SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 206

AI CUSTOMER CARE IMPLEMENTATION IN THE HEALTH AND WELL-BEING MARKET AS A DYNAMIC MARKETING CAPABILITY

Olgierd WITCZAK[1*], Marcin MOLIN[2]

[1] University of Economics in Katowice, Department of Organizational Relationship Management;
olgierd.witczak@ue.katowice.pl, ORCID: 0000-0001-6371-0833
[2] Philips, Vice President, Head of Central Eastern Europe, CCA & Kazakhstan Region;
marcin.molin@philips.com
* Correspondence author

Purpose: The paper shows the Artificial Intelligence (AI) company implementation process aimed at improving customer care, which is treated as an exemplification of crafting dynamic marketing capabilities.
Design/methodology/approach: The study employs case study analysis, focusing on Philips in the health and well-being market.
Findings: The paper provides Philips' AI integration process in customer care, emphasizing the use of GPT models and Retrieval Augmented Generation (RAG) to customize AI responses with company-specific data.
Research limitations/implications: Future research should explore AI's impact on other industries, incorporating quantitative financial and operational outcomes analysis. Longitudinal studies should assess how AI strategies evolve. Key areas for further investigation include ethical and privacy issues, AI implementation in small and medium enterprises (SMEs), and cross-cultural contexts. The research's limitations include its single case study focus, lack of quantitative data, and short-term AI adoption analysis.
Practical implications: AI tools, such as chatbots, can improve customer care efficiency, accuracy, and speed, reducing agent workload and enhancing consumer experiences. For Philips, AI integration in customer care leads to increased consumer satisfaction and loyalty. AI streamlines customer service, reduces operational costs, and allows businesses to scale support without proportional staffing increases, driving profitability and strengthening market positioning. However, human supervision remains critical to ensure accuracy and prevent AI-generated errors, while privacy safeguards must be in place to protect data.
Originality/value: The study highlights AI's transformative role in helping businesses navigate market complexities and the use of new technology in improving customer care processes.
Keywords: artificial intelligence, customer care, dynamic marketing capability, the health and well-being market.
Category of the paper: case study.

1. Introduction

The observed rapid growth in the utilization of Artificial Intelligence (AI) across an increasingly broad spectrum of business activities has rendered it an attractive research subject. It is now challenging to identify a functional area within an enterprise where processes are not, to some extent, supported by AI solutions. The scope and speed of AI's applicability vary across different management domains. The rate at which new AI applications emerge in business appears to be a function of the potential for optimising processes primarily aimed at cost reduction or increasing revenue/profitability. Consequently, the greatest commercialisation of AI solutions is observed in business processes where optimisation leverages positive outcomes in both cost and revenue management within ongoing operations.

One of the functional areas where AI implementation is most dynamic - and which also appears to be one of the greatest beneficiaries of AI solutions - is marketing. Marketing processes that are intensively supported by AI include (Kumar et al., 2024; Peyravi et al., 2020; Jarek, Mazurek, 2019):

- content personalization - analysing user data and recommending products or content that may interest them,
- Big Data analysis - analysing large datasets from various sources to identify trends, customer behaviour patterns, and market segmentation,
- sentiment analysis - analysing data from social media, reviews, and other sources to understand the emotions evoked by specific products or brands in customers,
- marketing automation - assessing potential customers based on various criteria (e.g., website activity, social media engagement) to identify the most valuable customers and manage email campaigns, delivering appropriate content at the right times, depending on the customer's stage in the journey,
- content creation - social media posts, product descriptions, and other marketing content,
- SEO optimization - analysing search data, recommending optimal keywords, content structure, and linking strategies,
- ad targeting - analysing user behaviour to enhance the effectiveness of advertising campaigns and optimize ad spending, thereby allocating budgets in a way that maximizes return on investment,
- consumer behaviour prediction - forecasting future consumer behaviours to better plan marketing and sales activities,
- cohort analysis - analysing the behaviour of different customer groups to understand how various marketing activities influence customer loyalty and engagement,
- competitor monitoring and analysis - real-time monitoring of competitors' actions, such as advertising campaigns, allowing for better adaptation of one's marketing strategies,

- social media marketing - automating the posting of content across different social media platforms, tailored to the platform's specific characteristics and users,
- customer journey optimization - mapping the customer journey based on data on customer interactions with the brand at various stages of the purchasing process, enabling the identification of critical points and optimization of customer experiences,
- chatbots and virtual assistants - automating responses to customer queries, solving problems, and assisting with online shopping.

The application of AI in marketing allows for more precise, customized approaches to meet individual customer needs, resulting in higher customer engagement and the optimization of management processes.

The observed scope of AI use in marketing suggests that a key element in building a competitive advantage will be an organization's ability to harness AI's potential to identify, create, and embed new, effective marketing routines that contribute to building dynamic marketing capabilities. At this stage, the beneficiaries of AI in marketing are large international companies with sufficient resources, where even relatively small gains from marketing process optimization through AI can generate significant benefits due to the volume of transactions and scale of operations. Increasing AI use allows these large enterprises to strengthen their competitive advantage by enhancing the effectiveness and efficiency of their activities.

