AI in Marketing

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Lecture-14 Application of AI in Marketing Mix -III

Welcome to this NPTEL online certification course on Artificial Intelligence Marketing and we are talking of module 14. So, as you can see that these 2 modules they are dedicated to understanding applications of AI in marketing mix. This is part 2 and module 14. Now, let us look at what are the things we will cover in this module. So, we will start with studying the application of AI in marketing mix. Then we will explore the application of AI in place and promotion mix.

Product and price we have talked about in product and price we have talked about in module 13. Now, we will talk about the place and promotion. And then we will understand the importance and role of different types of AIs for 4Ps or 4Cs and discuss the insights for marketing managers in terms of current practice and emerging practices for AI in 4Ps and 4Cs. And in the last we will understand the extended marketing mix and discuss AI applications in people, process and physical evidence mix respectively.

So, then now we are looking at the 7Ps of marketing mix which we generally use in services. Again, let us look at the value creation and the delivery sequence. So, as you may recall from module 13, this value creation and delivery sequence has 3 steps, choosing value, providing value and communicating value. The first choosing and choosing value is strategic marketing while the last 2 providing the value and communicating value are tactical marketing. Strategic marketing includes STPs and tactical marketing includes include 4Ps and together this strategic and tactical marketing is together called as the marketing strategy.

So, this is strategic plus tactical. Now, let us look at the artificial intelligence and place mix. Place which is from the company's points of view and convenience which is from the customer's point of view is the way the consumers can access the product. We will discuss 2 broad categories of place action, retailing and frontline virtually or physically in which interactions play a key role and distribution, logistics and delivery in which convenience is the key. So, these are the 2 components.

One is retailing and frontline virtually or physically. Now, this is because interaction plays a key role. While in distribution, logistics and delivery, convenience plays the key role. Mechanical AI and the place mix. Mechanical AI can be used to automate back end marketing processes and front end interaction.

These 2 are the things that it can automate. In the back end, service processes can be automated and retail processes can be optimized using internet of things. So, this is internet of things. In the front end, service robots can interact with the scale and consistency and can automate social presence in the frontline. Frontline service robots are common.

For example, Giant grocery uses the robot Marty to identify hazards in store. For example, detecting milk spilled on the floor and High ID Lau. Hotpot uses robots to deliver soup base for kitchens from kitchens to table sides. Grocery shopping is typically repeat purchase which does not involves too much interaction, communication and emotion. And thus using mechanical AI to automate the marketing function is desirable because there is not much interaction, communication or emotion involved in this process of purchase.

Thinking AI and place mix. At the thinking level, due to direct customer contact nature of retailing, AI is used to facilitate in-store shopping for individual customers. In-store shopping for individual customers, Amazon Go, an experimental grocery store uses facial recognition technology to identify and remember each customers. So that this it can facilitate in-store shopping for the individual customers. Massey's On Call, a mobile shopping personnel aid provides in-store information to help customers locate items they are looking for.

Alibaba's Fashion AI system uses smart mirrors in sales floor and changing rooms to display items that each customer selects and suggest complementary items also. So, this is how this Fashion AI is used for each customer select and suggest complementary items. Feeling AI and the place mix. Feeling AI can be used to enhance interaction and engagement. So, these are the two things can be that can be useful with Feeling AI.

For example, service robots can easily do surface acting and one voice. AI can enhance customer engagement by integrating various interfaces involved in a customer's journey. At the feeling level, various embodied robots are used to engage customers and optimize their experience. For example, Pepper robots are used by Marriott to greet and interact with the customers. So, this is a hotel chain.

Hotels and travel typically involves more interactions and more emotions and thus

Feeling AI naturally suits this kind of industry. Why? Because it involves more interaction and more emotions. Although marketers need to be cautious in that anthropomorphized robots are found to increase perceived warmth but decrease the liking and thus in the case of embodied frontline robots, marketers need to take the appearance of robots into consideration. So, appearance of this robot is taken into the consideration. Distribution, logistics, delivery is an area of marketing in which many functions and processes can be highly automated.

Here, lot of these functions can be highly automated including packaging, inventory, warehousing, supply chain, logistics and delivery to provide convenience benefits to the customers. So, these are some backend thing that can be easily automated. Task and distributions are mostly mechanical, routine and repetitive. Thus, the standardization benefit of mechanical AI fits well with this kind of situation. We have seen robots for packaging, drones for delivery, IoT for consumption tracking and order refilling and self-service technologies for delivering service to customers directly.

