AI in Marketing

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Week 4

Lecture 25 Avatar Marketing

Welcome to this NPTEL online certification course on Artificial Intelligence in Markovits. In this module, we will discuss about Avatar Marketing. Now, we will talk about module 25. So, as you can see, this module 25 is dedicated to understanding what is avatar marketing. And we are in chapter 4. Let us look at what are the things that we will cover in this module.

So, we will start with understanding the concept of avatar. Then we will understand the fundamentals of avatar including the key elements and design typology. The avatar matrix based on form and behavioral realism and defining avatar design into four types. Then we will understand the types of virtual world and marketing to avatar.

Now, let us start with understanding what is an avatar. Advances in computer technology have supported the proliferation of virtual characters, which are broadly known as avatars, which we define as digital entities with anthropomorphic appearance controlled by a human or software that have an ability to interact. So, they are digital entities controlled by human or software and have an ability to interact. An unattractive shy man will transform himself into a sexiest and aggressive guy or not uncommonly girl on the virtual block. Modern technology helps people realize a deep-seated desire to experience what it would feel like to be someone else.

The avatar is the most conspicuous online manifestation of people's desire to try out alternative identities or project some private aspect of themselves. The word which originally described the worldly incarnation of a Hindu god Vishnu was popularized in its cyber sense by Neer Stevenson in his 1992 cult novel, Snow Crash. It is a fully defined avatar and encompasses not only complex beings created for use in a shared virtual reality, but any visual representation of a user in an online community. For example, more than 7 million people have created yahoo avatars, simple but personalized cartoon-like characters used as pictorial signatures in activities ranging from instant messaging to fantasy sports. Avatars are endowed with mannerisms, skills, and wardrobes that their users create, employing a variety of software tools, purchases from in-world shops, receives as gifts from other avatars, or earns through in-game achievements.

Indeed, while avatars' anonymity is part of their appeal, many people take considerable pride in their creation as public expressions of hidden aspect of their identities. So that is public expression of hidden aspect of their identities. Those who do not have the time or desire to enhance their avatars on their own spend a combined total of more than $100 million a year on internet option sites for skills and accessories that are digital weapons earned or crafted by others that can improve their avatar presence and performance in a particular world. What are the fundamentals of an avatar? The popularity of avatar is fueled by two macro-environmental factors. First is the advancement of computer or digital technologies.

For example, artificial intelligence enabled the development of more complex avatars and they often appear in three-dimension forms, imbued with seemingly distinctive personalities, appearances and behavioral patterns and are overall more appealing than the previous simple versions. Second is, increase in the use of avatar reflects the growing importance of online service experience such as education, gaming, banking and shopping, which firms wants to make as convenient and hassle-free for customers as possible. They are multiple terms that can be referred to avatars, such as automated shopping assistants, virtual customer service agents, embodied conversational agents or virtual digital assistants. So these are all the forms of avatars. The key element of avatar, so there are three elements, three key elements that define an avatar.

The first is anthropomorphic appearance. The second is interactivity and the third is there is a controlling entity. So let us look at the first one that is anthropomorphic appearance. Anthropomorphism refers to the extent to which an image looks human. This element is important because the degree to which an avatar is anthropomorphic provides cues of its social presence.

Research shows that the more anthropomorphic an avatar is perceived to be, the more credible and competent it seems. So more anthropomorphic the avatar is more credible and more competent. How anthropomorphic we perceive something to be impacts our expectations of certain behaviours and our willingness to interact with that entity. Knowledge about how to deal with other humans generally is learned early in the life and is more detailed and readily accessible in people's memory. Then knowledge about how to interact with inanimate objects.

So we all know how to deal with human, but we do not know how to interact with inanimate objects. People tend to treat computer technology that exhibits human-like characteristics as a social actor and apply the same social rules to it during interactions, despite being fully aware that they are dealing with a machine. The presence of an anthropomorphic appearance triggers people's simplistic social scripts that is politeness, reciprocity, which in turn induces cognitive, affective and social responses during interaction with technology. The next is that it should be interactive. Interactivity refers to the extent to which individuals perceive that the communication allows them to feel in control as if they communicate synchronously and reciprocally with the communicator.

