AI in Marketing

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Lecture 53- Changing face of Retailing in the age of AI

Welcome to this NPTEL online certification course on Artificial Intelligence in Marketing and now we will talk about module 53. As you can see from this slide, now we are looking at the changing phase of retailing in the age of AI and these are the things that we will cover in this module. So, first is to discuss the future of retailing in the metaverse. Second is to study the metaverse elements and their developing links with retailing. The third is to explore differences between metaverse and related technologies. Fourth is to study consumer touchpoints along the customer retailing journey in the metaverse. And then we will discuss opportunities in the metaverse at the retailer level. Now we will look at metaverse retailing which is the future of retailing. Essentially, the metaverse is a 3D digital environment that combines augmented reality, virtual reality and video. The metaverse breaks through physical limitations by creating virtual constructs.

In the retailing space, metaverse offers great value for customers and retail outlets alike. The potential for retail in the metaverse is to make online shopping more engaging and useful. A tool that would allow consumers to explore and discover better than they can now would bring online shopping closer to what consumers can accomplish in stores without leaving their homes. So, this is to bridge online and offline. Lowe's uses AI through an augmented reality app to help consumers make their purchase decisions.

If a shopper is interested in remodeling her kitchen, she can use the app at the store to overlay the right product against a picture of her kitchen and see how it looks when installed in her kitchen. These AI-based systems help Lowe's determine sales patterns, keep tabs on the inventory and replenish the right items efficiently. While the metaverse is still a fairly new concept in actuality, there are a few retail brands that are leading the charge. Ralph Lauren's gender-neutral digital clothing is available in virtual polo shops on Roblox as well as gamified social experience. Zara digital version of the physical AZ collection is available on Repito platform.

Stephen Cook, a 23-piece modern menswear pack is available for purchase on the EA video game The Sims. Jordan brand Fortnite gamers can go on a scavenger hunt and

acquire brand clothing and accessories. Balenciaga, previously working with Fortnite. Balenciaga is working on the dedicated exclusive metaverse. The OTB group, the creation of the new business unit Brave Virtual Experience offers support to all of its brand in gaming.

The British Fashion Council launched its first fashion award for metaverse design with Roblox. Dyson created advanced VR technology allowing customers to test product using on Oculus headset. H&M items from the vegan Coexist Story collection have been created in virtual form to be showcased at the in-game fashion show for Animal Crossing. What is the definition of metaverse? Metaverse is an online collaborative shared space built on 3D environment that leverages high consumer immersion techniques to reduce the perception of technological mediated alongside transferable and unique digital assets while allowing user-generated digital personas to interact with each other. This definition provides four distinct dimension of the metaverse. First is online collaboration. Second is high consumer immersion. Third is transferable and unique digital assets. And the fourth is user-generated digital persona.

So, these are the four distinct dimensions of metaverse. Now, let us look at the metaverse element and retailing. The first of which is online collaboration. The natural progression of technology has increased the ability of consumers to build expensive communities. From early online forums, for example, 6 degree MySpace to more modern social media applications, for example, Instagram and TikTok, these platform allow joint creation and participation in commerce across physical borders and different cultures.

Metaverse are a further continuation of this progression that provide greater forms of collaboration due to the use of 3D software technology in one virtual space. As an example of such collaborations, Balenciaga, a fashion retailer, partnered with Epic Games to offer pairs of the game Fortnite luxury fashion items that can be worn by their in-game characters. Another example is Nivida's Omnivore, a collaboration that enables consumers, that is artists, players, individual creators to use different 3D software tools to work together in a real time and innovate within a 3D environment. Specifically, artists can work with architects to create unique buildings or individual creators can design new products for homes that can be used in the omniverse. Potentially other metaverses and or be brought into the physical world. Collaboration between firms is not simply restricted to artistic creativity. Interwork Alliance is a network of over 60 firms developing the token taxonomy framework, which is competing with other alliances to set a common language, behaviour and properties for cryptocurrencies so that consumers can use different cryptocurrencies when interacting with different firms. This intense level of

collaboration in the metaverse provides unique opportunities for retailers to generate greater customer engagement than current social media applications and social networking sites allow. As of 2022, consumers spend more time within 3D virtual shopping experience than on our 2D e-commerce websites, resulting in a 70% increase in conversion rates and a 450% increase in return on investment for retailers. Nevertheless, a long-term propensity to prefer 3D over 2D may be slower since these numbers are in part driven by the presence of early adopters in the 3D virtual shopping experience, whose self-selection might indicate a greater level of excitement within this 3D environment.

