# ChatGPT and Generative AI in IT processes

Applied Project Final Report

By

Chuan Ma

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## Executive Summary

Whether generative artificial intelligence (AI) has the potential to help IT organizations improve process efficiency and gain better prospects is a topic worth discussing. The white paper is a report on the application prospects of generative artificial intelligence in the IT industry, mainly including industry background, literature review, potential cases, technical descriptions, user interviews, potential risks and recommendations for adoption. This study believes that, in particular For IT companies, active use of generative AI represented by ChatGPT can automatically perform unnecessary tasks that are unnecessary time-consuming and energy-consuming, thereby freeing up resources to focus on more complex issues. However, the existence of generative AI Risks to safety, legal, moral and job losses cannot be ignored. Therefore, this study suggests that enterprises should consider following reasonable steps when applying generative AI to ensure proper data preparation and model selection.

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# 1. Introduction

## *1.1 Background*

The Information Technology (IT) industry is rapidly evolving, and the current landscape is more complex and competitive than ever before. Companies are facing a variety of challenges, including the need to stay ahead of the curve when it comes to new technologies, cyber security threats, and managing increasingly large volumes of data. They must also focus on leveraging data to drive insights and make better decisions, while keeping up with customer demands for better services and faster response times (Koeneke, 2022). The IT industry is also faced with the challenge of providing reliable, cost-effective services, while keeping up with the changing demands of the marketplace. Despite these challenges, the IT industry continues to be a major driver of economic growth and innovation, and businesses are continuing to invest in the latest technologies and solutions to ensure they remain competitive in the market. Management of availability, capacity, performance, infrastructure lifetime, and system management all need to be improved in the IT industry. When it comes to change management in particular, IT must ensure that they have the appropriate individuals in control of IT operations and make it clear that success will be judged by the only metric that matters in terms of IT operations metrics (Redhat, 2021).

## *1.2 Research question*

The research question is how to use generative AI, specifically ChatGPT, to improve IT processes. This research will explore the various ways in which ChatGPT can be used to improve IT processes, including automating tasks, reducing manual labor, and streamlining

processes. By understanding the capabilities of generative AI and its potential to improve IT processes, people can gain insight into how to best utilize it to our advantage.

*1.3 Necessity*

The use of Artificial Intelligence (AI) in IT processes can greatly improve efficiency and effectiveness. By utilizing Artificial Intelligence-based solutions such as machine learning, natural language processing, and predictive analytics (Comidor, 2023), organizations can achieve automation of tedious tasks, streamlining of processes, and minimization of manual mistakes. In addition, solutions based on AI can provide insights into client needs, which enables businesses to provide improved customer experiences. AI also enables organizations to identify and address potential issues before they become problems, resulting in higher customer satisfaction and improved operational efficiency. ChatGPT is a broad language model, Improve supervised and reinforcement learning using Open AI on large data sets (Patel, 2023). The automation of processes is one of the most significant effects that ChatGPT has. Because it is able to comprehend and react to input in natural language, it is a great tool for automating processes that, in the absence of this capability, would call for the intelligence and comprehension of a human. When it comes to optimizing corporate procedures, artificial intelligence systems like ChatGPT can be a real game changer (Lin, 2023). By using AI tools like ChatGPT, companies can significantly reduce the redundancy of their IT processes. This will lead to simplification of operations, improved efficiency and cost savings. As AI takes over repetitive tasks, employees can focus on high-value activities that add more value to the business.

*1.4 Application prospect*

The increasing use of AI in various industries is having a significant impact on the way businesses operate and the way products are produced. AI is being used to streamline IT processes, automate operations, and improve customer experiences. By incorporating AI into these processes, companies are able to achieve more efficient and effective outcomes. AI has the potential to revolutionize the way businesses operate, and has already been successfully implemented in a number of industries, such as healthcare, finance, retail, and manufacturing. As AI technology continues to evolve, more industries are beginning to adopt it to increase productivity, accuracy, and efficiency. For instance, ChatGPT can be used to improve the accuracy and effectiveness of software automation in the healthcare industry. ChatGPT can comprehend the meaning of words and phrases because to its natural language processing (NLP) capability. Automated systems can be more accurate in the retrieval, sequencing, processing, storage, and reporting of data transactions when they are able to comprehend, categorise, and contextualise culturally unstructured texts (Chow, 2023).

