# PERCEPTIONS AND CHALLENGES OF USING CHATGPT FOR TECHNICAL COMMUNICATION IN THE SCIENCE AND TECHNOLOGY BUSINESSES

**BY**

**ATCHARAPORN BUASONG**

**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN CAREER ENGLISH FOR INTERNATIONAL COMMUNICATION**

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# ABSTRACT

As generative AI tools become more common in the workplace, ChatGPT has gained popularity for supporting communication tasks across various roles. This study investigates the perceptions and challenges of using ChatGPT in technical communication among technical support staff in science and technology businesses. Quantitative approaches were used in this study and supported by content analysis from open ended questions. The findings revealed generally positive perceptions toward ChatGPT, as it enhanced productivity, saved time, supported technical problem-solving and learning needs, and helped overcome language barriers. However, challenges were also identified. The participants highlighted three major issues with the technical responses including their accuracy and the tool's limited depth specific knowledge and the absence of verifiable references. The success of ChatGPT depends significantly on how well users define their prompts. They also suggested the importance of prompt design, verification of outputs, and informed use. While ChatGPT was seen as a helpful assistant, it was not regarded as a replacement for human expertise. This study contributes to the use of AI-assisted communication in the workplace by emphasizing both the benefits and limitations of ChatGPT in technical settings. It underscores the need for critical use, proper training, and thoughtful integration of AI tools in

professional workflows. Future research should explore other AI platforms and assess their long-term impact on communication and knowledge work.

**Keywords:** ChatGPT, AI tools, Technical support, Technical communication, Science and Technology, Perceptions, Challenges

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Atcharaporn Buasong

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# LIST OF ABBREVIATIONS

| Symbols/Abbreviations | Terms |
|---|---|
| AI | Artificial Intelligence |
| GPT | Generative Pre-trained Transformer |
| NLP | Natural Language Processing |
| LLM | Large Language Model |
| TAM | Technology Acceptance Model |
| UGT | Gratifications Theory |
| PU | Perceived Usefulness |
| PEOU | Perceived Ease of Use |
| UTB | Utilitarian Benefits |
| ISP | Information Support |
| ITU | Intention to Use |
| PIE | Perceived Intelligence |
| KAQ | Knowledge Acquisition |
| LBS | Language Barrier Support |

# CHAPTER 1
# INTRODUCTION

## 1.1 Background of the Study

Technical communication is a core competency in the science and technology fields. It refers to the process of conveying scientific and technological information in a clear, accurate, and professional manner (Rizvi, 2005). In science and technology businesses, complex technical knowledge must be conveyed with clarity and precision. These businesses commonly engage in the distribution and support of scientific equipment, laboratory instruments, and chemicals used in research, diagnostics, and industrial applications, where precision and reliability are essential. Because of the specialized nature of the products and services, clear and accurate communication is essential, not only to ensure operational efficiency but also to ensure that users fully understand its proper application, leading to accurate results as well as the successful transfer of technical knowledge to end users

Technical support is one of the staff groups who rely heavily on technical communication in their roles. Their responsibilities involve assisting in technical support related to scientific and technological products including training and sharing technical knowledge, solving technical problems and handling complicated inquiries. These tasks require staff to communicate detailed technical information clearly and efficiently to both internal and external stakeholders. In addition, the technical support team maintains correspondence with global suppliers who are product developers or specification owners regarding product performance, operational procedures and technical updates. These interactions make their communication challenging due to technical and linguistic complexities, especially in cross-cultural communication environments where English is not the first language for many staff members. As noted by Wright (2015), professionals in technical fields need to understand complex content while adapting their communication for various audience groups. The effectiveness of technical communication depends on both language abilities and clear communication.

Despite its importance, there are several challenges present in technical communication. One of the most significant challenges is handling complex technical

issues that require prompt effective problem-solving (Johnson-Eilola & Selber, 2013). In addition, these technical staff must simplify complex information to make it easily understandable, manage the tasks, communicate clearly under time pressure, and deal with clients or colleagues from different languages and backgrounds. To overcome these communication barriers, many organizations now use digital tools, which is artificial intelligence (AI), to support workplace communication. One of the popular AI tools is ChatGPT, a generative AI model developed by OpenAI that uses natural language processing (NLP) technology to generate human-like text (Jurafsky and Martin, 2023).

The system has the ability to process complex command and generate responses to user inquiries while learning from user feedback (Cardon et al., 2023; Chen et al., 2022). The application of ChatGPT in professional settings has become increasingly popular. Because of the quick and precise, as well as relevant responses of ChatGPT, it helps organizations to boost their operational efficiency and productivity (Badini et al., 2023). It is an effective tool to assist users in their work by helping them draft content, summarize complex information and provide writing support by improving the clarity and quality of writing (Ausat et al., 2023; Balasubramanian, 2023). Moreover, ChatGPT can provide information and support self-learning (Jo & Park, 2024). With these variety of features, ChatGPT has become a valuable tool in the workplace.

In the technical field these capabilities offer potential benefits such as increased efficiency, clearer communication, and reduced language-related difficulties (Bansal et al., 2024; Waghmare, 2023). However, the advantages of AI-generated content are limited by its potential inaccuracies, technical limitations and unverifiable references which impact its reliability in formal or field-specific communication (Gayed et al., 2022; Huang & Tan, 2023). While the use of ChatGPT continue to grow in the workplace, limited research has studied its application in technical support roles or understanding how professionals view its strengths and weaknesses. This study aimed to address this gap by exploring the perceptions and challenges of using ChatGPT in technical communication within science and technology businesses, focusing specifically on technical support staff. The research investigated how technical support staff perceived ChatGPT in technical communication, and the challenges they encountered. The findings aimed to understand the perceptions of AI tool use in

technical roles and contribute to the broader understanding of AI-supported communication in professional environments.

## 1.2 Research Objectives

1. To explore how technical support staff perceive the use of ChatGPT in their technical communication tasks.

2. To identify the challenges technical support staff face when using ChatGPT in their work.

## 1.3 Research Questions

1. What are the perceptions of technical support staff toward using ChatGPT for technical communication?

2. What challenges do technical support staff face when using ChatGPT in technical communication tasks?

## 1.4 Definitions of Terms

### *1.4.1 Science and Technology Business*

The organizations engaged in distribution, or support of scientific products, instruments, equipment, and chemicals used in fields such as research, diagnostics, healthcare, and industrial applications.

### *1.4.2 Technical Support Staff*

The professionals responsible for assisting users with scientific or technological products by providing technical guidance, resolving product-related issues, delivering product training, and communicating with both internal teams and external stakeholders.

### *1.4.3 Technical Communication*

A specialized form of communication focused on conveying scientific and technical information in a clear, accurate, and professional manner. It includes written and verbal communication and is essential for ensuring that information about products, procedures, or technologies is understood and applied correctly by the intended users.

### *1.4.4 Perceptions of Using ChatGPT*

The attitudes, beliefs, and experiences of technical support staff regarding the use of ChatGPT as a support tool (Wut & Chen, 2025). This includes their opinions about its usefulness, ease of use, its clarity and accuracy in its responses, and its ability to support or improve their technical communication work.

### *1.4.5 Challenges of Using ChatGPT*

The challenges refer to the obstacles when technical support staff face when attempting to use ChatGPT for technical communication tasks (Wut & Chen, 2025). These include ChatGPT's lack of accuracy and technical depth, the absence of verifiable references, and the need for human oversight in professional contexts.

## 1.5 Scope of the Study

This study investigated the perceptions and challenges of technical support staff utilizing ChatGPT for technical communication. The study focused on technical support staff who work in science and technology organizations based in the Bangkok area. The participants were required to have at least one year of technical support experience together with previous usage of ChatGPT or similar AI tools. The research was conducted over a period of one month using a quantitative method supported by content analysis from open ended questions. The research investigated technical support staff experiences with ChatGPT used in real workplace communication to identify its perceived benefits and limitations in technical support contexts.

### 1.6 Significance of the Study

The research examined how technical support staff in science and technology businesses perceive the advantages and challenges of implementing ChatGPT for technical communication. The research results offer insight into how professionals can use generative AI tools to enhance their communication work, as well as the challenges faced while using the tools. The findings can help organizations implement ChatGPT effectively to boost workplace productivity and communication efficiency, especially in the technical communication field.

### 1.7 Organization of the Study

This study consists of five chapters, each addressing a different aspect of the research on the perceptions and challenges of utilizing ChatGPT in technical communication. Chapter 1 is the introduction which covers the background of the study, research objectives and questions, definitions of key terms, as well as the scope and significance of the study. Chapter 2 reviews the literature and relevant studies including the previous studies on ChatGPT, perceptions, and challenges frameworks. Chapter 3 describes the research methodology including participants, the research methods used, research procedures and instructions as well as data analysis. Chapter 4 presents the results of participants' perceptions and challenges of using ChatGPT from both qualitative and open-ended questions. Chapter 5 discusses the key findings in relation to existing literature, highlights the implications for practice, and outlines the recommendations for future research.

# CHAPTER 2
# REVIEW OF LITERATURE

This chapter reviews the literature in four main areas: (1) technical communication in science and technology businesses, (2) the role of AI as a support tool, (3) the conceptual framework, and (4) previous related studies.

