

AI in Marketing
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Week 6
Lecture-29 AI and Brand Equity

Welcome to this NPTEL online certification course on artificial intelligence in marketing and now we will talk about module 29. So, in module 29 we will talk about artificial intelligence and brand equity. So that is module 29. Now let us have a quick look at what we will cover in this module. So, we will start by discussing the concept of brand equity in marketing and its importance, dimensions and measurements. Then we will discuss how AI is redefining the facets of brand equity and then we will explore new drivers and measurement methods of brand equity and brand importance in the AI age.

So now let us start with understanding what is brand equity. Brand equity is the added value endowed on products and services which may be reflected in the way consumers think, feel and act with respect to the brand as well as in the prices, market share, profitability of the brand, profitability of the brand commands for the firm. What is customer-based brand equity? The premises of CBBE, that is customer-based brand equity is that the power of the brand lies in what customer have seen, heard, learned, thought and felt about the brand over time. CBBE is the differential effect that brand knowledge has on consumers' responses to the marketing of that brand.

So that is the differential effect. So, there are three key ingredients of CBBE. First is brand equity arising from differences in consumer responses. The second is this difference in responses are results of consumers' brand knowledge about the brand and the third is the differential responses by consumers that make a brand equity is reflected in perceptions, preferences and behavior related to all aspects of the marketing of that brand. Now here you will find that there is an important concept that is brand knowledge.

What is brand knowledge? All the thoughts, feelings, images, experiences, and beliefs associated with the brand. Brands must create strong favorable and unique brand associations with the customers as the following brands have. So, this is amazing, it is written in black and there is a yellow smiling kind of arrow there. Hallmark is blue for caring, Toyota for reliability. So, this is how knowledge, brand knowledge is built up of.

Thoughts and beliefs, feelings, images, experiences, so they all become part of the knowledge. Now marketing advantages of strong brands. The first is it is about improved perception of product performance, greater loyalty, less vulnerability to competitive

marketing action, less vulnerability to marketing crisis, larger margins, more inelastic consumer responses to price increase, more elastic consumer responses to price decreases, greater trade cooperation support, increased marketing communication effectiveness, possible licensing opportunities, additional brand extension opportunities, improved employee recruitment and retention and greater financial market returns. Now let us look at what is brand promise? A brand promise is the marketer's vision of what the brand must be and do for consumers. Consumers will decide based on what they think and feel about the brand, where and how they believe the brand should go and grant permissions or not to any marketing action or program.

So this is, this is the new lifebuoy. This monsoon stays protected from 100 infractions causing germs. So that is the brand promise of lifebuoy. Now we will look at the various brand equity models. The major brand equity models are listed below.

The first is Aaker model, the second is brand assets valuator model, the third is brands model and the fourth is brand resonance model. So, a detailed discussion on all these models of brand equity is beyond the scope of this course. However, the Aaker model, one of the most important models of brand equity is displayed through a flow diagram, graphic in the next slide. So, this is the Aaker model, the brand identity system, brand identity. So, this is the extended core, brand as product, brand as organization, brand as person and brand as symbol.

So, when we talk of brand as product, we are talking of product scope, product attributes, quality value, users, users, country of origin. When we talk of brand as organization, we are talking of organization's attributes, example, innovation, trustworthiness and local versus global. When we talk of brand as person, we are talking of personality, for example genuine energetic rugged and brand centric relationships, for example, friend advisor. When we talk of brand as symbol, we are talking of visual imagery and metaphors and brand heritage. Now these brand identity things they lead to value proposition and credibility.

Value proposition includes functional benefits, emotional benefits and self-expressive benefits and credibility is support other brand. Now these forms the brand customer relationships. That will lead to brand identity implementation system, brand positioning that is a subset of the brand identity and value proposition at target audience to be actively communicated providing competitive advantage. Then comes execution, so general alternatives, symbols and metaphors and testing and then comes strategy. What are the drivers of brand equity? Marketers create brand equity by creating right brand knowledge structures with the right consumers.