With its potential for IT process optimization, AI is set to become an integral part of the way businesses operate in the near future. ChatGPT can help automate IT processes, IT uses machine learning techniques to identify user intentions and automatically execute relevant IT processes based on user requirements. Once you have identified a task to automate, you can create a workflow for the functionality of that task. These workflows can be prearranged or activated automatically when certain situations occur or trigger conditions are met. Based on the parameters set, the organization may set up notifications or alerts as required for further action. The end result is faster, more efficient processes, fewer errors, cost savings and

increased productivity. In addition, the more automation there is, the more processes are identified for automation and the faster errors and other problems can be identified (Redhat, 2021). ChatGPT is ideal for organizations looking to increase the efficiency of their IT process.

## 2. Literature Review

### *2.1 Relevant studies*

To facilitate impact analysis of any proposed modification, an organization must first understand the structure of the IT environment, including dependencies among its various components (Atatus, 2021). However, Atatus points out that traditional technologies rely on manual configuration and rely on metadata maintenance, which is a dangerous and expensive proposition at best. In contrast, IT process automation refers to the automation of IT services, support, and management into workflows, thereby saving time and cost of manual management (Redhat, 2021). Once you have identified a task to automate, you can create a workflow for the functionality of that task. These workflows can be pre-scheduled or automatically activated when certain conditions occur or trigger conditions are met. Based on the set parameters, organizations can set notifications or alerts to be raised as needed for further action.

According to Yatskiv et al. (2019), the automation of time-consuming and repetitive work for employees is becoming increasingly popular, but its success is frequently contingent on the specific system that is being evaluated. The researchers provide an explanation of the proposed methods for software test automation, which make it possible to carry out tests in a quicker and more trustworthy manner. While this has been happening, Nordea has put in place a sizable number of software robots that are employed for a wide range of business operations. These software robots are employed for a variety of tasks, such as resolving enquiries related to the General Data Protection Regulation and transaction processing, as well as internal and external reporting (Kedziora & Penttinen, 2021). Kirchmer and Franz

(2019) present a method that enables focusing on the ideal sub-processes to automate, enhancing those business processes while taking the end-to-end process context into account, and maintaining the outcomes through proper governance and hybrid workforce management.

Organisations can simply link their services with apps and systems by using OpenAI tools, which are accessible through a web interface and APIs (Comidor, 2023). A restricted number of Azure cloud users are currently able to access the massive language learning model that underlies ChatGPT from Microsoft. All Azure cloud customers will soon have access to ChatGPT, Codex, and DALL-E, according to the plan (Zec, 2023). With ChatGPT, businesses will be able to make better use of cloud infrastructure and expand the use cases for cloud-based tools. According to Roth (2023), one of the uses of ChatGPT is to help professional developers answer their questions about other developers' code. This can help automation developers better understand VB.Net, SOQL, JQL, LINQ, and any other coding language. ChatGPT helps developers to expand their knowledge of lesser used programming languages. Patel (2023) believes that ChatGPT can play a full role in performance testing and security testing. On the one hand, ChatGPT has the capability to automatically generate a large number of test cases based on particular inputs (such as user scenarios or use cases). These inputs can include tasks such as producing test cases, analyzing test results, and delivering feedback. Because of this, the amount of time and effort needed to manually generate test cases can be significantly reduced, and the coverage of test cases can be increased, which ensures that the system is tested extensively. On the other hand, because of the growing complexity of today's systems and the growing danger posed by cyberattacks,

security testing has emerged as an essential component of information security. The sheer volume of data that needs to be evaluated is one of the most significant problems that must be overcome while conducting security testing (Patel, 2023). Inspections of network traffic, system logs, application code, and the results produced by various security tools can be performed more effectively via ChatGPT.

*2.2 Current state of the field and its limitations*

The field of IT process automation has made tremendous strides in recent years, particularly in the areas of software development and system management. Automation can greatly reduce the amount of manual labor required for many tasks, increasing efficiency and accuracy. However, the current state of IT process automation is still limited in many areas, including scalability, stability, and cost. Additionally, some automation processes require manual intervention, which can be time-consuming and costly. As the field continues to evolve, it is essential to focus on the development of more reliable and cost-effective automation solutions.

The potential influence of ChatGPT on IT process automation is substantial, yet the quality of the academic research in this area is appalling. ChatGPT is able to comprehend the purpose behind user inquiries and deliver precise and timely automated responses by utilising strong natural language processing and machine learning techniques. This enables organizations to automate tasks that would otherwise require manual input, reducing costs and increasing efficiency. But when you search for ChatGPT as a keyword, the results are mostly about its smart text generation capabilities and the academic ethical risks it may pose. Scholars seem to focus more on hot topics like these. This is understandable, given that

ChatGPT has only been around for nearly three months. As a result, much of the information sought in this study on how ChatGPT is applied to the IT process comes from the Web and lacks peer review.