## 2.1 Technical Communication in Science and Technology Businesses

Technical communication plays a vital role in science and technology businesses by enabling the clear presentation of complex scientific ideas. (Collier, 2005; Raman & Sharma, 2015; Rizvi, 2005) It covers written and oral communication that supports the effective transfer of technical knowledge to various stakeholders, including researchers, customers and business executives (Patel, 2013). Technical communication, defined as the structured delivery of information to make technical content more understandable and actionable, enhances clarity and efficiency especially in industries where precision and accuracy are critical (Burns et al., 2003). Technical communication helps transform complex information in a way that users can easily understand and apply. Three core characteristics define technical communication. First, accessibility ensures that information is easy to understand and apply, allowing users to find and comprehend the content they need quickly. Second, usability focuses on designing content for practical applications, ensuring that the information provided can be effectively applied. Third, relevance emphasizes that the information should match the audience's needs while avoiding both excessive details and technical terms that could cause confusion. (Patel, 2013; Raman & Sharma, 2015). These principles are applied in various business-related documents such as user manuals, technical papers, process documentation, data sheets and technical reports, all of which contribute to knowledge management.

Patel (2013) also highlights that the effectiveness of technical communication depends on three key skill requirements. First, having the knowledge and experience to understand the subject matter ensures that the information shared is accurate and clear. Second, possessing strong language skills to clearly explain concepts using suitable

words and tone, as well as adapting communication styles to different target audiences. Lastly, understanding how to organize information logically.

The message becomes easier to follow when information is arranged in a logical order which helps readers understand information more simply and clearly. Effective technical communication is essential to achieving business success in the science and technology sector, as it ensures precise and accurate information exchange with key stakeholders, including internal teams, partners, and customers. It also serves as the backbone of professional communication to support critical functions such as planning, reporting, decision-making, and training. (Patel, 2013; Raman & Sharma, 2015).

Since effective technical communication plays a key role in business success, especially in the science and technology sector, technical communication is adapting to meet the demands of today's technology-driven era (Patel, 2013). The evolution of emerging technologies has revolutionized the communication of technical information. Digital platforms now facilitate sharing knowledge, while artificial intelligence (AI) and machine learning tools are increasingly integrated into technical writing and documentation processes to enhance efficiency and productivity. (Huang & Tan, 2023). The rapid digital advancement and global expansion have led to a substantial increase in the importance of technical communication. Many organizations use technical communication as a standard business process which has given them deep expertise in technical communication (Patel, 2013).

However, technical communication continues to face several challenges that can impact clarity and effectiveness. The overuse of specialized terminology or jargon terms is one of the challenges that creates a complex scientific context that makes it harder for non-expert audiences to understand the information. While precise language is important for accuracy, excessive jargon can reduce clarity. (Shulman, 2019). In addition, cultural and linguistic barriers can lead to misinterpretations of technical content reflecting the differences in language, writing style and cultural perspective (Goby, 2007). Therefore, adapting the content to suit a diverse audience is important (Raman & Sharma, 2015). Moreover, the rapid speed of technological innovation requires organizations to update their technical documentation on a regular basis. Organizations need to stay adaptable in maintaining current and relevant materials because outdated information leads to confusion and operational inefficiencies (Patel,

2013). Additional barriers include ambiguous language, and irrelevant or overwhelming content (Raman & Sharma, 2015). These issues can reduce the impact of technical communication. To overcome these challenges, it is essential to ensure that technical communication remains clear, accessible, and effective for diverse audiences.

### *2.1.1 Technical Communication in Technical Support Roles*

In scientific and technological businesses, technical support personnel play a crucial role in disseminating technical knowledge and information about products. They serve both internal teams, such as sales departments, and external customers, ensuring that clients can effectively utilize the products offered. It is considered a key factor in customer satisfaction (Goffin & New, 2001). The key responsibility of technical support involves assisting with products including solving technical issues, training and sharing technical knowledge. They commonly use technical communication in their task, requiring clarity and effectiveness. In the high-tech businesses, technical support can be the key differentiating factor from competitors (Loomba, 1998). In addition, they also use technical communication to collaborate with principal suppliers to exchange updates and technical information of products and consult on resolutions for complex technical issues. However, as the technology develops, AI-powered tools will integrate into this workflow to enhance efficiency communication, providing fast and clear interactions, including real-time problem-solving capabilities and scalable support (Chui et al., 2023; Mohan, 2024). It also helps to reduce language barriers within intercultural communication (Arif et al., 2023).

## 2.2 The Role of AI as a Support Tool

Artificial Intelligence (AI) is a complex program made by advanced algorithms such as machine learning, deep learning and other complex algorithms. Those complex algorithms are applied in many useful applications like chatbots and personal assistance (Jurafsky & Martin, 2023). AI tools play a significant key role in supporting businesses, which enhances business communication by automating processes and increasing decision-making. Also, AI allows businesses and customers to communicate in real-time (Chui et al., 2023; Guzman & Lewis, 2019). Several AI tools such as chatbots, personal assistants, and predictive analytical programs have been used in business and

those tools have become important tools in business communication strategies (Kalogiannidis et.al, 2024). In the past, traditional business communication has focused on only human interactions. However, when we enter into the AI-driven era, AI integrates automated responses, natural language processing, and conversational agents that enable machines to interpret and respond to human questions contextually (Kalogiannidis et.al, 2024). AI-powered technologies such as virtual assistants and chatbots allow businesses to engage customers effectively, reducing response times and enhancing user experiences (Chui et al., 2023; Nugroho et al., 2023).

AI technology provides multiple enhancements which boost both the quality and effectiveness of business communication. The main advancement comes from natural language processing which enables AI systems to understand and produce human language with better contextual precision (Jurafsky & Martin, 2023). The technology enhances both the natural flow and the appropriate content of AI-generated responses. Organizations can break down language barriers through multilingual translation which enables them to communicate effectively with global markets (Chui et al., 2023). This capability enables organizations to support international teamwork and provide customer assistance throughout different areas. Sentiment analysis is a data-driven AI method used to identify and interpret people's emotional attitudes or opinions. It enables businesses to grasp customer emotional states by examining feedback alongside social media content (Lee & Yoon, 2021). Companies use these insights to modify their communication approaches which results in better customer satisfaction and stronger engagement. With these valuable features of AI technology, it is used as a support tool to enhance effective communication in the workplace.

### *2.2.1 ChatGPT in Technical and Business Communication Support*

ChatGPT is the one of AI tools made by the large language model (LLM). This model has the ability to generate text from its big language database (Shabana & Sharma 2019). ChatGPT was developed by OpenAI. It is an advanced natural language processing model that can generate text as human-like responses (Jurafsky & Martin, 2023). The increasing adoption of ChatGPT technology in professional environments has transformed how organizations perform their technical and internal communication responsibilities. The real-time assistance provided by ChatGPT enables users to create

technical responses while making complex information easier to understand and performing repetitive tasks. Multiple business studies demonstrate that ChatGPT delivers value through faster communication and better customer service and more efficient data management. According to Mohr (2024) the staff uses ChatGPT to handle various responsibilities while keeping their communication steady particularly when dealing with customer support and onboarding. The tool enables internal collaboration simplification and decision-making improvement and multilingual team support, according to Jusman et al. (2023) and Nugroho et al. (2023). In addition, the consulting field uses ChatGPT to create proposals, solve problems and generate content (Mohan, 2024). ChatGPT also improves research writing and technical environments through enhanced writing clarity and better organization of complex information (Huang & Tan, 2023). However, several research studies demonstrate that human supervision remains essential to stop AI content misuse and prevent both information inaccuracies and excessive dependence on AI-generated material. ChatGPT serves as a widely adopted tool for general business operations and communication needs

### *2.2.2 Challenges in Using ChatGPT for Technical Communication*

Several challenges were identified with using ChatGPT, especially in professional environments where accuracy, transparency, and task-specific reliability are essential. The common challenges of accuracy and reliability, due to the lack of sources of information result in users not trusting and using the GPT's response, since they are in situations that need precise and correct information and answers. (Khurana & Kobiela, 2023). Similarly, Younes et al.'s (2023) study highlights that these challenges impact the trust in using information in their work. Another common challenge is that ChatGPT sometimes gives answers that sound correct but are actually wrong, which is known as hallucination. This can make users less confident in using the tool and lead them to perceive that it is possible to receive the wrong answer or information from ChatGPT's responses (Khurana & Kobiela, 2023; OpenAI, 2023). Additionally, the poor quality of the Chatbot's feedback reflected the immaturity of Chatbot technology, evidenced by its inaccuracy in text recognition, vague or unclear responses, and inability to provide accurate answers (Han et al., 2021; Marjerison et at.,

2023). Another crucial challenge is the lack of specific knowledge that is useful to apply to the problems on their tasks (Gupta et al., 2021; Zhai, 2022), These studies found that the knowledge of ChatGPT could not match their own knowledge. It is insufficient to adapt to tasks that require in-depth knowledge. (Khurana & Kobiela, 2023).

### 2.3 Conceptual Framework

This study applies two acceptance models— the Technology Acceptance Model (TAM) and the Uses and Gratifications Theory (UGT) — to explore the perceptions of using ChatGPT in technical communication within science and technology businesses. The Technology Acceptance Model developed by Davis (1989) explains technology adaptation through core structure. While the Uses and Gratifications Theory, developed by Katz et al., (1973), focuses on users' motivations for selecting specific media or tools.

Six constructs were used in this study for interpreting participants' perceptions and motivations regarding the use of ChatGPT in technical communication roles. Utilitarian benefits (UTB) were used to interpret how technical support staff assess ChatGPT as a support tool for improving the clarity and speed of their communication tasks. This also helps explain the perceptions of using AI tools in professional communication settings.

Information Support (ISP) reflects how participants rely on ChatGPT to find and access technical information needed for their work. This explains how the tools provide information to support their work, including relevant technical suggestions, explanations, and problem-solving support. This demonstrates how well ChatGPT supports information sources for technical situations.

Perceived Intelligence (PIE) refers to ChatGPT's intelligence, particularly in handling technical communication tasks, and reflects how participants view the tool as capable, knowledgeable, and logically responsive in technical contexts.

