in the literature findings, it is essential to consider factors such as legal, ethical and technical implications. Business could face heavy legal implications through e.g. violating IP-rights with GAI generated content (e.g. images), improper processing of personal data (e.g. train algorithms with sensitive data) or leaking sensitive data to public GAI models. Therefore, it is important to evaluate the risk of such violations beforehand and to know which data sources GAI models are accessing. Especially for use cases involving human interfaces and personal data, organizations must consider ethical frameworks. GAI can, depending on the training data, reinforce racist and discriminatory bias. It must be ensured that the models have not been trained on biased data sets. Another ethical consideration would be how to deal with positions that could be replaced through GAI.

 The success of GAI in organizations depends largely on the quality and availability of data. To really leverage the potential, organizations must enrich GAI models with domain and company specific data (Baig et al. 2023, Chui et al. 2023b). Outdated data structures, missing data strategies and inadequate technical infrastructure for data processing can hinder the effective implementation of GAI.

In summary, this work can serve as a resource to offer organizational management an overview of potential practical applications of GAI. However, for a comprehensive perspective on implementation, additional considerations, including legal, ethical, and technical implications, must be taken into account beyond the insights presented in this study.

## 4.3 Future Research

As already indicated, the research field on use cases of GAI in organizations is still in its early stages and I anticipate a significant rise in academic papers in the coming months and years. The use cases currently highlighted in the literature are often theoretical and have not been fully tested in practice. The majority of applications tested and verified in practice can be found in consultancy papers (Baig et al. 2023 and Chui et al. 2023c). With more organizations adopting and proofing GAI use cases in the future, new insights and findings can be discussed in the literature. Future research could examine the different industry and function requirements to implement GAI. Another large research field is the legal and ethical impact of GAI. Cheng and Liu (2023) conducted an initial study in this domain and suggest the development of framework and guidelines for the responsible handling of GAI. Future works could explore the design and adoption of such frameworks and guidelines. More technical research could assess the integration of LLMs, such as ChatGPT or PalM2, into organizational infrastructure and explore methods for training these models with domain specific data. To classify use cases in a more uniform way, future research could also investigate on possible taxonomies for GAI use cases.

## 4.4 Limitations

The findings of the literature review are subject to certain limitations. A total of five databases were searched and therefore literature from other databases may be missing. In addition, only English-language literature was considered. The selected search string (2.1) and methodology excludes potential GAI use cases that may be addresses under the term "Artificial Intelligence". Despite the described literature selection process, the selection of literature may have been partially subjective based on my individual judgement. The field of research is novel and the majority of the literature just emerged in the past months. Thus, this review provides only a snapshot of the ongoing research. I anticipate that a considerable amount of literature with new insights and findings will emerge in the coming months.

# 5      Conclusion

This literature review outlines the research landscape of GAI use cases in organizations. A total of 21 use cases in seven different organizational functions stemming from 25 analysed papers were found. Many found use cases leverage GAI capabilities to combine and analyse unstructured and structured data from various sources. Paired with NLP and human like answers, GAI can boost productivity, efficiency and personalisation in the organizational context. Most of the identified use cases are still theoretical and need to be proven in practice. The literature in this field not mature and a significant increase in publications in the coming months and years is expected. With intensified research in this domain, new use cases could emerge and existing ones may be subject to examination regarding their practicality.

Nonetheless, the economic potential of GAI is undisputed and organizations have to consider and assess the potential of GAI in their organizations. Organizations should identify lighthouse projects to explore potential ethical and legal risks and gain acceptance and knowledge for the technology. I hope this work can assist organizations in the decision-making process of identifying and implementing their initial use cases.

# Appendix

| Reference | Marketing & Sales | Operations Management | IT & Software Management | Finance Management | Product R&D | HRM | Employee Utilization |
|---|---|---|---|---|---|---|---|
| Baig et al. (2023) | • | | • | | | | |
| Beheshti et al. (2023) | • | • | • | • | | | |
| Budhwar et al. (2023) | | | | | | • | |
| Chen et al. (2023) | • | | • | | | | |
| Chui et al. (2023c) | • | | • | • | | | • |
| Dogru et al. (2023) | • | | | • | • | • | |
| Dwivedi et al. (2023a) | • | | | | | | |
| Dwivedi et al. (2023b) | • | • | | | | | |
| Ebert and Louridas (2023) | • | | • | | • | | • |
| George et al. (2023) | • | | | • | • | | |
| Kanbach et al. (2023) | | | • | • | | | |
| Kar et al. (2023) | • | • | | • | • | • | • |
| Karapentelakis et al. (2023) | | • | • | | • | | • |
| Kshetri, N. (2023) | • | | | | | | |
| Li et al. (2023) | | • | | | | | |
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