

Emerging Retail Formats Centred on Extended Reality and Gamification: A Literature Review and Case Studies on Changes in Consumer Behaviour

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Abstract. The widespread adoption of Extended Reality (XR) and Gamification in the retail industry creates a new retail format and has shown great potential in the current landscape. On the other hand, brand owners are no longer confined to traditional marketing methods to motivate consumer demand, but are using approaches such as feedback enhancement, brand storytelling and bridging social value. This paper conducts a systematic review of gamified XR-based retail market strategies, focusing on their components, functions, and influences on consumer behaviour. It explores how XR and gamification operate within the sales process and the differences compared with traditional retail models. Two case studies are included to explain the specific procedures for different types of shopping experiences and the key elements involved. The study also discusses the current challenges faced and concludes with insights into future development trends. The findings are expected to provide retailers and brands with practical guidance on using XR and gamification to implement sustainable retail strategies.

Keywords: Retailing, Extended reality, Gamification, Consumer behaviour, Brand resonance

1. Introduction

The traditional retail industry has depended on physical stores for product selection and shopping for a long time, though with well-developed convenient online platforms for searching and delivery services [1]. Contemporary, it is noticed that consumer experiences remain relatively passive. This happens due to the limited valid information, simple product displays, and distant marketing communications. Therefore, customers have no choice but to either visit brick-and-mortar shops to test goods personally or use flat images and dazzling reviews on shopping websites for judgment [2]. Furthermore, this often leads to uncertainties, hesitations in decision-making, and gaps between their expectation and reality [2]. However, rapid developments of digital technologies with the boom in the digital economy since the COVID-19 pandemic have reshaped this industry [3]. A combination of Extended Reality (XR) and gamification is leading the way to a fervour called 'phygital retailing', which is a retail format that combines physical and virtual elements [2]. This approach transforms shopping from tedious work into an engaging, interactive, and enjoyable journey [4,5].

The changeable situations in consumer behaviour and market dynamics over the past decade have highlighted the importance of forward exploring and planning gamified XR-based retail market strategies. In the digital age today, as consumers have been seeking more meaningful, personalised, and entertaining shopping experiences, those outdated retail paradigms that rely solely on price promotions and advertising have found it hard to maintain consumers' engagement and brand loyalty [1].

Extended Reality (XR) serves as a collection that contains Augmented Reality (AR), Virtual Reality (VR) and Mixed Reality (MR) [6]. XR brings customers functions like AR mirrors for virtual try-ons, which reduces return risks and pre-confusion. Gamification introduces game elements like points, challenges, ranking boards, and storytelling [4,5]. With their combined efforts, transforming passive absorption of information into proactive participation. This new trend not only shortens the sensory gap between online and offline experiences but also fosters brand connection and additional social value [7]. In the current landscape, these technologies have already displayed enormous potential for economic and social meaning, providing retailers and brands with effective ways to create more value and strengthen their relationship with consumers.

On the other hand, interest kept growing in this new retail format focused on XR and gamification. There have been several relevant studies published in the last five years. However, current research on this topic appears fragmented and incomplete. For instance, Ambika et al. reviewed immersive technologies across various sectors for years [8]. They pointed out the differences in how varying levels of immersion affect consumers' sensory experiences, but lack attention to the practical situation of ordinary customers, as most of the studies rely on lab experiments and student samples [8]. In addition, Lopes et al. provided a theoretical framework for understanding how gamification has evolved from a simple promotional approach into a tool for building brand connection, but no more discussion on potential problems [9]. Overall, the major issue that has come to light is that most articles treat XR or gamification as individuals and focus on a single field. They rarely use specific cases to provide comprehensive explanations and proofs in detail.

This paper begins with a summary of previous literature, providing an overview of the roles of XR and gamification in sales processes. An account of the comparisons to traditional retail paradigms is then followed by two case studies from different brands on their gamified XR-based retail strategies. Eventually, defined problems and shared outlooks for the future retail sector.

