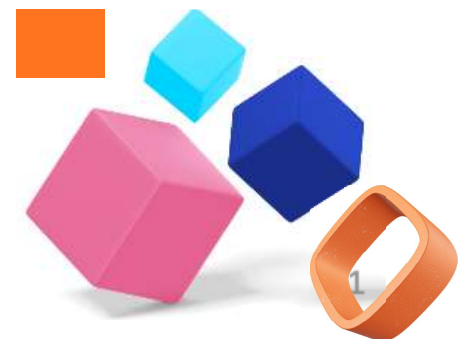




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FAKULTI SAINS KOMPUTER DAN MATEMATIK
UNIVERSITI TEKNOLOGI MARA
CAWANGAN JOHOR



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PREFACE

Praise be to Allah SWT, with His will, this eBook, ICT Trends that Matter, has been successfully compiled to capture some of the most relevant and transformative discussions in the world of Information and Communication Technology (ICT).

The work is a compilation of various views of the different practitioners, scholars, and professionals who have contributed their ideas and thoughts regarding the emerging technologies and their influence. The chapters provide just a few examples of how cybersecurity, big data harmonisation, artificial intelligence, novel learning tools, and social media analytics demonstrate the extent to which ICT has permeated our everyday worlds, our classrooms, workplaces, and communities.

ICT Trends that Matter offers readers a comprehensive exploration of 14 contemporary ICT themes that are shaping education, industry, and society. The eBook covers a wide spectrum of topics such as Big Data & AI, Digital Learning & Tools, Practical ICT Applications, Social Media & Communication and Smart Campus Initiatives highlighting UiTM Johor's experience in developing a data-driven digital ecosystem.

This eBook is informative and inspirational, with contributions that combine theory, research, and practical work. It makes the readers consider the existing ICT issues and opportunities and provides practical knowledge on personal, educational, and professional development. I would like to say that I am very grateful as the chief editor to all the contributors whose commitment, professionalism, and innovativeness have added value to the contents of this eBook. I believe ICT Trends that Matter will be useful to academicians and students, as well as any industry professional, policymaker and those who are keen to learn more about the dynamic ICT environment.

Whether you are an academic, student, or industry professional, ICT Trends that Matter provides valuable insights into the technologies that are redefining our world today. May this work inspire further dialogue, innovation, and collaboration toward building a smarter and more sustainable digital future.

Dr. Shamsatun Nahar Ahmad
Chief Editor
Brain Hub: ICT Trends that Matter

SYNOPSIS

ICT Trends that Matter is a compilation of 14 thought-provoking chapters, which discuss the most significant trends in Information and Communication Technology (ICT) and their implications on education, industry, and society.

The elements cut across essential areas of the digital world. Discussions about the harmonisation of big data and artificial intelligence to fight cybersecurity and comparative studies concerning popular AI tools will be available to the readers. The eBook also highlights innovative approaches to teaching and learning, such as Easymath2U and V-CCMPedia, to improve conceptual learning in calculus, and AI-assisted tools to improve student engagement.

The useful experience is presented with the help of the following topics: computer tips and tricks, free e-learning applications used by children, and the successful utilisation of social media analytics tools. The role of contemporary communication mediums such as Telegram and the global presence of TikTok are also discussed in the chapters, as well as reflections on institutional work towards data-driven digital ecosystems, such as the UiTM Johor RSP16 experience.

This eBook contains the work of numerous scholars and researchers and offers both theoretical insights and practical solutions, which is why it can be of interest to academics, students, practitioners in the industry, or policymakers. ICT Trends that Matter is not merely an anthology of articles but rather is a convenient way to learn about the latest trends in ICT and predict what to expect and what to take advantage of in the digital age.

ACKNOWLEDGEMENT

The Editorial Board of ICT Trends that Matter would like to thank everyone whose assistance and commitment enabled us to make this publication possible.

We would like to thank the Department of Linkage Industry and Alumni, UiTM Johor, Segamat Campus, for enabling the acquisition of eISBN and subsequent guidance throughout the publication process.

A special mention of gratitude belongs to all contributors, whose skills, knowledge and dedication have been instrumental in the content of this eBook. Every chapter is an embodiment of how well, creatively, and committed our writers were to delivering substantial discussions on the current issues in ICT.