*2.3 Gaps in the literature and areas for further research*

There is a dearth of systematic research and real-world application examples in the published material associated with this topic. This presents a challenge not just to people who are experts in the industry but also to others who are attempting to comprehend the subtleties of the topic at hand. The research done on this subject has barely scratched the surface of ChatGPT's capabilities when it comes to the automation of IT procedures. As a result, additional research into this field, conducted in collaboration with the IT process of various firms, is required. This will assist in determining the most effective strategy to utilize ChatGPT and provide vital information for practitioners of the future. In addition, ChatGPT is a potent instrument; therefore, investigating the ways in which it might be combined with other technologies may produce fascinating outcomes. The capability to integrate ChatGPT efficiently into preexisting frameworks and systems has the potential to open up a wide variety of new applications for the software. Researchers are able to obtain a better understanding of ChatGPT's potential as well as the ways in which it may be enhanced further by focusing specifically on how it can be utilized in conjunction with other technologies. This vacuum in research provides an intriguing opportunity to investigate and further one's understanding of ChatGPT and the possible implications it could have.

## 3. Methodology

### *3.1 Qualitative research*

An exploratory qualitative study methodology was chosen as the best method to acquire insight into the potential of applying generative AI to increase the effectiveness of IT processes. Qualitative research, which is a research methodology originated from sociology, is well-suited to the research process and mechanism, as we are all aware. Social scientists started to gradually value the limitations of quantitative research methodologies after the 1970s. In the interim, qualitative research with a humanistic bent began to emerge as qualitative research methods were rapidly developed (Marvasti, 2004). Despite the fact that quantitative approaches can be applied to the study of society and forecasting policy outcomes on a large scale, Aspers and Corte (2019) note that they are not appropriate for the thorough and changing examination and analysis of individual components in realistic contexts. In order to gain a better understanding of the viewpoints and experiences of people and groups that are utilizing AI to enhance IT operations, a qualitative research approach is more suitable than a quantitative one for this research. That's because generative AI is a new technology whose use and impact are still unclear. In contrast to quantitative analysis, qualitative research can be used to explore the details of users' perceptions, expectations and actual use of this technology. By observing and collecting different feedbacks, this study gains a better understanding of the potential and strengths and weaknesses of this technology.

### *3.2 Semi-structured interview*

Semi-structured interviews can be utilised to examine this topic because of how broad

and intricate the role of generative AI in IT operations is. One of the most crucial strategies for gathering data in qualitative research is the interview approach. Incorporating subjectivity, individuality, and integrity, it is a research methodology that also considers the context in which meaning is generated, the actual setting in which facts occur, and the relationships between phenomena (Lee, 2008). Additionally, the interview is semi-structured when the interview questions are structured and the responses from the respondents are unstructured or when the interview questions are structured and the responses from the respondents are unstructured (Easwaramoorthy & Zarinpoush, 2006).

In order to more fully investigate the opinions and experiences of practitioners from the IT industry about generative AI and to better understand the potential applications of this technology, this study chose to adopt a semi-structured interview style. There are various reasons to think about this. First, the semi-structured interview gave the researcher a framework for asking topic-related questions while yet allowing for conversational freedom (Kallio et al., 2016). Due to the opportunity to ask follow-up questions and further investigate the responses, this allowed the researcher to examine the subject in more depth. Secondly, semi-structured interviews promote a more relaxed dialogue since the interviewer does not have to stick to a predetermined set of questions. The researcher was able to ask participants-specific questions, which allowed the study to explore the subject in greater depth. Finally, because the researcher is not constrained by a predetermined set of questions, semi-structured interviews enable a more candid conversation between the researcher and the participants (Adams, 2015). This enables the researcher to comprehend individual experiences and viewpoints on this subject, which is essential for learning whether chatGPT's

generative AI has a future in the IT sector. In semi-structured interviews, open-ended queries can be posed, allowing respondents to furnish comprehensive replies that enable the investigator to thoroughly analyze the topic. This study asked detailed questions in some instances to elicit more information.

*3.3 Participants*

This study chose participants from large, small, and medium-sized businesses in the worldwide IT industry for the interview period (March 2023 – April 2023), as well as those that have used or are considering employing generative AI. Participants in this study were selected from a variety of IT supply chain disciplines, such as hardware manufacturing, software development, cloud computing, communication equipment makers, and cybersecurity, to ensure story diversity. To find research samples, this study used intentional snowball sampling. This strategy is predicated on the idea that people are more likely to recommend researchers to people who are similar to them. The researchers then got in touch with these extra people, who in turn recommended even more people, and so on, growing the participant pool. This strategy is useful when it is challenging to access the population of interest, such as when researching obscure or challenging-to-reach populations (Parker et al., 2019). In the end, 11 people made up the sample for this study. In order to preserve secrecy, the letters A to I in the study's initial mention of each participant's name have been substituted.