Knowledge Acquisition (KAQ) focuses on how ChatGPT functions as a tool to support participants in gaining new technical knowledge and mastering essential concepts. This demonstrates how ChatGPT enables users to understand complex technical context better while using that knowledge for their job responsibilities.

Language Barrier Support (LBS) explains how ChatGPT helps participants communicate more clearly, especially when using English in technical contexts. It focuses on how the tool supports understanding and expression when dealing with technical documents, messages, or professional writing across language barriers.

Intention to Use (ITU) shows whether participants intend to continue using ChatGPT for technical support tasks. It reflects the extent to which participants plan to use the tool regularly as part of their daily work.

## 2.4 Previous Related Studies

Previous research studied ChatGPT applications in different professional fields to show both benefits and challenges to assist with communication-related tasks.

### *2.4.1 Improving Task Efficiency and Communication Responsiveness*

The study by Jo and Park (2024) investigated how ChatGPT affects workplace information access and utilization. They employed a quantitative approach using structural equation modeling, a statistical technique used to analyze complex relationships among observed and unobserved variables, to analyze data from 351 participants aged between 20 and 40, drawn from various industries. According to their research findings, ChatGPT boosts workplace productivity by enhancing both the speed and quality of information support systems. ChatGPT provides faster and more effective responses, delivering precise and understandable information in handling complicated inquiries. However, the study revealed multiple risks that emerge from using ChatGPT. The main risk is about the responses produced that appeared confident but turned out to be both incorrect and outdated. Employees needed to verify the information before using it for critical work. The authors stressed that employees require appropriate training to master ChatGPT as an assistive tool for human collaboration instead of trying to replace human thinking.

ChatGPT has been shown to improve technical support speed and multitasking as demonstrated in the study by Mohr (2024), that evaluated how ChatGPT technology enhances technical assistance as well as customer service quality. This study used mixed-methods to explore how AI technologies, including ChatGPT, enhance efficiency in technical support environments. Twelve EMEA-based support employees

evaluated AI-generated responses through a structured survey and open-ended questions to gather qualitative insights. Semi-structured interviews with support leaders provided qualitative insights on customer acceptance, privacy concerns, and implementation challenges of AI tools. This study demonstrated that ChatGPT enables staff members to handle inquiries faster and execute various assignments simultaneously while maintaining consistent communication approaches. The system provides immediate assistance to new employees which results in enhanced training and better team operational performance. The study demonstrated that depending too heavily on ChatGPT might diminish human interaction and cause mistakes to remain unaddressed. The researcher supports using ChatGPT as a support tool while implementing proper training programs and guidelines for effective integration.

Communication efficiency and data handling were examined by Nugroho et al., (2023) who studied ChatGPT's impact on business communication efficiency in management science. The study used a qualitative approach through a literature review, analyzing journal articles, publications, and online sources published between 2000 and 2023. The researchers applied data reduction, data display, and conclusion drawing to synthesize key findings. This study shows that ChatGPT improves response times and enhances data analysis while supporting strategic decision-making through its ability to automate routine communication work and deliver fast customer answers and real-time business data analysis. The research demonstrated how ChatGPT functions as an internal collaboration tool by making complex information easier to understand and by creating better communication flows between staff members and their leaders. The system improves customer service operations and enhances project management while enabling businesses to communicate across different languages in international settings. The researchers stressed that human supervision remains essential to stop misinformation and preserve professional standards while ensuring ethical AI practices in business communication.

Similarly, Jusman et al. (2023) conducted a qualitative literature review to examine how ChatGPT supports business management through strategic communication. By analyzing sources from 2000 to 2023, they identified key themes and trends in their application to business management and decision-making. The study examined how the tool increased productivity through automated responses as well as

data-driven decision-making capabilities. These operational features correspond well to the needs of technical support specialists because they need to resolve problems and explain complex information to technical and non-technical teams while recording organizational knowledge. The study showed that proper human analytical thinking requires balancing with automated processes.

ChatGPT supports consulting tasks by helping with problem-solving and providing recommendations, as examined in the study by Mohan (2024), which highlights the impact of Artificial Intelligence and Large Language Models, including ChatGPT, on the management consulting industry. This study synthesizes industry trends, literature, expert commentary, and theoretical frameworks to explore how AI, especially ChatGPT and large language models, impacts the management consulting field. The study demonstrated that businesses can enhance their productivity through AI automation of data analysis and content generation and customer support functions. The technology enables consultants to complete their work at a faster pace with increased efficiency. The study found that ChatGPT provides consulting assistance through its ability to generate proposals, solve problems and provide recommendations. The paper identified three main challenges: data privacy concerns, AI response bias, and the requirement for consultants to acquire new skills including prompt engineering.

### *2.4.2 Supporting Scientific Writing and Information Organization*

ChatGPT supports scientific writing and information organization, as highlighted by Huang and Tan (2023), ChatGPT can help to enhance the efficiency and quality of scientific writing by drafting research articles, organizing data, summarizing complex concepts, and also improve language by suggesting better grammar, sentence structure, and better vocabulary. This can help, particularly for non-native English speakers. However, the study also states issues with over-reliance on AI-generated content because it may cause plagiarism issues, incorrect information, and lower-quality writing. These issues need humans to improve and adjust the response before using the content.

Rice et al. (2024) investigated the role of ChatGPT in supporting research activities within technology research. The researchers tested ChatGPT by providing it with various prompts (questions) that are commonly found in research, such as how to

design experiments. After that, they examined the AI's answers to identify both its useful contributions and its limitations. The study highlighted that ChatGPT significantly enhances research efficiency through its ability to assist with literature reviews, research gap identification, research plans, and method development. ChatGPT enhances collaboration between experts from different fields through simplified communication methods. It also provides better support for innovative ideas with a fast and smooth research process. However, the study pointed out key limitations, such as ChatGPT's potential to generate inaccurate or outdated information, the risk of bias in AI-generated content, and the need for human verification to ensure accuracy.

### *2.4.3 Overcoming Language Barriers and Supporting Cross-Cultural Communication*

The implementation of ChatGPT technology improves organizational work productivity but language differences create a major obstacle for communication between employees. The tool supports both enhancing productivity in tasks and overcoming language barriers, according to Nugroho et al. (2023). A qualitative literature review of sources published between 2000 and 2023 was conducted to examine ChatGPT's role in addressing communication challenges. The study highlighted that ChatGPT improved business operations through enhanced internal collaboration and decision-making capabilities and responsive communication. The tool demonstrated its maximum value when used in situations where people speak different languages and when providing technical assistance. The authors expressed reservations about ChatGPT because when utilized improperly the system may generate false information that could reduce professional standards.

In addition to improving task efficiency and overcoming language barriers in cross-cultural organizations, another study by Arif et al. (2023) investigated ChatGPT as a natural language processing support for real-time language translation along with cultural training. Their study, which employed a qualitative library research method, analyzed and synthesized journal articles and online publications related to ChatGPT and cross-cultural team management. Through data reduction and thematic analysis, the researchers concluded that ChatGPT helps reduce misunderstandings and enhances

collaboration within international teams. The research examined cultural diversity and demonstrated how ChatGPT helps resolve complex communication problems, especially in language barriers that technical support teams frequently encounter in multilingual and multicultural environments.

There are several studies that have explored the benefits and challenges of using ChatGPT in communication-related tasks. To investigate the roles of ChatGPT in technical communication within science and technology businesses, this study examines the perceptions of technical support staff who use ChatGPT in their work tasks and the challenges they face. It aims to understand their views on how ChatGPT affects their technical communication.

# CHAPTER 3
# RESEARCH METHODOLOGY

This chapter outlines the research methodology used to achieve the research objectives and answer the research questions regarding the perceptions and challenges of using ChatGPT in technical communication among technical support staff in science and technology businesses. It includes participant selection, research methods, research instruments, research procedures, and data analysis.

## 3.1 Participants

The participants worked in technical support positions at three science and technology companies based in Bangkok. These companies operate in specialized sectors such as scientific equipment distribution, high-throughput systems, and life science technology. Participants were recruited using purposive sampling to ensure they met the study criteria: (1) currently employed in a technical support role within a science and technology business, (2) a minimum of one year of experience in a technical support position, and (3) prior use of ChatGPT tools in their technical work.

## 3.2 Methods

This study uses quantitative approaches and is supported by content analysis from open-ended questions to analyze deeper insights into using ChatGPT in technical communication. The quantitative part used structured questionnaires to collect data that represent the participants' perceptions of using ChatGPT in technical communication. The open-ended part of the content analysis consists of information about challenges faced and strategies used when participants use ChatGPT in their communication work.

## 3.3 Research Instruments

This study uses a self-administered questionnaire as the primary research instrument to explore the perceptions and challenges of using ChatGPT in technical communication. The questionnaire was chosen because it allowed the researcher to collect data efficiently from many participants within a short period of time. It was designed to collect both quantitative and open-ended data. This provided a complete

understanding of the research objectives. The questionnaire was designed by adapting ideas and questions from many academic sources and modifying them to fit with technical support work in science and technology businesses.

The first part collected demographic data or personal information, such as gender, age, and education level. This helped to explain the background of the participants.

The second part focused on how participants felt when they used ChatGPT in technical tasks. This section was designed using a five-point Likert scale which ranges from 1 (strongly disagree) to 5 (strongly agree). This section included 18 questionnaire items adapted from previous studies, to explore participants' perceptions of using ChatGPT. These items were grouped into six main constructs. Perceived Intelligence (PIE), Information Support (ISP), Knowledge Acquisition (KAQ), Utilitarian Benefits (UTB), and Intention to Use (ITU) were adapted from Jo and Park (2024), while Language Barrier Support (LBS) was developed based on ideas from Dwivedi et al. (2023) and Menon and Shilpa (2023).