Moreover, laggards who join the metaverse later might not necessarily behave similarly to the first movers. One possible strategy for retailers to maintain this trend towards greater time spent in 3D virtual shopping environment is to leverage the collaborative aspect of metaverse by working with other firms, artists and consumers so as to create innovative products and services which can further enhance the shopping experience. Additionally, retailers can form alliances and consortias with other retailers within the metaverse to set industry standards. As the scale and number of metaverses expand, enabling better coordination between the retailers. Setting industry standards will ensure that retailer services will be highly compatible with technologies used in the metaverse, better secure the long-long-longitivity of retailers within the metaverse, make the metaverse more accessible to consumers and motivate consumers to engage with the retailers for a longer period.

The second is high consumer immersion. A second characteristic of the metaverse is that it uses high consumer immersion techniques convincingly enough that consumers are completely absorbed within the environment. The metaverse uses a mix of augmented reality where digital objects, for example images, texts and sounds are superimposed onto the physical world and VR which provides a 3D view of the digital world. This mixed reality offer consumers a greater range of interaction with digital environment than mobile technology. By closely mimicking real life, leading consumers to spend more time in the metaverse.

To fully immerse in the metaverse, consumers often use VR headsets such as Oculus Quest 2 and Samsung Gear VR to move and interact with 3D environment as they would be in a physical environment. Virtual concerts are a popular way for firms to offer consumer immersive experiences using VR headsets. Metaverses such as Decentraland and Cryptovolex have hosted concerts for famous artists like Snop Dog and Marshmallow. When attending such virtual concerts, consumers put on their VR headsets and interact with other attendees, dancing with or talking to them. For retailers in

particular, the metaverse provides similar entertainment for consumers as physical malls do.

Thus, the metaverse can potentially enhance the entertainment value offered by retail environment and provide entertainment at a larger scale and scope. However, as sophisticated as current VR headsets are, they are not without limitations. They are still quite expensive for the average consumers, inhibiting many from entering the metaverse. Also, they are considered by many to be bulky and awkward to use. Most must still be wired to a personal computer, a smartphone or a gaming console or require expensive wireless adapters to capture a similar experience as the wired versions.

Some consumers also experience motion sickness when using VR headsets. Lastly, a key concern for retailers is the lack of a standard VR headset for use in the metaverse because VR headsets differ in software and hardware specifications. The level of consumer immersion achieved using them can differ greatly. Given the importance for retailers to provide an omnichannel experience that offers a seamless journey that enhances customer satisfaction and loyalty, firms will need to address such challenges regarding VR headsets and other technologies as they innovate to develop experiences that take advantage of 3D environments and immersive technology. The third is transferable and unique digital assets.

The most noticeable difference between current metaverses and first generation metaverses such as Second Life is the presence of unique digital assets that are transferable between consumers and have an established market value that is characteristics enabled by blockchain technologies which are growing in use. Although blockchain was introduced to the general public through the Bitcoin cryptocurrency, it gained popularity due to its unique ability to build a sharing economy. A business model where both firms and individuals provide short-term rentals of goods and services with high levels of security. Simply put, a blockchain is a decentralized digital ledger that allows for highly secure storage of transactions within a sharing economy. Each time a transaction is conducted, it is transmitted to each number in a peer-to-peer network and only accepted once most of this network has validated that transaction.

Once a transaction is validated, it is built into a block of transactions and is chained together with other transactions to create a consensus history of all transactions. This process provides high level of security since any malicious actor could have to control a majority of these nodes in the network to hack the ledger successfully. Building on this blockchain technology, most products and services offered in the metaverse are created and accessed on non-fungible tokens in which products and services have unique identification codes that differentiate them from copies of each other. As such, NFT

llows consumers to have unique ownership of digital goods and establish true ownership across the collection of such transactions. While blockchain technology is not necessary for a metaverse to exist, it is currently the only technology that allows for secure transactions and unique digital ownership.

