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RESEARCH ARTICLE

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ChatGPT-Enabled Digital Services: Transforming Service Delivery and Value Creation

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Abstract: ChatGPT has transformed the way business is conducted across the entire value chain, and these technological advancements are not limited to the service sector. This study examines the possible implications of ChatGPT for services management and develops a forward-thinking research agenda for academicians and practitioners. The paper employs an academic perspective, drawing on the expertise of 23 seasoned practitioners in the service and information systems sectors. It critically evaluates existing literature and practices related to ChatGPT and services management. The findings indicate that ChatGPT has considerable potential in five aspects of services management, including ethical and corporate digital responsibility, service marketing, digital services, customer experience, and cost-effective service excellence. ChatGPT can significantly enhance digital services, improve customer experiences, reduce service costs, and generate broader societal benefits. Nevertheless, its application may interfere with conventional service practices, potentially resulting in reduced personal interaction, privacy and safety concerns, and adverse effects on service consumers and employees due to biases, inequality, and incorrect application of technology. An examination of the opportunities and challenges associated with ChatGPT across different service sectors demonstrates its potential to influence the future of services management. The study provides valuable insights for future research and practical applications by proposing a comprehensive research agenda addressing emerging opportunities and challenges. By examining the potential benefits, limitations, and implications of ChatGPT, the paper contributes to understanding its role in transforming service delivery and management practices. Overall, the study makes a contribution to the literature on digital transformation in the services sector while highlighting the importance of responsible and effective implementation of ChatGPT.

Keywords: ChatGPT, Service Marketing, Customer Experience, Digital Services, Ethical Responsibility, Artificial Intelligence, Security

Introduction and Literature Review

ChatGPT, created by OpenAI, has tremendously enhanced the capabilities of chatbots. It is the use of the so-called Generative Pre-trained Transformer (GPT) framework that has allowed the miraculous transformation to occur, as explained by Ray (2023). ChatGPT is an advanced AI chat system, which runs on the power of Natural Language Processing. It is quite effective in enabling human-like conversation to answer the questions and requests of the users (Nazir and Wang, 2023). Within five days after its launch, ChatGPT gained over a million users who registered on the platform. A month

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later, Fuchs (2021) noted that the number of active users was over 100 million. The use of ChatGPT and conversational AI in the business sphere nowadays is growing tremendously. This is more visible in the application of these technologies to power chatbots and offer better conversational marketing services.

Besides its application in chat applications, ChatGPT can be used in different service applications, including customer support, virtual assistants, content creation, and sentiment analysis, as it proves to be practical and effective. ChatGPT also has such functionality as topic recognition and emotion detection that will improve the understanding of the interlocutor of the user. This will encourage real interactions between the consumer and the AI agent in service delivery. Probably, ChatGPT will reduce or even remove human interference in the service work. Alternatively, we can envision the idea of using ChatGPT to boost the capacity of the marketing officers and maximize their human resources using the technologies as a collective tool and make them more creative and productive. Human replacement, augmentation, and complementing effects may equally and simultaneously apply to the adoption of ChatGPT by service providers. This can bring revolutionary change in the way they build, market, and deliver very personalized customer service experiences during interactions with clients. It is yet unclear how, through which mechanisms, factors, and methods, service operators and staff may opt to integrate and disseminate ChatGPT in their marketing policies and what the outcomes and challenges will be. Since ChatGPT is becoming a radically advanced service engagement and service delivery tool, the service community should explore the diverse ways through which ChatGPT can be leveraged to enhance service provision in the AI-driven service industry. We aim to explore the following research question: What are the relevant opportunities, challenges, and future research directions regarding ChatGPT in service theory and practice?

Currently, this article outlines and analyzes the five areas in which ChatGPT can play an important role in the service sector. Whereas part three examines the impact of ChatGPT on customer experience, section two examines the impact of the tool on service marketing. Moreover, the Internet and digital service context are especially examined in the fourth and fifth parts, as well as the affordability of service quality achieved through the utilization of ChatGPT. Lastly, the text covers the issues related to the use and ethical aspects of ChatGPT, along with the issues related to security and corporate digital responsibilities. As indicated by the recommendation provided by (Hussain et al., 2024), we chose to address the issue from an expert-focused perspective. We invited 23 distinguished experts working in the service and information systems field to collect useful opinions and discuss opportunities, challenges, and the prospects of research.