Therefore, most current research is exploratory, focusing on identifying the extent and areas of AI use by large companies. At this stage, AI implementation in marketing activities primarily employs qualitative methods (case studies, participant observation), where research efforts are concentrated on exploring the phenomenon, describing the scope of AI use within specific organizations, and outlining the challenges and barriers to AI implementation, in the search for new, effective marketing routines aimed at creating new competencies that, in the long term, will form the basis for building dynamic marketing capabilities that sustain a competitive advantage in the market.

The purpose of this article is to review customer care practices in the area of AI utilization as a foundation for exploring examples of building dynamic marketing capabilities aimed at enhancing business efficiency and creating a competitive advantage for organizations focused on meeting consumer needs.

The area of investigation for dynamic marketing capabilities is the health and well-being market, as an example of a consumer-centric business, with Philips company serving as the subject of analysis. The case study method (Fidel, 1984; Yin, 1984; Thomas, 2011) was employed to analyse the collected material. The article consists of two main sections.

The first discusses the concept of dynamic marketing capabilities from the perspective of AI technology's potential to create new marketing routines and practices in customer care specifically.

The second part presents the results of exploring Philips' AI-related customer care practices, describing the process of AI adaptation and implementation. The analysis of actions adopts a retrospective approach to AI implementation, discussing the early stages of adoption and the evolution of AI use in Philips' customer care.

The article concludes with a diagnosis of the research limitation, benefits and risks associated with using AI as an effective tool for building new customer care routines, which in the future have the potential to create dynamic marketing capabilities that will underpin Philips' competitive advantage in the health and well-being market.

2. AI as a catalyst for creating new marketing capabilities in the health and well-being market

In the context of the development of scientific theory within strategic management, the concept of dynamic marketing capabilities (DMC) represents one of the areas of research within the broader framework of organizational dynamic capabilities (DC) (Mohamud, Sarpong, 2016). Dynamic capabilities refer to specific, learned routines or practices that are systematically employed by organizations to continuously adapt their resources and capabilities to environmental changes. These learned routines, however, are not permanent; their replication period is time-bound and does not guarantee a sustained competitive advantage. The necessity for continuous adaptation of these routines is driven by two primary factors: the turbulent environment (Kogut, Zander, 1992) and the rapid imitation of solutions or routines by competitors. Organizations must therefore be capable of adapting to changes in every aspect of management (reorganization of resources), including the continuous adaptation of developed routines/practices that enable the organization to survive and thrive. This leads to the fundamental assumption of dynamic capabilities: the organization's acceptance of strategic change, which involves the continuous pursuit of new, rare resources and capabilities, as well as new combinations of resources and capabilities that allow the organization to quickly adapt to changing environmental conditions.

In the process of seeking new combinations of resources and competencies, the acquisition of information from the environment and the organization’s ability to swiftly utilize this information, as well as to create new or modify existing routines/practices, play a crucial role. Therefore, the organization must be open to acquiring data from its environment and possess the internal capacity to quickly implement changes that address the challenges identified in the environment. The scope of information acquisition is continuously expanding due to the increasing number of interdependent organizations involved in delivering increasingly complex value propositions to a wide range of stakeholders (customers, investors, local communities). The complexity of the environment, along with the dynamics of the changes within it, means

that every area within the organization could be a source of opportunity or threat to the company's market position. Consequently, there is a need for the enterprise to be permanently oriented towards creating dynamic capabilities for building an appropriate composition of resources and organizational capabilities at every level of the company's organizational or functional structure, including in the area of marketing activities (Witczak, 2018; Witczak, Narimanfar, 2022).

Emerging definitions of dynamic marketing capabilities (DMC) highlight the functional area of the company's marketing activities, including marketing mix instruments, where routines/practices are created based on the existing marketing resources and competencies. Within this convention, DMC are defined as the creation of competencies in the functional domain, that is, by increasing the effectiveness and efficiency of the organization's classic marketing instruments (product, price, distribution, and promotion). Therefore, dynamic marketing capabilities are oriented towards acquiring and reconstructing resources to change marketing routines, which are difficult for competitors to imitate, thereby leading to the achievement of a competitive advantage (Konwar et al., 2017).