*3.4 Processing*

All interviews took place online over the course of 30 to 45 minutes on average. Additionally, this study made careful notes after the interviews and during the interviews in

order to better understand the context of these participants' narratives. This method enables the collection of in-depth data and viewpoints from individuals who are directly impacted by the problem, giving a thorough and complex understanding of the circumstance. On the basis of consent, all interviews were audio recorded and transcribed. The results are documented in their original form to ensure the data accurately reflects the study participants.

## 4. Results

Interviews with current and potential users of generative AI reveal some interesting insights. Among the many users who were positive about the technology's ability to automate IT processes, they mentioned appreciating its high efficiency. For example, participant A said that from the perspective of the hardware manufacturing field, generative AI can help them speed up product design and development. They can use AI for chip design and testing, improving cost-effectiveness and product efficiency. Participant B believes that ChatGPT's technology can help them save time and reduce errors by automating repetitive tasks such as software updates, system monitoring, and troubleshooting. This helps reduce costs associated with manual processes and streamlines the overall process by taking care of routine tasks that would otherwise be done manually. Participant C believes that from their company's perspective, generative AI can help them better address data management challenges. They can leverage this technology for data analysis and forecasting to better manage and optimize their data.

The potential for generative AI to help facilitate communication both internally and externally within the enterprise is also widely recognized. Participant D believes that their company plans to use chatGPT technology to improve the efficiency of communication within their team. They hope to use this technology to automate common tasks and reduce time spent on non-critical issues. This point of view was also mentioned by participant B, who expressed the hope that chatGPT technology can help them reduce misunderstandings and mistakes caused by poor communication between engineers. In addition, participant E believes that their company believes that chatGPT will definitely make their customer service

better. Their business is building an AI-based auto-response system in order to better solve customer problems, shorten customer waiting time and increase customer satisfaction. Participant F also indicated that they could use this technology for natural language processing and text analysis to more accurately understand customer intent and needs.

In addition, some participants also mentioned that this technology can be used to maintain the security of equipment and network systems. Participant G said that his company believes that generative AI can help data centers better solve communication equipment failure and maintenance problems. Participant H believes that generative AI can help the IT industry to better manage security. They can use this technology to perform tasks such as security inspections, incident response, and malicious code detection to improve their security effectiveness and reliability.

However, some respondents expressed concern about whether generative AI will have a good prospect when applied to the IT industry. Participant I said that although chatGPT performs well in simulated dialogue and intelligent customer service, it may have algorithmic deviation or wrong analysis in complex business processes. If an unpredictable situation occurs in a process, ChatGPT cannot deal with it and requires manual intervention. Moreover, the learning process of the technology is data-intensive and time-intensive, which increases the time and cost of process implementation. Participant J also has concerns about the safety of generative AI. In many processes, IT practitioners need to handle sensitive information. If generative AI is not secure, this information could be leaked and even used to attack other companies' networks and databases. Participant K believes that the emergence of generative AI will inevitably replace some jobs. She said that many routine tasks have been automated,

especially in some low-skilled human-intensive tasks, such as data entry, data collection and so on. The emergence of generative AI will make more people unemployed, and it will also have a certain impact on the entire IT industry.

## 5. Discussion

### *5.1 Explanation of the technology*

#### 5.1.1 Technical overview of generative AI and its capabilities

Generative AI is an emerging technology that has the potential to revolutionize the IT process. It is a branch of artificial intelligence that focuses on developing systems that can autonomously generate data from scratch. This technology uses deep learning algorithms to recognize patterns in data and create new data from it. Generative AI can be used to automate IT processes, as it is able to generate data from existing datasets and create new data. Generative AI could help generate text, images, audio, and videos. It can also be used to create new data points, such as recommendations or predictions, from existing datasets (Patel, 2023). This technology is also able to learn from data over time, so that it can improve its performance and accuracy. Generative AI has a wide range of potential applications, such as natural language processing, image recognition, and automated reasoning. ChatGPT also has the potential to automate the IT process. It uses natural language processing to generate data from conversations, enabling IT teams to automate processes and reduce the need for manual labor. This technology is capable of understanding conversations and generating data from them, which can then be used to automate processes (Roth, 2023). ChatGPT can also be used to generate new data points from existing datasets, such as recommendations or predictions.

#### *5.1.2 Different types of generative AI models and their applications*

Generative AI models are a type of artificial intelligence that uses algorithms and deep learning to generate data from a given set of input data. These models can be used to automate IT processes, such as natural language processing (NLP) tasks, image recognition,

and data mining. Kang et al. (2020) identified three main AI models used in generative tasks - recurrent neural networks, convolutional neural networks, and generative adversarial networks. Each model type has its own unique benefits and drawbacks, making it ideal for a variety of IT process tasks.