Current metaverses typically leverage blockchain technology to create, distribute and transfer unique digital goods and services, allowing consumers and firms to create complex and evolving digital economies that were not previously possible. For example, Decentraland, a popular metaverse, uses the Ethereum blockchain to issue land tokens, a specific type of NFT that confers true ownership of digital real assets within the ecosystem. Additionally, Decentraland uses its own cryptocurrency, MANA, which can be purchased through cryptocurrency exchanges such as Coinbase, which must be used for all purchases within the ecosystem. Once acquired, each land token corresponds to a unique coordinate in the virtual world and allows only the owner to make digital changes to it. Users who own land in Decentraland are free to innovate by designing the animation and interaction experienced by other users on their virtual real estate.

Essentially, every consumer interaction within the metaverse involves interacting with one of these digital experiences built upon pieces of virtual real estate. The fourth is user-generated digital persona. Unlike other technologies that allow physical consumers to interact with each other, such as social media platforms, the metaverse allows consumers to build and fully customize a digital persona to interact with other digital persona within a particular metaverse. A digital persona commonly referred to as an avatar is the digital representation of a consumer's personal information created by the user or gathered as part of the term of using a platform. Digital persona encourages consumers to extend their unique creativity into metaverse and build upon the idea that the metaverse is about individuality and digital ownership.

These digital personas are realistic or fantasized, highly customizable, often through purchased unique goods and services and can interact directly through VR technology. These aspects of digital persona add to the immersive experience of metaverses and improve the diversity of communities while providing stronger protection of one's identity, which addresses consumers' growing privacy concerns. Digital persona can be a realistic representation of an individual or can be fantasized with almost no limitations. For example, Soul Machine, a tech company, designs realistic digital personas that replicate humans from their faces, body, hair, voice and clothing, which are then used in metaverse. Currently, Soul Machine uses these realistic digital personas combined with AI in customer service, video games, education and healthcare to connect and collaborate with consumers across cultures and boundaries.

Soul Machine also plans to expand its technology across metaverses so that consumers can use the same digital persona in different metaverses. Still, the firm may face

difficulty in achieving consumers' desire to use their digital persona seamlessly across different metaverses. As metaverses are not standardized, in their ability to customize digital persona. On the other hand, competitors of Soul Machine, such as Wolf3D, Genies and Crucible, have moved away from realistic digital persona and offer consumer tools to create abstract digital persona with futuristic or fantastical faces, bodies, hair, voice and clothing. For example, consumer can choose to have turquoise hair or a metallic mouse head.

An important trend within metaverse is how commerce changes as retailer face these novel virtual spaces and shared experiences. For retailers, digital persona offers new opportunities to optimize consumers' engagement with retailers and the brands they offer. For instance, retailers use realistic digital personas in metaverse to deliver a continuous journey for consumers between in-store and digital spaces. Likewise, retailers could create digital products such as clothing or voices that complement each realistic or fantasized digital persona and allow consumers to express their unique styles. Now, not all that looks like a metaverse is actually a metaverse.

Two factors contribute to the confusion surrounding the concept of metaverse. First, the metaverse is not a single online space but a group of applications that share certain features. In this sense, the term metaverse is similar to the term social media, which is used to describe both a group of applications and one specific implementation of the concept, for example, the Facebook. Second, the current period of technology transition has created digital environments that mimic certain aspects of the metaverse but lack others. Two obstacles prohibiting the mass adoption of the metaverse are the lack of widespread adoption of the VR technology and computing requirements of blockchain technology.

Since these are the only technologies available to produce high consumer immersion and transferable digital assets, firm-phase trade-off when employing them while VR creates highly immersive access for consumers, it lacks on adoption limits. Its lack of adoption limit the growth of metaverses that require the technology to access. Similarly, while blockchain allow for deep digital economies, its application comes at the cost of computational power which can be allotted to other areas such as graphics or processing speed. Most current metaverses are transitory metaverses and originate within the video game ecosystem. The most prominent examples are the video game Roblox and Fortnite.