Such standardization provides a convenience benefit to the customer. Moving up to the thinking AI level, we can see that a customer's future orders and refills can be anticipated by the predictive analysis. So, you can, you can understand the future orders and refills and thereby that information can go into the supply chain. Order products can be delivered to customers using autonomous cars equipped with facial recognition technology.

For example, jd.com and dominoes use self-driving cars for delivery. So far, feeling AI is not as widely used as the other two AI intelligences for this marketing action due to distributions mechanical and thinking in nature. Let us take a look at data requirements for AI augmented place mix summarized in the following table. So, what AI can offer? One is prediction and optimization of distribution. One, let us look at what AI can offer.

Prediction and optimization of distribution, inventory, store displays and store layouts both in brick and mortar and online stores. Then it can enable voice and visual searches. Now, what are the data requirements to do this? So, data are the store level, historical and real time sales, real time inventory, in store and web traffic data and location level that is local competitors, demographic of, demography of a local catchment, data on individual customers, historical sales, search history, any other customer level data useful for making product recommendations, historical customer service queries, responses and satisfaction scores. Now, examples of current AI implementation. AI driven stock and inventory management system.

One, merchandising based on AI predictions. Two, recommendation engines that show

people what they want to see. Use of AI driven camera analysis to speed payment and optimize store layout and design. And then AI enabled visual searches. Example of this AI and place mix is Browzzin.

Browzzin, a social commerce app combines AI with visual recognition technology with the power of influencers to drive sales as the app transforms posted images into shoppable contents. Posted images into the shoppable content. So, this is how it adds value. Shoppaple content platforms like Browzzin and P-interest visual search features are examples of deep learning augmenting the shopping experience via image classification. Such technologies allow consumers to take pictures of things they see in the stores on a commute or at a friend's and then they make the item in the pictures shoppable.

In this way, consumers can shop anywhere or anytime which creates new opportunities for companies to engage customers outside of traditional channel locations. So, now the companies are taking the customer outside of the traditional channels and they can shop anywhere and anytime. Now, let us look at the AI and promotion mix. Promotion, broadly called as communication, is the marketing communication between the consumers and the marketers. It can include personal selling, traditional mass media, advertising and more commonly nowadays direct marketing, database marketing and digital marketing, social media marketing, mobile marketing, search engine optimization, etc.

And all of these can benefit from the various AI intelligences. How, what can mechanical AI do in such a situation? Mechanical AI is ideal for automating various repetitive, routine and data intensive functions of promotion. Most of these are about promotional media planning and execution. Example include automating, advertising, media planning, scheduling and buying, automating search campaign execution, keywords, researching and bidding, automating social media targeting, retargeting and posting. Especially considering the real-time nature of digital marketing, such automations greatly aids marketers' efforts in the labour intensive high time pressure process.

Next comes thinking AI. Thinking AI has great potential for promotion content creation and the and personalization. So, it can create content and it can personalize the content. For example, AI content writers can facilitate the generation of ad or post the content. A recent example was a Lexus car commercial that used IBM Watson to create the driven by intuition commercial script.

So, that was based on AI. Content can be personalized and optimized to different

consumer profiles at different locations and at different times. So, that is the biggest advantage that it can be personalized and optimized to different profiles at different locations and different times. Kantar Analytics uses content analytics to help advertisers create content that shortens the idea to value time and maximize content effectiveness. So, this is what it helps the advertisers to do. Feeling AI can be used to track real-time customer responses.

Two promotional messages like whether they like it, dislike it, disgusted, funny, etc. and then adjust what to deliver and what to emphasize in both media and content. At the feeling level, more real-time and accurate emotion sensing from posted messages can better engage customers and provide a better interaction experience. Insights from marketing managers for AI in the 4Bs and 4Cs along with future questions are tabulated in the next slides. The data requirement for AI, Augmented Promotion Mix is summarized in the following table.

So, now we are looking at the promotional mix and AI potential. What AI can offer here? Creation of different ads depending on permutations of content and on related words. Development of individualized promotion offers and ads. Running of AI driven A-B testing and optimization of ad placements contextual ad targeting. The data requirements here are both historical and real-time data on ads including their content, both text and images, placement and performance, information on potential ad placements, example cost audience characteristics, real-time data on customer behavior at all points along the customer journey.