The Field of Service Marketing and ChatGPT

General Idea

The current generation of consumers has shown an increasing tendency toward higher expectations and discerning taste due to their ample exposure to abundant information. This has led to a change in their expectations with respect to service utilization. This matter is particularly relevant today, as websites such as social media have given clients a platform to post their experiences through user-generated content. In such a case, service providers must be keen to make sure that their customer service and marketing efforts match consumer expectations. As such, service providers need to incorporate modern intelligent technology in their marketing and customer relations management system in order to suit the needs of clients, regardless of their personal preferences.

Opportunities, Research Agendas and Challenges

ChatGPT has been circulating like a fad in the service industries, with businesses incorporating it into their marketing strategy development and Customer Relationship Management processes. ChatGPT is a new generative AI technology that is utilized by assistance organizations to conduct their

marketing processes, such as communicating with clients, providing instant customer support, and managing inquiries (Orzoł and Szopik-depczyńska, 2023; Retkowsky et al., n.d.). The use of ChatGPT enhances the process of service delivery and maximizes customer satisfaction. ChatGPT is known to embrace the talent and ingenuity of people and come up with highly personalized service offerings. As well, it can conduct tailored marketing strategies targeting specific segments and offering excellent experiences through analyzing and learning from large volumes of data related to client profiles, satisfaction rates, and needs (Kmiecik, 2023).

Although ChatGPT may become a powerful tool for service providers in generating and providing service experiences, there are some issues that need to be resolved before the tool can be used efficiently (Binder and Mezhuyev, 2024). Developing a set of laws and ethical guidelines that will regulate the use of ChatGPT in marketing is necessary. The challenges concerning the abuse and improper handling of consumers' personal data should be addressed (Wang et al., 2023). Moreover, the issue of the credibility of the data associated with ChatGPT is a serious issue that may cause clients to receive incorrect marketing content.

As much as one would not reject certain limitations in the use of ChatGPT, it cannot be denied that this invention will result in significant benefits to service marketing as long as it is used ethically and with sufficient planning. However, further research is required to discuss the impact of ChatGPT on the current service marketing scene and define the uncertainties related to this technological solution. Therefore, an emerging researcher should focus on the following research agenda:

- This question is: How can governments monitor the marketing activities of the service sector, and how can they prepare to use generative AI, such as ChatGPT?
- What do you think are the probable legal barriers to applying generative AI, such as ChatGPT, in the service industry?
- What is the application of ChatGPT in service promotion?
- With service marketing and operations in the perspective of generative AI (such as ChatGPT), what solutions might it provide?
- In the case of generative AI (such as ChatGPT), what primary details does it influence regarding the consumption of services by users?
- How would service firms talk to their partners and customers (with the help of generative AI, such as ChatGPT)?
- What can ChatGPT be used and with what consequences on the tasks, responsibilities, and skills of service marketing specialists?
- What are the limitations of ChatGPT with regard to the service industry and its advertising campaigns?
- What are the operational and business obstacles that service organizations will have to cross when marketing through generative AI (such as ChatGPT)?

ChatGPT and the Satisfaction of Customers

General Idea

The customer experience is comprised of six dimensions: sensorial (that deals with senses), relational (that deals with social variables), pragmatic (that deals with functional aspects), lifestyle (that deals with values), emotional (affective reactions), and cognitive (mental processes) (Zhang and Katrine, 2024). Despite the fact that ChatGPT focuses more on output than user experience, it creates an experience. The ChatGPT design philosophy of No-UI focuses on the least possible interaction, thus making the design less cognitively demanding for customers and purposefully pursuing a design philosophy of sensory deprivation by design to create a minimalist experience. At the same time, a sense of euphoria is created due to the novelty of the situation and stimulates social contact between participants in this group and communal and considerable activity. It is possible to say that we focus on our ideals or way of life.