So, we are talking of creating right kind of knowledge structures. The initial choice for the brand elements or identities making up the brand like brand names, URLs, logos,

symbol, character, spokesperson, slogan, jingle, packages and signage. The product and service and all accompanying marketing activities and supporting marketing programs. Other associations indirectly transferred to the brand by linking it to some other entity that is a person, place or thing. Now how do we go about measuring brand equity? So, there are two primary approaches to measure brand equity.

One is the indirect approach, and the other is the direct approach. In an indirect approach, we assess potential sources of brand equity by identifying and tracking consumer brand knowledge structures. In direct approach, we assess the actual impact of brand knowledge on consumer responses to different aspects of marketing. The marketers need to understand one, the source of brand equity and how they affect the outcome of interest and how these sources and outcomes change over time. Brand audits are important for the former and brand tracking for the later.

So, for the first one, it is brand audit and for the second one, it is brand tracking. Now we will look at the brand value chain. Through brand value chain, we can link the two approaches, that is the direct and indirect approach of measuring brand equity. The brand value chain is a structured approach to assessing the sources and outcomes of brand equity and the way marketing activities create brand value. So, this is what this brand value chain looks like.

At the top are the value stages. So, the first stage is marketing program investments that is product, communication, trade, employee, and others. The second is customer mindset, awareness, association, attitude, attachment, activity. The third is brand performance, price premiums, elasticities, market shares, expansion, success, cost, structure, and profitability. And then comes the fourth one that is shareholder value, stock price, price earnings ratio and market capitalization.

Now in between are multipliers which act as moderators. So, there are program multipliers, there are customer multiplier and there are market multipliers. Program multipliers include distinctiveness, relevance, integrated, value and excellence. Consumer multipliers include competitive reactions, channel support, customer size and profile. Market multipliers include market dynamics, growth potential, risk profile and brand contribution.

Brand audit is a consumer-focused series of procedures to assess the health of the brand, uncover its sources of brand equity and suggest ways to improve and leverage its equity. Brand tracking studies collect quantitative data from consumers on a routine basis over time to provide marketers with consistent baseline information about how their brands and marketing programs are performing on key dimensions. Brand valuation is estimating the total financial value of the brand, and it is different from brand equity. So, this is a brand valuation method given by interbrand. So, there are market segments, financial

analysis, demand drivers, competitive benchmarking leads to brand strength, role of branding, economic earnings, leads to brand earnings and brand discounted and that gives you brand value that is net present value of future brand earnings.

Now let us look at the integration of AI and brand equity. AI defines the dimensions of brand identity. Brand identity are aspirations. What the brand strategies wants to create in the form of brand promise? Brand identity is a vision of how that brand should be perceived by its target audience. Core idea of the brand which can be communicated to its stakeholders form the brand equity.

We can define brand identity as a group of envisioned brand inputs. Let us take the dimensions of Akar 1995 and explore the AI impact on every dimension of brand identity, that is product, organization, personality and symbol. So, brand identity in the first column and AI based brand identity is on the second column. So, brand identity the first is product symbol.

So these are smart products. Organizations, smart organizations, personality, brand character and symbols remain the same in both the two categories. Now what is a product? The product and its related attributes influence brand identity. The product as a part of brand identity includes country of origin of the product, product features, product scope, quality user of the product and users of the product. But this framework shined in the age of industry 1, 2 and 3 in the age of no involvement of consumers in production. AI and other technologies have taken the industry to the next level that is industry 4.

It has relabeled consumers as prosumers, professional consumers and production as a pro assumption that is customer's involvement in the production and product into smart products. For instance, Family Hub, AI enabled brought the 2018 International Consumer Electronics Show Best of Innovation Award to Samsung. Family Hub is a smart refrigerator which enables the household members to see who is ringing the doorbell. To check the sleeping baby in the next room, to watch the refrigerator inside when they are in the market away, find the best bargain in the market and save them directly to the shopping list or loyalty card. AI plays a major role in production of smart products of this kind.

