Role of Artificial Intelligence in evaluation of customer feedback in fashion sector

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Abstract

The article reviews artificial intelligence with the improvement of customer experience on online and offline fashion purchases. The presence of AI in the retail business is turning into a vital part of the customer experience. AI attempts to disclose approaches to interpret with the end goal for organizations to make a genuine use out of them, either online or offline. It provides additional knowledge on how this experience of AI could be improved in later fashion purchases and how it will undoubtedly be part of the everyday customer experience.

Key words: AI, Customer experience, Fashion, Online, Offline.

1 Introduction

The Fourth industrial revolution introduced by the digital transformation is allowing the fashion industry, like many other sectors, to increase its capacity to produce and use data that was not previously technically or financially feasible. The most important impact on production and distribution is yet to come. In a recent interview (March 6, 2019) Federico Marchetti, CIO and founder of YOOX talks about how Artificial Intelligence (AI) is not only helping to revolutionize the production - the brand "8" is produced by YOOX through AI-but also in selling and marketing, since big data and AI will allow each customer to have his/her own homepage.

Artificial Intelligence has been around since 1956 and has made massive rise: beating the best human at chess, beating the best human at complex strategy game. Recently brands have started to adopt this technology for the core service. There is no doubt that the relationship between machine and human has changed. AI covers computing technology that can do things typically requiring human intelligence, from understanding language and recognizing visuals to making plans and solving problems. Artificial Intelligence has been gaining lots of attention in the recent months, and is a growing technology used in different fields. Through the collection of organized data, AI and its algorithm has the ability to take out useful, meaningful information. Providing a full customer experience is the goal of every brand, and AI is more and more incorporated in it. It is believed that "By 2020, 85% of the customer interactions will be managed without human" – Gartner and we can already notice that AI has been more than present in our past shopping experiences, either online or offline. The main objectives in its use for customer experience are to improve it, by time and efficiency, it allows us to answer easy questions that doesn't need to be asked anymore, just by the use of specific information.

According to the Artificial Intelligence High Level Group of the European Commission (2019): "Artificial intelligence (AI) refers to systems that display intelligent behaviour by analysing their environment and taking actions with some degree of autonomy to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g. Advanced robots, autonomous cars, drones or Internet of Things applications)".

Due to the online antagonism, many e-stores give to customer the opportunity to personalize the pages so that they can use it more easily. This is very expensive process as it needs several employees to work on this kind of system implementation.

This is the reason that many researchers are working in finding and evaluating customer aids in their shopping. Different studies allow an imitation of the virtual shopping of users. Many experiments used a behavioral approach, and the results has shown that a personalized page is not always the best customer aid function for all the users in comparison with simpler ones [1].

The time has come to restyle the fashion industry business which has been the embodiment of styling for quite a long time. It is the circumstance of the pandemic which causes such changes inescapable. The progressing pandemic (COVID) has constrained the style business to vamp up the advances which can make individuals more secure just as give the client's an enhancing experience. Fashion Industry is viewed as perhaps the most serious business sectors where something which is moving today may end up in the corner the following day. In the background of the pandemic, the AI can be utilized as of the most brilliant instrument to help the interests of the clients. At the present time, it has been utilized to expand the efficiency of the assembling of the garments and the smooth working of ventures. We have just seen the "recommendations dependent on what you have seen" on different OTT stages like Netflix, Amazon, and a plenty of

others. The current climate esteems individual experience as the most noteworthy. The steadily expanding request of shoppers for profoundly customized design style, the requirement for improved stock administration, the expanding impact of advanced media on style decision, and the need to recognize significant purchasing patterns have been not many key drivers of AI in style.

The AI in the Fashion Industry is anticipated to grow at a CAGR of ~39.17% during the forecast period 2020–2026(Research, 2020).This report endows comprehensive research about the current and the competitive trends following the usage of AI in the fashion industry. There has been a enormous demand for AI in the fashion industry and this is major because of the escalating influence of social media on the fashionist as industry. The increasing popularity of tailor made experience is the driving force behind the demand for AI.