Recurrent neural networks (RNNs) are a type of generative artificial intelligence (AI) model that can recognize patterns in sequential data (Sutskever et al., 2011). This makes them ideally suited for tasks such as natural language processing, as they can comprehend the meaning of a sentence and produce a response. CNNs are a type of generative AI model that is ideally suited for image recognition tasks. They can be used to recognize objects and patterns in images, making automated image processing possible (Chauhan et al., 2018). GANs are a type of generative artificial intelligence (AI) model that can be used to generate data from a given set of input data (Saxena & Cao, 2021). They are especially helpful for generating data that is similar to the original data set, enabling more realistic simulations and data enhancement.

Generative AI models can be used to automate a variety of IT process tasks, such as natural language processing, image recognition, and data mining. By using these models, IT professionals can reduce the time and effort needed to complete these tasks, as well as improve accuracy and reduce errors. In addition, these models can be used to generate new data sets for testing and experimentation, allowing for the development of more advanced AI systems. Thus, generative AI models can be a useful tool for IT professionals looking to improve efficiency and streamline their operations.

*5.2 Potential use cases and applications*

5.2.1 Specific IT processes tasks

ChatGPT and other uses of generative artificial intelligence can be used to automate various IT process tasks. Simple data entry activities to more difficult ones like natural language processing, image recognition, and predictive analytics can all fall under this category. By automating these tasks, businesses can reduce costs, increase efficiency, and free up resources to focus on higher-value tasks.

One of the most common IT process tasks that can be automated using generative AI is data entry. The automation of data-intensive tasks can be facilitated by using artificial intelligence to automatically enter data. Businesses will save time and money, and reduce human error. AI can also be used to automate tasks such as natural language processing, enabling businesses to process customer requests and feedback more quickly and accurately. For example, ChatGPT can be used to automate the collection, analysis, and interpretation of large datasets, leading to faster and more accurate decisions (Comidor, 2023). Generating artificial intelligence can also be used to provide automated reports on the performance of IT systems, enabling faster response times and better performance optimization.

Image recognition is another IT process task that can be automated with the help of generative artificial intelligence. AI can be used to quickly identify objects in images and videos, enabling businesses to quickly process large amounts of visual data. Predictive analytics is another task that can be automated using generative artificial intelligence. Artificial intelligence can be used to analyze large amounts of data to predict future trends, which can help businesses make more informed decisions.

ChatGPT can also be used to automate the development of applications and software solutions. For example, it can be used to generate code snippets that can be used to develop applications faster and more efficiently. Generative AI can be used to create AI-driven solutions for automating and streamlining IT processes. By harnessing their potential, businesses can reduce the labor and effort required to develop applications, thereby increasing the efficiency of IT processes.

Furthermore, ChatGPT can be applied to automate customer service interactions. For example, customer service teams can use ChatGPT to provide automated responses to customer inquiries, reducing the need for manual intervention. This helps increase customer satisfaction and speed up the resolution process. Additionally, ChatGPT can be used to generate automated support tickets, resulting in faster response times for customer service inquiries.

*5.2.2 Potential benefits and impact*

ChatGPT is a powerful new technology that has the potential to revolutionize the way IT processes are handled. By automating tedious and time-consuming tasks, it and other generative AIs can significantly improve the efficiency and effectiveness of IT processes. Additionally, they can help reduce costs associated with IT process execution because fewer resources are required to complete tasks. This can improve the accuracy with which IT processes are executed, as AI can somewhat eliminate the possibility of human error.

The potential advantages of ChatGPT in terms of IT process efficiency and effectiveness are manifold. ChatGPT can help organizations save time and money by allowing IT processes to be completed faster and more accurately. ChatGPT can also help improve customer service

and satisfaction as IT processes can be completed quickly and efficiently. This can help reduce the complexity of IT processes and make it easier for organizations to manage their IT infrastructure. By reducing the time and cost associated with IT process execution, ChatGPT can help organizations maximize the efficiency and effectiveness of their IT processes (Comidor, 2023). This will help organizations improve customer service and satisfaction as IT processes can be done quickly and accurately.