Opportunities, Research Agendas and Challenges

Three global consumer trends that offer possible opportunities to improve the customer experience by using ChatGPT include authentic automation, prospering, and resurrected routines (S. Singh and Kaur, 2023). True automation, the harmonious cooperation of machines and people, means that service companies must carefully consider the group of tasks that can be best handled by ChatGPT and those that can be better executed by human staff. ChatGPT should focus on making customers prosper rather than turn into another stressor. It is also able to relieve stress by improving service recovery through the use of technology like service robots. The degree of involvement of clients would be adequate to help customers set boundaries without asking too much effort. Routines reestablished (rebuilding our lives post-pandemic): ChatGPT can help people to come up with new routines both the work and the leisure like creating a perfect commute schedule that combines office and home-office time, or suggesting a playlist that motivates and gives energy.

There are three main problems that can be implemented in the model of ChatGPT to enhance the customer service experience. The main challenge is the conflicting trade-off between reducing effort and the time spent in social interactions. Despite the potential of technology to simplify chores, overreliance on technology eliminates social interaction and breaks social connections. This can be seen especially when talking to ChatGPT, which has a low perceived authenticity. Consequently, this has an ultimate impact on the community element of client knowledge. The other issue is decreasing innovation. The initial appeal of ChatGPT as a new technology will fade away, and competitors will enter the market. To maintain user engagement and loyalty and guarantee a positive emotional experience, ChatGPT should always pursue innovation. Moreover, there is also the challenge of guaranteeing accuracy. In order to create confidence in ChatGPT and offer a positive cognitive client experience, one should strive to ensure the correctness of the answers by preserving the credibility and the timeliness of the data.

After weighing the degree of organizational risk and change, and the possible possibilities and challenges, we propose three situations for further research. Another way is to ask questions about numerous future situations as opposed to the current one. In the following examples, we use education services as an illustration of each case.

Scenario 1 will entail improvement of existing client experiences with a limited risk and limited changes. The integration of ChatGPT as a plug-in into the existing educational services is possible to observe in this situation. As an illustration, it can offer course-specific replies to an already existing university chatbot. The success will be determined by the best functionality, out of the current alternatives and reliability in giving help to those who success through trusting participation. Two questions are presented: Research Question 1: What can AI-enhanced services do to make basic services more practical and provide a trustworthy content experience? Research Question 2: What is the best level of cognitive load to achieve a smooth experience of the new experience, but also be interesting?

In Scenario 2, it is the creation of the experiences, which are likely to take place in the near future. These are medium-risk experiences with medium change. In the latter case, educational services like personalized tutors can emerge, and this will be extended to help students as they read lectures and do tutorials. Such a change to the basic product can potentially damage interpersonal and lifestyle interactions unintentionally with a form of artificial automation. Two questions, in turn, are being formulated: Research Question 3: How can AI-enhanced services positively stimulate, prompt, and provide personalized support using reminders and suggestions? Research Question 4: How can real artificial intelligence automation be used to personalize experiences based on personal values?

Scenario 3 is the investigation of speculative consumer experiences that is characterized by a high measure of risk and potentially large change. There is no text provided. The third scenario presents educational experiences that include courses which are entirely personalized, and they are aimed at individual skills and previous experiences of the students, as well as the possible applications of the knowledge. In a society where the educational path of every individual is different, it is important to emphasize setting up regular habits. Two

research questions are anticipated: Research Question 5: The use of the five senses in an online environment: How could it be used to support individualized routines? Research Question 6: How can AI be designed to effectively identify and actively control good and negative emotional experiences in times of considerable change and unfamiliarity?

The ChatGPT Platform and Digital Services

General Idea

Contemporary customers are always connected to the internet and are always enthusiastic about expediency and efficiency when it comes to fulfilling their needs, whether it is a human or an artificial intelligence offering the service to the customer. Companies are also committed to the digital transformation process, where digital technology is being used to meet the needs and wants of those who have become used to digital devices and platforms (Orzoł & Szopik-depczyńska, 2023). Moreover, the intense competition with technological advancement has dictated that companies adopt AI-driven technologies like conversational chatbots and process optimization (Mohammed and Ahmed, 2024).