Most researchers have found out that interactive avatars can increase customer

satisfaction with a website or product, credibility and patronage intentions. Designing a truly interactive avatar that can engage in synchronous communication is not an easy task. Whereas conversational interfaces are truly intuitive when applied to interactions between people, conversation between human and automated conversational agents are more challenging. However, when there is a true bi-directional interactivity, it can satisfy customers hedonic that is having fun while shopping on a website and utilitarian that is efficiently finding a solution to a problem on a website needs. The third is the controlling entity.

It refers to whether the control over an avatar that is representing an organization involves a human operator or a automated computer program. The business practices, in business practices due to cost considerations, digital avatars appear more exclusively enabled by AI because that reduces the cost. Consumers want a perception of an avatar having some level of intelligence but often cannot tell precisely who or what controls it as there are typically no solid clues available. If agency cues are present in an interface, they influence users' perception by prompting their cognitive heuristics about the nature and content of the interaction. Users' perception and behavior thus differ if they learn that they are interacting with an AI-backed avatar versus one controlled by a person, reflecting the different heuristics that are evoked by machine versus human counterparts.

Now, we will look at the typology of avatar design. Different design elements cause avatar to vary in their visual appearances and behavior during interaction with human. All of the design element affect avatars form realism and behavioral realism. Form realism refers to the extent to which the avatar's shape appears human. While behavioral realism captures the degree to which it behaves as a human would in the physical world.

Some researchers argue that behavioral realism is more important than the form realism. But both form and behavioral realism are associated with greater avatar usefulness in most of the context. So, both of them behavioral realism and form realism should be there. Form realism is higher form realism may lead users to develop social expectations for their subsequent interactions with avatars. Managers can impact the degree of form realism of an avatar through spatial dimensions, movement and human characteristics.

Spatial dimensions of avatar can be a 2D or a 3D. Research indicates that 3D avatars are perceived to be more compelling and impactful relative to 2D versions. The second is movement. Both technological advancements and customer expectations have prompted the development of more realistic visually dynamic avatars that can move their bodies and faces. For example, Amelia is a visually dynamic avatar that is capable of facial expressions and movement and has been used with modifications in various industries such as banking, insurance and healthcare.

Visually dynamic avatars with the ability for facial expressions can convey emotions which is especially useful for customers from different cultural backgrounds. Avatars with high intensity expressions and dynamics allows both the local and global audiences to achieve approximately equal levels in subject identification and emotion perception. The third is the human characteristics. To enhance form realism, avatars can be designed

to include additional human elements such as identifiable name, gender, race and age. Out of the set of characteristics, gender and age are the most commonly used ones followed by name and race.

Researches show that characteristics such as gender can increase the effectiveness of an avatar. Avatars' behavioralism can facilitate more natural interactions with users. More natural interaction with users and managers can manipulate the degree of avatars' behavioral realism using design elements associated with avatars' interactivity and controlling entity. Relevant design elements that managers can use to impact avatars' interconnectivity are communication modality, response type, social content and the controlling entity. So let us look at the communication modality.

Avatars differ in the modalities of communication they use. Non-verbal avatar communication can be represented by text, that is speech-to-text avatars, gestures, facial expressions. Verbal avatar communicate via speech and both non-verbal and verbal avatars can communicate using a combination of these modalities. The later category would be the highest in behavioral realism from a communication modality perspective. Managers might increase behavioral realism by enabling avatars to recognize the non-verbal behavior of users such as their facial expression prompting more appropriate responses.

For example, Microsoft's Zicole can interpret users' photo and make relevant inferences and comment. So this is the picture of that. However, even with significant advances in AI, creating an avatar capable of correctly identifying and responding to users' various emotions and context remains a challenge because large interpersonal variability exists in how people express emotions. Human also have diverse preferences for how an agent, that is an avatar, responds to them. Response type, managers can design avatars with an ability to converse in a way that feels natural to users.