2. Literature review

2.1. Key functions of XR and gamification in sales

One of the most common professional concepts of retail marketing in sales is the seven-step sales process, through prospecting, qualification, presentation, handling objections, closing the deal, follow-up and post-sale relationship building. Extended Reality (XR) and gamification breathe new life into it with a variety of advanced applications that have been frequently used at present [4]. Therefore, it is important to indicate what role exactly XR and gamification play in sales processes.

As the branches of XR, Augmented Reality (AR) and Virtual Reality (VR) are the technology types that brands are usually keen on applying to their products or marketing activities [4,6]. AR and VR are generally seen as the foundation of the basic technique to support the eventual results that are presented to users [7]. Following the current development of technology, all sorts of XR devices are necessary for participants. Consequently, this has given rise to different XR applications that each has its own unique spotlight. Representative methods worth mentioning are Augmented Reality

(AR). Practical applications include AR cameras and AR virtual try-ons (AR mirrors), for example, try on a pair of glasses without touching a single frame [4,7]. The other part is Virtual Reality (VR) with wearable VR devices, bringing consumers virtualised goods and immersive feedback above the real environment [8].

However, a systematic theory and technologies can only provide a minimum set of strategies. Thus, gamification has opened up new possibilities and works differently. Rather than changing the products' display formats, it pays attention to feelings [5]. Gameplay and game story power players to keep on playing, and retail can be the same as it is [5]. Elements used to belong to video games, like point systems, timed challenges and ranking boards, enrich the dull buying process [5]. Finally, inspiring consumers to reveal layers of interest and arising desires with a sense of achievement through rewards as a result [9].

To sum up, the main purpose of XR and gamification is to fabricate a phenomenon that makes the shopping experience worth their time and energy to have a try and cuts the distance between surface information and actual details.

2.2. Differences compared to traditional retail paradigms

The most normal and standard form of traditional retail for most companies in today's retail sector can be generally described as a dual-channel arrangement. Allocate the majority of resources to the side with higher sales while using the other side as a secondary channel or ground for testing the latest product. Under the circumstances of using Extended Reality (XR) and gamification widely in sales processes, there have been apparent discrepancies compared to old retail paradigms.

2.2.1. Operations

The traditional retail flow follows a mechanical process, which is fairly linear whether online or offline. On the one hand, when consumers enter a brick-and-mortar shop, they first need to find which area and shelf the target is on and then start selecting and comparing until the final decision. The lack of clear navigation and assistants may lead to misunderstandings. On the other hand, when consumers are surfing online shopping websites, precise tags and names are essential to avoid the problem of counterfeits. Before checkout, the items' pictures and the buyer's reviews are what consumers can only rely on. Given the current climate of AI proliferation, they sometimes need to look for review videos by professionals for useless customer service responses. For both operations, the limited and fragmented access to information is the root cause.

Thus, the XR-based retail process combines the advantages of both. Instead of being trapped in a jumble of shelves and search algorithms, exploring a product from any angle with personalised guidance is possible [10]. The whole process can be organised by customers themselves, rather than the mechanical shopping with repetitive searches or comparisons. The original messy information is converted into pieces of 'parts' that are land for flexible use.

2.2.2. Motivations

Once the foundation has been laid, whether a marketing strategy can be regarded as a success depends on whether the company can keep it sustainable or make it better. Accordingly, countless outstanding retail cases demonstrate how vital effective motivations are.

Looking back over the past, the massive advertisements, discounts, and limited-time offers within traditional retail motivations leave consumers spoilt for choice [11]. Although these original tools

work very quickly, a lasting relationship with the brand may not necessarily be built with extensive spreads [1].

Whereas the gamified XR-based retail works on a different psychological level. To use a metaphor, it chooses pulling instead of pushing. A huge discount does not have to be the reward any more, but would be the satisfaction of overcoming a challenge, pride from becoming the top of the ranking board, or a special surprise like Downloadable Content (DLC) from the game [11]. This kind of motivation tends to be more durable because it is hooked to enjoyment rather than numbers on price tags [5,9].

For a clearer explanation, Figure 1 is used to illustrate the comparison.