Opportunities, Challenges and Research Agendas

ChatGPT can optimize the work of existing services and significantly improve them with the help of digitalization. A number of businesses have already started experiments to use ChatGPT to complement or replace their customer-facing online services, including the possibility of offering multilingual assistance on the features of a product. The linguistic abilities of ChatGPT allow it to outperform the detached characteristic of the existing chatbots and interact with consumers in a bipolar fashion. Having asked ChatGPT the question, Can you assist me? the robot answers, as it pleases, with eagerness to help (e.g., Certainly! I will do all in my power to help you). Instead of using uninterested and boring chatbots, companies may replace them with ChatGPT to add the missing but needed human touch. Digital marketers who provide services like content development, email marketing, SEO, and search advertising can use ChatGPT to provide customized and affordable services. ChatGPT has the potential to influence numerous different forms of online services, such as video streaming, e-commerce platform recommendation systems, online banking and finance, education, healthcare, and legal issues because it can learn from large datasets. The content moderation service providers can use ChatGPT to detect and label misinformation, also known as fake news, on the Internet and social media. Governments can also make their digital services much easier with the help of the translation and text-to-speech options of ChatGPT.

Since its creation, ChatGPT has received considerable criticism and concerns that are, primarily, based on the possibility of copyright violations, data privacy, accuracy and authenticity of replies, ethical aspects, data bias, disinformation, and information leaks. Business organizations can use biased information to train AI algorithms to give customized advice on banking or medical services that better reflects their business interests than those of the consumers. The issue of the digital divide and inequality of access to such advanced tools might violate the very principles of equity and equal treatment. Furthermore, the introduction of automation will also impact employment quite substantially, and it will require businesses to take care of employee dissatisfaction and offer more training to their staff.

The fact that the number of users is growing exponentially offers interesting research opportunities in understanding how ChatGPT can help organizations to digitalize their services, as well as help them provide more value to their customers. Future research directions can be as follows:

- How can ChatGPT be used to support the development of the digital services market, and at the same time, make it more productive?
- Can ChatGPT improve learning and competence among students in the area of education?
- What can ChatGPT do to enhance the user experiences of digital entertainment services?
- What impact will the introduction of ChatGPT have on the customers and the employees who provide direct customer service?

- How can businesses leverage ChatGPT to move their application from low-value to high-value service?
- How can governments utilize ChatGPT in order to deliver digital services to the general population?
- Do you have any moral concerns when considering the use of ChatGPT to provide digital services, e.g., are you also concerned with fraud, security risks, and privacy of personal information?
- What can governments do to enhance their planning and coordination to stop and penalize abusive ChatGPT use?
- What can be done to restrict the misappropriation of generative technologies in sensitive sectors such as healthcare and the law?

Cost-effectiveness and excellence in service quality with ChatGPT

General Idea

The use of ChatGPT will have serious consequences in the delivery of customer services (Javaid et al., 2024; Prananta et al., 2023; S. K. Singh et al., 2023). It is claimed that these technologies will bring a breakthrough in the quality and productivity of services (Lelepary et al., 2023; Zhu et al., 2024).

Opportunities, Challenges and Research Agendas

ChatGPT is expected to have service robots and substitute human service employees in a variety of environments, such as Linke Technology and UED Intelligent (S. Singh and Kaur, 2023; Wu et al., 2024). The growth and development of the services with the help of ChatGPT-based solutions ensure that efficiency is preserved. There will be a gradual transition of services involving information processing, which have been accessed via phone calls, emails, applications, or physical information counters, to full automation, thus lowering the need for human workers. A real-life case study is a Google company that does not have much interaction with human service employees to interact with clients. Using this strategy, Google will have the potential of offering consumers some of the most useful services like: Google Maps, Gmail, and Google Scholar at a strongly accessible cost. Marketing can be the main support for the services since they have low operating costs, either free or charged at a minimal fee in certain cases. ChatGPT is expected to be the general approach for a number of data-processing-oriented companies in the future, such as banking, insurance, education, and healthcare. The reason is that it provides fully automated services and the extra costs are minimal. ChatGPT can make a major leap in the concept of physical service robots and "digital people" (holograms, virtual agents, and chatbots) having a higher quality of interaction and automated service delivery. ChatGPT can achieve outstanding customer service for the clients of an organization by combining rules that depend on up-to-date training data and frequently asked questions. It is assumed that the user interfaces of numerous existing providers, not only ChatGPT, will be equipped with the so-called generative AI. In other words, ChatGPT and similar full-scale AI systems will be able to supplement chatbots and service robots with a facade of so-called general intelligence. That, in essence, entails services that are equal to the understanding and adaptability of human service. Thus, ChatGPT can make a considerable change in different industries. It is expected that customers will prefer using digital agents powered by ChatGPT to traditional call centers. Moreover, they provide 24hours of support and can speak the language that the customer prefers.

