

Artificial Intelligence for Seamless Experience across Channels

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Abstract

This chapter analyses the use of AI for seamless experiences across channels. Implementing seamless experiences across different channels is necessary, given the increased utilisation of different retail channels. With the growing amount of data and computer processing capabilities, it is essential to explore how businesses can integrate artificial intelligence (AI) and machine learning (ML) with the data to enhance their business operations. This information would be useful for business owners contemplating their digital transformation strategies, AI developers working on different algorithms for businesses and policymakers ensuring an enabling environment to support digital transformation. The chapter entails a literature review to enumerate key findings later utilised to devise managerial implications and policy recommendations. Significant managerial implications include the need for business leaders to invest in AI-enabled value chains, evaluate the deployment of AI in the business and make necessary enhancements by collaborating with AI experts to create better customer service programs provided in the chapter. Likewise, the chapter offers policy recommendations that revolve around implementing policies that support consumer data protection, skills development and talent acquisition in AI.

Keywords: Customer Experiences, Artificial Intelligence, Omni-channel, Retail Experience, Personalised Engagement Marketing, Machine Learning

Introduction

The increased adoption of multi-channel retailing has emphasised the need for seamless experiences across different channels (Batra, 2019). In this digital era, many business entities are utilising different channels to sell their merchandise, including online stores, offline stores, mobile apps, and social media (Voorveld et al., 2016). The effective operation of these multiple retailing channels is anchored on delivering better customer experiences on all available platforms (Batra, 2017). Seamless customer experience is a significant consideration in the current technological era. It is anchored on the increasing proliferation of on-demand services and same-day deliveries (Steinhoff et al., 2018).

Artificial Intelligence (AI) enables seamless customer experiences in a multi-channel retailing environment (Wilson & Daugherty, 2018). AI is a non-human intelligence encompassing a set of algorithms, machines, and systems that demonstrate intelligence (Shankar, 2018). It enables machines to constantly learn from the environment to obtain knowledge and develop human-like cognitive skills (Nair, 2022). AI is essential in delivering a seamless experience in multi-channel retailing through its capabilities to analyse and interpret large datasets and utilise insights to predict prospects (Shankar, 2018). It helps ease the human effort and accommodates the inability to perform certain complex tasks to enable automation across different business areas (Jayakrishnan, 2022). Therefore, AI has been the most suitable technological integration for businesses that want to deliver the best customer experience across different channels.

With the growing amount of data and computer processing capabilities (Dwivedi et al., 2021), it is essential to explore how artificial intelligence (AI) and machine learning (ML) can be integrated with the data to enhance business operations. This information about adopting AI for a seamless experience across the various business channels would be useful for key stakeholders.

First, business owners are contemplating their digital transformation strategies. These business owners and brands could be financial service providers, media and entertainment companies, and higher education institutions exploring how to gain insights from their data and what they can do with those insights (Dwivedi et al., 2021; Mogaji & Nguyen, 2022). Second, this insight would be relevant for AI developers working on a different algorithm for business and developing their platform for individuals and businesses (Mogaji et al., 2023). This could be a tech company working with a university to develop learning analytics or developing its platform to curate student learning materials (Sharma et al., 2022). Third, policymakers need to be aware of the needs of businesses and customers, ensuring an enabling environment to support digital transformation (Dwivedi et al., 2021).

This chapter aims to consider how AI can be harnessed to deliver seamless customer experiences through its technological integrations. To achieve this aim, the study adopts an integrative literature review approach to critically review and synthesise the literature on Seamless Customer Experiences (CX), AI for Omni-channel Retail Experience, AI for Personalised Engagement Marketing (PEM) and Machine Learning (ML) for Multi-channel Messaging Applications, which enables us to develop a new theoretical framework and perspective (Snyder, 2019) to enhance the better understanding of how to use Artificial Intelligence to enhance the customer experience across the channels. In doing this, the study contributes to the existing body of work on Data-Driven Decision Making, Business analytics and data-driven customer service (Ahn et al., 2022; Dwivedi et al., 2022; Taylor, 2022; Kim, 2021), with theoretical implications for academic researchers, managers and policymakers exploring marketing prospects, digital transformation, and service quality in a data-driven business environment.

The remainder of this section presents a summary of the literature on seamless customer experiences, AI for omnichannel retail experience, AI for personalised engagement marketing (PEM) and machine learning (ML) for multi-channel messaging applications. Recommendations and practical implications for the stakeholders subsequently follow this section. The paper concludes with a concluding remark highlighting the study's limitations and the agenda for future research.