The third part consisted of 12 questionnaire items focusing on the challenges of using ChatGPT. This part also used Likert-scale questions and was adapted from studies examining the challenges of AI chatbots usage, including studies by Younes et al. (2023), Marjerison et al. (2023), and Khurana and Kobiela (2023). The items were designed to show what participants are concerned about when using ChatGPT. The concerns should include giving wrong or unclear answers, misunderstanding technical terms, lacking subject-specific knowledge, and not giving verifiable references. This section aimed to identify the specific problems or challenges that participants may find when they use ChatGPT in their work.

The final part of the questionnaire included two open-ended questions. Participants were asked to describe any challenges they encountered while using ChatGPT in their technical work and to share suggestions for improving its usages. This section allowed participants to explain their experiences in more detail and to provide more insights that the structured survey questions could not provide.

## 3.4 Data Collection

The data were collected using an online questionnaire shared through Google Forms. Before starting the questionnaire, participants were asked to read and agree to a consent form that explained it was voluntary. Responses were collected without names to help participants trust and provide fair answers. Out of the 45 people invited, 30 completed and returned the questionnaire, all of them met the selection requirements. This organized process helped collect both quantitative and open-ended data in an ethical and efficient way.

## 3.5 Data Analysis

The questionnaire consisted of four parts: (1) demographic information, (2) perceptions of ChatGPT, (3) challenges of using ChatGPT, and (4) open-ended responses. Each part was analyzed using appropriate methods to interpret the data accurately.

### *3.5.1 Analysis of Demographic Information*

The data from demographic information such as gender, age, and education were analyzed by using descriptive statistics, which included frequency and percentage in the PSPP software. The descriptive statistics helped to review the participants' background characteristics.

### *3.5.2 Analysis of Perceptions of ChatGPT*

The second part of the questionnaire included 18 Likert-scale items. The data were analyzed using PSPP software with descriptive statistics, including mean and standard deviation, to summarize participants' perceptions of ChatGPT in technical communication tasks.

Although Likert-scale data are technically ordinal, it is common in educational and social science research to treat grouped Likert items as interval-level data when calculating means and standard deviations particularly when multiple items are used to measure a single construct and the sample size is adequate. As Sullivan and Artino (2013) note, while caution is warranted, parametric analyses can be appropriately

applied to Likert-type data when justified by scale design and sample distribution characteristics. The average mean score obtained from each item was interpreted into the perception levels as shown Table 1

**Table 1**

*Five Range Scale Value of Perception Levels*

| Scale Value | Perception Level |
|---|---|
| 4.21–5.00 | Strongly Agree |
| 3.41–4.20 | Agree |
| 2.61–3.40 | Moderate |
| 1.81–2.60 | Disagree |
| 1.00–1.80 | Strongly Disagree |

This interpretation framework supported the analysis of trends across perceptions and challenge constructs.

### *3.5.3 Analysis of Challenges of Using ChatGPT*

The third part of the questionnaire contained 12 Likert-scale items which assessed the challenges participants encountered when using ChatGPT for technical communication tasks. PSPP software was used to generate descriptive statistics, including mean and standard deviation, to summarize participants' responses. To interpret the level of perceived challenges, the average mean scores from Table 1 were compared against the perceptions level scale.

### *3.5.4 Analysis of Open-Ended Responses*

The final section of the questionnaire contained two open-ended questions. Responses were analyzed using content analysis. This involved multiple readings of the responses, coding recurring ideas, and grouping them into thematic categories. This helped to find deeper insight into participants' experiences, which revealed both challenges and recommendations for enhancing ChatGPT usage in technical communication work.

# CHAPTER 4
# RESULTS

This chapter presents the findings in four main parts ( 1) demographic characteristics of participants, (2) a descriptive analysis of participants' perceptions of using ChatGPT in technical communication, ( 3) a descriptive analysis of participants' challenges of using ChatGPT in technical communication and ( 4) qualitative insights from open-ended responses regarding specific challenges encountered and participants' suggestions for improving the effectiveness of ChatGPT in their work.

## 4.1 Demographic Characteristics of Participants

This section presents the demographic information of the participants, including gender, age, and education level. All participants work in technical support roles and have experience using ChatGPT. The data were analyzed using frequency and percentage to describe the distribution of these characteristics.

**Table 2**

*Demographic Characteristics of Participants*

| Demographics | Items | Frequency | Percent |
|---|---|---|---|
| **Gender** | Female | 18 | 60% |
| | Male | 12 | 40% |
| | **Total** | **30** | **100%** |
| **Age** | 20–29 | 9 | 30% |
| | 30–39 | 19 | 63.30% |
| | 40–49 | 2 | 6.70% |
| | **Total** | **30** | **100%** |
| **Education** | Bachelor's Degree | 7 | 23.30% |
| | Master's Degree | 19 | 63.30% |
| | Ph.D. | 4 | 13.30% |
| | **Total** | **30** | **100%** |

Table 2 presents the demographic information of the participants, covering gender, age range, and educational background. In terms of gender distribution, most of the participants were female, accounting for 60%, while 40% were male. Regarding age, most respondents were between the ages of 30-39 years, representing 63.3% of the sample. This was followed by those aged 20-29 (30%) and a small proportion aged 40-49 (6.7%). In terms of educational qualifications, the largest proportion of participants had a master's degree (63.3%), with fewer holding a bachelor's degree (23.3%) and a Ph.D. (13.3%), respectively.

### 4.2 Perceptions of ChatGPT in Technical Communication

Table 3 presents the descriptive statistics for technical support staff's perceptions of using ChatGPT in technical works, based on six constructs: perceived intelligence, information support, knowledge acquisition, utilitarian benefits, language barrier support, and intention to use.

**Table 3**

*Technical Support Staff's Perceptions of Using ChatGPT.*

| Construct | Item | Mean | *SD* | Perception Level |
|---|---|---|---|---|
| **Utilitarian Benefits (UTB)** | Using ChatGPT helps me save time on technical tasks. | 4.57 | 0.73 | Strongly Agree |
| | ChatGPT improves my efficiency when working on technical content. | 4.13 | 0.94 | Agree |
| | ChatGPT enhances my productivity when dealing with technical issues. | 4.13 | 0.9 | Agree |
| | **Overall** | **4.28** | **0.86** | **Strongly Agree** |
| **Language Barrier Support (LBS)** | ChatGPT helps me overcome language barriers when communicating technical information. | 4.20 | 0.96 | Agree |

| | | | | |
|---|---|---|---|---|
| | ChatGPT helps me understand English technical documents and messages more easily. | 4.17 | 0.95 | Agree |
| | ChatGPT improves my ability to write professional English emails or reports. | 4.43 | 0.68 | Strongly Agree |
| | **Overall** | **4.27** | **0.86** | **Strongly Agree** |
| **Information Support (ISP)** | ChatGPT gives me suggestions and advice on problem-solving in my technical tasks. | 3.87 | 0.73 | Agree |
| | ChatGPT delivers relevant technical information appropriate to my tasks. | 3.87 | 0.68 | Agree |
| | ChatGPT helps me find sources or explanations for technical problems. | 4.07 | 0.83 | Agree |
| | **Overall** | **3.94** | **0.75** | **Agree** |
| **Intention to Use (ITU)** | I intend to continue using ChatGPT for technical tasks. | 4.27 | 0.78 | Strongly Agree |
| | I plan to use ChatGPT regularly in my technical support tasks. | 3.73 | 1.11 | Agree |
| | I aim to rely on ChatGPT more in my daily technical tasks. | 3.53 | 1.14 | Agree |
| | **Overall** | **3.84** | **1.01** | **Agree** |
| **Perceived Intelligence (PIE)** | I believe that ChatGPT is competent in handling technical tasks. | 3.93 | 0.78 | Agree |
| | I consider ChatGPT to be knowledgeable in technical subject areas. | 3.80 | 0.81 | Agree |
| | I perceive ChatGPT as intelligent in responding to technical queries. | 3.77 | 0.73 | Agree |
| | **Overall** | **3.83** | **0.77** | **Agree** |

| | | | | |
|---|---|---|---|---|
| **Knowledge Acquisition (KAQ)** | ChatGPT helps me learn new technical knowledge related to my job. | 3.80 | 0.85 | Agree |
| | ChatGPT enables me to understand technical concepts more easily. | 3.97 | 0.89 | Agree |
| | ChatGPT supports me in applying technical knowledge to my work. | 3.70 | 0.88 | Agree |
| | **Overall** | **3.82** | **0.87** | **Agree** |

The results indicated that participants strongly agreed that ChatGPT provided Utilitarian Benefits (UTB) ($M$ = 4.28, $SD$ = 0.86) and Language Barrier Support (LBS) ($M$ = 4.27, $SD$ = 0.68). Participants also agreed that the tool was helpful for Information Support (ISP) ($M$ = 3.94, $SD$ = 0.75) and Knowledge Acquisition (KAQ) ($M$ = 3.82, $SD$ = 0.87). Additionally, they agreed with the tool's Perceived Intelligence (PIE) ($M$ = 3.83, $SD$ = 0.77) and expressed a positive Intention to Use (ITU) ($M$ = 3.84, $SD$ = 1.01).

Within the Utilitarian Benefits construct, participants strongly agreed that ChatGPT helped them save time on technical tasks ($M$ = 4.57, $SD$ = 0.73), and they also agreed that it improved efficiency ($M$ = 4.13, $SD$ = 0.94) and enhanced productivity when dealing with technical issues ($M$ = 4.13, $SD$ = 0.90).