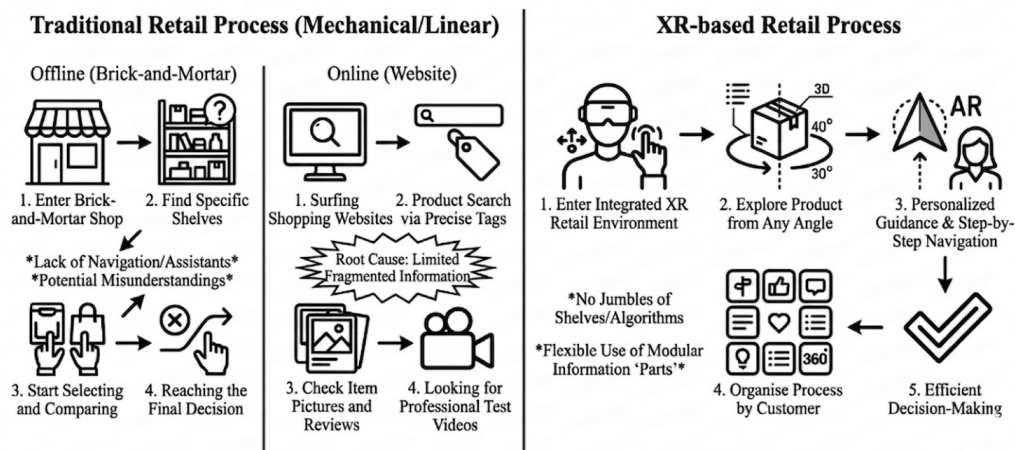


Figure 1. Comparison of retail process (picture credit: original)

2.3. Influences on consumer behaviour

Prior works have concluded numerous perspectives regarding the influences of Extended Reality (XR) and gamification on consumer behaviour. Since customers have gradually accommodated to the current market environment, their priorities have altered accordingly. In total, it can be listed as sensory requirements, depth of the brand narrative and instant feedback [1,7].

Firstly, one of the most direct effects is a reduction in purchase uncertainty [8]. This is particularly true for fashion, sports equipment, and luxury goods, where buyers cannot afford to make the wrong choice. Through a virtual try-on system, they can check suitability without geographic limitation, which apparently lowers the return rate [8].

Secondly, the deepening impact on impulse purchase through brand story and product philosophy. When consumers understand the stories behind the scenes, unfamiliarity with the item itself will fade [12]. The idea that the product is meaningful and valuable will gradually take root in consumers' minds [12].

One more necessary point is about social value. Recent research by Wittayakom S et al. explored how to let consumers willingly pay for green products, which indicated that gamification promotes sustainable retail while also raising consumers' environmental awareness [13]. This is compiled with social aspects brought by gamification elements and creates a word-of-mouth advertising effect. Compared to customers who hold a bunch of coupons, those who actually enjoyed the experience are more likely to recommend the brand to their friends.

3. Case studies

The two cases selected for this paper represent opposite sides of the emerging retail format. One focuses on the general consumer group through a new product launch event with a gamified AR experience, and the other provides fashion-conscious consumers with an immersive VR exhibition. In common, they help illustrate how XR and gamification can be adapted for distinct products, audiences, and targets.

3.1. OREO × PAC-MAN SuperMarcade

In early 2024, Oreo launched a limited-edition collaboration with classic game PAC-MAN across Europe, organised in a local supermarket AR campaign in Germany called the OREO × PAC-MAN SuperMarcade. The organising team used 3D scanning to turn the aisles in the shop into a live AR PAC-MAN maze, letting consumers play the game from a first-person perspective while doing their daily grocery shopping. It was easy for every participant to access, as they only needed to scan the QR code on the package, launching a web-based AR game on their mobile phones with no extra app download. Once click the game start button, players weave through the shelves serving as the maze walls, collecting 'Oreo cookies' and dodging ghosts to get points. There is a ranking panel that tracks scores, and players can share their records on social media. Top-ranked customers can exchange their points for physical gifts designed specifically for this event. The details shown in Figure 2.