We also recognise the unwearying efforts on the part of the Editorial Board, which have been tireless from the very beginning of the conception to the final production of this eBook, which makes it and guarantees its success.

We are most thankful to all who have assisted this undertaking either directly or indirectly. May Allah SWT bless this endeavour and enable it to do good for the readers and the community at large.

SWOT ANALYSIS OF CHATGPT AND SIRI: UNDERSTANDING THEIR ROLE AND IMPACT AS POPULAR AI TOOLS

PALANIAPPAN SHAMALA, QATRUNNADA ATIQA SHAZLIN ARKIN,
MURUGA CHINNIAH, NOOR AZRIN ZAINUDDIN

INTRODUCTION

Artificial intelligence (AI) has become one of the most talked-about topics in technology, and for good reason. In recent years, numerous advancements that once seemed confined to science fiction have started to become a reality. Many view AI as a powerful driver of production, with the potential to unlock new avenues for growth and transform how tasks are carried out across various industries. Essentially, AI refers to the development of machines designed to mimic human intelligence and behaviour. This is achieved by examining human brain patterns and cognitive processes, which in turn leads to the creation of intelligent systems and software.

AI systems typically function by processing vast amounts of labelled training data, identifying patterns and correlations within that data, and using these insights to make future predictions. AI has been used in various industries and sectors to ensure efficiency in the progress such as learning, plantation and accounting. There are several types of AI, including self-aware AI, theory of mind AI, reactive machines, and limited memory AI. These forms of AI have paved the way for numerous applications that enhance both everyday life and

professional environments, such as Siri and ChatGPT.

In today's generation, Artificial Intelligence applications, devices or websites play an important role in human life. Almost up to 70% of people rely on the internet to be able to go through their day smoothly. For example, most people rely on Google maps to go to certain destinations, some medical treatments need AI to proceed with the treatment and business mainly uses AI to operate and it goes as simple as taking a daily selfie as the interaction with AI when a filter is involved. AI is especially useful in repetitive tasks or simply wanting the task to be done quicker as AI can be modified according to the tasks. In general, AI is important to make one's life better and have a smoother process or progress.

GOAL OF STUDY

This study aims to conduct a SWOT analysis of two AI tools, ChatGPT and Siri, which have gained increasing popularity and are widely utilised by diverse groups in society for various purposes. ChatGPT has become famous because it delivers human-like responses, supports learning, writing, and problem-solving, and is accessible to a wide range of users. Siri is widely used due to its integration with Apple devices, voice-

command convenience, and ability to simplify daily digital interactions. The reason to apply SWOT analysis in this study is because a SWOT analysis helps to evaluate whether these tools truly deliver value by weighing their advantages against limitations. SWOT analysis guide to provide deeper insight for users, researchers, and organizations in deciding how these AI tools can be best applied for practical benefits.

OVERVIEW OF CHATGPT

ChatGPT is an artificial intelligence program developed by OpenAI which was designed to generate general conversational-like dialogue based on any topics asked. This chatbot utilises machine learning algorithms to analyse large amounts of data which make it effective. As it operates using natural language processing capabilities, this allows ChatGPT to understand human language in terms of writing and speaking which makes it easy to interpret the input it receives and provide relevant responses. For example, students can ask as simple questions as what is the meaning of cloud and ChatGPT can still answer it with a clear and easy to understand language. It could answer any question using vast vocabulary that suits the students' needs. The application is not only used by students but also the variety of ages that is needed. It goes as far as being used as a daily system or an entertainment for some people. ChatGPT offers wide variations capabilities such as translation text, debug code, write code, create a poem, and write an email.

CHATGPT SWOT ANALYSIS

The strength of ChatGPT falls under various sections such as ChatGPT can come up with an idea very fast for example, creating an idea for any topic asked by the users and it is also free and very easy to use for anyone with devices. Not to mention for students particularly, it is good in editing and can help with the sentence structure. Due to its vast operations worldwide, ChatGPT supports more than 50 languages which makes it easier for students to participate and understand the information. Additionally, it can adapt its tone to specific requests, such as writing like a middle schooler or adopting a particular voice or style. This helps students to write their work appropriately as according to their nature of speaking. Beyond text-based tasks, ChatGPT can also generate melodies and chord progressions for music composition, write fictional narratives, and produce or debug code effectively.