For example, HSBC's virtual assistant, Ami, currently is able to select and provide users with only predetermined responses about a limited number of banks' products. Avatars with the capability for natural responses instead can have a relatively free-flowing conversation using expected vocabulary and grammar and with the ability to track the context of the conversation and make appropriate responses, avatars tend to rely on scripted responses. For example, the skincare company SK2's Umi understands users expressing themselves in their own words and response in an organic conversational manner. The ability to have a conversation that feels natural is also highly correlated with the perceived agency type. Avatars controlled by human would have a natural response, whereas software controlled avatars tend to rely on a scripted responses.

Social content, another design element that can increase avatars' interactivity is their ability to provide some social content during interaction with the users. As opposed to purely task-oriented communication that is providing product information. Microsoft's Xiaolce is an AI assistant that also attempts to function like a friend, checking on users after a relationship breakup or asking about the physical recovery of a user who posted a photo of a bruised leg. Since its launch in China in 2014, Xiaolce has gained great

popularity due to its emotional intelligence. The real key takeaway is that they have focused on emotional intelligence that can be called as empathetic computing framework designed to have conversations with human naturally which can build a social and emotional connection.

Then comes the controlling entity. Research shows that consumers interactivity with an avatar that they perceive to be controlled by human behave differently from customers who believe the avatar is controlled by a software. According to a study, avatars controlled by human elicit more presence and stronger social influence than do computer-controlled avatars. Therefore, for forms that rely on software-controlled avatars, reinforcing human elements can be very effective. However, perceptions of human agency might not be desirable in all settings. As research shows that people perform worse on certain tasks when they recognize that they are interacting with a human-controlled avatar rather than software due to social inhibitions, social desirability bias and perceptions of reduced autonomy.

For example, avatars have become popular in healthcare and when it comes to disclosing sensitive information such as drinking habits, users are more comfortable revealing information if they perceive less human agency. Now, let us look at what is this avatar matrix. Avatars can be parsamuasily grouped into 2 by 2 taxonomy according to their form and behavioral realism. This taxonomy provides a foundation for predicting the success or failure of avatars in business practices and can inform avatar design strategies.

So this is that 2 by 2 matrix. Form realism versus behavioral realism taxonomy. So on x-axis we have form realism and y-axis we have behavioral realism and both vary from low to high. So when both of them are low, that is simplistic avatar. When form realism is high and behavioral realism is low, then it is superficial avatar. When form realism is low and behavioral realism is high, then it is intelligent, unrealistic avatar and when both the realism are high, then it is digital human avatar.

Simplistic avatar, not a very anthropomorphic appearance, example 2D static cartoon image and low intelligence that is scripted task specific communication. Since this avatar type has an unrealistic appearance, the consumer's expectations of its behavioral competence are lowered. It can provide a hassle-free convenience by completing quick and specific tasks. For example, 24 by 7 travel information, online content exploration. Most effective of low risk transaction that is basic customer enquiries inexpensive online purchase.

So this is ING, Netherlands, Inge. Intelligent unrealistic avatar. Intelligent that is cognitive and emotional intelligence but lacks realistic anthropomorphic appearance that is cartoon image. It can produce customary lies because the non-realistic appearance lowers customers initial expectations of avatar intelligence. That is capable of autonomous natural verbal and non-verbal communication that can also include social content. Especially effective for complex relational transaction involving sensitive personal information like mental health by providing reassurance that a non-human agent

will not judge the customer.

So this is PTSD therapist Elle. Traditional avatars realistic anthropomorphic appearance, 3D dynamic realistic image but low intelligence that is scripted non-customized solutions likely result in a negative disconfirmation for customers because the realistic anthropomorphic appearance raises expectations of the avatars intelligence. Effective in improving productivity of low risk transactions for example bank account information enquiries can produce detrimental effects on customer experience for high risk transactions. For example, stock purchases due to lower intelligence. So this is not West Bank's Coraa. Then the highest form is the digital human avatar.