The next is organization. AI can influence every function of the human resources from recruitment that is chatbots to employee iterations that is predictive retention. Good brands require great organization culture that is organizational attributes, local working versus global activities. AI gathers the virtual motives of employees such as views, likes, shares and comments from the digital world and predict the culture of an employee. This way normal organizations become smart organizations.

The next is personality. Brand personality talks about the human nature of the brand. Brand personality creates the self expressive benefits such as bond between consumers and brand and helps in the expression of attributes and benefits of the product. Digital technologies that is AI enabled produce the brand generated content and user generated content that is UGC. UGC is a content that is made available by customers over internet. UGC acts as a brand character, and which can influence the consumers.

The next is symbols. Brand symbols represent the visual imagery of the brand. Analytical AI is the most commonly used artificial intelligence and works through cognitive intelligence. The specific application of analytical AI is logo recognition of brand. Digitally recognizable brand logo helps in understanding the digital transaction of logo in UGC that is user generated content and BCG that is brand generated content. The digital transaction data of logo helps in understanding and predicting the consumers behavior.

Keller in 1993 changed the perspective on brand equity that is the customer based brand equity and eliminated all kinds of existing confusions over brand equity. Let us consider the dimensions of brand equity given by Keller and explore the AI impact on them. That is one is awareness, association, attitude, attachment and activities. We will start with the first one that is awareness. Positive equity happens when brand awareness becomes the brand salience.

Brand salience is not about the top of the mind awareness. It is the degree of customers awareness about the brand in different purchase situations. Brand salience takes place when brand promotion targets a right consumer. AI solves this problem and make it easier for the brand to target the right customers. Now all these Aquisso, Trappica, Quarisme, their website address is given here are applying AI in promotion of brands for ads optimization.

You can visit these websites and find out in detail how each of these agencies are leveraging AI in promotion for brands. The next is associations. Associations are the features, benefits and value of the brand which can differentiate it from the competitors and create relevance to the customer. A recommendation system understands the features, benefits of brands and values of customers and recommends the purchase by learning and establishing associations. Collaborative system may work through popularity.

Most popular items are recommended. Collaborative filtering that is user activity based recommendation. Content based filtering that is description of the item that has been rated by the user and hybrid approaches which works through any combination of above stated algorithm. For instance, recommendation systems which show the ads on social media, movies on OTT platform etc. use the customer characters and brand associations.

The next is attitude. AI enables the customers to order product by means of voice, text etc. and also enables the dynamic pricing, real-time price adjustments. Hence AI can induce change in the customer purchase intent at the last minute also by observing the customer attitude and changing the brand and channel response. Then comes attachment and activities. Technology is changing the degree to which organizations interact and establish the relationship with customers.

Earlier organizations have responded to customers by means of auto responses and auto notifications. AI have augmented the customer relationships through automated services, smart content curation and predictive analytics. This enables the organizations to maintain relationships with the right customers for maximizing customer lifetime, value and driving loyalty. Now we will look at AI and new brand equity drivers.

Social media analytics and brand equity. The rise of social media usage for both the companies and customers recommends promising data sources to know consumer behavior. Social media data helps to notify the company's strategy and create business optimization. A recent research examines the impact of user-generated content on nonsense of brands in Twitter's followers on the brand image and product sales to achieve brand equity. Social structure of the brand can have an impact on social media to create information or content for brand perceptions. The benefits of social media AI analytics help brand to know the data blast.

Capacity and ambiguity of data sources raises the challenges, which helps to frame the effective algorithmic decision making. There needs to be an increase in the choice of analysis on the interface of social networking web and equity of brands on all the social media platforms. In addition, the theory of brand equity needs to incorporate dynamics of social media effects. The evolution of social media data is primarily categorized into user-generated content. Primarily categorized into firm-generated content and user-generated content.

Firm-generated content is generated through social media pages or accounts and used by brands as the marketing channel to improve customer relationships. This can be achieved through many posts, including text, videos and photos through a social network. On the other hand, the user-generated content explains the social network web activity of customers focusing on particular brands. UGC is a network-based, distributed and non-linear phenomena to measure the firm's content in social media. This phenomenon includes the valence or sentiment of users' content.