AI proposes tremendous potentials for better services to customers and energize profits to the fashion, but getting into the area like customer service is not that important, which could very well be the thing that saves fashion brands and retailers from the ambush of Amazon etc. But success for offline stores now depends on how sales events are arranged and managed — and that means accurately predicting discounts to drive in-store shoppers. This is just one area where AI can shine: not only enhancing discounts, concessions etc, but also shaping territorial allocation of stock, taking in consideration the supply chain and its distribution. Behind many fashion brands is a highly complex supply chain. The infamously fast-to-fabricate H&M hit a drop in sales last quarter, and told shareholders that it was sitting on $4.3 billion in unsold merchandise. This is a problem that AI can solve [2].

The choice of channel is especially influenced by the kind of product and moreover, within the case of fashion, the consumer's mood may be a key determinative element [3,4]. Hence, customers square measure additional seemingly to pick out a physical store once they buy epicurean fashion product as a result of sturdy physical environments elevate the mood through opportunities for social interaction, product analysis, and sensory stimulation. However, recent information show that customers consider on-line fashion as a style of diversion, devoting their leisure to search for garments on-line.

Customer experience in shopping through AI

The increasing concentrate on client expertise arises as a result of customers currently move with corporations through myriad touch points in multiple channels and media, leading to more advanced client journeys Understanding client expertise, experiences and therefore the client journey over time is essential for companies. Customers currently move with companies through myriad bit points in multiple channels and media, and client experiences a lot of social in nature. These changes need companies to integrate multiple business functions, and even external partners, in making and delivering positive client experiences. Online fashion searching as associate amusing and gratifying activity, it would be valuable to research however the amount of expertise in shopping for wear online will influence consumers' perceptions and motivations to shop for in numerous channels. In marketing practice, we observe a strong use of such customer feedback metrics as an easy measurement of the customer experience.

In Schmitt's framework, customer experience management consists of five steps:

(1) analyzing the experiential world of the customers, (2) building the experiential platform, (3) designing the brand experience, (4) structuring the customer experience, and (5) engaging in continuous innovation. In this discussion, customer touch points do not have a prominent position. Herhausen et al. (2015) report that online–offline channel integration reduces perceived risk of the

online store and increases perceived quality of the online channel, resulting in positive choice effects for the online channel and reduced cannibalization in the offline channel [5].

• Chatbots or AI Smart Assistants:
The increasing scale and granularity of personalization in online fashion would be impossible to manage without AI applications. The most popular services for personalized online shopping use chatbots or AI smart assistants. These are virtual machines that interact with customers via chat, responding to customer service inquiries, helping users navigate ranges online and in-store, recommending clothing and accessories that best suit a specific customer as if they were human shopping assistants working 24 hours a day.
Chatbots can be divided in two categories: scripted and artificially intelligent.
Scripted chatbots are able to follow only a predetermined set of rules. It means that they are only able to answer the questions they are programmed for. Artificially intelligent chatbots are instead able to interpret human language and are capable of coming up with answers to question that have not been predefined. Furthermore, there are specialized chatbots specifically for retail applications [6].

Image Search:
Personalized shopping is also achieved using AI applications based on computer vision and augmented and virtual reality. Indeed, fashion is probably one of the industries that relies the most on images. Image search usually refers to the process of finding images using a text input. Search engines as Google introduced this possibility since 2001.

• Personal AI Stylist:
Having a Personal stylist would represent the top of personalization, but for an average citizen it would be unaffordable. AI is making this possible by creating personal virtual AI stylist. This product is the culmination of the technologies presented so far: natural language processing, natural language understanding, computer visions, neural networks and various types of machine learning.

Applications of AI to Fashion
Fashion is one of the most valuable sectors in the world. Its estimated worth is about $3 trillion, representing 2% of Global Domestic Product. However, this industry has remained quite traditional for decades. As the digital transformation progresses, it is also imposing profound transformations on the fashion industry. In particular, the abundance of data made available by the use of digital technologies has enabled the diffusion of many applications of AI in this industry. The most widespread applications are in the domain of customer services, bringing the ability to capture the trend of customer personalization by enhancing customer experience online and in stores. Schneider (2017) estimates that AI will manage up to 85% of all B2C interactions by 2020.

