Navigating AI in the customer service industry

Professional Environments 1 (CI4450) – Coursework 1
Group Number - ALPHA 13 :

Garv Nagar - K2427057
Arsh Nagar - K2426185
Oliver Higgins - K2024686
Vedant Pandya - K2409497
Mateja Kucaite - K2412252

Introduction

Customer service is only one of the areas that artificial intelligence (AI) has transformed. In order to improve efficiency, accuracy, and personalisation, AI technologies—such as chatbots, virtual assistants, and automated response systems—are being incorporated into customer support operations more and more. By handling a variety of duties, such as responding to frequently asked queries or resolving complex client issues, these technologies can enhance the entire customer service experience.This report will explore the uses of AI in the Customer Service industry and the legal, ethical, societal, and economic issues associated with the use of AI in customer service as well as provide PESTLE Analysis and Stakeholder Analysis for the same.

1.   Uses of AI in Customer Services Industry

1.1   Call centres

AI in the call centre environment can provide help to customers worldwide to reach the required operator to assist them with their query without having to be transferred through several departments,AI can rapidly generate reasonably accurate answers, meaning customers spend significantly less time waiting for a human agent instead. This is noteworthy because commonly customers highly value receiving a prompt response when they have a question about customer service.

1.2 Multilingual Support

AI-driven translation and natural language processing (NLP) technologies are revolutionising customer service by eliminating language barriers. These advancements enable businesses to provide real-time support in various languages, ensuring that non-native speakers receive the same quality of service as native speakers. This is a great demonstration of how AI can benefit the adaptability of both individual employees and their business, a highly valued Kingston Graduate Attribute, improving international relations and becoming accessible.

1.3 Voice Analysis

AI Voice analysis in customer service leverages AI to enhance interactions between businesses and their clients. This approach employs algorithms that analyse vocal attributes to assess customer sentiment and satisfaction during calls. Overall, AI voice analysis enables more empathetic interactions. Enhancing the emotional response to make the customer feel understood is another core Kingston Graduate Attribute.

2. PESTLE Analysis

2.1 P - Political

Governmental Regulations: *Different countries have regulations concerning data privacy and AI usage. For example, the GDPR in Europe and the UK enforces strict limits on data gathering that can influence how computer systems - including AI - handle customer data. The European Commission (2023) has proposed harmonised rules on the regulation of artificial intelligence, which are set to impact multiple industries, including customer service.*
(European Commission. (2023). Proposal for a Regulation Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act). European Commission. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206)

Potential Misuse: *AI can (and has already been) misused for harmful purposes that can be a threat to democratic institutions, including bias in decision-making, privacy breaches, election hacking, and data surveillance, as well as creating falsified AI-derived video or audio of a political candidate.*

2.2 E - Economic

Cost Efficiency: *AI can help businesses reduce operational costs by automating repetitive, time-consuming or tedious customer service tasks such as FAQs, appointment scheduling, and ticketing systems. According to McKinsey & Company (2022), AI and automation in customer service can significantly reduce operational costs while improving efficiency. The reduced costs*

through AI can be crucial to small businesses and allow for being enterprising, another important Kingston Graduate Attribute.
(Toorajipour, R., Sohrabpour, V., Nazarpour, A., Oghazi, P. and Fischl, M. (2021). Artificial intelligence in supply chain management: A systematic literature review. Journal of Business Research, [online] 122(1), pp.502–517. doi:https://doi.org/10.1016/j.jbusres.2020.09.009.)

High Initial Cost: *Developing and implementing AI technologies can be expensive, requiring significant investment in hardware and software. For example, China's commercial hub Shanghai announced a substantial investment of 100 billion yuan to boost its integrated circuit and AI sectors. This massive fund highlights the scale of financial commitment needed to support fields such as intelligent chips, autonomous driving, and intelligent robots.*
(Statista. (n.d.). AI adoption rate within product development 2022. [online] Available at: https://www.statista.com/statistics/1346741/ai-adoption-rates-product-development/.)