DMC refers to the effectiveness of a bundle of interrelated routines/practices that support the organization's ability to engage in specific marketing activities and respond to changes in market conditions (Kamboj, Rahman, 2015; Ngo, O'Cass, 2012). In this context, dynamic marketing capabilities reflect the shaping of managerial capabilities, including human capital, social capital, and cognitive processes of managers involved in creating, utilizing, and integrating market knowledge and marketing resources to adapt to and create market and technological changes (Bruni, Verona, 2009). The key term in this definition of DMC is market knowledge, which reflects the knowledge about customers and competitors as a domain for creating effective routines/practices through the use of tangible (products, distribution channels) and intangible (brand) marketing resources. Combining these two approaches – functional and competency/managerial – dynamic marketing capabilities can be defined as a set of learned, repeatable practices aimed at systematically creating, evaluating, and reconfiguring the organization's resources and capabilities to create routines that allow marketing activities to be adapted to changing market conditions, ultimately leading to a competitive advantage (Mitręga, 2016; Dias, Pereira, 2017).

As a result, dynamic marketing capabilities are increasingly sought in the utilization of AI in marketing processes (Pfajfar et al., 2024; Manis, Madhavaram, 2023; Abou-Foul et al., 2002; Wang, 2013). Researchers are particularly interested in learned, repeatable practices that leverage AI (e.g., AI chatbots in call centres, user-generated content, new product development) to systematically create, evaluate, and reconfigure the organization's resources and capabilities, thereby creating innovative routines (through the use of AI) that enable the organization to better adapt its marketing activities to changing market conditions compared to its competitors.

AI implementation is becoming increasingly crucial for companies operating especially in the health and well-being market. These encompass operational efficiencies and the potential to improve patient outcomes, consumer experiences, and overall customer care innovation in the industry. Below is a detailed explanation of why AI is vital in this market (Alhashmi, 2020; Abou-Foul et al., 2022; Kumar, Joshi, 2022):

- customized treatments: AI can analyse vast datasets of patient information, including genetic data, medical history, and lifestyle choices, to develop personalized treatment plans. This approach, known as precision medicine, is particularly valuable in treating conditions like cancer, where therapies can be tailored to the genetic profile of the tumour;
- predictive analytics: AI can predict potential health issues before they manifest, allowing for early intervention. For instance, AI algorithms can analyse patterns in patient data to predict the likelihood of chronic diseases such as diabetes or heart disease, enabling preventative care measures;
- enhanced imaging analysis: AI-powered tools can process medical images (such as X-rays scans) with high accuracy, often surpassing human capabilities. These tools can detect abnormalities like tumours, fractures, or other conditions at an early stage, leading to timely and accurate diagnosis. By assisting or automating diagnostic processes, AI reduces the potential for human error, which is critical in fields like radiology and pathology, where misdiagnosis can have serious consequences;
- accelerated research: AI algorithms can process and analyse vast amounts of biomedical data to identify potential drug candidates faster than traditional methods. This can significantly reduce the time and cost associated with bringing new drugs and equipment to market.
- automated administrative tasks: AI can streamline administrative processes, such as patient scheduling, billing, and claims processing. This automation reduces the workload on staff, cuts operational costs, and minimizes the risk of human error;
- supply chain optimization: AI can manage and optimize the supply chain in healthcare settings, ensuring that the right amount of medical supplies is available when needed, thereby reducing waste and saving costs;
- virtual assistants and chatbots: AI-driven chatbots can provide patients with 24/7 access to healthcare information, schedule appointments, and even offer preliminary medical advice. This enhances patient engagement and satisfaction by making healthcare more accessible;
- remote monitoring: Wearable devices and AI-driven health apps can monitor patients' health in real-time, providing feedback and recommendations directly to patients or healthcare providers. This continuous monitoring can improve chronic disease management and patient adherence to treatment plans;

- big data analytics: AI can analyse large datasets from various sources, including electronic health records (EHRs), clinical trials, and patient-generated data, to uncover trends and insights that can inform decision-making at both the individual patient and population health levels;
- evidence-based practices: by continuously learning from new data, AI can help healthcare providers adopt evidence-based practices, leading to more effective treatments and improved patient outcomes;
- automated compliance monitoring: AI systems can continuously monitor and analyse healthcare operations to ensure compliance with regulations and standards, reducing the risk of legal and financial penalties;
- clinical trials optimization: AI can improve the design and management of clinical trials by identifying suitable participants, predicting outcomes, and analysing results more efficiently;
- innovation in treatments: AI is driving the development of novel therapies, such as personalized medicine and gene editing techniques, by providing researchers with new tools to understand complex biological processes;
- scalable solutions: AI can help in scaling health solutions globally, particularly in resource-limited settings. For instance, AI-driven diagnostic tools can be deployed in areas with a shortage of healthcare professionals to provide essential diagnostic services;
- disease surveillance: AI can analyse global health data to predict and track the spread of infectious diseases, helping to manage and prevent outbreaks;
- data privacy: AI can help in implementing robust data privacy measures, ensuring that patient information is protected while still being used effectively to improve health outcomes;
- ethical AI use: Companies can leverage AI to ensure that their services are delivered fairly and ethically, such as by reducing biases in healthcare delivery and ensuring equitable access to care.