Literature Review

Seamless Customer Experiences (CX)

Seamless customer experience is derived from the general concept of customer experience (CX), which denotes the customer's experience with the products along their purchase journey (Nair, 2022). AI has been a major digital transformation for implementing seamless customer experiences by enhancing existing applications, uncovering hidden insights, establishing trends, and scaling the business' expertise (Sinai, 2016). Many enterprises are adopting AI by deploying machine learning (ML), natural language processing (NLP), virtual agents, and predictive analytics as suitable ways to optimise customer outcomes and enhance customer interactions (Borth, 2018). The use of AI in enhancing customer experiences is meant to increase the effectiveness and efficiency of customer experiences by enabling personal experiences that could not be easily implementable without this technology (Wynne, 2018). It makes it easier to personalise and address individual and personal concerns faster and more efficiently than humans can. A seamless customer experience can be implemented using AI through target messaging,

online support services, targeted advertising, personalised content creation, intelligent customer insights, and churn reduction (Kaliraj & Devi, 2022). In the era of AI, a seamless customer experience is a major competitive advantage for any business. AI incorporates intelligent experience engines utilising customer data to deliver high-quality end-to-end customer experiences. The necessity of AI in enhancing customer experiences is also anchored on the need to scale up the personalisation of customer interactions, which humans cannot achieve (Russell & Norvig, 2016). It requires Omni-channel integrations to merge the flow of the customer's digital and personal experiences (Briel, 2018). AI can be deployed to build intelligent experience engines that will focus on combining the micro goals of the customer journey for enhanced interactions (Rustholkar et al., 2022). It also makes it possible to connect user data with relevant insights to enable various marketing initiatives, such as geographical and gender-based targeting. Personalisation across numerous channels helps deliver offers based on the individuals' behaviours and preferences (Andersson et al., 2017). Investments in AI-powered data analytics are also vital in personalising customer experiences to their context to enhance the appeal. It is a great intervention in the current era, where customers value quick responses and the ability to communicate anytime.

A seamless customer experience is a central necessity in the customer purchase journey, and it integrates with the increasing significance of sensory marketing (Lemon & Verhoef, 2016). Sensory marketing uses the consumers' senses to impact their judgment, perception, and behaviour (Krishna, 2013). Technology-based service delivery systems have become a key part of commerce and significantly impact the overall customer experience (Pelet et al., 2019). AI-based resource management and topology will help realise seamless customer experiences by efficiently adjusting resource utilisation depending on the changes in the environments and dynamics in the customer

expectations (Zhang & Zhu, 2020). This functionality is attained through harnessing dispersed computing resources and devices to circumvent individual devices' storage and power limitations. AI technologies can be harnessed to enhance the customer experience through ML and NLP in Chatbots, enhancing seamless integration across devices and providing personalised offers using analytics (Biswas et al., 2020).

Bilgeri (2020) established that AI could be harnessed for customer relationship management (CRM) and customer experience management (CX). It can be deployed through various integrations such as customer service, process automation, lead prediction and profiling, pricing, content creation, and conversational commerce. AI helps in enhancing efficiency and productivity but can also be utilised to provide better services to customers, which creates added value (Kunz et al., 2019). For example, automated customer service involves using AI and its associated technologies to power virtual assistants that carry out tasks such as handling calls and other customer queries. In content creation, digital data is utilised for automated content generation and customising content using Natural Language Generation (NLG) (Paluch & Wirtz, 2020).

AI for Omni-channel Retail Experience

The Omni-channel retail experience encompasses creating a streamlined and connected customer experience across offline and online platforms (Narayanan & Nandagopal, 2016). This approach enables businesses to enhance their sales practices through flexible customer engagements depending on their preferences. An Omni-channel retail experience also aids in providing a seamless experience across multiple channels to save time on routine tasks (Li et al., 2019). The necessity for an Omni-channel retail experience is anchored on the increasing perception that customers want a flawless experience across different channels. It provides a