However there lies few weaknesses for ChatGPT such as its knowledge base only up to 2021 which is far back and unreliable for current references. It also has a limited context window, which means it struggles with very long texts or conversations. This makes it difficult for people whenever they want a clarification or a summarisation of certain essays or statements. Not to mention, one of the worst drawbacks of ChatGPT is the fact that it could create its own facts such as "hallucinate" references or citations that do not exist as it is in ChatGPT's nature to give plausible responses whenever they are asked. Also, the AI model was trained on human-generated data, it can unintentionally

replicate biases, stereotypes, or harmful present in its training material. This can result in biased or offensive responses under certain conditions such as sexism or gender equality.

Other than that, ChatGPT has the capability to understand and interpret human language, responding accordingly. For instance, ChatGPT can currently answer questions, complete sentences, and generate text based on a provided prompt but as its language understanding improves, it can also create a scenario based on a given topic and answer personal questions from its users. This will help not only in terms of the thesis or text-based work but also the sentiment analysis that relates to human emotions. ChatGPT can quickly brainstorm ideas, whether for essays, projects, or creative writing. By providing a wide range of suggestions in seconds, it reduces the time spent on the ideation process and helps users focus on executing their plans. As ChatGPT continues to grow and gain

worldwide acceptance, it will create new job opportunities such as AI development, content moderation, prompt engineering, and training AI models.

While ChatGPT gives a lot of opportunities, there's also few threats that come from using ChatGPT such as security violations because these applications are used widely therefore the information that was recklessly put on the applications could be stolen by any hackers. They could use the information to impersonate other people or create fake news. Furthermore, because ChatGPT can generate essays, answer any question including test questions and solve problems, this can be used to cheat which violates the integrity of academic evaluations. Not to mention, over reliance on ChatGPT makes the users less diligent in doing their assignments or work which will produce less authentic work. This led to the declining in the critical skills of individuals.

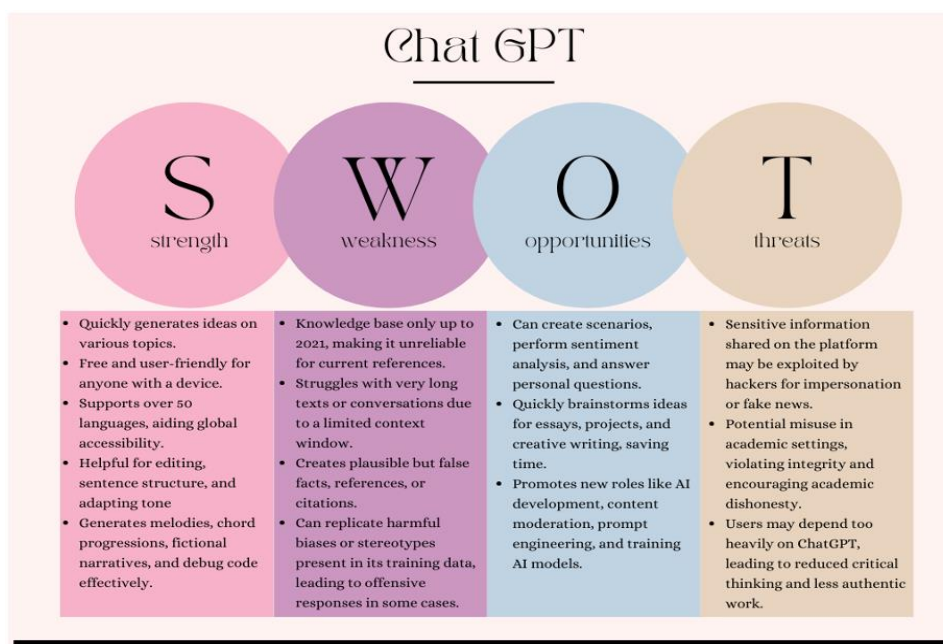


Figure 1: ChatGPT SWOT Analysis Summary

RECOMMENDATIONS FOR CHATGPT

There are a few recommendations for ChatGPT to stay convenient in the industry such as regularly updating their information in order to provide accurate information for each subject or issue. This could widen their knowledge on topics or questions asked by users. ChatGPT also needs to integrate the verifications system which means that they need to ensure that any article, news or information that they provide is true and not a made up one. This is to ensure that users can have authentic and accurate references for the topics they are searching which makes ChatGPT more reliable in fact. The need to establish clear guidelines for ethical uses is important especially for academic purposes to avoid plagiarism and cheating for online tests. ChatGPT needs to create a track system of blocking pasting format from websites or applications that is put under education apps. This would heighten academic integrity.