For Language Barrier Support, participants strongly agreed that ChatGPT improved their ability to write professional English emails or reports ($M$ = 4.43, $SD$ = 0.68). They also agreed that it helped them overcome language barriers when communicating technical information ($M$ = 4.20, $SD$ = 0.96) and assisted in understanding English technical documents and messages ($M$ = 4.17, $SD$ = 0.95).

In terms of Information Support, participants agreed that ChatGPT helped them find sources or explanations for technical problems ($M$ = 4.07, $SD$ = 0.83). They also agreed that it gave useful suggestions and advice on problem-solving ($M$ = 3.87, $SD$ = 0.73) and delivered relevant technical information appropriate to their tasks ($M$ = 3.87, $SD$ = 0.68).

For Knowledge Acquisition, participants agreed that ChatGPT enabled them to understand technical concepts more easily ($M$ = 3.97, $SD$ = 0.89), helped them learn

new technical knowledge related to their job (*M* = 3.80, *SD* = 0.85), and supported them in applying technical knowledge to their work (*M* = 3.70, *SD* = 0.88).

Regarding Perceived Intelligence, Participants agreed that ChatGPT is competent in handling technical tasks (*M* = 3.93, *SD* = 0.78), knowledgeable in technical subject areas (*M* = 3.80, *SD* = 0.81), and intelligent in responding to technical queries (*M* = 3.77, *SD* = 0.73).

Finally, for Intention to Use, participants strongly agreed that they intend to continue using ChatGPT for technical tasks (*M* = 4.27, *SD* = 0.78). They also agreed that they plan to use it regularly in technical support tasks (*M* = 3.73, *SD* = 1.11) and aim to rely on it more in daily technical work (*M* = 3.53, *SD* = 1.14).

### 4.3 The Technical Support Staff's Perceptions of the Challenges of Using ChatGPT

This part presents the results of the technical support staff's challenges in using ChatGPT in technical communication. The results are presented in Table 4

**Table 4**

*Technical Support Staff's Challenges of Using ChatGPT.*

| Item | Mean | *SD* | Perception Level |
|---|---|---|---|
| 1. There is a risk that ChatGPT may provide incorrect technical answers. | 3.77 | 0.97 | Agree |
| 2. It takes effort to revise ChatGPT's responses to meet the accuracy required in technical tasks. | 3.63 | 0.93 | Agree |
| 3. I am worried about believing or sharing incorrect information from ChatGPT with clients or suppliers. | 3.63 | 1.1 | Agree |
| 4. ChatGPT responses are sometimes too vague or unclear for technical tasks. | 3.57 | 0.94 | Agree |
| 5. ChatGPT sometimes fails to understand my technical questions. | 3.50 | 0.86 | Agree |

| | | | |
|---|---|---|---|
| 6. Sometimes, I receive suggestions from ChatGPT that are not applicable to the technical context I work in | 3.50 | 0.94 | Agree |
| 7. I am concerned that ChatGPT may misinterpret technical questions and give misleading answers. | 3.37 | 1.03 | Moderate |
| 8. ChatGPT sometimes gives inaccurate or unsuitable suggestions for technical issues. | 3.30 | 0.92 | Moderate |
| 9. ChatGPT responses often lack verifiable sources or references. | 3.30 | 1.15 | Moderate |
| 10. ChatGPT lacks sufficient technical depth in my subject area. | 3.17 | 1.09 | Moderate |
| 11. ChatGPT's recognition of technical language is sometimes inaccurate. | 3.13 | 0.86 | Moderate |
| 12. ChatGPT does not always provide answers that align with my technical knowledge. | 2.83 | 0.75 | Moderate |
| **Overall** | **3.39** | **0.96** | **Moderate** |

Overall, participants demonstrated moderate perceptions of the challenges associated with using ChatGPT, with an overall mean score of 3.39 (*SD* = 0.96).

Participants agreed that there is a risk of ChatGPT providing incorrect technical answers, which was reflected in the highest mean score among the challenge items (*M* = 3.77, *SD* = 0.97), followed by the need to revise ChatGPT's output to meet the accurate information (*M* = 3.63, *SD* = 0.93), and concerns about potentially sharing incorrect information with clients or suppliers (*M* = 3.63, *SD* = 1.10), respectively. Further, participants agreed that ChatGPT responses can sometimes be vague or unclear (*M* = 3.57, *SD* = 0.94), and the tool may fail to understand technical questions (*M* = 3.50, *SD* = 0.86) or provide suggestions that are not applicable to the technical context (*M* = 3.50, *SD* = 0.94).

The remaining six items were perceived at a moderate level. These included concerns about ChatGPT misinterpreting technical questions and giving misleading answers (*M* = 3.37, *SD* = 1.03), providing inaccurate or unsuitable suggestions for

technical issues ($M$ = 3.30, $SD$ = 0.92), and lacking verifiable sources or references ($M$ = 3.30, $SD$ = 1.15). Participants also expressed moderate perceptions regarding ChatGPT's technical depth ($M$ = 3.17, $SD$ = 1.09), its recognition of technical language ($M$ = 3.13, $SD$ = 0.86), and the alignment of its answers with their existing technical knowledge ($M$ = 2.83, $SD$ = 0.75).

## 4.4 Qualitative Findings: Challenges and Suggestions in Using ChatGPT

This section presents the results of the qualitative data collected through open-ended questions, , which were answered by 20 participants.

### *4.4.1 Challenges of Using ChatGPT*

The findings indicated that four key themes emerged from the data: (1) Accuracy and trustworthiness, (2) Prompt clarity, (3) technical depth knowledge limitation, and (4) lack of reliable reference

**4.4.1.1 Accuracy and Trustworthiness** One of the most frequently mentioned challenges was the lack of accuracy and trustworthiness in ChatGPT's responses. Six participants reported that the tool sometimes produced incorrect, inconsistent, or overly simplified answers especially when used in technical or field-specific tasks. As a result, participants felt they could not rely on ChatGPT's output without further checking and editing.

*"ChatGPT gave incorrect answers, so I had to check everything myself before using it." (P30)*

*"It provided an incorrect answer." (P20)*

ChatGPT's mistakes could lead to confusion or even errors if used without careful review.

*"I've encountered answers that didn't match what I previously knew, so I had to keep refining them until I got the correct one." (P16)*

*"It even got simple single-digit calculations wrong, so I have to check the answers every time" (P18)*

This highlights users' concern when using ChatGPT, because it provides fast content generation but lacks reliability for technical or specialized topics without checking the response by humans.

**4.4.1.2 Prompt Clarity** Seven participants shared that a common challenge identified by participants was the need to craft clear, specific, and well-structured prompts in order to receive accurate and relevant responses from ChatGPT. Participants frequently observed that when prompts were vague, broad, or lacked sufficient context, ChatGPT's answers often missed the point or required multiple revisions.,

*"Sometimes it doesn't answer the question directly, which requires revising the input several times to get a clearer response." (P13)*

*"If the answer doesn't fully meet your needs, try asking again using different questions." (P11)*

*"I asked it to help translate an instruction manual by uploading an English file, but ChatGPT didn't translate everything in detail as I expected. The solution was to copy and paste the text instead, then it could translate it, and I would refine the translation afterward." (P6)*

*"Trying different formats of inputs or questions can help ChatGPT provide more accurate and relevant information." (P29)*

These reflections indicate that prompt clarity is not just the best practice, it is a core requirement when using ChatGPT effectively in technical tasks.

**4.4.1.3 Technical Depth Knowledge Limitation** Two participants noted that ChatGPT lacked sufficient depth in specialized or domain-specific content. While the tool was generally effective for broad or general knowledge, participants found that it often struggled to deliver accurate or meaningful answers in technical areas.

*"Sometimes it gives answers that don't directly address the question or are too broad. The solution is to use ChatGPT as a guideline and then do further research on your own to help reduce working time*." (P3)

Moreover, one participant noted that ChatGPT attempted to provide answers even when it lacked sufficient understanding of the topic, which led to confusion.

*"Sometimes ChatGPT tries to generate an answer without considering whether it's correct or not, in simple terms, it doesn't know what it doesn't know."* (P9)

*"I used ChatGPT to search for technical information in a specialized area, but the initial results were not very relevant. To solve this, I repeated the question using key keywords and also searched from other sources until I found the information I needed."* (P9)

These concerns reflect ChatGPT's limitations in technical knowledge. While it supports general productivity, it struggles with more advanced or specialized technical communication.

**4.4.1.4 Lack of Reliable References** Five participants identified unreliable references in ChatGPT responses. The absence of proper citations in technical work made it challenging for participants to trust or directly apply the information provided since credibility and source verification are essential. They could not use the information with confidence because the lack of reliable references required them to verify the information further

*"It provided incorrect references, so I had to carefully check all the references myself." (P1)*

*"Most of the information lacks clear references." (P28)* how many

One participant also verifies ChatGPT's responses by reviewing them directly or by asking the tool to generate sources that support its answers.

*" When using ChatGPT, I ask for the sources to be included and then check the answers directly at the original source." (P25)*

These insights show that while ChatGPT can assist in generating content or summarizing information, its lack of citation transparency remains a key weakness.

### *4.4.2 Suggestions for the Effective Use of ChatGPT*

This part presents the suggestions reflecting their strategies to improve outcomes with the tool. There are three key themes emerged this data (1) prompt design, (2) verification and informed use, (3) use as a support tool

**4.4.2.1 Prompt Design** Three participants emphasized the importance of clear and specific prompts to get accurate and useful answers.

*"Use a clear and specific prompt to get the information you need," (P13)*

*"You need to practice writing prompts and always verify the answers." (P18)*

*"To get good and effective answers from ChatGPT, the questions need to be detailed or specific to what you're looking for… If the answer doesn't meet your expectations, you can refine the question." (P6)*

This highlights the importance of effective prompt design. Users need to ask clear and detailed questions in order to receive useful and accurate answers from ChatGPT.