ChatGPT has bright future opportunities for enjoying enhanced service experiences within the blockchain (Roosan et al., 2024). It seems that learning a foreign language through interacting with digital individuals offered by ChatGPT in the blockchain is entirely possible. This training will be very immersive and needs-based. It can also be offered at an acceptable price, as the extra expenses will be minimal.

In addition, there are ethical, fairness, and privacy issues with ChatGPT (Ijaz and Yadegaridehkordi, 2024). Such moral risks go beyond that disconcerting image of a surveillance society. They could lead to a situation in which customers are evaluated, predicted, and manipulated, which many times they are not aware of or consent to (Hussain et al., 2024; Retkowsky et al., n.d.). The following are the risks that have been identified in the works of (Ray, 2023; Retkowsky et al., n.d.). So, it is urgent that we be able to better understand the possible risks of using ChatGPT to serve customers and discuss the ways to reduce them.

Since we are still at the initial stages of applying ChatGPT to practical use, there are vast opportunities in terms of research. Some of the interesting research questions include: (1) how to develop, implement, expand, and manage the customer experiences and overall service delivery using ChatGPT at the highest level of efficiency; (2) how to design ChatGPT to facilitate customer experiences across their service journeys; (3) how to program ChatGPT to act as tolerably as human staff to errors made by customers; and (4) how to make ChatGPT perform service recovery processes.

ChatGPT Focuses on the Ethical Considerations, Security Measures, and Corporate Responsibility in the Digital Realm

General Idea

The latest development of AI technologies with high capabilities such as ChatGPT is a great step forward for organizations, but it also creates a number of ethical and security concerns. To determine corporate digital responsibility, Kmiecik (2023) and Orzoł and Szopik-depczyńska, 2023) identified the concept of corporate digital responsibility as the principles according to which a service company should act ethically, fairly, and protectively in using data and technology when engaging with clients in their ecosystem of digital services. But very often, corporations are faced with conflicts between social corporate responsibility and their objectives, which lead to trade-offs in profitability and in ethical-based issues (so-called CDR calculus).

Opportunities, Challenges and Research Agendas

ChatGPT is a type of generative AI that can give companies the opportunity to streamline operations, save costs, and provide customers with better service. Moreover, it can also be used to streamline all business operations in a cost-effective way. ChatGPT can be used ethically to improve security. ChatGPT has the potential to generate strong passwords, identify the vulnerabilities of the code, and perform other security-related tasks automatically. Additionally, through careful data filtering and data refinement, ChatGPT and other generative AI systems can alleviate harmful prejudices. In the future, ChatGPT can provide explanations for its responses; therefore, to promote trust in AI systems, we can explain its reasoning and limitations.

Moreover, the introduction of smart automation enables businesses to deliver customized and individualized services to more of the population, and the result of such a development is a positive effect on more of our society. Subsequently, the delivery of quality service is now made available to a large group of individuals, and not just the wealthy. With the use of such platforms as ChatGPT, every customer is offered a personal assistant that is able to assist them in myriad activities. In the past, the process of hiring a personal assistant was seen as a luxurious feature. Nevertheless, round-the-clock customer service is now available with the emergence of ChatGPT chatbots. ChatGPT can handle repetition and monotony in work, which can be used to address more meaningful and strategic tasks by human workers. This increases productivity and employee happiness.

Language models such as ChatGPT learn using large amounts of text-based data, which may contain biases that are present in the data unintentionally. The problem of bias must be addressed to ensure fairness of ChatGPT responses in different demographics and in relation to different cultures. In order to avoid the further propagation of already existing biases, developers have to implement strong mechanisms to address the biases of the training data and forcefully involve different teams in the development itself. Moreover, the output of ChatGPT is not always accurate and at times leads to AI delusion, besides producing erroneous, misleading, or harmful answers. This may cause people to make decisions based on misconstrued information, thus undermining their trust or security.