In conclusion, to ensure the long-term sustainability of ChatGPT, OpenAI needs to focus on innovations and improvements of the information and the backup system of ChatGPT. OpenAI needs to continue to update ChatGPT to promote competitiveness and relevance in the market between other Artificial Intelligence applications. By the fact that ChatGPT is a tool that complements human capabilities and speech, this could lead to a bigger positive impact in education or working environment if used appropriately. Ultimately, the sustainability of ChatGPT lies in its ability to adapt,

innovate, and address the challenges identified in its SWOT analysis while maintaining ethical and user-focused practices.

OVERVIEW OF SIRI, DIGITAL ASSISTANT

Siri is a virtual assistant for Apple which supports software such as iOS, macOS, tvOS and watchOS devices that works mainly using voice recognition and is powered by artificial intelligence. It was first started in 2011 for iPhone 11s which put it as the first widely accessible virtual assistant. People can start their request by calling its name which is "Hey Siri" or simply "Siri. Siri can navigate not only the question for work or school but is specialized in navigating the user's everyday lives. People can talk to Siri and ask it to do things as if it was a real person. Siri can create notes, make appointments, text someone, answer facts, create ideas and go as far as calling other people as per requested. According to these specific features, the usage of Siri extends to the accessibility even to the people with disabilities who find it difficult to write or type.

THE SIRI SWOT ANALYSIS

Siri comes with multiple strengths or pros such as an excellent communicator, capable of handling a wide range of tasks such as setting appointments, creating reminders, and sending messages using voice commands. This makes it easier for people to control their lives while doing something else like driving. Siri can even be connected to a third party for security purposes. The newest feature was to contact emergency services

whenever there is a sudden drop or increase in heartbeat or sudden impacts on the devices. Siri can grasp any topic, and it can explain it far into what it can reach online. The scope of time for Siri is as recent as the seconds before opening Siri which is because Siri is connected to Safari which is one of the fastest browsers and it can cover up to 20 languages.

However, there are a few weaknesses that people go through while using Siri such as the inefficient use of different dialects. Due to Siri being created in the United States, the dialect or pronunciation used by users can be different from Siri which make it difficult for Siri to catch up sometimes especially if users carry strong accents. This has become a great barrier for people that have Apple devices but do not speak English. Other than that, despite having a password on the devices, Siri can be used simply by using the home button. Therefore, all the features such as sending messages can be done without permissions. This can lead to false alarms or scammers whenever the phone or any devices are out of reach of the owner. Siri also operates depending on the region the devices are currently in, which indicates that sometimes Siri can only provide information limited to that region.

Siri opportunities involve expanding Siri's presence in the smart home market and partnering with more smart home device manufacturers to improve compatibility, ensuring users can seamlessly control a wide range of devices like lights, thermostats, and security systems. By utilising the Matter

protocol which allows smart devices to communicate across different ecosystems, Siri can strengthen the multiplatform functionality and become competitive against other powerful virtual assistants such as Google Assistant or Alexa. Among them, Other than that, improvement of accessibility features like enhanced voice control and increasing the number of languages plus accent employed in the speeches can make Siri more disabled friendly which increase independence and usability of all. Not to mention, active application of AI and machine learning can improve Siri natural language understanding capabilities which enable it to recognize any version of a language more, the focus context and provide more relevant and natural speech. This makes Siri more flexible in answering the question posed and interpreting the context.

As for the threats for Siri, with the home button unlocked Siri can still be used which poses dangers of leaked personal privacy for example contacts and social media infringement exists. However, privacy is not the only concern for users, Siri itself poses some challenges. The General Data Protection or similar laws and status have made things difficult for Siri. These legal requirements come at a cost in that they limit Siri capabilities from the restriction of the laws to Siri data collection, processing as well as storage abilities. Also, due to Siri being limited to the Apple ecosystem, it is unable to reach far like its competitor such as Google Assistant.