**4.4.2.2 Verification and Informed Use** Since technical work requires precise and accurate information, six participants emphasized the importance of verifying ChatGPT's output before using it to ensure reliability.

*"Make sure to verify everything on your own every time," (P30)*

*"It's important to verify sources before relying on ChatGPT's answers." (P28)*

Others expressed the need to double-check and cross-reference with reliable sources,

*"It's necessary to frequently verify the answers to prevent errors" (P16)*

*"I double-check every time" (P25)*

Some responses pointed to the value of basic knowledge and continuous learning when using AI tools.

*"Using ChatGPT requires a certain level of basic knowledge on the topic," (P9)*

*"Recheck the accuracy before using the information from ChatGPT and continue learning alongside it." (P19)*

These comments reflect the idea that ChatGPT is most effective when users are actively engaged and knowledgeable about how to guide and assess its responses.

**4.4.2.3 Use as a Support Tool** Two participants suggested using ChatGPT as a support tool rather than a source of final answers. The tool is suitable for initial planning or drafting, especially when combined with the user's own thinking.

*"It is suitable for drafting or initial planning tasks, or work that requires quick turnaround. (P3)*

Combining it with the user's own thinking and skills will make the work more complete and efficient.

*"Use it as a support tool, but don't let it lead you in everything." (P20)*

This reflects a mindset where users benefit from ChatGPT's speed and convenience while maintaining control over content decisions.

In summary, the qualitative results reveal that while participants find ChatGPT useful for supporting technical communication tasks, they also face several common challenges. The main concerns include accuracy, prompt clarity, lack of technical depth, and unreliable references. However, participants also recognized that the effectiveness of ChatGPT largely depends on how it is used, especially when users give clear and detailed prompts, check the answers carefully, and apply their own knowledge. With these practices, they believe ChatGPT has the potential to become a more effective and valuable tool for technical and professional work

# CHAPTER 5
# DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents: (1) a summary of the study, (2) a summary of the findings, (3) discussion, (4) conclusion, (5) implications, and (6) recommendations for further study.

## 5.1 Summary of the Study

This study investigated the perceptions and challenges of using ChatGPT in technical communication among technical support staff in science and technology businesses. Using quantitative approach, it combined a Likert-scale questionnaire with open-ended questions to gather deeper insights into the challenges participants encountered and the strategies they used to overcome. The questionnaire was completed by 30 respondents, while the open-ended involved 20 participants. The study covers not only general perceptions but also benefits and challenges associated with using ChatGPT in technical communication. The subsequent discussion and interpretation of the results aim to address the research questions and study objectives.

## 5.2 Summary of the Findings

This study aimed to explore the perceptions and challenges associated with using ChatGPT in technical communication among support staff in science and technology businesses. These results are presented according to the two research objectives: (1) to explore how ChatGPT is perceived by technical support staff, and (2) to identify the challenges users face when using it in their work.

### *5.2.1 Perceptions of ChatGPT in Technical Communication*

The study shows participants have a positive perceptions of using ChatGPT for technical communication. Most of them agreed that ChatGPT is a useful tool can help them save-time on works and also enhance productivity and efficiency in technical communication. These included delivering product training, sharing technical knowledge, and resolving product-related problems. ChatGPT can provide quick access to search information and suggest ways to solve problems. Moreover, it can also

simplify complex technical content into a simple version that is easy to communicate to a non-technical person.

Besides, ChatGPT can support technical work, it can help participants learn new knowledge which can apply to their work. The results showed that participants perceived to use ChatGPT to learn about new knowledge in technical field. This shows that participants viewed ChatGPT is not only a tool for communication but also a way to improve the learning of new knowledge.

Another benefit of ChatGPT is that it can help participants handle language issues. Participants found that ChatGPT was great for writing emails or technical reports because it made their English clear and more natural. Moreover, it made a way easier for them to read English documents or messages in their work. This helped them feel more confident when interact with global principal suppliers.

### *5.2.2 Challenges of Using ChatGPT in Technical Tasks*

The results showed multiple important barriers that technical support staff encounter when they use ChatGPT for their work. Although, generally demonstrated a moderate level of concern about the challenges associated with ChatGPT, as reflected in the overall mean score (M = 3.39, SD = 0.96), several challenges in using ChatGPT were identified. The results showed that participants agreed that the risk of receiving incorrect technical answers (M = 3.77, SD = 0.97), the need to revise ChatGPT's output to meet accuracy requirements (M = 3.63, SD = 0.93), and the risk of sharing potentially misleading information with clients or suppliers (M = 3.63, SD = 1.1) respectively. Participants also noted that ChatGPT's responses were sometimes too vague or lacked sufficient context (M = 3.57, SD = 0.94). Quantitative findings highlight the key issues was the lack of clarity and relevance in ChatGPT's responses. Participants agreed that ChatGPT may provide incorrect technical answers, they need to check and edit the answers before using or sharing information.

These challenges were supported by open-ended questions emerged four key themes including accuracy and trust, prompt clarity, lack of verifiable references, and technical depth. One of the major challenges related to the accuracy and trustworthiness of ChatGPT's responses, which was frequently discussed in qualitative responses. Participant notes that ChatGPT produced incorrect, inconsistent, or overly simplified

responses when applied to technical or specialized tasks. As a result, they felt it was necessary to review and verify the output before applying to the tasks.

Another major challenge related to prompt clarity results in the lack of clarity and relevance in ChatGPT's responses. The participants mention that the quality of the answers provided by ChatGPT depends on the question prompt. If the prompt is unclear, the answer may be incomplete or unclear. This shows that the well answers from ChatGPT depend not only on the tool but also on the user's skill. Many users acknowledged that it is important to write clear and specific prompts to get useful results. A common concern was the lack of verifiable references in ChatGPT's responses. Participants were concerned about using information with lacking verifiable references or reliable sources. The comments highlight that many participants expressed discomfort relying on information without reference sources. They also noted that they had to manually check references or avoid using certain responses in formal documentation due to the absence of citations because references are essential in these fields.

Finally, participants also noted that ChatGPT sometimes lacked sufficient technical depth, particularly when dealing with specific technical contexts. They also reported that ChatGPT struggled with complex or specialized topics and provided answers that were either too general or repetitive. The system proved less effective when participants required in-depth technical knowledge.

## 5.3 Discussion

This study aimed to explore the perceptions and challenges associated with using ChatGPT in technical communication among support staff in science and technology businesses. The discussions are presented according to the two research objectives: (1) to explore how ChatGPT is perceived by technical support staff, and (2) to identify the challenges users face when using it in their work.

### *5.3.1 How ChatGPT is Perceived by Technical Support Staff*

The findings of this study aligned with previous research that demonstrate the positive impact of ChatGPT on workplace communication and task efficiency. The participants in this study indicated that ChatGPT enabled them to finish their work

faster while enhancing their communication quality through its instant access to relevant information and simple explanations of technical terms. The results show special significance for science and technology businesses because their technical staff need to explain complex information while providing product training and handling product-related issues. This study aligned with previous studies by Jo and Park (2024) that showed ChatGPT boosts workplace communication speed and quality when dealing with complex inquiries. Their study also emphasized ChatGPT's role in providing timely and accurate information support, which helps employees respond more effectively to technical questions. Similarly, Mohr (2024) highlighted that ChatGPT improves multitasking abilities and maintains technical communication consistency.

The study also highlights that ChatGPT functions as an effective tool for professional learning. The participants utilized the tool for exploring unfamiliar technical content and gaining knowledge that could be applied directly to their tasks. This supports the findings of Rice et al. (2024), demonstrating how ChatGPT enhances research efficiency through its capabilities in literature reviews and research gap identification and disciplinary communication. Additionally, Jusman et al. (2023) showed that ChatGPT enhances strategic business management by supporting knowledge transfer and improving communication between technical and non-technical teams. The research results from this study match how participants employed ChatGPT to make technical information more accessible and enhance team communication within organization. These shared observations highlight ChatGPT's role not only in supporting workplace tasks but also in enhancing continuous learning and professional development.

Another strong theme from the study was ChatGPT as a key factor which helps participants overcome language barriers. As many participants were non-native English speakers, they emphasized that ChatGPT helped them communicate more clearly in English. This study found that ChatGPT helped with that process by making technical content clearer and more readable. This finding is supported by Huang and Tan (2023), who observed that ChatGPT enhances both the clarity and structural organization of scientific writing. These results suggest that ChatGPT can help not only with the speed of producing information but also with how well that information is communicated. In

addition, ChatGPT helps them professionally use English. In roles that involve frequent contact with international suppliers and the use of English for professional writing, non-native English speakers often face pressure to be clear, accurate, and professional. Instead of relying only on translation tools, participants used ChatGPT to improve the tone, grammar, and structure of their emails and technical reports. The research findings align with Nugroho et al. (2023), who demonstrated that ChatGPT improves international business communication through its ability to simplify complex content and facilitate language-independent collaboration. The research by Arif et al. (2023) demonstrated that ChatGPT provides immediate language translation services and facilitates cross-cultural understanding, especially in technical teams that operate with multiple languages.

### *5.3.2 The Challenges Users Face When Using ChatGPT in Their Work*

Although ChatGPT offers many benefits, this study also found several important challenges that technical support staff face when using it in their work. One key issue is the accuracy of information. One issue is the phenomenon of AI hallucination, in which ChatGPT generates responses that appear confident and correct but actually contain false or misleading information. The observed behavior of ChatGPT led multiple participants to verify the output and prevent its use for particular technical applications. This finding reflects OpenAI (2023) recognizing hallucination as a weakness in large language models. Khurana and Kobiela (2023) confirm this as a major obstacle for using ChatGPT in professional settings. The challenge reduces participant trust in the tool while creating concerns about misinformation spread and incorrect decisions made from flawed AI outputs.