The integration of AI into a consumer-centric business seems to be not just a competitive advantage driver, but a necessity. AI offers transformative potential, from improving customer care and operational efficiency to driving innovation and ensuring compliance. Companies that embrace AI are likely to lead in delivering high-quality, cost-effective, and accessible healthcare equipment and care, ultimately contributing to better health outcomes on a global scale. All of the above seems to be a promising realm for the creation of new dynamic marketing capabilities for companies operating in the health and well-being market.

3. Using AI in the customer care of the company – a case study

3.1. AI forecasts for the health and well-being market

To evaluate AI potential for Philips's business purposes, as well to diagnose the organization's capabilities and readiness company's managers have participated in profiled conferences, seminars and trainings. New knowledge collected, and gained skills and capabilities allowed them to respond to the AI business challenges and face in forecasts.

Collected predictions revealed that by 2027, AI will greatly influence organizations globally. Gartner predicts that 90% of analytics content consumers will become AI-enabled creators by 2025 (Beyond the Hype…, 2023). Over 70% of software vendors will integrate generative AI into their applications by 2026. Workforce roles will shift significantly, with many data analysts retraining as data scientists and moving into AI engineering. Additionally, AI's productivity impact will be recognized as a key economic indicator of national power.

In parallel the study from McKinsey & Company showed the projected impact of generative AI on productivity across various business functions for different industries. One of the industries with the highest AI potential is consumer goods, where companies like Philips, which provides products and services for end consumers, rely heavily on their marketing and sales functions. These functions serve crucial roles in the competitive landscape, both now and in the future, as they compete with other producers. The total potential productivity impact of generative AI on the Consumer Package Goods (CPG) industry, the health and well-being is a part of it, is estimated to be between $160 billion to $270 billion, representing 1.4% to 2.3% of the industry revenue. In CPG, generative AI is expected to have the most significant impact on Marketing and Sales, Customer Operations, and Product R&D. Other business functions such as Supply Chain and Operations, Strategy and Finance, Risk and Legal, Software Engineering, Corporate IT, and Talent and Organization are expected to see lower impacts from generative AI in the CPG market (Chui et al., 2023, p. 25).

3.2. AI adaptation – proof of concept

From the broader marketing and sales domain, the company has focused on AI adaptation into the consumer care process. At this stage, the purpose was to test elements of AI involvement, evaluate achieved outcomes, collect key learnings, and prepare for future steps – Support Chatbot business utilization.

A proof of concept for implementing a Support Chatbot has been tested if it can answer support-related questions specifically for Philips. To evaluate this proof of concept, the company used care agent staff. The primary goal was to initially develop a tool that would enhance the daily operations of care agents when interacting with consumers, while also evaluating whether the tool could eventually handle direct consumer interactions on its own

and under what conditions this would be feasible. The main objectives of the test were as follows:

- **Learning:** to determine if Philips could develop an application that leverages public data from multiple Philips sources using OpenAI, and to understand how this would work given that these large language models (LLMs) are pre-trained on vast amounts of data, but not specifically on the company's data or very recent data.
- **Performance (accuracy):** Once the company developed a functional application that allows users to query the Support Chatbot about public data, Philips wanted to assess the accuracy of its responses; and also considered potential strategies to further enhance the chatbot's accuracy and consistency.
- **Performance (speed):** the company wanted to evaluate whether the response times of queries to the LLM would be fast enough for use by Care Agents and potentially by consumers in the future. The goal was for responses to be delivered within seconds, although no specific time limit was set for this proof of concept. Additionally, a secondary proof point comes from testing the application with the country X care agents, which involves a language other than English. However, conducting a full-scale accuracy comparison between Country X and English is beyond the scope of this proof of concept.

For this proof of concept, Philips wanted to ensure that no functionality or data would be exposed outside of Philips, so there were implemented the following precautions:

- the Philips Support Chatbot is only accessible through Philips and is not publicly available;
- the company exclusively use Azure OpenAI APIs provided under existing Microsoft contracts, which are protected by agreements with Microsoft;
- all data used to train the chatbot is publicly available information from Philips.com.

To assess the chatbot's performance, Country X was selected. Several support agents were asked to test the bot using around 100 of the most frequently asked questions they received to see how effectively it responds. The multiple versions of the chatbot were developed, with three currently available internally.

To test effectively LLMs with company-specific data, a method known as Retrieval Augmented Generation (RAG) was employed. The initial step involved developing a proprietary web application (the Philips Bot) that interacts with the LLM, in this case, GPT. RAG enables the integration of the company's data by adding context to the prompt sent to the LLM. For instance, if a user asks, "How can I best clean my shaver?", the query is enriched with relevant Philips documents where the answer is likely to be found. This enhanced prompt is then sent as a request to the LLM API, instructing it to generate a response based on the provided context.

The challenge lies in selecting the appropriate documents, as there is a limit to the size of the prompt that can be sent to the LLM. This is where vector databases come into play. Vector databases (see Figure 1) are specialized databases that store multi-dimensional vectors and can identify which vectors are closest to each other.