Realistic anthropomorphic appearance that is 3D dynamic realistic image and intelligent cognitive and emotional intelligence. Allignment of realistic appearance and intelligence provides highest level of customer experience. Capable of autonomous natural verbal and non-verbal communication that includes social content allows for complex transactions that require highly personalized services for example skin care. Cost effective for long term relational exchange by providing highest levels of cognitive that is informativeness, effective that is entertainment and social that is rapport customer experience.

So this is UBS Daniel Kalt. Let us look at the types of virtual worlds. The online worlds populated by avatars comes in many forms but can basically be divided into two types. The first and the most popular by far are combat focused games such as EverQuest, Lineage and World of Warcraft. The second consists of other virtual worlds which even if includes games like elements primarily offer the opportunity for social interaction. In the second type of virtual worlds places like Second Life and Antrophia Universe aimed at adults and the more teen oriented there.

The Sims Online, The Habbo Hotel users customize not only themselves but also their environment and experience. Decorating personal living spaces or running their own events. The settings are more realistic than those in a typical science fiction or fantasy combat games. Though we often need to pay a monthly subscription to get the full experience we buy our own land in Second Life for instance or to sell virtual items made in there. The operators of many of these social virtual worlds recently have allowed people to join and explore the worlds for free.

This approach have boosted the site's membership numbers. Second Life currently have around 65000 paying subscribers and another 100000 non paying members with fewer in world privileges according to Linden Lab, the company that developed and runs that world. How to go about marketing in virtual worlds? Companies are heavily investing in avatars to engage and serve their customer better and the use of avatars is predicted to increase by 241% in the travel and hospitality industry and by 187% for consumer goods. In the banking industry 87% of the companies already use some form of avatars or plan to implement one within the coming years. Wells Fargo Bank operates a virtual world called Stagecoach Island designed to educate teens about money matters through games and social activities.

At in world ATMs players take a financial quiz in order to withdraw virtual cash for activities such as skydiving and games of paintball. In Second Life for instance you find services you might expect virtual clothing and furniture design, event planning, real estate brokering. Nike the athletic apparel brand launched Nikeland in 2021 where consumers can play games, purchase avatar clothing from Nike and collect NFTs. As of September 2022 around 21 million people have already visited the virtual version of Nike stores which is based on the company's headquarters. These virtual world is what we call today as Metaverse and that will be discussed in later modules.

For years companies have been searching for new ways to engage with audience, generate loyalty and increase convergence. The Metaverse while still a novel concept provide business leaders with a unique opportunity to showcase products and services like never before. Built on the foundations of community connections, immersive experience and innovation the Metaverse is giving new life to the marketing and customer experience strategies of major companies. The real world marketing potential of online worlds is suggested by active virtual commerce that already takes place within them. Online virtual worlds offer untapped marketing potential for real world products and services particularly because of their ability to generate sustained customer engagement with the brand.

This occurs through interaction with avatars, the beings users create as representation of themselves and through which they live and relate to others in these worlds. Advertising has always targeted a powerful consumer alter ego that hip attractive incredibly popular person just waiting to emerge with the help of advertised product from a all to normal self. Now that in the virtual worlds consumers are taking the initiative and adopting alter egos that are anything but under wraps. Marketers can segment, reach and influence them directly. Indeed it is important for companies to think about more than the potentially rich market of virtual worlds and consider the potential customers, the avatar.

For starters avatars are certainly useful subjects for market research. For instance a company could track how how inhabitants of a virtual world use or otherwise interact with a particular type of product noting choices they make about the product features wardrobe mix or even virtual vacation destinations. It could then use those choices to create profiles of potential customer segments. So now those profiles are used to develop potential customer segment. For instance in creating a yahoo avatar people choose from an array of elements including physical features, accessories such as pets and the settings which in which the avatar appears.