Another common concern was lack of reliability and verifiable sources in ChatGPT's responses. Participants frequently mentioned that ChatGPT responses lacked reliable sources which made them unverifiable. The participants showed caution when accepting information from the tool because they needed precise fact-checked content for their tasks. This concern aligns with the findings of Khurana and Kobiela (2023) who support this concern because users doubt AI-generated information when sources remain unattributed and data lacks traceability. Similarly, the study by Younes

et al. (2023) shows that users become less likely to use ChatGPT suggestions in their professional work when they cannot verify the accuracy of the information.

The study also identified insufficient specialized knowledge as a significant challenge. The participants observed that ChatGPT succeeded in general tasks but failed to deliver insights which matched their specific expertise or complex technical task requirements. This is supported by Gupta et al. (2021) and Zhai (2022) who discovered that ChatGPT lacks sufficient depth to assist with highly specialized work. The model's inability to adapt to task-specific knowledge, according to Khurana and Kobiela (2023), creates a barrier for professionals who need reliable expert-level task support.

The participants also noted that ChatGPT's feedback was sometimes unclear and of poor quality. The responses were sometimes too vague or not detailed enough to be useful for technical problem solving. These results are consistent with the findings of Marjerison et al. (2023) and Han et al. (2021), who noted the immaturity of chatbot technology in professional contexts, citing issues with text clarity, inconsistent recognition, and vague or generic answers. This can be a problem for participants when they need highly specific and actionable information.

Another important factor is the role of clear prompting. When input questions are too broad or unclear, ChatGPT tends to generate less helpful or off-topic responses. This shows that the quality of output is strongly shaped by how well the tool is guided. Budhathoki et al. (2024) similarly emphasized that the effectiveness of AI tools depends on the user's ability to give specific and structured prompts. Without this skill, the tool’s potential to assist with technical communication becomes limited.

In summary, this study shows that ChatGPT is a useful tool for improving the speed, clarity, and effectiveness of technical communication. It supports informal learning, reduces language barriers, and enhances writing quality. However, the tool also has limitations related to accuracy, depth knowledge, prompt dependency, and lack of references. These challenges show that while ChatGPT can be a valuable part of the communication process, it must be used with care, alongside human expertise, critical thinking, and proper review.

## 5.4 Conclusion

This study highlights that ChatGPT functions as a valuable tool which enhances communication speed and transforms complex language into simpler terms and supports workplace learning. The tool enables non-native English speakers to enhance their professional communication skills with greater clarity and self-assurance. The challenges explored in this study found that participants expressed doubts about the accuracy and trust of ChatGPT's responses, especially when dealing with specialized or in-depth specific information. The tool's performance relies strongly on prompt quality and its lack of verifiable sources makes it less reliable for official or client-oriented communication.

Overall, the results suggest that ChatGPT can be a supportive resource in technical environments when used carefully and responsibly. While it offers clear benefits, it should not replace human expertise, especially in areas where accuracy, detail, and credibility are essential.

## 5.5 Implications

The results from this study offer multiple practical applications for businesses operating in the science and technology sectors.

1. Improving content quality and reducing time. The practical application of ChatGPT functions as a helpful communication assistant. The platform enables technical staff to draft messages, explain complex concepts and resolve language-related issues.

2. Enhancing communication efficiency. ChatGPT help to reduces communication time while improving quality, especially when working internationally, since English functions as the primary language.

3. Supporting employee learning and confidence. Organizations can implement ChatGPT technology for both training purposes and operational activities. The learning tool enables staff members to grasp new subjects better while improving their writing skills and boosting their confidence in applying learned knowledge when properly guided.

4. Highlighting the need for prompt engineering training. This study demonstrates that proper user training stands as a critical factor. Organizations need to

provide staff training about writing effective prompts, checking results and understanding ChatGPT's operational boundaries, because the tool's responses depend on user question quality and result verification. The proper implementation of ChatGPT depends on careful and responsible usage.

### 5.6 Recommendations for Further Research

While this study provides valuable insights into the use of ChatGPT in technical communication, the following points are recommended for further investigation.

1. Expand the participant pool across job roles and industries. This study focused on a limited sample of technical support staff. Future research should involve participants from diverse roles and sectors within science and technology industries to enhance the generalizability of the findings.

2. Include multiple AI tools for comparison. The research focused exclusively on ChatGPT. Further studies should explore other AI language models and tools to compare user experiences, performance differences, and application outcomes across platforms.

3. Investigate long-term impact and adaptation. Future studies should examine the long-term effects of AI integration in the workplace, including how employees adapt to AI tools, how these tools become embedded in daily communication practices, and how they influence decision-making and job performance over time.

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# APPENDICES

# APPENDIX A
# QUESTIONNAIRE IN ENGLISH

**Perceptions and Challenges of Using ChatGPT for Technical Communication in the Science and Technology Businesses**

This questionnaire is a part of an independent research study in the Master of Arts program in Career English for International Communication, Thammasat University. The research aims to study how ChatGPT supports technical communication in the science and technology business, especially in technical support roles.

The questionnaire is divided into Four parts:
Part 1: Demographic Information
Part 2: Perceptions of Using ChatGPT in Technical Work
Part 3: Challenges of Using ChatGPT for Technical Work
Part 4: Open-Ended Questions on Challenges and Suggestions

Please note that the information obtained from this questionnaire will be kept confidential and used solely for the purpose of this research. Participants are kindly requested to provide truthful responses. The researcher sincerely appreciates the time and effort contributed by all participants in completing this questionnaire.

**Consent Statement**

By proceeding with this questionnaire, you are giving your consent to voluntarily participate in this study. You understand that your responses will remain anonymous and will be used strictly for academic purposes only. You may choose to withdraw at any time without any consequences.

**Part 1: Demographic Information**

**1. Gender**

☐ Female

☐ Male

**2. Age**

☐ 20s ( 20–29 )

☐ 30s ( 30–39 )

☐ 40s ( 40–49 )

**3. Level of Education**

☐ Bachelor's Degree

☐ Master's Degree

☐ Doctor of Philosophy – PhD

**Part 2: Perceptions of Using ChatGPT in Technical Work.**

Please rate your agreement with the following statements.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

| No. | Statements | 5-point Likert Scales | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | I believe that ChatGPT is competent in handling technical tasks. | | | | | |
| 2 | I consider ChatGPT to be knowledgeable in technical subject areas. | | | | | |
| 3 | I perceive ChatGPT as intelligent in responding to technical queries. | | | | | |
| 4 | ChatGPT gives me suggestions and advice on problem-solving in my technical tasks. | | | | | |
| 5 | ChatGPT delivers relevant technical information appropriate to my tasks. | | | | | |
| 6 | ChatGPT helps me find sources or explanations for technical problems. | | | | | |
| 7 | ChatGPT helps me learn new technical knowledge related to my job. | | | | | |
| 8 | ChatGPT enables me to understand technical concepts more easily. | | | | | |
| 9 | ChatGPT supports me in applying technical knowledge to my work. | | | | | |
| 10 | Using ChatGPT helps me save time on technical tasks. | | | | | |
| 11 | ChatGPT improves my efficiency when working on technical content. | | | | | |
| 12 | ChatGPT enhances my productivity when dealing with technical issues. | | | | | |
| 13 | ChatGPT helps me overcome language barriers when communicating technical information. | | | | | |
| 14 | ChatGPT helps me understand English technical documents and messages more easily. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 15 | ChatGPT helps me understand English technical documents and messages more easily. | | | | | |
| 16 | I intend to continue using ChatGPT for technical tasks. | | | | | |
| 17 | I plan to use ChatGPT regularly in my technical support tasks. | | | | | |
| 18 | I aim to rely on ChatGPT more in my daily technical tasks. | | | | | |

**Part 3: Challenges of Using ChatGPT for Technical Work.**

Please rate your agreement with the following statements.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

| **No.** | **Statements** | **5-point Likert Scales** | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | ChatGPT's recognition of technical language is sometimes inaccurate. | | | | | |
| 2 | ChatGPT sometimes fails to understand my technical questions. | | | | | |
| 3 | ChatGPT responses are sometimes too vague or unclear for technical tasks. | | | | | |
| 4 | ChatGPT does not always provide answers that align with my technical knowledge. | | | | | |
| 5 | I am concerned that ChatGPT may misinterpret technical questions and give misleading answers. | | | | | |
| 6 | I am worried about believing or sharing incorrect information from ChatGPT with clients or suppliers. | | | | | |
| 7 | There is a risk that ChatGPT may provide incorrect technical answers. | | | | | |
| 8 | ChatGPT responses often lack verifiable sources or references. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | ChatGPT sometimes gives inaccurate or unsuitable suggestions for technical issues. | | | | | |
| 10 | ChatGPT lacks sufficient technical depth in my subject area. | | | | | |
| 11 | It takes effort to revise ChatGPT's responses to meet the accuracy required in technical tasks. | | | | | |
| 12 | Sometimes, I receive suggestions from ChatGPT that are not applicable to the technical context I work in. | | | | | |

**Part 4: Open-Ended Questions on Challenges and Suggestions**

1. What challenges have you faced when using ChatGPT for technical work? Please give an example and share how you dealt with or overcame the challenge.