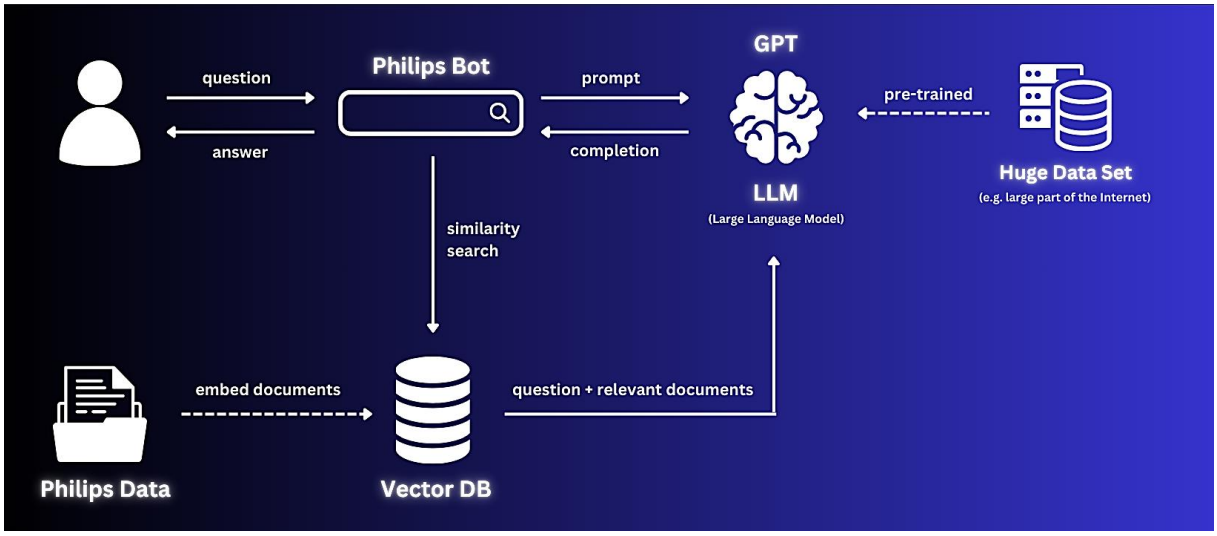

Figure 1. AI adaptation process in Philips.

Source: Philips' internal corporate documentation.

3.3. AI Implementation and Evolution

During the proof of concept, Philips developed a web application capable of hosting multiple versions of the chatbot side by side for ongoing evaluation and comparison. Although approximately 10 versions were technically created, only three were deployed, with the last two being made available internally for evaluation. The three deployed versions are detailed below.

Version 1 – Knowledge Articles

After conducting an initial evaluation of this version (without the involvement of Polish care agents), we observed the following. The model performs fairly well with very general questions, such as:

- "How can I best clean my shaver?"
- "How often do I need to clean my breast pump?"
- "Can I groom my dog with a hair clipper?"

However, the bot's knowledge of Philips-specific information could be improved, and it sometimes fabricates answers when it does not know the correct response, making these fabricated answers sound convincing. Additionally, the bot responds to all types of questions, both related and unrelated to Philips, including political questions and inquiries about other brands.

Version 2 – Blog Posts

For the second version, Philips included an additional data source by incorporating blog posts that were typically written to provide support on frequently asked topics. These blog posts from the philips.com website were scraped, performed further preprocessing, and added to the same vector database as the knowledge articles. Additionally, the company experimented with prompt optimization to make the bot behave more like a Philips Support Agent, reduce answer fabrications, and limit its responses to the provided context in which it should operate. After evaluating this version (including feedback from Country X care agents), there were observed the following that the prompt optimization significantly improved the bot's ability to function as a Philips Support Bot and remain within the provided context boundaries. Incorporating rich blog articles, often written to address frequently asked questions, greatly enhanced the bot's ability to respond to inquiries commonly encountered by our Support Agents. Additionally, there was implemented logic for the bot to provide URLs to the documents it referenced for its answers. This feature helped identify and correct several inaccuracies in the online content.

During testing with support agents, this version of the bot was found to be already useful, with many of the answers being directly usable, resulting in substantial time savings. However, there was noticed that the bot struggled to correctly answer questions related to specific products and feature comparisons.

Version 3 – Product Library

For the third version was utilized product content from the Philips Product Library (PPL), which is publicly available on philips.com. After preparing the data, it was loaded into the same vector store as the knowledge articles and blog posts. After evaluating this version it was observed that the addition of product content initially did not enhance the bot's performance because it appeared that the new documents were being ignored. However, introducing a second database and explicitly directing the bot to this database when exact products are requested resolved this issue. In Figure 2, it’s visible how the questions from the list provided by the Support Agents were rated on a scale from 1 to 5 for each version. Answers rated 1 or 2 are considered relatively unhelpful, while those rated 4, and especially 5, are so effective that they could be directly copied and pasted as responses to consumers. This alone would be a significant time-saver for Support Agents, as it would eliminate the need to type out answers themselves, thereby reducing the time required to handle each query.