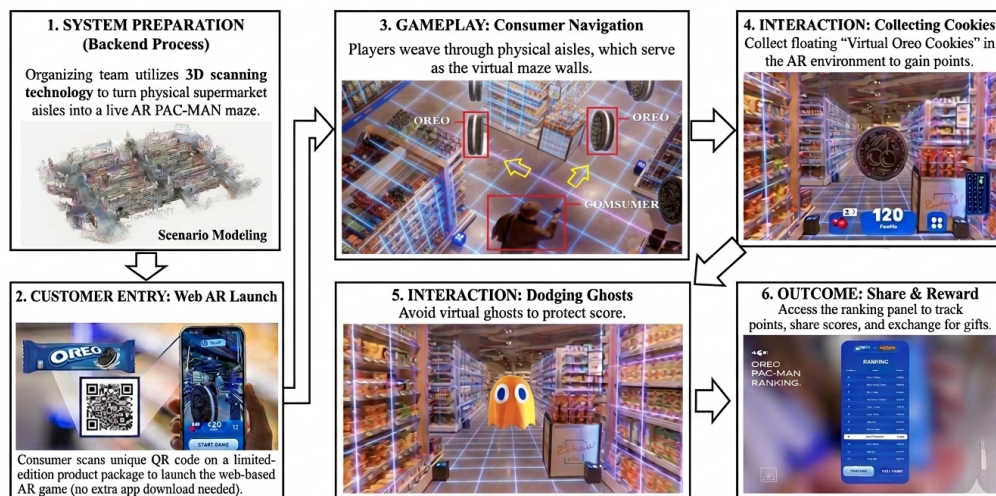


Figure 2. The entire event process of OREO × PAC-MAN SuperMarcade (picture credit: original)

The whole event lasted for nearly a month, and its results were immediate and successful. During the period, the sales volume of the special PAC-MAN edition cookies had increased rapidly, with at least 50 to 300 people visiting the supermarket to play every day.

The key to the success of this marketing strategy lies in how it connects engagement to purchase. Since the product has been incorporated into the experience itself, the path from participation to purchase has become shorter. Moreover, this collaboration is also in line with the values of both brands. Oreo always regards "The spirit of fun" as central, which makes the partnership with PAC-MAN feel natural and reasonable.

3.2. SYKY × Apple Vision Pro

SYKY is a luxury digital fashion platform founded by Alice Delahunt, the former chief digital officer at Ralph Lauren. In July 2024, SYKY launched a pioneering virtual fashion experience software on Apple Vision Pro. At its debut show, SYKY showcased the work of Kunihiro Morinaga, the founder and designer of the avant-garde Japanese brand Anrealage.

The entire experience takes place in a space where the virtual UI windows blend with the real surroundings. After putting on the Apple Vision Pro, visitors begin in a tailored designer room. In the middle of the display stand is the high-quality 3D model of the 'Pyramid Dress' from Anrealage. Users are able to move, rotate and even wear it. Hand and eye tracking on the Apple Vision Pro enables windows to spread dynamically according to users' line of sight and touch. What is most innovative is that there are separate video areas for design significance, concept, model presentation and production process. A personal explanation from the designer brings a close connection with the works and users. The details shown in Figure 3.