Transitory metaverses are online collaborative shared spaces built on a 3D environment allowing user-generated personas to interact with each other. Unlike the metaverse, the transitory metaverse strategically exclude the use of high consumer immersion techniques to reduce the perception of technological mediation and or transferable and unique digital assets to optimize the use of existing computing resources given existing VR and blockchain technologies. Transitory metaverses are being utilized to drive consumer

adoption of the metaverses by getting consumers and retailer used to the unique type of interactions that can occur within the metaverse compared to other digital platforms. At the same time, technological advances in VR and blockchain technologies are being made. Retailers must recognize the existence of these transitory metaverses and their differences from platform within the metaverse.

At present, transitory metaverses are the digital platforms that are most responsible for large scale changes in consumer behavior since they have the broadest reach. So, this is the table that comparison of metaverses to other digital platforms. So, first is online collaborations, high consumer immersion, digital unique digital assets and digital personas. So, here we have e-commerce, social media, video gaming and metaverse. So, e-commerce there is no online collaboration.

So, none of these. While in social media, the first is is there, the other features are not there. In video gaming, this indicates that digital platform part partially includes the feature. So, this online collaboration is partially included. High consumer immersion is included, unique digital assets are not included and digital personas are partially included.

While on metaverse, all these four are included. Now, we will talk about amplified consumer touchpoints along the consumer journey. Through its impact on consumers, the metaverse shift the variability and intensity of consumer retailer touchpoints. Let us explore the temporal elements of the retailing and consumption experience within this space through the customer journey, framework that is pre-purchase, purchase and post-purchase stages. The metaverse components amplify three customer touchpoints in the digital experience. That is the digital economic exchanges, complex social relationships and direct environment interaction.

Through its impact on the digital experience, the metaverse impacts how retailers interact with consumers and marketers. So, figure in the next slide will illustrate this framework. So, this is the framework. So, these are the transitory metaverse component consumer impact and how they affect the amplified consumer touchpoints along the customer journey. So, online collaboration leads to localized communities, non-diadic relationships.

Higher consumer immersion leads to digital mimicry and responsive feedback. Unique digital assets lead to true ownership and digital real estate. Digital personas lead to self-expression and psychological distance. Now, this is the customer journey, pre-purchase stage, purchase stage and post-purchase. And here we have the digital economic exchange, complex social exchange and direct environment interaction.

So, at the pre-purchase stage, we move from value exploration, relationship development and product creation. In purchase stage, value exchange, relationship validation and product delivery. In post-purchase stage, then we have value evaluation, relationship

maintenance and product spillover. Now, let us look at the first one that is the digital economic exchange. One of the most significant differences between the metaverse and other digital platform is the realism and the increased opportunities of economic exchange.

Although e-commerce opportunities exist on other digital platforms, the depth of economic systems created in the metaverse is unique. With the combination of online collaboration leading to non-diadic social networks, unique digital assets resulting in true ownership and digital real estate and digital personas allowing digital goods to be used for self-expression. The formation and evaluation of digital economic exchange is a fertile area of opportunity for retailers. Value acceleration, value exchange and value evaluation are the three areas of opportunity created by the amplified touch points surrounding digital economic exchange.

The second is complex social relationships. One constant theme that emerges from each metaverse component is the depth of consumer relationships within the metaverse compared to other digital platforms. Whether it is online collaboration encouraging the development of localized communities, higher consumer immersion leading to more realistic social feedback or digital personas making social relationship feel much closer than those possible in other digital environments such as social media. The complexity of social relationships in the metaverse in terms of depth and breadth is one of the most promising opportunities for retailers and marketers. Relationship development, validation and maintenance are the three areas of opportunities created by the amplified touch points surrounding complex social relationships.

The third is direct environment interaction. Perhaps the most noticeable amplified touch point is between consumer and the digital environment since the metaverse enables a much greater variety of ways consumers can directly interact with the digital environment. Specifically with unique digital assets encouraging funds to leverage their digital real estate. For deep experiences high consumer immersion allow consumers to receive instantaneous feedback from the environment. The digital persona allowing psychologically closer experiences. The opportunities that exist for retailers in this realm are essentially endless.