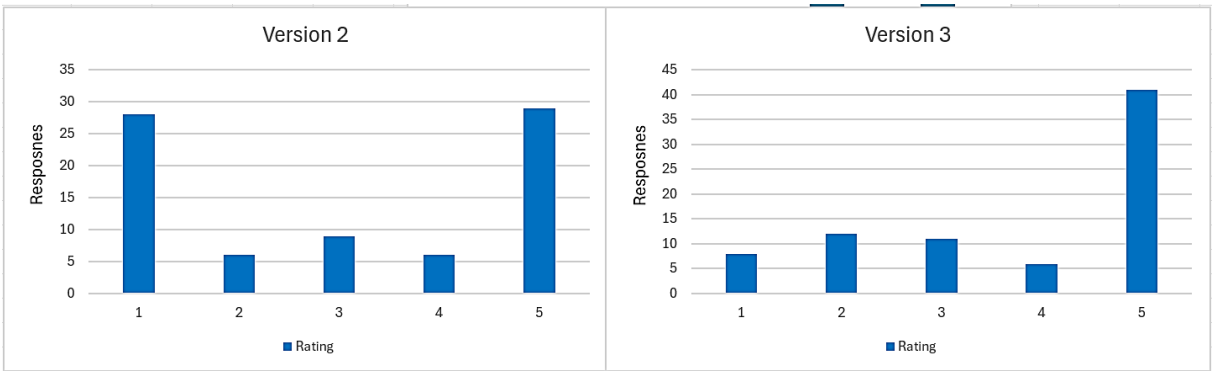

Figure 2. Result of utilization of product library into AI.

Source: Philips' internal corporate documentation.

3.4. AI Incorporation and Next Steps

After just a few weeks of this proof of concept, it can already draw some initial conclusions:

1. Generative AI and Large Language Models are very powerful and, even in their current form, can add significant value to internal processes.
2. Human supervision remains necessary at this stage because the models generate answers in real-time, which can sometimes be inconsistent or incorrect (a phenomenon known as "hallucination").
3. Hallucination happens because these models have primarily been trained to conduct human-like conversations and provide plausible answers. The focus now needs to shift toward producing factually accurate responses, a challenge that many companies are currently addressing through approaches such as:
   - RLHF (Reinforcement Learning with Human Feedback): in this method, large groups of people manually label answers as correct or incorrect to guide the next version of the model toward greater accuracy;
   - RLAIF (Reinforcement Learning with AI Feedback): here, multiple models evaluate each other's answers to collaboratively determine the most accurate and consistent responses, creating labelled data that can be used to train future versions of the model.

The tool is currently undergoing testing in various countries. In the next phase, it will transition to the production stage with the following new features:

1. AI-powered automation of administrative tasks to enhance efficiency.
2. AI integration for directly handling customer inquiries in processes where agents have achieved high success rates.
3. AI support for generating pre-formulated responses that agents can review and send to customers.
4. Enhanced local language translation capabilities and extended support hours through AI, leading to reduced operational costs and improved Net Promoter Score (NPS).

5. Improved user interface design tailored for customer care agents.
6. Global process standardization to realize cost savings.

4. Discussion and Conclusions

The integration of Artificial Intelligence (AI) into marketing will significantly enhance an organization's dynamic marketing capabilities (DMC) potential. By leveraging AI, companies can develop new marketing routines and practices that are not only tailored to rapidly changing market conditions but also difficult for competitors to replicate. This ability to adapt and innovate marketing strategies through AI-driven insights and automation is a crucial factor in sustaining a competitive advantage, especially in consumer-centric industries like health and well-being.

The health and well-being market, characterized by its consumer-centric approach, seems to be beneficiary of AI's ability to optimize customer care and operational efficiency. AI applications such as personalized treatment plans, predictive analytics, and enhanced imaging analysis directly contribute to improved patient outcomes and consumer experiences. These innovations are critical for companies like Philips to maintain a competitive edge, as they enable more effective and efficient marketing and sales processes, ultimately leading to higher consumer satisfaction and brand loyalty.

The proof of concept for AI implementation in Philips' customer care demonstrates the potential of AI to significantly improve internal processes and consumer interactions. The development and testing of various versions of a support chatbot revealed that AI could effectively handle consumer queries, enhance the accuracy and speed of responses, and reduce the workload on support agents. These implementation process descriptions indicate that AI can serve as a valuable tool in optimizing customer care routines, which are essential for building dynamic marketing capabilities and strengthening competitive positioning in the market.

Despite the promising outcomes, the adaptation of AI in customer care also presents challenges, such as ensuring the accuracy of AI-generated responses and maintaining data privacy. The study highlights the importance of continuous refinement of AI models, including the integration of company-specific data and the implementation of robust privacy measures. These considerations are crucial for the successful deployment of AI in customer care and for realizing its full potential in enhancing marketing capabilities.