There should be an ultimate emphasis on privacy in the context of working with large language models, such as ChatGPT. When interacting with users, the model collects and processes large amounts of personal information. It is highly important to keep the privacy of the user and protect his/her personal information. The developers should adhere to strong privacy measures, such as introducing data anonymization and encryption methods, and they should make sure that they obtain the express and informed consent of users for the

collection and retention of their data. Moreover, ChatGPT ought to support the concept of intellectual property and respect for others. One of the common things is replicating or plagiarizing already existing work on Internet or elsewhere and fail to give appropriate credit or seek permission. This move can violate intellectual property rights and the artistic integrity of the original writers or artists, hence undermining their fame and notoriety. To address this problem, ChatGPT ought to have knowledge of the source and the owner of the content that it generates or uses and accordingly attribute it.

ChatGPT is created to prevent the possibility of the exploitation or manipulation of this tool by individuals with malicious intentions. ChatGPT may be applied to malicious goals like spamming, phishing, trolling, sharing misinformation, or spreading propaganda. Moreover, ChatGPT can impersonate real people, therefore making it easy to facilitate identity theft or any other form of fraudulent actions. Also, ChatGPT can reveal private or confidential data and even suggest immoral or illegal actions. It can damage the image or the welfare of individuals or companies, and it can have an undesirable impact on public opinion or behavior. ChatGPT requires robust security controls and strict regulations to address these possible threats successfully. ChatGPT is authenticated and verified in order to ensure its identity and integrity. Moreover, the system may be monitored and evaluated by human specialists and users who may provide comments and guidance. Moreover, ChatGPT requires the adoption of legal and ethical guidelines and standards to control its use and spread.

Transparency is essential to create trust in ChatGPT. OpenAI should enjoy transparency by openly admitting the limits of the technology and successfully communicating the capabilities to the consumers. In addition, they must be compelled to be transparent, i.e., disclose the basic training data and the methodology used.

Numerous research opportunities arise because of the challenges related to the implementation of new AI approaches to CDR. To reduce bias in AI, it is essential to explore ways of preventing bias both in algorithms and data proactively. Also, the accuracy of ChatGPT should be considered, considering the emergence of AI hallucination. Moreover, it is essential to develop the systems that will protect intellectual property and guarantee the privacy of the user data.

As the use of ChatGPT plug-ins continues to grow in popularity, artificial intelligence (AI) will increasingly become part of various business processes. We must urgently learn the knowledge and skills to automate these processes in a responsible way, and we should also make corporations using artificial intelligence accountable and transparent. Moreover, there is a need to protect against the wrong use of these systems with ill motives. As more and more generative AI technologies like ChatGPT are being adopted, the future of human service personnel is now questionable. The questions of what contribution they are likely to bring to future organizations are worth considering (Nuland et al., 2024). Could a company be sustainable with no middle management and only top management and the frontline workers of the service? Moreover, the development of an all-encompassing legislative framework and a series of ethical principles that shall be used to guide the use of ChatGPT in marketing are also requested. This acts as a preventative approach against the illegal manipulation of customers' personal information (Wu et al., 2024). This brief discussion of research opportunities highlights the importance of research, understanding, and applying effective CDR with consideration of the developing abilities of AI.

Conclusion

There is no doubt that ChatGPT represents a great opportunity in the service sector. To be competitive and succeed in the market, service organizations must track the ever-growing development and advancement of ChatGPT, and apply the technology to benefit themselves. This study indicates that ChatGPT can enhance the effectiveness of service companies in general since it shows how the technology can work to the benefit of businesses in a variety of aspects and in a number of services, including marketing and operational services. The paper analyses the opportunities, constraints, and future research of the implementation of ChatGPT into service theory and practices. This area of research needs additional exploration to study the revolutionary and possibly transformative role of ChatGPT in the service business with respect to the opportunities and challenges

it opens up. ChatGPT represents a new field of service theory and practices. Later researchers could use this research to have a more in-depth understanding of this promising technology and investigate its untapped research opportunities. This paper will seek to build a strong base on the academic and practical perspectives of the areas, given the huge role played by ChatGPT in the current competitive and demanding service environment.

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