Product creation, delivery and spillover are the three areas of opportunities generated by the amplified touch points surrounding direct environmental interaction. Now what are the opportunities in the metaverse? Let us now elaborate on the potential opportunities in the metaverse mentioned above. The three main stakeholders of any retailing exchange are consumers, retailers and brands. The impact of metaverse at consumer and brand levels is out of the scope of this discussion. Let us look at the retailer level and the opportunities the metaverse presents to them along the pre-purchase, purchased and post-purchase stages of the consumer journey. Within each of the three amplified touch points

defined above that is digital economic exchange, social complex social relationships and direct environment interaction. The complete framework is depicted in the table in the next slide. So this is the table. Amplified customer touch points along the customer journey and these are the opportunities in the metaverse. So these are the the various touch points at each stage value exploration, relationship development, product creation, value exchange, relationship validation, product delivery, value evaluation, relationship maintenance and product spillovers.

And these are the three levels of opportunities in the metaverse, customer level, retailer level and the brand level. So as you can see that this value exploration that is digital versus physical characteristics. At retailer level expected role of the retailer and at the brand level marketing rules for value communication. So at all opportunity that all the three three levels are identified. At the three stages so this is obviously the pre-purchase stage, this is the purchase stage and this is the post-purchase stage.

So now let us look at each one of them. So as the pre-purchase stage the first value exploration expected role of retailer. Current customers who are first movers tend to engage within the metaverse longer than other channels. While this may change for late adopters this overall trend is unlikely to reverse entirely. Retailers can therefore leverage the rich 3D environment to provide consumers with an authentic and valuable experience collaborating with other businesses. Such experiences requires meaningful content that will encourage customers to spend more time in the metaverse and potentially purchase more products through the retailer.

Developing such enriched content will create opportunities for the retailer within the metaverse that would not be possible in the physical world or traditional e-commerce channels. Therefore, retailers should understand and establish their role in the metaverse. Especially since there is the risk that retailers might compete directly with brands when engaging with customers. The second is relationship development, impact and use of digital real estate. Unique digital ownership within the metaverse allows retailers to own their digital space in many metaverse.

Such as decentralized and sandbox, users and companies can purchase specific pixel within the digital rendering of the metaverse that can be used to build digital experiences for other users to enjoy. This unique ownership of digital real estate is artificially scarce directly affecting retailer strategies when interacting with consumers through the metaverse. As such, retailers must identify which metaverses to enter, where and when to purchase digital real estate and how to leverage the real estate to create value for the consumers.

The third is product creation i.e. limitation on products and services. Although the metaverse offers many advantages for marketers, it has limitation regarding the types of

products and services retailers can provide. Retailers may find it difficult to directly transfer their offline product and service offerings to the metaverse, which would diminish the value they can add to the metaverse. Specifically, current AR-VR technology limits products and service interactions to only sight and sound. Thus, retailers need to consider how to replicate the purchase experience of product and services in the real world within the metaverse. Also, the nature of the metaverse is highly experiential due to the high consumer immersion as such retailers might benefit from offering more experiential products and services which may retain or even increase their desirability.

The second is the purchase stage and the first step here is value exchange cost of omnichannel strategy. A major cost for retailers associated with the metaverse relates to extending their omnichannel strategy. Retail omnichannel strategies have become more complex as retailers expand into the metaverse making it more difficult to streamline the entire omnichannel strategy concerning sales, marketing and customer service. Retailers must consider how much of the physical store strategy, for example, points of presence, inventory carrying task, one-stop shopping will be required in the metaverse. Furthermore, as retailers broaden their reach into the metaverse, they will have access to sensitive customer information not found on other digital platforms such as hand and eye tracking.

Retailers must understand how to store, manage and analyze this customer information. Along with the large volume of customer data, there are privacy concerns retailers will need to address to ensure that sensitive customer data are not breached. The complexity of operating in a metaverse forces many risks such as mixed customer experience between channels and customer data breaches. Retailers must be aware of these risks and attempt to mitigate them. The second is relationship validation that is human front line employees versus AI.

Relative to other digital platforms, the metaverse enables highly immersive interactions between consumers and front line employees. High consumer immersion and digital persona create an environment where deep social interactions occur, including relationships with retail employees. One challenge retailers face is the choice of using AI-based avatars to interact with consumers-based avatars versus human front line employees. In addition, there is a limited evidence regarding the role of particular avatar, characteristics, more versus less realistic features, genders and other aspects of appearance for relationship building and other important outcomes.