Some of these elements include branded items, Adidas shoes or a jeep commander parked in the background. While encouraging avatars to wear real world product is mainly aimed at enhancing the brand. Even at this rudimentary level one could learn that avatar who choose golden retrievers as pets prefer jeep grand Cherokee over jeep commanders. As the options presumably multiply in the future and the avatars become more complex One could assemble detailed profile of those who might be likely buyers of either kind of a model.

Avatars might also be enlisted to play a marketing role. They could use their virtual world sensibility to design products with real world potential. Several second life clothing designers have been approached by real world fashion houses and at least one business makes real world version of furniture based on virtual furniture designed by second life residents. Avatar brokers could link up real world companies with virtual land owners willing to rent space for the company's marketing initiatives. Avatars ultimately could run virtual world stores selling real world products or become advertars paid to publicize overtly or not those same products. But will avatar actually buy real world products that are marketed in virtual world? In effect purchasing real world goods for their creators just as those creators buy virtual world paraphernalia for them.

At the least avatars are likely to window shop. Michael K Wilson CEO of Makena Technologies which run there says that e-commerce sites while they have reduced retailers brick and mortar cost don't address the inherently social nature of shopping especially for women. But in the mall of a virtual world an avatar could try on and try out in front of virtual friends real world clothing brands or styles her creator typically couldn't afford or wouldn't dare to wear. If she got good feedback from her friends and become along with her creator comfortable with the idea of wearing a particular outfit a purchase in the real world might follow. David Cobb head of the community applications at Yahoo and manager of the company's avatar program said that it does not cost anything for someone to create an individualized outfit to create an individualized outfit even mixing several brands and it does not cost anything for companies to supply the product that become part of this act of self-expression and personal brand endorsements. The amount of marketing and purchasing data that could be mined is staggering and avatars digital nature means that everyone is everyone of its moves for example pursuing products in a store and discussing them with a friend can be tracked and logged in a database.

This behavioral information organized by individual avatars aside from being priceless to marketers in the long term could be processed immediately. Research conducted at Stanford University's virtual human interaction lab have found that users are more strongly influenced by avatars who mimic their own avatars body movement and mirror their own appearance. The virtual manifestation of an old sales trick makes avatars potentially powerful sales people. Using a simple computer script, a selling avatar clerk is able to subtly and automatically tailor its behavior, its gait, the way it turns its head, its facial features to the avatars buyers thus making the clerk seem more friendly, interesting, honest and persuasive. Even more astonishing, digital technologies allow avatars sellers to modify their behavior and appearance so that they simultaneously mimic the different gestures and look of hundreds of avatars in the same room at least in the virtual eyes of each of those potential buyers.

The potential of marketing directly to avatars does not appear after they accompany their creators tucked in their creator's psyches back to the real world. A company might for instance create a real world advertising campaign aimed at a particular avatar segment. Or they might be offered in real world stores a distinctive clothing line

available only to people whose avatar had through achievements in the online world earned their creators the right to fear the gear thus giving people credibility in the real world based on the avatars virtual world status. By contrast, what Disney Virtual Magic Kingdom site instead of bestowing real world credibility for what an avatar does online grants virtual world credibility for a real world activity. The site is designed to encourage visits to the company's real world theme park attractions.

Avatars created at computer terminals in Disney's real world amusement parks get to sport an exclusive born in park icon in the virtual Magic Kingdom giving them main street creed according to the Disney site. As the barriers between virtual worlds and real life blurs, so do the barriers between virtual world and the rest of the cyberspace. New technology allows a group of avatars, a web mob, to roam the internet. Appearance has superimposed images on a web page. They can check it out, make purchases if they feel like it, then zoom off as a group to other websites.

Instead of having to seek out avatars in virtual worlds, savvy marketers may instead find ways to attract avatars to their e-commerce sites. So to conclude in this module, we have understood the concept of avatar. Then we have gone through the fundamentals of avatar and its design in which we first understood the key elements. Then we have gone through the typology of avatar design in which we have read about form realism and behavioral realism. We have studied about four types of avatar based on the avatar matrix and finally we have studied about the types of virtual worlds and marketing to avatars.

And these are the the seven sources from which the material for this module was taken. Thank you.