Users' likes or users' comments posed to achieve brand equity. Now social media analytics through AI with the help of a marketing mix model is being explored to achieve brand equity in the global market. Now we will look at the chatbot-driven brand intimacy. Machine talk or chatbot help consumers to make decisions and buy the

products. The advancements of natural language processing and the implementation of chatbots allow the consumers to interact with the firms or brands.

The usage of messenger systems as a unique and novel interaction paradigm between consumers and intelligent bots is referred to as the next operating system in business management and commerce. It is transforming how humans search, shop and express their preference to a particular brand. It is transforming how humans search, shop and express their preferences for particular brands. The novel forms of interaction between the consumers and their technology-related businesses help the value creation of business and to analyze consumer behavior. Factors associated with system design features, users' perceptions and acceptance and unsupervised learning through user interactions are key for chatbots driving brand intimacy and thus leading to loyalty and brand equity.

Automated conversation success depends on consumers in how they perceive a conversational interface as similar to human-based traditional interface. It also increases the human-like interactions which creates rich data and enhance more intimate consumer-brand relationships. Now let us look at the relationship between artificial neural networks and brand choice. The initiation of barcodes and scanners made it easy for retail stores to keep track of their customer purchase behaviors. The customer data provides information about the product that they have purchased.

Nowadays supermarkets or hypermarkets use loyalty cards that is used to understand the preferences of individual customers and forecast their future purchase decisions. This prediction helps the retail industry to maximize profits. It is a non-linear statistical model created for the human brain and can be programmed and trained to identify data patterns. The applications of artificial neural networks are used in the market for the optimization of businesses. Using simple artificial neural networks can help to increase the accuracy of customer preference, forecast their brand evaluation and avoid fake data.

AI and New Brand Equity metric One is Semantic Brand Score. In today's AI driven world, several web applications are designed to evaluate the brand image, positioning and importance through textual data analysis. For this, there is a new conceptualization that calculates the semantic brand score to measure brand visibility. That is SBS. The leveraging capability of big data allows brand managers to revise trends in their customer patterns and perceptions to monitor the positive or negative associations of the brand. The SBS is a unique concept and measure brand importance by using analytics and customer data.

It is framed to calculate the significance of more than one brand by contemplating the dynamic longitudinal trends with the help of data from multiple online sources from different perspectives. The measure is appropriate for the data analysis even on different cultures and languages. These SBS concepts mostly helped familiar brands to calculate

brand equity through brand recognition and awareness. The brand may be a person or politician, or several keywords used in the concept to create brand value.

The SBS is also used to assess the changeover dynamics. For example, when a new brand supplants, that is supersedes and replays, old brands to evaluate the election contender and forecast trends of share markets. The SBS comprises of three dimensions, and they are, the first is prevalence, the second is diversity and the third is connectivity. What is prevalence? Prevalence represents the frequency with which the brand name appears in the set of text documents. The more a brand is mentioned, the higher its prevalence with higher expectation of familiarity from the text authors. A more recurrent brand name is probably more visible and easier to recall than a brand that appears rarely.

On social media, for example, only users who are aware of a brand name and can remember it will use it. Moreover, readers will probably memorize more easily a brand that is frequently repeated with respect to one that rarely appears in a discourse. Readers suggest a possible link between prevalence and the dimensions of the brand awareness, which is however only partial as there might be brands with high awareness that are not frequently mentioned in the text documents, depending on their specific markets. The second is diversity. Diversity is partially linked to the concept of lexical diversity and to the study of word co-occurrences.

It measures the heterogeneity of the word co-occurring with a brand. This measure is connected to the construct of brand image and therefore to the association of other words with the brand. While the interpretation of favorability, uniqueness and type of these associations is important, diversity focuses on their heterogeneity. The brand could be mentioned frequently in a discourse, thus having a high prevalence, but always used in conjunction with the same words, being limited to a very specific context. On the other hand, a brand with more diverse associations should be preferred as this is usually embedded in a richer discourse with a high versatility of the brand name. The metrics of diversity is supported by research as showing that the number of brand associations positively affects brand strength.