Financial Services: *AI can improve financial services through fraud detection, risk assessment, and personalised financial advice. AI algorithms can analyse transaction patterns to identify fraudulent activities and help investors make informed choices. For example, in 2024 JP Morgan developed a generative AI product as a research analyst tool, enabling employees to use a large language model for tasks such as writing, idea generation and summarising documents.*

Unemployment Concerns: *The automation of customer service roles may obviate or heavily reduce the need for human agents, leading to concerns about layoffs or job losses. According to the World Economic Forum (2020), AI's impact on job displacement is a key concern for industries implementing automation technologies.*
(World Economic Forum. (2020). The Future of Jobs Report 2020: AI's Impact on Job Displacement. World Economic Forum. WEF_Future_of_Jobs_2020.pdf)

2.3 S - Social

Changing Customer Expectations: *Customers increasingly expect instant or even "precognitive" responses, 24/7 availability, and personalised experiences, which AI can provide through real-time data analysis and machine learning.*

Digital Divide: *While AI improves customer service efficiency, not all customers are equally comfortable with technology, creating a challenge in serving a diverse demographic. There is a further issue in that AI can and does reflect the biases of the training data it is fed.*
(Ntoutsi, E., Fafalios, P., Gadiraju, U. (2020). Bias in Data-driven Artificial Intelligence systems—An Introductory Survey. WIREs Data Mining and Knowledge Discovery, [online] 10(3). doi: Bias in data-driven artificial intelligence systems—An introductory survey.)

Trust in AI: *There is an ongoing societal debate about trusting AI, particularly in managing sensitive personal data or providing empathetic customer support. For complex and/or emotionally charged situations, a real human is still currently the superior choice.*

2.4   T - Technological

AI Advancements: *Developments in natural language processing (NLP) and machine learning are central to AI's role in customer service. AI-powered chatbots and voice assistants are becoming increasingly capable in the field of accurately parsing customer queries and providing accurate humanlike responses. Technological advancements play a crucial role in customer service, allowing for a higher rate of customer satisfaction.*

Integration with Existing Systems: *Many businesses face challenges integrating AI technologies with their current customer relationship management (CRM) systems and legacy software, as in many cases their systems were built before the concept of generative AI even existed.*

Cybersecurity: *As AI systems handle vast amounts of customer data, they become targets for cyberattacks, raising the need for robust security measures and real-time threat detection. A further danger comes from maliciously crafted prompts that attack the AI directly by bypassing the "guardrails" that are trained into an AI model, which may cause it to produce incorrect, unsafe or illegal output. Companies and businesses are then forced to recognise the importance of resilience, another Kingston Graduate Attribute, and implement necessary countermeasures.*

2.5   L - Legal

Data Privacy Laws: *AI systems in customer service must adhere to data privacy laws such as the GDPR and the CCPA, which regulate how customer data is collected, stored, and used. The General Data Protection Regulation (GDPR) sets stringent rules regarding data privacy and protection, which impact how AI systems in customer service can operate (General Data Protection Regulation, 2016).*
(General Data Protection Regulation (GDPR). (2016). Regulation (EU) 2016/679 of the European Parliament and of the Council. Official Journal of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R0679)

AI Accountability: *As AI takes on more customer service tasks, there is growing legal scrutiny about who is accountable for AI-driven decisions or errors, particularly in highly regulated industries like finance or healthcare. With the advent of driverless cars, the debate over who is legally responsible if an automated vehicle injures or kills a human has reignited.*

2.6   E - Environmental

Energy Consumption: *AI systems, particularly machine learning models and large-scale data centres, consume significant amounts of energy. As businesses increasingly adopt AI for*

customer service, there is increased pressure to adopt greener technologies to reduce the environmental impact of AI operation and training.

Sustainability in Tech Development: *There is a rising trend towards building sustainable AI technologies, encouraging companies to invest in energy-efficient hardware and cloud-based solutions to minimise the carbon footprint, a critical task as training an AI can cause massive carbon dioxide release.*
(Strubell, E., Ganesh, A. and McCallum, A. (2019). Energy and Policy Considerations for Deep Learning in NLP. arXiv (Cornell University). doi: https://doi.org/10.48550/arxiv.1906.02243.)

3.   Stakeholder Analysis

3.1 Customers

Efficient, accurate, and personalised service, Improved customer experience through faster response times and personalised interaction. Providing efficient, accurate, and personalized service is essential for enhancing the customer experience. By utilizing advanced technologies and data analytics, we can ensure prompt response times and tailor interactions to meet the unique needs of each customer. This approach not only improves customer satisfaction but also fosters loyalty and trust.

3.2 Customer Service Agents

By ensuring job security and providing enhanced tools, we can significantly reduce the workload. Automating repetitive tasks allows employees to concentrate on more challenging problems, ultimately increasing job satisfaction. It also provides faster response times and reduces wait times for specialised departments.