Examples of current AI implementation are Watson Ads, Omni. It enables marketers to deploy AI powered interactive ad placement. Chinese video start-up Viscovari is developing AI technology that enables brand to display ads in videos specific to the content being watched. Now, let us look at an example. For Black Friday 2018, Lego engaged Watson Ads Omni to create AI powered interactive ads.

The AI system was trained with the knowledge of a wide range of different Lego products with ads crafted to consumers depending on their specific interests and needs. So, this is what it did. Ads crafted to its consumers depending on their specific interests and needs. The benefit of such an application is that the brand can have meaningful one-to-one conversations with consumers along their path to purchase. So, now these applications can have meaningful and one-to-one conversations with the customers.

Now, AI in 4Ps, 4Cs insights from the marketing managers. So, now we are talking of product or the consumer solution. The current practices, conjoint analysis decides attributes level and then we go in for market testing or we do market testing in order to

decide on the attribute levels. Emerging practices is that mechanical AI automates service and product processes.

Thinking AI for product innovation. The next is the product consumer solution. The current practices aggregate sales as customer adoption and product life cycle. The emerging practice is feeling AI for service interaction and customer value. The next is the price for the company and cost for the consumers. The current practices is skilled labour intensive media planning.

So, that is a labour intensive activity relying on creative executives talent. Emerging practices, mechanical AI automates promotional execution and media planning and thinking AI for content creativity. Again for continuing with the price and cost, the current practices delayed response to customer reactions to promotions. Emerging practices, feeling AI for emotion sensing and the reaction.

So, that is more immediate and this is more delayed. That is real time. Now, let us look at the place or the convenience. The current practices, self-service and physical distribution. Unskilled labour provides homogeneous shopping assistance.

So, this is what is happening currently. Now, emerging practices, mechanical AI automates distribution logistics and delivery. Thinking AI, it personalizes the shopping. Again, the front line employees variables emotional labour is the current practice. So, their emotional labour is changing.

That is, it is variable. While feeling AI interacts with the customers and with the same level of emotional labour. Now, coming to the promotion or communication, the current practice is skilled labour intensive media planning. So, that is intensive, labour intensive media planning and relying on creative executives talents and delayed responses to customer reactions to promotions. The emerging practices, mechanical AI automates promotion, execution and media planning.

So, here it was labour intensive, now it is automatic. Thinking AI for content creativity and not on the executive talent. Feeling AI for emotion sensing and reaction. So, person is not involved in emotion sensing and reaction, only feeling AI is involved. Now, what are the future questions here? So, for product consumer solutions, how is AI best suited in developing new products to meet customer needs and wants? So, that is one question. The second for the price and cost is how to manage AI based price negotiation? How, when this price negotiation is being done by AI, then how to manage that process? How to manage customer disengagement due to place automation? That is a question related to place or the convenience.

The next for promotion and communication, how to use AI to build strong relational bonds? Now, let us look at the extended marketing mix that is the 7 Ps. The essence of every marketing strategy is the marketing mix. For service marketers due to special and unique features, the marketing mix is extended to include the 3 more Ps. One is the physical evidence, 2 is the process and 3 is the people.

So, now this makes a 7 Ps marketing mix. So, the first is as you can see the product, there is no point in developing a product or service that no one wants to buy. The second is price. A product is only worth what customers are prepared to pay for it. The price also needs to be competitive, but this does not necessarily means the cheapest. The third is the place the product must be available at the right place at the right time and in the right quantity.

Promotion is the way a company communicates what it does and what it can offer the customers. Now, these are these were the traditional 4 Ps of marketing. Now, we will look at these 3 additional Ps. So, this fifth one that is the process. The process of giving service and the behaviour those who deliver are crucial for the customer satisfaction.

Then comes the people. The reputation of your brand rests on your people's hand. The seventh is the physical evidence. A service cannot be experienced before it is delivered. So, it has to be experienced and delivered simultaneously. This means that choosing to use a service can be perceived as a risky business because they are buying something intangible.

People refer to customers who buy products or service and other customers in the service environment. ML technologies can be applied to analyse people related marketing activities including churn prediction, targeting customer prediction and engagement. So, these applications are described in detail in the next slide. What is churn prediction? Customers' churn is the percentage of customers who stopped purchasing your business's product or services during a certain period of time. Churn management is a top priority for most businesses and churn prediction creates a central role in churn management programs.