The following queries arise
• How does a further conceptualized Customer Experience construct relate to other major constructs in customer management and shopping?
• How should organizations be structured in order to successfully manage the customer experience?
• How AI is affecting the purchase behavior of customer (Online or Offline)

AI in online fashion industry

AI has been mostly used on online platforms, such as online shopping malls. AI is changing jobs (not replacing them) and augmenting human tasks in consumer goods, manufacturing, customer service and many more verticals. In retail and fashion, the biggest opportunities are in trend forecasting and better supply chain management. Chatbots are very well implemented, they can answer questions, and guide the customer through his online shopping experience, by helping him and even recommending items that could be liked or matching the already purchased ones. This can be done thanks to the data collected during the time the customer was browsing the website, his past shopping experiences and matching other users' data. By doing so, the AI can provide a personalized experience to each customer, which is similar to offline shopping experience with an assistant but provided at distance. Furthermore, Artificial Intelligence is closely linked with shopping applications using Augmented Reality as well as computer vision-driven image recognition and predictive inventory. Augmented Reality, or AR, can be defined by a virtual interface adding to the real-world complementary elements, such as texts, sounds, animations, and virtual objects that can be clothes. It works thanks to a camera, jointed to another device which can be a smart phone, glasses, a helmet or a screen. The real world and the virtual information are connected together through geo-localization and captors put inside the device, so that the user is well situated in the field he is standing in. As an example of AR used in fashion retail, Alibaba is a multichannel application, that is to say that many brands items are sold through its virtual wardrobe, allowing customers to recall what they have tried on in-store while they also can read other buyers' or sellers' recommendations, so that customers are able to make one piece of clothes matching with other brands' ones [7]. In few words, Fashion AI innovation allows us to acquire a very wide sight of the trendy products in a well personalized way.

Ecommerce firms in the service aspects that motivate customer satisfaction, belief, and loyalty. Customer service is an important feature that should be built with proper applications. Customer Engagement Services, Website interface properties, and other reliable services leads to customer satisfaction [8]. The role of innovation in gaining customer satisfaction has been portrayed [9]. The researcher states that Virtual Reality, Augmented Reality, and Artificial Intelligence play a key innovation role in providing unique service for customers and thereby they get satisfied. Customer satisfaction leads to customer delight and customer retention that values customer experience.

AI in offline fashion industry

Several are the innovation technologies that stores are trying to introduce as a new way of customer experience. Nowadays Fashion AI is growing as a system used to accurately observe and learn how to help the consumers in their style choices depending on what clothes they have tried in a store. One of these Fashion innovative devices consists in a screen able to recognize the clothes chosen and worn by a customer, and to suggest him or her other items matching with the tried one. Some of these screens are called smart mirrors, installed into stores' changing rooms. There use is mostly oriented in the help for consumers to find the articles in the boutique. This is called the customer experience improvement. E-commerce is more and more developing; offline stores are still going to stay sustainable thanks to the new technologies' investments. However, we could be asking if this kind of technical innovations in offline retail will continue to preserve this movement to keep being modern and attractive. Indeed, despite technologies being a precious help for both customers and retailers, the constant evolution endangers the offline area to be quickly out of fashion. So, what could be able to save this sector? The winning recipe may consist in the alliance

of humanity and technology.AI in Fashion: CRM & Marketing business has proven benefits throughout the value chain: Reduction in the Operational Costs, Increase in Operational Efficiency, Support more Sustainable Practices, Omni channel Brand Experience.

AI as true omnichannel shopping for fashion industry

AI renders new fashion designs complete with sewing patterns using a powerful algorithm that studies past designs and future trends. Retailers may opt to directly submit AI-designed apparel to production or integrate this as an additional step to automate the process of pattern making and fitting.

Human designers can then make alterations on these pre-designed garments to significantly speed up design to market time. By automating fabric quality control, pattern checks, colour matching and defect identification, AI scales the manufacturing process in fashion. Manual production processes are completed with improved precision by AI at a fraction of the time.

AI acts as a Predictive analyst as it analyses business success at a per-attribute level by means of automated product labelling. Buyers are not only told about the goods that perform well, but also about detailed features such as color, prints, sleeves, necklines, and more. In addition, instead of looking at patterns and product results at the end of each season as a snapshot, AI offers real-time information to observe changing trends and stock performance as they occur. Buying and merchandising teams should also follow a constructive approach to combat customer demand as it emerges and remain relevant at all times.