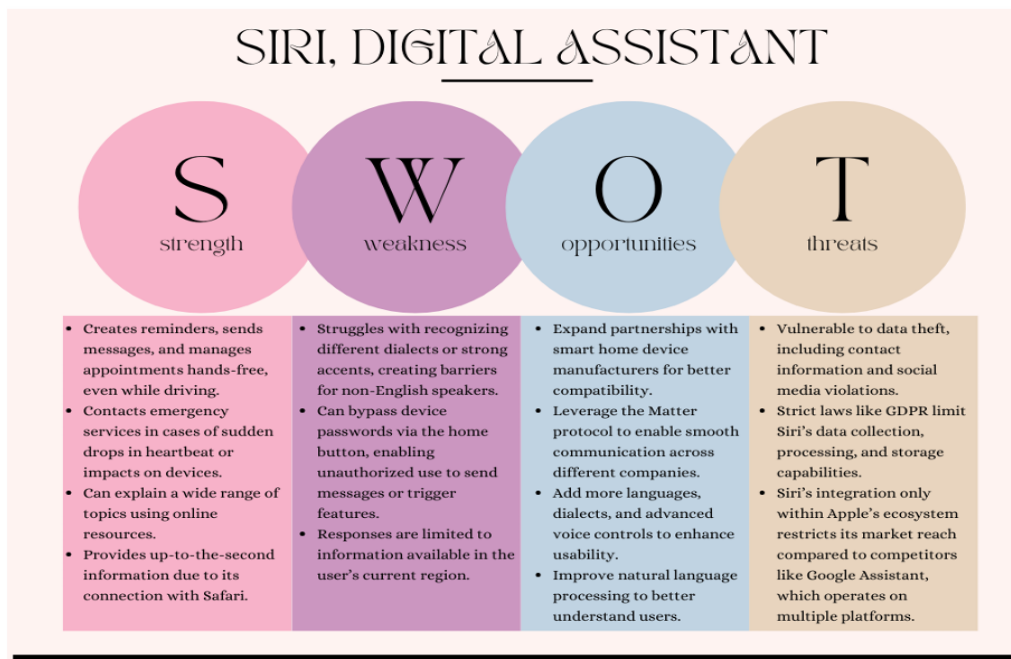


Figure 2: Siri SWOT Analysis Summary

RECOMMENDATIONS FOR SIRI

Recommendations for Siri improvement such as enhancing Siri natural language processing capabilities which is critical for improving its ability to understand diverse accents, dialects and languages. Apple needs to widen the scope for Siri languages for more than 20 languages to have more acceptability worldwide. Strengthening data privacy and security is essential to address vulnerabilities such as unauthorized access messages. Apple needs to make a voice verification passcode whenever Siri is used when the device is locked. Additionally, Apple needs to expand its Siri platform by introducing limited versions for non-Apple devices which allows Siri to be used even outside of the Apple ecosystem. This helps bring more audience and makes Siri an effective digital assistant like Google Assistance and Alexa.

To ensure Siri long term sustainability, Apple must continue to invest in Ai and machine learning technologies to maintain competitive capabilities. Emphasizing user's privacy and compliance with evolving data protection regulations will be crucial in building trust and retaining users/Furthermore, expanding Siri's global reach by improving regional adaptability and integrating with its brother smart home ecosystem will make it a dynamic and essential virtual assistant. By addressing its weaknesses and investing in growing opportunities, Siri can be in the top position for AI powered virtual assistants while fostering innovation and inclusivity for a diverse global audience.

OVERALL SUMMARY

Siri and ChatGPT have different purposes, hence their usefulness depends on the context of the use. While Siri has proven great with reminding, calling, sending messages and giving up to date resources. That it seamlessly integrates into Apple's ecosystem makes it ideal for Apple's products users while its accessibility features are

particularly appealing to those who would like to rely on their voices or need handsfree assistance. On the other hand, ChatGPT is a strong tool for content creation in ways such as essay writing, music composition and idea brainstorming. Its accessibility can be reached by multiple platforms. And it doesn't rely on a specific ecosystem. This makes it versatile to use for a wider audience. Furthermore, ChatGPT supports more languages and tones as compared to Siri. Although both are good, they specialised in different sectors.

In conclusion, a better tool that can be utilised is Siri, as it is not only capable of giving examples and suggestions with current references but also it also can go as far as to help users navigate their days or lives. Siri can make user's lives so much easier with only voice recognition and commands. Siri can also be used by different levels of age and a different setting like workers and students, elders and youngsters. This shows that Siri is much more accessible and varied compared to Chat GPT.

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