*5.2.3 Examples of use cases*

ChatGPT, the intelligent virtual assistant, can revolutionize the finance industry by automating and streamlining customer support for banking and financial services. It can provide prompt assistance to customers with account inquiries, transaction disputes, and loan applications, enabling them to easily and quickly manage their financial needs (Kedziora & Penttinen, 2021). With its advanced language processing capabilities, ChatGPT can offer a personalized and interactive experience, enhancing customer satisfaction and loyalty. In the retail industry, ChatGPT can be a powerful tool to automate customer support for e-commerce platforms. It can help customers with product inquiries, order tracking, and returns, providing a seamless shopping experience (Lin, 2023). With its ability to handle complex queries and multiple languages, ChatGPT can assist customers worldwide, contributing to increased sales and customer retention. In the manufacturing industry, ChatGPT can be a game-changer by automating IT support for production facilities. It can help employees with equipment troubleshooting, software installations, and network connectivity issues, ensuring smooth and uninterrupted production. With its 24/7 availability and fast response time, ChatGPT can significantly reduce downtime, improving productivity

and profitability (Roth, 2023).

### *5.3 Issues with adoption*

#### *5.3.1 The potential challenges and obstacles*

The cost of implementing generative AI in a company's IT process tasks can be prohibitive. Depending on the size and scope of an AI project, companies may need to invest in new hardware and software to run the system. This hardware and software can be expensive, and additional hardware and software may need to be purchased to keep the system up to date. Additionally, companies need to hire dedicated personnel to oversee the system and ensure it is functioning properly. It can also be costly to invest in additional training and development for its employees (Poquet & De Laat, 2021). Companies may also need to invest in additional security measures to ensure that AI systems are properly protected from any malicious attacks. All of these costs add up quickly, so it's important for companies to carefully consider implementation costs before committing to generative AI projects.

With generative AI, the risk of data breaches is also higher than ever due to the complexity of the algorithms and the sheer volume of data that can be generated. Companies must keep their data secure and address any potential data breaches quickly and efficiently. Data breaches can result in loss of customer trust, financial loss and damage to a company's reputation. Companies must ensure they have measures in place to protect their data and reduce the risk of data breaches. This includes ensuring that all data is encrypted, regularly backed up, and regularly monitored for any suspicious activity (Feldstein, 2019). Companies should also ensure they have the right people and resources in place to respond quickly and effectively to any potential data breach.

Cultural resistance to change is also noteworthy. Employees may be hesitant to accept and use new technology, or may feel that their existing job roles are threatened. Executives may be wary of the costs associated with introducing generative AI and may be concerned about potential security and privacy concerns. Also, there may be resistance to the idea that data is generated by algorithms, as opposed to humans, which could lead to further backlash from employees and executives (Maity, 2019). These objections may be because generative AI represents a major change in the way tasks are accomplished, and it may be difficult for individuals to adapt to the new technology. In some cases, the introduction of generative AI may be seen as a threat to existing positions, leading to feelings of insecurity and mistrust.

*5.3.2 Addressing ethical and legal concerns*

Ethically, generative AI may introduce a degree of bias or manipulation into the adoption process. For example, chatGPT is often trained on existing data and can reproduce existing social structures and inequalities. If left unchecked, this can lead to a process of perpetuating existing biases instead of trying to address them. Furthermore, AI models are often trained on existing data, which means they may inadvertently prioritize certain features or values over others (Wynsberghe, 2021). This can lead to a situation where potential adoptees are judged on criteria that do not reflect their individual needs or preferences, leading to unfair outcomes. The use of generative AI in the adoption process may also create a sense of uncertainty and distrust among the parties involved (Wynsberghe, 2021). People may be reluctant to trust decisions made by AI systems, especially if they cannot verify their accuracy or understand the underlying algorithms. The possibility of interference and prejudice can breed mistrust of the adoption system, which can have persistent repercussions on the perception of adoption

(Wynsberghe, 2021).

The importance of legal aspects is also worth considering for businesses. Among the relevant regulations are copyright regulations, data protection regulations, privacy regulations and consumer protection regulations (Feldstein, 2019). The implementation of these regulations is aimed at safeguarding the interests of consumers, companies, and other stakeholders, and must be considered when utilizing generative AI technologies. Meanwhile, organizations must be aware of any other laws or regulations that may apply to their particular jurisdiction. Organizations must also ensure that their use of generative AI technologies complies with any relevant industry standards. For example, the International Organization for Standardization (ISO) has published several AI-related standards, including ISO/IEC TR 24028:2020, which covers “trustworthiness in AI systems”(ISO, 2020). Organizations should also ensure that their use of generative AI technologies complies with industry codes of conduct. By adhering to these standards and codes of conduct, organizations can ensure that their use of generative AI technologies is ethical and legal.