Discussing the paper’s limitations and future research, this study focuses on the one large company which operates in health and well-being sector, future research could expand the analysis to other industries. Most of the current research focuses on large corporations with significant resources. Exploring how AI can be effectively implemented in small and medium

enterprises (SMEs), which may face resource constraints, could offer valuable insights into AI democratization in business. Investigating how AI affects dynamic marketing capabilities (DMC) in different consumer-centric or B2B industries could provide broader insights into AI's potential across various markets. The research relies on a single case study (Philips), which limits the generalizability of the findings. While the results are informative for companies in the health and well-being market, they may not apply universally to all industries or businesses. As companies like Philips operate globally, future research could examine how AI-driven marketing capabilities vary across different cultural and geographic contexts. This would provide insights into how businesses can tailor AI solutions to different markets and consumer preferences.

The study provides insights into the early and current stages of AI adoption, but it lacks an analysis of long-term AI adoption and the sustainability of its benefits over time. Since AI technologies continue to evolve, longitudinal studies examining the long-term impact of AI on dynamic marketing capabilities would be valuable. These studies could track how companies adapt their AI strategies over time and how AI integration influences business growth and competitiveness in the long run. Future research should delve deeper into the ethical challenges and privacy concerns associated with AI in marketing and customer care. As AI becomes more embedded in business processes, understanding how to navigate data privacy regulations and ethical AI use will become increasingly important.

The study primarily uses qualitative methods, which offer in-depth insights but lack measurable outcomes. The absence of quantitative data on metrics such as cost savings, revenue growth, or customer satisfaction post-AI implementation limits the ability to precisely quantify the benefits of AI. The study primarily employs qualitative methods. Future research could incorporate quantitative approaches, such as measuring the specific financial and operational outcomes resulting from AI implementation in customer care, marketing, and sales processes. Metrics like return on investment (ROI), customer satisfaction scores, and operational efficiency improvements could be studied.

The research focuses on specific AI applications in customer care (e.g., chatbots) but does not extensively explore the broader range of AI tools, such as machine learning models for predictive analytics or AI-driven content creation tools, which also have significant potential in marketing. The study points out challenges in ensuring AI accuracy and privacy but does not fully explore how these challenges can vary based on the complexity of AI models and the diversity of customer data. More research is needed to address how companies can overcome these obstacles across different AI applications.

These limitations provide avenues for future research, which could offer a more comprehensive understanding of AI's role in enhancing dynamic marketing capabilities across industries and over time.

The study suggests that the ongoing evolution of AI technologies will further amplify their impact on marketing and customer care processes. As AI becomes increasingly sophisticated, its role in shaping dynamic marketing capabilities will expand, offering companies new opportunities to innovate and adapt to market changes more rapidly. For Philips and similar organizations, investing in AI-driven solutions is not just a strategic advantage but a necessity for future-proofing their business in the competitive health and well-being market. These conclusions underscore the transformative potential of AI in developing dynamic marketing capabilities and enhancing customer care, positioning companies to better navigate the complexities of the modern market landscape.

References

1. Abou-Foul, M., Ruiz-Alba, J., López-Tenorio, P. (2022). The impact of artificial intelligence capabilities on servitization: The moderating role of absorptive capacity-A dynamic capabilities perspective. *Journal of Business Research*, *No. 157,* https://doi.org/10.1016/j.jbusres.2022.113609
2. Al Mamun, K.A. *AI for Health: Revolutionizing Healthcare Through Innovation*. Retrieved from: https://thecoronal.org/ai-for-health-revolutionizing-healthcare-through-innovation/, 27.09.2024.
3. Alhashmi, S.F., Alshurideh, M., Al Kurdi, B., Salloum, S.A. (2020). *A systematic review of the factors affecting the artificial intelligence implementation in the health care sector*. Proceedings of the international conference on artificial intelligence and computer vision (AICV2020). Springer International Publishing, pp. 37-49, https://doi.org/10.1007/978-3-030-44289-7_4
4. *Beyond the Hype: Scaling AI Strategic SupportWS#1: general market trends and success criteria for AI adoption* (2023). Retrieved from: Gartner training for Philips.
5. Bruni, D.S., Verona, G. (2009). Dynamic Marketing Capabilities in Science-based Firms: An Exploratory Investigation of the Pharmaceutical Industry. *British Journal of Management*, *Vol. 20, No. S1,* p. 103, doi: 10.1111/j.1467-8551.2008.00615.x
6. Chui, M., Hazan, E., Roberts, R., Singla, A., Smaje, K., Sukharevsky, A., Yee, L., Zemme, R. (2023). *The economic potential of generative AI, The next productivity frontier*. McKinsey & Company. Retrieved from: https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/the%20economic%20potential%20of%20generative%20ai%20the%20next%20productivity%20frontier/the-economic-potential-of-generative-ai-the-next-productivity-frontier.pdf, 26.08.2024.