competitive advantage, enhances customer satisfaction, and promotes better inventory planning. According to Cai & Lo (2020), Omnichannel retailing has become a common strategy in the new era characterised by digitisation, big data, social media, and other emerging technologies. Verhoef et al. (2015) regard Omni-channel management as the synergetic management of the available channels and customer touchpoints, optimising the performance and customer experience across channels. Omni-channel retailing management is anchored on the significance of cross-channel operations such as cross-channel pricing, product promotions, marketing research, and customer communication (Gabisch & Gwebu, 2011). According to Cao & Li (2015), cross-channel integration significantly impacts sales growth among retailers. Shen et al. (2018) further indicated that the quality of cross-channel integration greatly impacts the overall user experience. The major considerations in cross-channel integration include the variety of channel choices and content, transparency of the service, and consistency in the processes. Omni-channel retailing mainly targets integrating all channels and optimises the overall sales and technology (Brynjolfsson et al., 2013; Bell et al., 2014). AI plays a central role in Omni-channel retailing management since identity attractiveness, uncertainty, and switching costs determines the customer experience in this retailing environment (Li et al., 2018). It helps implement digital strategies such as gathering digital data, creating a digital brand and digitising the systems for effective cross-channel integration (Frishammar et al., 2018).

According to Grewal et al. (2018), the retail sector is evolving thanks to the increased proliferation of mobile phones and smart devices. Bădică & Mitucă (2021) support the retailing evolution due to the development of digital technologies and computer interconnection via the internet, which have paved the way for the evolution from traditional marketing to digital marketing. AI is a significant contributor to the retailing evolution in combination with other

current technologies, including ML, robotics, the internet of things (IoT), social media, and blockchain techno, enabling various retailing aspects such as retailing analytics (Bradlow et al., 2017). Retailing analytics entails one of the most significant functions of AI since it enables retailers to gain better insights into their customers. These insights are derived from various datasets, including location, purchase, and social media data, which can be harnessed for value creation (McAfee et al., 2012). Many retailers are investing in retail analytics in place of traditional loyalty programs to enhance system integration and make effective use of available datasets to enhance consumer engagement (Grewal, 2018). NLP has also been harnessed as an essential component of retailing analytics, whose results are used to facilitate managerial decision-making (Kumar et al., 2017). Other emerging technologies, such as Big Data, enable AI integrations in retail. It enables retailers to collect essential data from enterprise systems, demographic information, and social media usage statistics. Retailers can uncover unique insights using this data alongside customer loyalty data and demographic and geographic information to enhance the customer experience (Hallikainen et al., 2020). Another important AI integration in the retailing landscape involves using Frontline Service Robots (FSR), which will be deployed in fulfilment centres (Wirtz et al., 2018). In addition, drones and driverless vehicles have been suggested as potential replacements for human labour, enhancing the overall customer experience (Kim, 2017).

Modern AI applications are linked to various advanced data processing technologies to perform functions such as solving problems, learning, reasoning, planning, and communicating (Paschen et al., 2019). ML refers to such capabilities whose methods include decision trees, artificial neural networks, random forests, and regression (Asare-Frempong & Jayabalan, 2017). ML obtains patterns from data using different ML methods, including natural language processing (NLP) and image recognition (Meire et al., 2017). AI is the future of e-commerce, where it will

empower various technology-driven intelligent processes to enhance their smartness, speed, and levels of personalisation (Raisch & Krakowski, 2021). The increasing levels of utilisation of digital tools for customer interactions imply that AI offers businesses new opportunities to manage these interactions within digital spaces. AI technologies leverage the data-generative nature of e-commerce environments to transform and enhance sales and marketing processes (Wirtz et al., 2018). The major roles of AI revolve around its management functionalities, including the transformation of task management, automated accounting management, and robotisation of customer service (Korhonen et al., 2021). AI also plays a crucial role in customer journeys to enable effective experience management (Steward et al., 2019).

According to Chi et al. (2019), a combination of AI and IoT can be deployed to enhance the Omni-channel retail experience through the scope of the drama theory. The main focus is creating a single business platform with unified back-end and front-end systems for a better customer experience (Chen & Chen, 2010). The drama theory is deployed in the retailing service industry to create a service interaction process that resembles a theatre performance. Under this theory, the main assumption is that the four major elements of theatre performance, including actors, setting, performance, and audience, significantly impact customer satisfaction (Kossakowski, 2008). AI and IoT enable the development of such a scene by exploring the core needs and behaviours of the consumers and integrating this data into the service to better their experience. Furthermore, the same information can also be utilised to develop an immersive experience across channels by targeting the specific advantages of each channel. Bae & Wooldridge (2020) further established that AI is an essential component of Omni-channel retailing as it helps in collecting consumer data, making product recommendations, enhancing visual merchandising, and providing consumer insights.