*5.3.3 The potential impact on the workforce and the need for upskilling*

The automation of labor will have a clear impact on job security and wages. Automating labor through the use of generative AI has the potential to drastically reduce the need for certain types of work. While this may increase efficiency and productivity, it also poses a threat to job security and wages. As companies begin replacing human workers with AI systems, there is a risk of job losses, which could lead to lower wages for those still working. This could lead to lower wages for those who are replaced because they can no longer compete with AI-based systems for jobs. In addition, the use of generative AI for labor

automation may also have a negative impact on wage inequality. This could lead to a widening wage gap, as those able to work with generative AI are likely to earn higher salaries than those who cannot (Maity, 2019). The use of generative AI may also lead to a reduction in job opportunities in certain industries. As companies rely more and more on AI-based systems, they may no longer need the same amount of human labor, resulting in fewer job openings. This can lead to lower wages as fewer people can compete for jobs, leading to a lower overall demand for labor.

Upskilling is a key component in addressing the potential impact of adoption of generative AI on the workforce. AI is constantly evolving, and workers must be prepared to continually learn and grow in order to keep up with the latest developments. Workers can learn the necessary skills to understand and interact with these systems, which will enable them to remain relevant in the workplace. Upgrading and retraining the workforce is not only beneficial to workers themselves, but also to employers (Poquet & De Laat, 2021). By providing training and support to their employees, employers can ensure their employees have the skills and knowledge they need to remain competitive in the job market. Additionally, employers can benefit from the increased productivity and efficiency that comes with a highly skilled workforce. In this way, both employers and employees can benefit from adopting generative AI.

## 6. Recommendations for Adoption

### *6.1 The steps companies should take*

The first step in analyzing current IT process tasks to identify the best use cases for generative AI. Specifically, the current state of IT process tasks needs to be understood to identify areas where the process can be improved using generative AI. This includes understanding the overall scope of the task, the task at hand, and the goals of the process. Additionally, it is important to consider the complexity of the process, the resources required, and the timeline for completion. Evaluating the data that can be used to generate AI is also essential. This includes understanding the types of data, data sources, and data quality needed to train AI (Shi et al., 2020). Additionally, it is important to consider the potential scalability of AI and the potential for future improvements in AI. By understanding these aspects of the available data, it is possible to identify the best use cases for generating AI and ensure that the AI produces the expected results.

Pilot projects should be the next step. Before attempting to fully adopt generative AI into IT processes, a pilot project needs to be developed to test the system and make sure it works properly. Pilot projects should involve full IT processes on a smaller scale and can be used to resolve any issues before implementing the system at scale. During a pilot project, stakeholders should be aware of potential risks and should monitor the project closely to identify any issues or areas for improvement. At the same time, the scope of the pilot project should be clearly defined so that it is clear what constitutes success. Objectives should also be documented, and projects should be designed to test generative AI and measure its performance (Paschen et al., 2020). After the pilot project is complete, the results should be

analyzed and used to determine whether generative AI is suitable for adoption. If the results are positive, then the IT process should be ready for full implementation. However, if any issues are discovered, the organization should take the necessary steps to resolve them before the system goes live.

Subsequently, a wider range of corporate employees will need to be trained in how to use generative AI systematically. This includes teaching them how to use the tools properly, and how to fix any problems that may arise. Additionally, employees should be taught how to collaborate with other teams to maximize the effectiveness of AI. It is also important to ensure that employees have access to the necessary resources to learn about the latest AI technologies (Jaiswal et al., 2020). This can be done through online courses, workshops, seminars or other training opportunities. When training employees on AI, it's important to make sure they understand the basic concepts and principles behind it. This will help them identify best practices and use cases for the AI tools they are using. Additionally, employees should be taught how to use AI in a safe and secure manner, including how to protect user data and privacy.

Once the pilot program and extensive initial employee training have passed, the business can formally implement AI into IT process tasks. During this process, enterprises need to deploy AI systems into IT processes to integrate with existing systems and ensure their smooth operation. This can be achieved by taking a comprehensive inventory of the IT infrastructure and developing a plan to accommodate new AI systems. It is important to consider the compatibility of AI systems with existing systems, as well as the security measures required to protect new systems (Kordon, 2020). At the same time, businesses need

to ensure they have the necessary resources to properly maintain and monitor AI systems. This includes having a dedicated team to deal with any technical issues and ensuring systems are regularly updated and monitored for any potential security threats. Businesses should provide tools and services to help technical staff identify any potential issues with AI systems, such as performance and accuracy, before they become major problems (Poquet & De Laat, 2021).

After stable operation, regular monitoring and adjustment implementation is also essential. One of the first steps is to track the performance of AI systems. This can be done with metrics like accuracy, throughput, and latency. It is important to monitor these metrics over time to determine whether the AI system is performing as expected. In addition to tracking the performance of an AI system, it is also important to tune the system's parameters to ensure optimal performance. This may include changing hyperparameters such as learning rate, batch size, and optimizer type, or changing the data used to train the AI system (Feldstein, S. 2019). It is important to regularly review the parameters and data used to ensure they remain valid and relevant.