3.3 Management and Executives

Competitive advantage in the market can be achieved by focusing on cost reduction and increasing efficiency. This approach allows significant cost savings and improved service standards, ensuring higher quality services to customers. Management and executives are crucial stakeholders due to their strategic decision-making power and influence over organizational direction. They ensure projects align with company goals, allocate resources, and provide leadership. Their involvement secures buy-in from other stakeholders and drives change initiatives. Executives also manage risks and develop mitigation strategies. Engaging them early helps navigate complexities and achieve successful project outcomes

3.4 IT Personnel

IT personnel play a vital role due to their significant impact on technical success and operational efficiency. Their responsibilities include ensuring the project's technical feasibility, maintaining system integrity, and providing ongoing support and maintenance, insights into potential technical risks and opportunities. Engaging IT stakeholders can enhance project outcomes by

leveraging their expertise to optimize system performance. Effective IT involvement can lead to smoother project execution and better overall outcomes.

3.5 Regulators and Policy Makers

Ensuring compliance with data protection laws and promoting ethical use of AI are crucial for maintaining trust and integrity. If AI systems adhere to legal standards and ethical guidelines, we can protect user privacy, prevent misuse of technology, and enhance credibility and reliability of AI applications. The Regulators and Policy Makers are essential due to their authority to create and enforce regulations that impact the project and organization. They ensure the compliance of legal standards and influence policy development , which can shape the operational environment. Their decisions can significantly affect the project's feasibility, timelines and costs. Engaging with regulators and policymakers early helps anticipate regulatory changes, align project goals with policy objectives, and mitigate compliance risks.

3.6 Shareholders

All companies are ultimately beholden to their shareholders and required to provide them with increased value. AI can achieve this by reducing the number of human agents required, which thereby reduces the total expenses of the company. It can also be used to provide accurate growth predictions, which can bolster shareholder confidence as well as being able to attract new investors to become shareholders.

References for Stakeholder Analysis

Melise Peruchini, Modena, G. and Julio Monteiro Teixeira (2024). Between artificial intelligence and customer experience: a literature review on the intersection. Discover Artificial Intelligence, 4(1). doi:https://doi.org/10.1007/s44163-024-00105-8.

García-Madurga, M.-Á., Gil-Lacruz, A.-I., Saz-Gil, I. and Gil-Lacruz, M. (2024). The Role of Artificial Intelligence in Improving Workplace Well-Being: A Systematic Review. Businesses, [online] 4(3), pp.389–410. doi:https://doi.org/10.3390/businesses4030024.

Dennehy, D., Griva, A., Pouloudi, N., Dwivedi, Y.K., Mäntymäki, M. and Pappas, I.O. (2022). Artificial Intelligence (AI) and Information Systems: Perspectives to Responsible AI. Information Systems Frontiers, 25, pp.1–7. doi:https://doi.org/10.1007/s10796-022-10365-3.

Henz, P. (2021). Ethical and legal responsibility for Artificial Intelligence. Discover Artificial Intelligence, 1(1). doi:https://doi.org/10.1007/s44163-021-00002-4.

Lui, A.K.H., Lee, M.C.M. and Ngai, E.W.T. (2021). Impact of artificial intelligence investment on firm value. Annals of Operations Research, 308. doi:https://doi.org/10.1007/s10479-020-03862-8.

Kim, G.-Y., Lee, W.-J., Choi, B. and Lew, Y.K. (2024). Fostering collaborative opportunities for AI start-ups: The case of a hybrid business incubator in Seoul. The Journal of Technology Transfer. doi:https://doi.org/10.1007/s10961-024-10102-9.

Deranty, J.-P. and Corbin, T. (2022). Artificial intelligence and work: a critical review of recent research from the social sciences. AI & SOCIETY, [online] 39, pp.1–17. Available at: https://link.springer.com/article/10.1007/s00146-022-01496-x.

Chin, H., Marasini, D. P., & Lee, D. (2023). Digital transformation trends in service industries. Service Business, 17, pp. 11-36. Available at: https://link.springer.com/article/10.1007/s11628-022-00516-6

Conclusion

In summary, AI's integration into the customer service industry significantly enhances efficiency, accuracy, and personalization through technologies like chatbots and virtual assistants. However, this advancement brings important legal, ethical, societal, and economic challenges that must be addressed.

The PESTLE and stakeholder analyses highlight the complex environment in which AI operates, emphasising the need for organisations to balance technological benefits with ethical considerations. By proactively addressing these issues, businesses can optimise AI's potential while fostering a positive impact on society and enhancing the customer experience.

In order for the future graduates we need to be able to develop key attributes that separates us from the work of AI, as AI develops it puts a lot of jobs at risk. Our attributes maintain our job security as these cannot be replicated. The ability to empathise with customers, the support the clients get reflects on the company, it's important for maintaining relations. As graduates our ability to adapt to new problems and collaborate with others to solve them are our best attributes as those are the skills that will always be needed in the workplace. They are irreplaceable and are necessary to a work environment. An enterprising and questioning mindset is what sets us apart as leaders as we continuously try to improve and better the company.