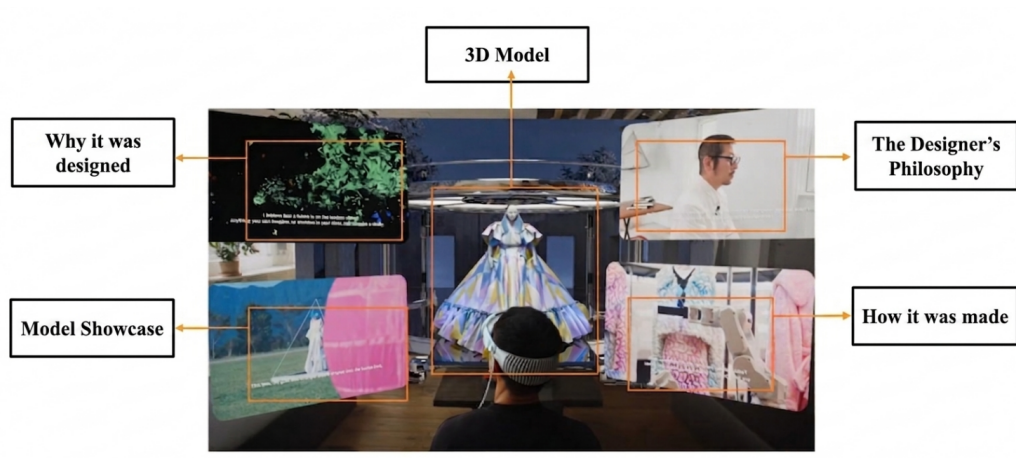


Figure 3. Overall view of the designer room (picture credit: original)

The contrast in this case with traditional luxury retail is memorable. Premium fashion has always relied on physical presence, whether in a boutique or a fashion show. SYKY's solution introduces a sense of immersion accessible through a VR headset that was previously limited to offline experiences. Rather than simply displaying a work, it gives consumers an understanding of the designer's intention, materials and manufacture. A truly emotional resonance is raised by the underlying message, and this is often the essential factor in changing interest into a purchase.

4. Discussion

Despite the positive outcomes in both the literature and the case studies above, there are still potential problems and challenges faced by brands in running a gamified XR-based retail strategy well.

4.1. Defending problems and challenges

The initial one is the cost. Developing high-quality and reliable XR technologies and the subsequent installation requires a huge investment in hardware and software. The expensive financial barrier to

market entry restricts the spread of these approaches, especially for small-scale brands that lack the capacity to trial promotional campaigns.

In the second place, concerns that cannot be overlooked about digital privacy and data protection. The operation of the XR system requires the collection of large amounts of user data, though it can provide better services based on behavioural patterns, interaction history, and preferences. Meanwhile, for large enterprises, preventing data breaches is crucial too. Nowadays, consumers are becoming increasingly aware of these issues. Hence, the trust built can be quickly eroded if a brand lacks transparency and assurance.

Lastly, the risk of over-gamification is often underestimated. When attention to game content and rewards covers the original product, the resulting information redundancy may cause some consumers to lose interest.

4.2. Outlook for the future

The future for this rising retailing trend is unpredictable and full of anticipation. As technology matures and development costs continue to fall, constructing XR experiences will gradually become an industry standard for most retailers with limited budgets to afford, rather than being exclusive to leading brands.

At the same time, formal privacy protection frameworks need to be followed up promptly. Brands ought to disclose to consumers the details of their data collection practices and give them meaningful control over it.

In the long term, what is perhaps most important is that the current mission for the retail industry should be to move XR and gamification from experimental tools into indispensable parts of daily shopping experiences. It is expected that solutions will appear in the near future to break down barriers between channels and balance the interests of buyers and sellers. This paper also advises that gamified XR can be approached from the direction of interconnectivity, which ensures transparency throughout the entire process, from production and stocking to sales and management. Additionally, establishing a sustainable retailing paradigm on economic and social value with emotional links at its core.

5. Conclusion

The role of extended reality and gamification extends beyond influencing consumer behaviour, but has already had an impressive shock on the very fabric of the retail industry. Comparisons and outcomes listed in this article have indicated the key driving force behind this phenomenon, which seems simple but is complicated indeed. This paper also explores the nature of the brand resonance driven by emotional marketing, and the case studies cited have revealed the ingenious ideas of brands in their retail strategies.

In conclusion, emerging retail formats centred on extended reality and gamification build brand value through an emotional approach, transforming passive shopping into active participation. While enhancing economic benefits, it also promotes social interaction in public. Although challenges like costs, privacy and operational issues remain to be addressed, these problems are hoped to be solved via technical optimisation and accumulation of practical cases. In time to come, this model will bloom deeply into life routine, acting as a key direction for the evolution of the retail industry. Retailers and brands should put more effort into this field and formulate targeted strategies to match consumer demand. In the end, it is expected that this paper will provide a valuable contribution to the advancement of the retail sector.

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