So, how many people have they have stopped using your product? So, that is important for every company to know. Targeting customers who are at the highest risk of churning is not necessary. Firms should target customers whose propensity to churn decreases in response to intervention. So, this churn has to be managed. So, those target customers whose propensity to churn decrease if some action is taken.

So, they are more important. Using monthly client transactions record in business to business setting, ML techniques can adequately predict which clients will be lost. So, that is another important thing to understand so that some kind of intervention can be done and therefore these customers can be retained. Multiple studies are exploring ML methods for churn prediction models. Another is targeting customer prediction. So, marketing messages are most effective if they reach the right customers.

The allocation of different marketing resources to different customers is important for the firm. So, they are most important, most effective if they reach the right customers. Because if they are not reaching the right customers then the money is wasted. So, allocation of different marketing resources to different consumers is important for the customers. Which resources for which customers? AI and ML can predict targeting customers from the perspective of customer response, gender, preference, heterogeneity and loyalty.

Facial recognition techniques are important for targeted marketing. Facial features like color, skin color for example facial features like skin color, gender, appearance, emotion and facial marks can be extracted from facial images using different ML technologies. Facial recognition technology is used to classify individual based on their facial features. So, here we are classifying individual based on their facial features. These features are salient for understanding consumer preferences. Such as information, such information is used for interactive targeting marketing.

So, your facial features to classify individuals and then that can be used to understand consumer preferences. Facial expressions analysis has been applied to develop a novel model to automatically personalize clothing recommendations. So, it has already been used for personalizing the clothing recommendation. The ability of facial recognition technology to determine user emotions and influence buying decision is part of the digital marketing strategy which is important for marketing. So, ability of facial recognition technology for what to determine user emotion and therefore influence buying decision is part of the digital marketing strategy.

The next is engagement. Social media platforms such as Facebook, Twitter or X and Instagram have created new ways of interaction, communication and engagements. People post their opinion and use like, share and comment for exchanging information via these platforms. The engagement level can gauge the effectiveness of firm's social media marketing efforts. So, these can be used to measure the engagement level which in turn will tell the effectiveness of the firm's social media marketing efforts. Huge volume of opinion expressed in real time has great appeal as a novel marketing applications.

Volumes of opinion. Hence, extensive applications in ML in engagement and interaction have been explored. However, as e-commerce grows, so does the prevalence of the fake online reviews. Fake reviews are utilized to manipulate the product reputation and consumer purchase decisions. Several ML methods can be used can help detect fake reviews. Another exciting new application of AI and ML is in measuring the impact of the social media influencers.

Influence marketing on social media has grown immensely and machine learning models have been applied to measure the social media influence index across popular social media platforms. That is one. Two is to predict top persuader prediction. Three is explore the role of narratives and the fourth is to study the influence of superstars on spectators.

Now, let us look at the AI and process mix. The process refers to the procedure, mechanism and ploughing of activities. ML methods can help marketers in several processes such as segmentation, segmenting very effectively as it can better process large amounts of customer data. ML has been used also to integrate customer arrival, forecasting, service time estimation and staffing into labor planning process. Next, we will look at the AI and physical evidence mix. So, physical evidence refers to the environment in which the service is delivered and tangible goods clues that facilitate the performance and communication of the service.

So, this is what the physical evidence means. ML technologies have been applied to investigate physical evidence related marketing activities. Content marketing is about tangible information and persuading audience with solid content to motivate customers to buy the goods or services. ML measures the success of different types of posts on Facebook to optimize brand communication on the social media. ML based methods have been used for measuring marketing constructs through the passive analysis of consumers generated textual data.

So, we are talking of passive analysis. So, in order to conclude this module, we have studied the application of AI in place and promotion mix. We also discussed the role of three kinds of AI in marketing mix that is AI, mechanical AI for standardization, thinking AI for personalization and feeling AI for relationalization. Then we have discussed the implication of for marketing managers for AI in the 4Ps and Cs. We explored the extended marketing mix which is applicable for services.

Then we studied the application of AI in people, process and physical evidence mix. We also briefly discussed the future questions for marketing managers in the emerging

landscape of AI applications in 4Ps and 4Cs. And these are the six references from which the material for this module was taken. Thank you.