7. Dias, Á., Pereira, R. (2017). Dynamic Capabilities and Marketing Capabilities in Portugal. *Academia Revista Latinoamericana de Administración*, *Vol. 30, Iss. 3*, pp. 417-430, https://doi.org/10.1108/ARLA-10-2016-0268
8. Fidel, R. (1984). *The case study method: A case study*. University of Washington, pp. 273-288.
9. Jarek, K., Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review*, *8(2),* pp. 45-55, doi: 10.18267/j.cebr.213
10. Kamboj, S., Rahman, Z. (2015). Marketing Capabilities and Firm Performance: Literature Review and Future Research Agenda. *International Journal of Productivity and Performance Management*, *Vol. 64, No. 8,* p. 1041, https://doi.org/10.1108/IJPPM-08-2014-0117
11. Kogut B., Zander, U. (1992). Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organization Science*, *Vol. 3, No. 3,* pp. 383-397, https://doi.org/10.1287/orsc.3.3.383
12. Konwar, Z., Papageorgiadis, N., Ahammad, M.F., Tian, Y., McDonald, F., Wang, Ch. (2017). Dynamic Marketing Capabilities, Foreign Ownership Modes, Sub-national Locations and the Performance of Foreign Affiliates in Developing Economies. *International Marketing Review*, *Vol. 34, Iss. 5,* p. 675, https://doi.org/10.1108/IMR-01-2016-0004
13. Kumar, A., Joshi, S. (2022). *Applications of AI in healthcare sector for enhancement of medical decision making and quality of service*. 2022 International Conference on Decision Aid Sciences and Applications (DASA), pp. 37-41, doi: 10.1109/DASA54658.2022.9765041
14. Kumar, V., Ashraf, A.R., Nadeem, W. (2024). AI-powered marketing: What, where, and how? *International Journal of Information Management*, *No. 77,* 102783, https://doi.org/10.1016/j.ijinfomgt.2024.102783
15. Manis, K.T., Madhavaram, S. (2023). AI-Enabled marketing capabilities and the hierarchy of capabilities: Conceptualization, proposition development, and research avenues. *Journal of Business Research*, *Vol. 157*, https://doi.org/10.1016/j.jbusres.2022.113485.
16. Mitręga, M. (2016). Dynamiczne zdolności marketingowe jako obiekt badań w zarządzaniu. *Prace naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, *no. 422*, p. 316. doi: 10.15611/pn.2016.422.26
17. Mohamud, M., Sarpong, D. (2016). Dynamic Capabilities: Towards an Organizing Framework. *Journal of Strategy and Management*, *Vol. 9, Iss. 4*, pp. 511-526, https://doi.org/10.1108/JSMA-11-2015-0088
18. Ngo, L.V., O'Cass, A. (2012). In Search of Innovation and Customer-related Performance Superiority: The Role of Market Orientation, Marketing Capability, And Innovation Capability Interactions. *Journal of Product Innovation Management*, *29(5),* p. 862, https://doi.org/10.1111/j.1540-5885.2012.00939.x

19. Peyravi, B., Nekrošienė, J., Lobanova, L. (2020). Revolutionised technologies for marketing: Theoretical review with focus on artificial intelligence. *Business: Theory and Practice*, *21(2),* 827-834, https://doi.org/10.3846/btp.2020.12313
20. Pfajfar, G., Mitręga, M., Shoham, A. (2024). International dynamic marketing capabilities: developments and a research agenda. *International Marketing Review*, *No. 41(1),* pp. 1-41. doi: 10.1108/IMR-10-2023-0283
21. Revell, G. (2024). Generative AI applications in the health and well-being domain: Virtual and robotic assistance and the need for niche language models (nlms). In: *Applications of Generative AI* (pp. 189-207). Cham: Springer International Publishing.
22. Thomas, G. (2011). A typology for the case study in social science following a review of definition, discourse, and structure. *Qualitative Inquiry*, *No. 17(6),* pp. 511-521, doi: 10.1177/1077800411409884
23. Wang, E.T., Hu, H.F., Hu, P.J.H., (2013). Examining the role of information technology in cultivating firms' dynamic marketing capabilities. *Information & Management*, *No. 50(6),* pp. 336-343, https://doi.org/10.1016/j.im.2013.04.007
24. Witczak, O. (2018). Zarządzanie marką w aspekcie rozwoju koncepcji dynamicznych zdolności marketingowych. *Studia Ekonomiczne Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, *no. 362*, p. 321.
25. Witczak, O., Narimanfar, S. (2022). Dynamic marketing capabilities in customer service on social networking sites (SNS). *Journal of Modern Science*, *Vol. 2, Iss. 49*, pp. 299-301, doi: https://doi.org/10.13166/jms/156238
26. Yin, R.K. (1984). *Case Study Research: Design and Methods*. Sage Publications, p. 243.