Ultimately, the presence of diverse lexical associations to persons, things or other concepts should increase brand awareness. Each dimension of SBS in particular, diversity has to be interpreted and commented upon considering the sentiment, strength and type of associations. The next is connectivity which is a new measure in the brand equity scenario. Derived from social networks analysis and operationalized through the betweenness centrality metrics. This measure indicates how frequently a node in the graph lies in between the shortest path which interconnects the other nodes.

When nodes represent words, they express how often a word that the brand serves as an

indirect link between all the other pairs of words. Connectivity reflects the embeddedness of a brand in the co-occurrence network, going beyond the direct connections considered in the calculation of diversity. Some could imagine connectivity as a measure of how much of a discourse passes through a brand. How much a brand can support a connection between words which are not directly co-occurring. A high connectivity level could indicate a brand which serves as a bridge between different sets of words.

Thinking more laterally, connectivity could be considered as the brokerage power of a brand. Its ability of being in between different groups of words sometimes representing specific discourse topics. This measure differentiates from diversity. It might be the case that a brand has high diversity being surrounded by many heterogeneous terms but if peripheral, still presents low connectivity since not properly integrated in the general discourse.

Connectivity has already proved its value in the recent research. The betweenness of a company's name in a text co-occurrence network also used as predictor of a company's stock price. The analyses were performed based on the company's employees' discourses on an internet social network. In addition, it was found that the betweenness centrality of a brand in semantic networks extracted from the web could be considered as a proxy for its popularity. Now let us look at the calculation of the semantic brand score. The SBS has been conceived to express the importance of a brand along the three dimensions of prevalence, diversity and connectivity which comes from the combination and novel use of well-known social network and semantic metrics.

Let us take a quick look at the mathematical formulation of these dimensions and how they combine to give a calculation of semantic brand score as a new measure of brand importance in the age of AI. However, a detailed mathematical operationalization cannot be discussed here. The first is prevalence. Prevalence refers to the presence of a specific word brand in the text and is calculated as its overall term frequency, that is FGI for a given set of documents and or timeframes. To compare this value across different text corpora of different sizes, one could divide the absolute term frequency by the total number of words in the text indicated as TOTW.

So, these are the equations for them. Diversity is calculated as the degree centrality of. Next comes diversity. Diversity is calculated as the degree centrality of the brand in the co-occurrence network that is the number of edge directly connected to its nodes. The number is higher when a brand co-occurs with many different words. By contrast, if the discourse around a brand converges towards a small set of words, its diversity will be lower.

Then the following formula that is DGI indicates the degree of the brand node GI. Third is connectivity. Connectivity depends on the network's position of a brand. Its value is

higher when the brand node is more often in between the network paths which interconnects the other words within the text and therefore more deeply embedded in a discourse. Connectivity answers the question how often does a brand figure in the network path that keeps together other pairs of words or other parts of the discourse.

Connectivity of the brand GI is given by the formula. This is the formula where DJK equal to the number of shortest paths linking the generic pair of nodes DJ and GJ and GK and DJK GI to the number of those paths which contain the node GI. So now this semantic brand score is obtained by summing the standardized values of prevalence, diversity and connectivity in order to attribute the same importance to each dimension even in the case of different variances. So, this is the final equation for this semantic brand score. So, to conclude this module, we have discussed the concept of brand equity in marketing and understood related terms and concepts like consumer-based brand equity, brand knowledge, etc. Then we have discussed how AI is changing the facets of brand equity that is awareness, association, attitude, attachment and brand identity, product, organization, personality and symbols.

We have also discussed the emerging drivers and metrics of measurement of brand equity and brand importance in the age of AI and explored the new conceptualization of semantic brand score. And these are the 6 sources from which the material for this module was taken. Thank you.