AI helps a retailer to consider returning consumers at any point of interaction, irrespective of the platforms in which they have interacted in the past, completely breaking the limits of conventional retail. Connecting data from both digital and traditional retail outlets under one umbrella ensures that a loyal customer will obtain for the first time in the physical store of a retailer or at another venue.

Smart Mirrors at the online stores turn their store into an experience centre, they incorporate AI technology into a range of customer touch points on the shop floor. In order to make personalised product and outfit suggestions, AI-powered smart mirrors directly communicate with the consumer. This encourages the exploration of goods and decreases fatigue from an abundance of options. AI uses visual detection and key product attributes to acclaim visually alike alternatives for each product on a fashion retailer's online store. When a product goes out of stock or size, customers are redirected to multiple relevant product pages on the retailer's website. They can easily find what they are looking for without the hassle of restarting product search, which often leads to frustration and site abandonment. Using similarity recommendations increases customer engagement and reduces sales opportunities lost to competitors.

Key Technologies for the Future of Fashion

How is the fashion industry interacting with digital technologies? And in particular, what are the most relevant technologies for the future of fashion? Alcimed (2017), a French consulting company, identifies the following 11 technologies as key to ensure the agility and competitiveness of the French fashion industry:
• Cloud
• Big Data
• Artificial Intelligence
• Cybersecurity
• Tags

• RFID
• IoT
• Robots/Cobots
• Drones
• Additive manufacturing
• Immersive technologies

Artificial intelligence and fashion
Artificial Intelligence as a Game Changer
The fashion industry is at a turning point. The McKinsey Global Fashion Index (2018) forecasts that industry sales growth will triple from 2016 to 2018, from 1.5% to between 3.5% to 4.5%. This growth is characterized by two phenomena: 1) the West will no longer play the major role in fashion sales and more than half of apparel sales will come from emerging market countries across Asia-Pacific, Latin America and other regions; 2) the adoption of digital technologies such as mobile internet, advanced analytics, virtual and augmented reality, advanced robotics and artificial intelligence are profoundly changing the industry and setting the stage for a strong trend towards a decisive phase of digital adoption by mainstream consumers; these processes are geared to match some specific trends in customer and enterprise behavior

A futuristic outlook
"Fashion is not a winner of the pandemic," he said. "As a category we are a loser, but as an online channel we are a winner from Covid-19."(Weiss,2021). Online platforms are also strengthening their position in the fashion sector. Platforms such as Amazon, Zalando and Myntra are promoting their own private label fashion offerings.
They are also differentiating their offering in specific sectors such as sportswear or premium and luxury segments. At the same time, fashion brands have to figure out how to collaborate in a mutually convenient way with platforms to avoid that not only their fashion brand but also their customers' data could be used by platforms to build their own label-collections.AI provides multiple solutions for fashion retailers to more effectively address each pain point in the omni channel customer journey and deliver a better brand experience that sets them apart from the competition.
However, integrating AI into a fashion business is like finding the right suit: one size does not fit all and the best fit will be achieved through a tailored application.
Fashion retailers who leverage AI as Augmentative Intelligence to supercharge their existing business model will scale their resources, amplify their core strengths, be empowered by data-driven insight to overcome their weaknesses and maximize their market penetration as a brand. Growing market share and revenue while cutting down operational costs means an increasingly profitable business.
For fashion and product designers, machine learning techniques may be beneficial.
Based on historical and real-time data, they may take advantage of predictive analysis of future patterns. In improving the existing recommendation engines, which currently rely on collaborative or content-based filtering, this can also prove promising. These engines can be improved by integrating with consumer data from social media and real-time trends from fashion blogs, magazines and other social networks such as Pinterest, Instagram.

AI is starting to be used extensively in the fashion industry, in particular to improve customer experience both online and off. Trend forecasting, supply chain management and price optimizations are also widely employed applications in the industry. Additional and more tailored applications are exploited by some companies of a larger size or with also a particularly strong presence in the online or off-line markets.

The "datafication of fashion" – the capacity to create digital data in relation to fashion products and production processes – that is making the fashion sector both an important consumer and supplier of data, which proves very useful in informing production decisions, improving planning and logistics and customizing products.

Moreover, fashion data are also used to feed into the rest of the value chain: wholesalers, retailers, finance and product input sectors such as textiles and leather.

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