*6.2 Proper data preparation and model selection*

Proper data preparation is an essential part of any successful adoption of generative AI. Data used to train models must be accurate and complete to produce reliable results. Poor data quality can lead to errors and bias in model output. Data are thoroughly evaluated prior to model training, including checking for accuracy, completeness, and relevance (Nakandala et al., 2020). Accuracy involves verifying that data values are correct and complete. Integrity ensures that all necessary data points are present. Relevance ensures that data is useful for the

purpose of the model. Additionally, businesses can improve data quality by using techniques such as data cleaning, data preprocessing, and data enrichment. Data cleaning involves removing irrelevant or incorrect data points, while data preprocessing is the process of converting data into a format more suitable for model training (Kordon, 2020). Data augmentation involves adding additional data points to a dataset to improve the accuracy and completeness of the data (Kordon, 2020). To achieve high accuracy, it is necessary to choose an appropriate algorithm for the task at hand.

Additionally, the precision of the data employed to construct the model must be taken into account as it will directly determine the accuracy of the model produced. It is essential to contemplate the sort of data that will be used to educate the model when deciding on an algorithm for generative AI (Nakandala et al., 2020). For example, supervised learning algorithms are well suited to data that has labels associated with it, while unsupervised learning algorithms are better suited to data without labels. Deep learning algorithms can be used to process large amounts of data and learn complex patterns in the data (Nakandala et al., 2020). It is also important to consider the complexity of the task and the amount of data available, as this can affect the accuracy of the model. Once an appropriate algorithm has been selected, it is important to ensure that the model is properly tuned to the data. According to Nakandala et al. (2020), this entails picking the appropriate hyperparameters, such as learning rate, batch size, and layer count. Prior to feeding the data into the model, it is crucial to make sure that it has been appropriately preprocessed. Preprocessing the data can help improve the accuracy of the model by removing any outliers and normalizing the data. Finally, it is important to evaluate the model after training it to ensure it performs as

expected.

*6.3 The benefits of scaling up gradually*

To successfully implement generative AI, it is important to start small and gradually increase complexity. This incremental strategy is beneficial for several reasons. First, it allows for a manageable learning curve, allowing developers to become familiar with the technology before attempting more complex tasks. Additionally, it can help identify potential pitfalls and weaknesses early on, allowing developers to address them before they become major problems. Finally, it provides a platform to test and refine the AI before scaling it up, ensuring the system is reliable and effective.

## 7. Conclusion

This white paper sees the possibility and promise of using generative AI to simplify IT operations by automating laborious and lengthy activities. Generative AI has the potential to dramatically improve IT process tasks, from simplifying routine tasks to providing more effective solutions to complex problems. This type of AI can be used to automate labor-intensive processes, freeing IT teams to focus on more strategic tasks. Additionally, generative AI can provide faster and more accurate decisions while reducing risk by considering all available data. Using generative AI in IT process tasks can also improve customer experience.

The project accomplished the research objectives to a large extent. This study covers the relevant research, experiments, and state of the art on the use of generative AI in IT process tasks. At the same time, it invited existing and potential generative AI users from different fields of the IT industry to accept interviews in order to provide multiple perspectives and perspectives. The discussion section analyzes the difficulties companies may face when using generative AI in their IT activities, such as dealing with ethical and legal issues, and the potential impact on the workforce. Furthermore, how to start with modest steps and increase the use of AI over time is also envisioned and suggested by this study.

It is essential to recognize the boundaries of this study. For instance, the influence of various backgrounds and values may skew the accuracy of self-reported prospects for generative AI application in the IT business. The researcher has made an effort to reduce descriptive bias in the analysis by fusing audio recordings and interview notes, although it is challenging to totally avoid it. Therefore, while reading participants' subjective expressions,

readers should be aware of any potential differences between what was reported and what they truly expected. Additionally, only 11 participants' experiences and perspectives were thoroughly examined in this study due to time and resource constraints. It is possible that the results of the present study are only applicable to the surveyed group, and not reflective of the general population. In other words, given the extent and nature of the information acquired, it is not feasible to conclude that all IT companies that utilize or are considering utilizing generative AI would be impacted by the factors and solutions established in this research. As a result, care should be taken when interpreting the findings of this study. Scholars can include more IT practitioners in such studies in the future to provide the conclusions a stronger foundation. Additionally, comparative studies of large enterprises and small and medium-sized enterprises should be encouraged as well as analysis of how specific IT organisations are impacted by AI generation. This should make generative AI more effective and seamless in its contribution to the IT sector.

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