The third is product delivery that is store design. Retailers can create novel digital experiences in the metaverse, representing a critical shift in how consumers shop even using online channels. Retailers can take advantage of this shift through store design or virtual presence within the metaverse. With the rapid technological development of 3D

software and AR-VR, retailers can build 3D spaces that are not limited to by other real-world boundaries. Retailers can collaborate with consumers to design digital stores so that they are more personal and consumers find increased value in their detail retail experience. In addition, retailers can design digital stores to be more entertaining and interactive than physical store experiences by engaging customers' senses, for example, sight, touch and hearing, and along consumers to interact with products in fun and novel way.

In doing so, retailers will need to provide a seamless customer experience between the retailer's physical and digital stores to ensure an uninterrupted customer journey. At the post-purchase stage, the first step is value evaluation, reselling and upgrading decisions. Reselling or upgrade products are two common ways retailers increase sales. But it is unclear how retailers should design these strategies in the metaverse. Popular resellers, for example, the RealReal, ThreadUp, take advantage of societal trends such as focus on sustainability and affordable luxury fashion, but such trends may not necessarily be top of the mind for many consumers in the metaverse.

Even though there are many industries, for example, financial services, fashion and sports, trying to establish their presence in the metaverse and innovating strategies to increase their sales. Retailers could gain inspiration from the gaming industry when designing their strategies for reselling and upgrading especially as many industry experts expect that the gaming industry is and will continue to be at the forefront of the metaverse. Blackbots and NFT collection of 3D avatars within the crypto voxel metaverse allows users to customize their NFTs by changing their name or upgrading the NFT by combining it with other NFTs. For example, users can purchase weapons and other accessories for their blackbot avatar.

The second is relationship maintenance, loyalty programs and store redesign. Maintaining customer relationships in the metaverse requires an omnichannel approach for established retailers with a physical or traditional digital presence. Brands can leverage their already established loyalty programs to help drive customer engagement through different customer touchpoints between digital platforms. Understanding what drives the customer to interact with these touchpoints is the first step in integrating the metaverse into the retailer's strategies. Also due to the experiential and highly immersive nature of the metaverse, retailers must be mindful of continually redesigning store layouts to be exciting and enjoyable for customers keeping up with needs that are likely to evolve as they experience the metaverse. The detail nature of the metaverse allows for many more unique interactions than with other channels, giving retailers an increased ability for creative storefronts that continually drive customers to re-engage with them.

The third is product spillover, bundling strategies. Another method retailers can use to increase sales in the metaverse is to bundle products and or services and sell them as at a

single price. Retailers can develop bundling strategies that leverage customer trends within the metaverse and physical worlds. For instance, fashion retailers such as Forever 21 and Park Soon observed that many customers like to own digital versions of physical products. As a result, Park Soon sold unique digital artwork of anthropomorphized rats bundled with different perks such as physical clothing, free shipping of physical items brought at Park Soon and an invitation to special events. Retailers need to recognize attractive bundling opportunities that leverage unique digital ownership and the 3D environment characteristics of the metaverse.

So, to conclude, even though the metaverse is still in its infancy, the possibilities for retailers and brands to grow in this digital platform are seemingly endless. It provides retailers and brand with unique opportunities along the customer journeys, pre-purchase, purchase and post-purchase stages within each of the three amplified touch points. That is digital economic exchange, complex social relationships, direct environment interaction. However, these benefits come with risks. Examples include difficulty transferring offline products and services offerings directly to the metaverse pre-purchase stage.

Other risks include providing mixed customer experience purchase stage and offering unattractive reselling and upgrading decisions to customers at the post-purchase stage. Since the metaverse is being shaped continuously by technology companies, gaming companies, metaverse platform, VR and AR developers, retailers and brands are iteratively experiencing how best to engage with consumers in this new world. With time, retailers might find more creative, collective solution by working with consumers and brand to manage the risk and opportunities in the metaverse. And these are the eight sources from which the material for this module was taken. Thank you.