AI for Personalised Engagement Marketing (PEM)

AI is a significant innovation that will help deliver value to users, especially through PEM among retailers (Kumar et al., 2019). AI is actively shaping many aspects of human lifestyle through personalisation. Personalisation and AI converge in the marketing sphere as it helps collect customer data and utilise it to determine the suitable marketing mix for a given individual (Jordan & Mitchell, 2015). The personalisation process is relevant in engagement marketing because customer relationships are characterised by emotional bonding progress towards a state of engagement. Therefore, personalisation initiates positive relationships, significantly affecting customer engagement (CE) behaviours (Morgan, 2018). Since engagement encompasses the customers' behaviours, attitudes, and level of connectedness, various AI-related integrations can be deployed to enhance this outcome. AI enables exceptionally high levels of personalisation through its deep learning (DL) and data-driven integrations (Chui et al., 2018). Its unobtrusive nature helps create an endearing bond with the customers by working on a personal level. This functionality can be harnessed for customer value creation. AI-powered tools are also deployed in digital curation for PEM, where the main focus is on the automatic selection of products, advertising messages, web content, and dynamic pricing (Karp, 2016). It deploys customer transactions, communication, and consumption patterns data to predict purchase preferences. ML algorithms such as DL, collaborative filtering, k-nearest neighbours, and unsupervised clustering have been harnessed for such functionalities (Mullainathan & Spiess, 2017). Self-learning neural networks have also become a major revolution in PEM. This development combines NLP technologies to generate suitable customer buying options and help in buyer decision-making and implementation. AI enables PEM by suggesting a wide range of recommended products with

different configurations for easier decision-making (Pansari & Kumar, 2017). It also makes comparing similar products and prices easier through continuous knowledge organisation, management, and sophisticated customer information processing mechanisms. AI is increasingly used in marketing, whereby the tools and devices deployed extensively rely on consumer behaviour. It is deployed in marketing decision-making to solve many traditional and digital problems.

Machine Learning (ML) for Multi-channel Messaging Applications

Multi-channel messaging frameworks utilising ML provide intelligent customer communication pathways (Salami & Mnkandla, 2021). These communication pathways enhance seamless multi-channel integration on a single retailing platform. The ability to relay the appropriate information at the right time and use the most suitable channel has the impetus for the success of any retailing venture. These messaging models can be built on existing communication frameworks, including email, SMS, and instant messaging services (Ma et al., 2019). The automation capabilities of AI/ML systems make it possible to provide virtual assistants for precise translation and interpretation of the human language (Bisoi et al., 2020). Smart AI chatbots constitute a similar integration whose major functions involve solving business tasks and making decisions on various business and personal activities alongside automated financial service applications (Shabbir & Anwer, 2018). Multi-channel messaging capabilities enable the business to achieve sophisticated customer segmentation and enhance the overall customer experience (Jiang et al., 2014). They also promote sales across different channels through their advertising and commerce support via the available integrated channels. Providing different channels to communicate with the customers enhances the customer's perception of the service offering.

Providing communication channels that match the customer's preferences is an effective integration attained through ML analytics (Salami & Mtsweni, 2016). AI/ML applications have continuously improved in many facets and currently apply in many domains, including facial recognition, pattern recognition, speech recognition, and dynamic machine learning (Nasteski, 2017). The AI and dynamic machine learning capabilities are important in ensuring the efficient and effective selection of messaging channels based on the available resources and channel integration modules.

According to Panda & Chakravarty (2021), AI and its associated technologies, including ML, NLP, and DL, are fuelling the evolution of Intelligent Information Services (IIS). The IIS systems enable the creation, collection, and accumulation of data through AI-powered tools and devices to enable higher-level automation that will replace human cognitive capabilities in completing various tasks (Rosário, 2021). It has enabled technological tools that connect humans and machines through intelligence. This connection harnesses other integrations, such as IoT systems, to enable the development of AI chatbots (Pal et al., 2022). The combination of AI and NLP is utilised to develop intelligent virtual assistants (IVA) implemented through smart AI chatbots (Hoy, 2018). These chatbots simulate human conversations through audio or text and are integrated into various messaging applications, mobile apps, and websites (McNeal & Newyear, 2013). AI enables the operation of chatbots by discovering patterns in the available data to develop the intelligence required to perform tasks, manage information, and solve problems (Nuruzzaman & Hussain, 2018). IVA is essential to enhance customer experience since it facilitates an everyday user experience (UX) via voice or text-based channels.