   ……
   ……
   ……
   ……

2. What suggestions or additional comments do you have for improving the use of ChatGPT in technical work?

   ……
   ……
   ……
   ……

# APPENDIX B

# QUESTIONNAIRE IN THAI

แบบสอบถามมุมมองและความท้าทายในการใช้ **ChatGPT** เพื่อการสื่อสารด้านเทคนิคในธุรกิจวิทยาศาสตร์และเทคโนโลยี แบบสอบถามฉบับนี้เป็นส่วนหนึ่งของการศึกษาอิสระ **(Independent Study)** ในหลักสูตรศิลปศาสตรมหาบัณฑิต สาขาภาษาอังกฤษเพื่อการประกอบอาชีพระหว่างประเทศ สถาบันภาษา มหาวิทยาลัยธรรมศาสตร์ โดยมีวัตถุประสงค์เพื่อศึกษา โดยมีวัตถุประสงค์เพื่อศึกษามุมมองและความท้าทายในการใช้ **ChatGPT** สำหรับการสื่อสารด้านเทคนิคในธุรกิจวิทยาศาสตร์และเทคโนโลยี โดยเฉพาะอย่างยิ่งในบทบาทของเจ้าหน้าที่สนับสนุนด้านเทคนิค **(Technical Support)**

แบบสอบถามฉบับนี้แบ่งออกเป็น **4** ส่วน ดังนี้:

ส่วนที่ **1:** ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

ส่วนที่ **2:** มุมมองต่อการใช้งาน **ChatGPT** ในงานทางเทคนิค

ส่วนที่ **3:** ความท้าทายในการใช้งาน **ChatGPT** ในงานด้านเทคนิค

ส่วนที่ **4:** คำถามปลายเปิดเกี่ยวกับความท้าทายในการใช้งาน **ChatGPT** ในงานด้านเทคนิค และข้อเสนอแนะ

ท่านได้รับการขอความร่วมมือให้ตอบแบบสอบถามนี้ เนื่องจากท่านอยู่ในตำแหน่งที่สามารถให้ข้อมูลอันเป็นประโยชน์ต่อการศึกษาได้ กรุณาตอบคำถามตามความเป็นจริง โดยจะมีคำแนะนำในการตอบแบบสอบถามในแต่ละส่วนอย่างชัดเจน ขอเรียนให้ทราบว่าท่านไม่จำเป็นต้องระบุชื่อ ข้อมูลที่ให้จะถูกใช้เพื่อวัตถุประสงค์ทางวิชาการเท่านั้น และจะได้รับการเก็บรักษาไว้เป็นความลับโดยเคร่งครัด จะไม่มีการเปิดเผยข้อมูลส่วนบุคคลในลักษณะที่สามารถระบุตัวตนได้

ขอขอบพระคุณเป็นอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถามฉบับนี้

**ข้อความขอความยินยอม**

เมื่อท่านคลิกเริ่มตอบแบบสอบถาม ถือว่าท่านยินยอมเข้าร่วมในการศึกษาในครั้งนี้โดยสมัครใจ และเข้าใจว่าข้อมูลที่ท่านให้จะถูกเก็บเป็นความลับ และใช้เพื่อการศึกษาวิจัยทางวิชาการเท่านั้น ทั้งนี้ ท่านสามารถยกเลิกการตอบแบบสอบถามได้ทุกเมื่อ โดยไม่ส่งผลเสียใด ๆ ต่อท่าน

**ส่วนที่ 1 : ข้อมูลทั่วไป**

**1. เพศ :**

☐ **หญิง**

☐ **ชาย**

**2. ช่วงอายุ :**

☐ **อายุ 20–29 ปี**

☐ **อายุ 30–39 ปี**

☐ **อายุ 40–49 ปี**

**3. ระดับการศึกษา :**

☐ **ปริญญาตรี**

☐ **ปริญญาโท**

☐ **ปริญญาเอก**

**ส่วนที่ 2 : มุมมองต่อการใช้งาน ChatGPT ในงานทางเทคนิค**

โปรดให้คะแนนระดับความเห็นด้วยของท่านกับข้อความต่อไปนี้

ระดับการให้คะแนน: 1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = เฉยๆ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง

| No. | Statements | 5-point Likert Scales | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | ฉันเชื่อว่า ChatGPT มีความสามารถในการจัดการงานของฉันได้ดี | | | | | |
| 2 | ฉันมองว่า ChatGPT มีความรู้ในหัวข้องานทางเทคนิค | | | | | |
| 3 | ฉันรู้สึกว่า ChatGPT ตอบคำถามเชิงเทคนิคได้อย่างชาญฉลาด | | | | | |
| 4 | ChatGPT ให้คำแนะนำและข้อเสนอแนะในการแก้ปัญหาในงานของฉัน | | | | | |
| 5 | ChatGPT ให้ข้อมูลที่สอดคล้องกับงานของฉัน | | | | | |
| 6 | ChatGPT ช่วยฉันค้นหาแหล่งข้อมูลหรือคำอธิบายของปัญหาในงานของฉัน | | | | | |
| 7 | ChatGPT ช่วยฉันเรียนรู้ความรู้ทางเทคนิคใหม่ๆที่เกี่ยวข้องกับงาน | | | | | |
| 8 | ChatGPT ช่วยให้ฉันเข้าใจแนวคิดทางเทคนิค (technical concepts) ได้ง่ายขึ้น | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | ChatGPT สนับสนุนงานฉัน โดยให้ความรู้ทางเทคนิค (technical knowledge) ไปใช้กับงาน | | | | | |
| 10 | การใช้ ChatGPT ช่วยฉันประหยัดเวลาในการทำงาน | | | | | |
| 11 | ChatGPT ช่วยให้ฉันทำงานด้านเนื้อหาทางเทคนิคได้เร็วขึ้น | | | | | |
| 12 | ChatGPT ช่วยเพิ่มประสิทธิภาพในการจัดการปัญหาของงาน | | | | | |
| 13 | ChatGPT ช่วยให้ฉันเอาชนะอุปสรรคทางภาษา เมื่อต้องสื่อสารข้อมูลทางเทคนิคทั้งกับลูกค้าหรือซัพพลายเออร์ | | | | | |
| 14 | ChatGPT ช่วยให้ฉันเข้าใจเอกสารและข้อมูลทางเทคนิคที่เป็นภาษาอังกฤษได้ง่ายขึ้น | | | | | |
| 15 | ChatGPT ช่วยให้ฉันสามารถเขียนอีเมลหรือรายงานทางเทคนิคเป็นภาษาอังกฤษได้ดีขึ้น | | | | | |
| 16 | ฉันตั้งใจจะใช้ ChatGPT ในการทำงานต่อไป | | | | | |
| 17 | ฉันวางแผนจะใช้ ChatGPT อย่างสม่ำเสมอในการทำงาน | | | | | |
| 18 | ฉันตั้งใจจะพึ่งพา ChatGPT มากขึ้นในการทำงาน | | | | | |

**ส่วนที่ 3: ความท้าทาย (Challenges) ในการใช้ ChatGPT**

โปรดให้คะแนนระดับความเห็นด้วยของท่านกับข้อความต่อไปนี้

ระดับการให้คะแนน: 1 = ไม่เห็นด้วยอย่างยิ่ง, 2 = ไม่เห็นด้วย, 3 = เฉยๆ, 4 = เห็นด้วย, 5 = เห็นด้วยอย่างยิ่ง

| No. | Statements | 5-point Likert Scales | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | ChatGPT มักจะเข้าใจภาษาทางเทคนิค (technical term) ของฉันไม่ถูกต้อง | | | | | |
| 2 | บางครั้ง ChatGPT ไม่เข้าใจคำถามเชิงเทคนิค (technical questions) | | | | | |
| 3 | คำตอบของ ChatGPT มักจะกว้างเกินไปหรือไม่ชัดเจน | | | | | |
| 4 | ChatGPT ไม่ได้ให้คำตอบที่สอดคล้องกับความรู้ทางเทคนิคของฉัน | | | | | |
| 5 | ฉันกังวลว่า ChatGPT อาจตีความคำถามทางเทคนิคผิดและให้คำตอบที่ทำให้เข้าใจผิดได้ | | | | | |
| 6 | ฉันกังวลว่าจะหลงเชื่อหรือแชร์ข้อมูลที่ไม่ถูกต้องจาก ChatGPT ให้กับลูกค้าหรือซัพพลายเออร์ | | | | | |
| 7 | มีความเสี่ยงที่ ChatGPT จะให้คำตอบที่ไม่ถูกต้อง | | | | | |
| 8 | คำตอบของ ChatGPT มักขาดแหล่งข้อมูลอ้างอิง | | | | | |
| 9 | บางครั้ง ChatGPT ให้คำแนะนำที่ไม่ถูกต้องหรือไม่เหมาะสมสำหรับปัญหาทางเทคนิค | | | | | |
| 10 | ChatGPT ไม่สามารถให้ข้อมูลเชิงลึกได้เพียงพอเพื่อ support งานของฉัน | | | | | |
| 11 | ฉันต้องใช้ความพยายามในการแก้ไขคำตอบจาก ChatGPT เพื่อให้ได้ข้อมูลที่มีความถูกต้อง และนำมาใช้ในงานของฉัน | | | | | |
| 12 | คำแนะนำจาก ChatGPT ในบางครั้งไม่สามารถนำไปใช้กับงานของฉันได้ | | | | | |

**ส่วนที่ 4: คำถามปลายเปิดเกี่ยวกับความท้าทายในการใช้งาน ChatGPT ในงานด้านเทคนิค และข้อเสนอแนะ**

1. คุณเคยพบกับความท้าทาย (Challenges) อะไรบ้างในการใช้ ChatGPT ในงานทำงาน? กรุณายกตัวอย่างและคุณมีวิธีคุณรับมือหรือแก้ไขปัญหานั้นอย่างไร?

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2. คุณมีข้อเสนอแนะหรือความคิดเห็นเพิ่มเติมอย่างไรเกี่ยวกับการใช้ ChatGPT เพื่อให้การทำงานทางเทคนิคมีประสิทธิภาพมากขึ้น?

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