Discussion

AI is significant in implementing seamless customer experiences because businesses can deploy it to enhance existing applications, establish trends, and uncover hidden insights from the available consumer data sets (Moore et al., 2022; Nguyen et al., 2022; Liu-Thompket al, 2022). Its associated technologies include ML and NLP alongside their associated integrations, such as predictive analytics and virtual agents. AI helps enhance customer experiences by optimising their outcomes and enabling personalised experiences. Target messaging, target advertising, online support services, and personalised content are some of the AI-related functionalities that enable the implementation of seamless customer experiences.

This application could be in the banks within the financial sector that can analyse consumer data to provide personalised credit offers to customers, recognise fraud, and provide credit ratings and scores (Mogaji & Nguyen, 2022; Mogaji et al., 2022; Nguyen & Mogaji, 2022). Adopting AI in retail services to enhance customer experience and shopping practices (Moore et al., 2022; Nguyen et al., 2022). Media and entertainment sectors like Netflix and Paramount can use analytics to know what type of movies people are watching, what time they are watching and what interests them; this insight can be used in commissioning newer projects, offering recommendations and also for advertising purposes (Hadida et al., 2021; Fagerjord & Kueng, 2019). Likewise, the Universities can benefit from learning analytics to evaluate how well their students are engaging with the virtual learning environments (VLEs), their attendance and visit to the library, which can be used in determining students who need assistance and even predict future grades (Jain et al., 2022; Sharma et al., 2022)

The firms can also connect user data and relevant insights for marketing activities. AI systems also enable adjustments in resource utilisation based on environmental changes and dynamics in consumer preferences. Entities can also harness AI in CRM and CX through lead prediction, automated customer service, profiling, and dynamic pricing. An Omni-channel retail experience ensures a seamless customer experience across multiple channels through the synergetic management of customer touchpoints and channels. The operations related to Omni-channel retailing include cross-channel pricing, market research, product promotions, and customer communication. Cross-channel integration impairs customer experience through various content and channel choices, service transparency, and process consistency. AI plays a crucial role in Omni-channel retailing by enabling digital data collection, system digitisation, and the creation of digital brands.

AI and its associated technologies, including ML, IoT, and robotics, enable various aspects of digital retailing, including retailing analytics (Abdulquadri et al., 2021; Chemma et al., 2022a). Retailing analytics is vital in delivering seamless customer experiences by providing insights into the customers that can be harnessed for value creation (Broksworth et al., 2022). NLP is crucial in retailing analytics alongside Big Data and Robotics, deployed in data collection, uncovering insights from consumer data, and deployment in fulfilment centres such as FSR. ML deploys NLP and image recognition to discover patterns from consumer data which constitute the retailing analytics. These advanced functionalities make AI the future of e-commerce by empowering technology-driven intelligent processes. A combination of AI and IoT is useful in enhancing the Omni-channel retail experience by exploring consumer needs and behaviours and integrating the data to deliver better experiences. AI also helps in making relevant product recommendations and

enhancing visual merchandising. It is extensively deployed in PEM through its DL and data-driven integrations, making it possible to personalise customer relationships. PEM is implemented through the automatic selection of products, web content, advertising messages, and dynamic pricing. It is made possible through ML algorithms such as DL, k-nearest neighbours, collaborative filtering, and unsupervised clustering. Self-learning neural networks combine with NLP to recommend products and aid buyer decision-making. ML is deployed in multi-channel messaging to provide intelligent communication pathways that enable a seamless experience across different channels. It makes it possible to relay the right information to the right customer at the right time and use the most suitable channel.

Automation capabilities of AI/ML systems enable the development of virtual assistants in the form of smart AI chatbots. Smart AI chatbots can solve business tasks, make decisions and provide automated financial services. Multi-channel messaging enhances the customer experience through effective segmentation and promoting sales across different channels. ML analytics make it possible to provide communication channels that match the customers' preferences and consider other relevant aspects such as channel integration modules and availability of resources. Such capabilities enhance the customers' overall perception of the service offering.

Managerial Implications

Business leaders should consider investing in AI-enabled value chains for customer engagement, knowledge and insight management, operations management, and inventory management. They should also consider deploying AI in offline and online stores to enable point-of-sale (POS) digitisation and automated systems for self-checkout. Retailers need to fast-track the adoption of robotics technology in-store management to provide intelligent guidance to the customer, facilitate

the ordering process and address customer issues. The viability of acquiring AI-powered humanoid robots should also be assessed for visual merchandising and category management. Business managers should also consider how they will use insights from AI from tracing the customer purchase journey to address challenges in this process.

Business leaders specialising in the business-to-business (B2B) sector should consider developing competent managerial skills and digital capabilities for managing complex buying and selling processes in this sector, which have gradually been digitised (Mogaji et al., 2023; Dwivedi et al., 2021). Tracking customer interactions across different channels and touchpoints will require significant investments in marketing and sales operations fusion through available AI tools (Nguyen & Mogaji, 2022b). Considerate budgetary allocations for implementing AI and its associated technologies are vital because they will help unlock new possibilities for managing customer interactions in digital retailing environments.

The findings on the significance of AI in delivering seamless customer experiences should be utilised to develop a suitable framework for implementing AI-empowered tools in customer journey management. Data on AI-related technologies, their usage, and their capabilities should enable business leaders to evaluate the level of AI deployment in their entities' sales and marketing activities. It should also help them propose suitable areas for development and procedures to be followed in the implementation to harness the possibilities availed by AI. Business leaders should also devise digital retailing strategies coherent with the requirements in multi-channel retailing and grow the use of AI to deliver better customer experiences.

Other considerations include evaluating the link between different retailing channels and how AI can be deployed to make the experiences similar in all scenarios. It will involve harnessing the different capabilities of AI as they apply to their business model and customising to the buyers'

needs on each channel. Lastly, marketers should collaborate with AI experts to re-imagine the customer service process using AI and work towards enhancing operational flexibility, level of productivity, and personalisation of the commodities.

Business leaders should devise policies that support consumer data protection since AI systems collect large amounts of data about the consumer journey. The main measures under these policies should revolve around fair business practices and information disclosures. Other areas to be considered revolve around fair use of consumer data drawn from retailing analytics to prevent exploitation. The management should also develop policies that support skills development for their AI teams and measures to curb AI's negative impacts, such as algorithmic bias and data exploitation. Additionally, there should be significant investments in AI-related research and development to enable business entities to stay ahead of the curve in terms of its use and implementation. Lastly, business managers should devise policies enabling entities to attract, develop and retain talent in AI and acquire suitable data and digital infrastructures that support its integration.

Conclusion

Multi-channel retailing has become a common trend, with many businesses opting for different channels to sell their merchandise. Its advent has been met with the increasing need to deliver seamless experiences across different channels. AI is fronted as one of the suitable solutions for delivering seamless experiences across multiple channels based on its numerous technological capabilities. Its technological capabilities are associated with various technologies, including ML, NLP, DL, NLG, and robotics. AI is useful in delivering seamless customer experiences through

its applications in PEM, enabling Omni-channel retailing, sensory marketing, and multi-channel messaging capabilities.

Predictive analytics and virtual agents is a major AI-powered solution that helps optimise customer outcomes and enhance interactions. Personalisation is crucial in delivering seamless customer experiences because the services and product offerings are customised to the customer's behaviours and preferences, making them more appealing. AI is also vital in CRM and CX through automation, conversational commerce support, and creating added value. Its application in Omni-channel retailing has been associated with its digital data gathering and branding capabilities that enable cross-channel integration. In PEM, AI powers much functionality through self-learning neural networks, NLP, ML, and DL to help consumer decision-making and suggest relevant products to customers. The increased significance of AI in delivering seamless customer experiences implies that business managers should consider investing in AI-enabled value chains, fast track the adoption of robotics in the retail sector. They should also evaluate the level of AI utilisation in their firms and make suitable recommendations for enhancing its application. Policy concerns relate to data protection, talent acquisition, research and development, and addressing the negative impacts of AI.

While effort has been made to synthesise existing literature on this matter, there are some limitations to this study, and readers should interpret the provided insights in the context of these limitations. First, the study was highly conceptual, thus opening an opportunity for future research to explore and empirically validate the insights provided in this chapter. Second, like any other conceptual paper (e.g. Ahn et al., 2022; Kim, 2021; Taylor, 2022), the study gave a holistic view

of Seamless Customer Experiences (CX), AI for Omni-channel Retail Experience, AI for Personalised Engagement Marketing (PEM) and Machine Learning (ML) for Multi-channel Messaging Applications and no data has been collected to validate the propositions empirically. Future studies can contextualise and validate the conceptual framework in business contexts. Notwithstanding, the study offers future research opportunities to understand better how to use Artificial Intelligence for a seamless experience across the channels. This study, like others that have provided these theoretical insights, will likely spur future research and expand our knowledge about the subject matter. Future studies must collect qualitative and quantitative data from the key stakeholders to understand their challenges and opportunities for using Artificial Intelligence to enhance the customer experience across the channels.

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