# **Customer Advocacy**

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The rise of online social networks has revolutionized the way businesses and consumers interact, creating new opportunities for customer word-of-mouth (WoM) and brand advocacy.

customer advocacy online CE knowledge graph knowledge graph construction

## 1. Introduction

The advent of online social networks has developed the way businesses and consumers interact, creating fertile ground for shared interests, perspectives, and objectives. This pervasive connectivity has engendered a multitude of communication channels between companies and their existing and potential customers, presenting an unprecedented opportunity for businesses to perceive the market as a dynamic "conversation" unfolding in real time <sup>[1][2]</sup>. Positive customer word-of-mouth (WoM) represents a pivotal facet of this discourse. It encompasses the actions of satisfied customers who enthusiastically disseminate their favorable experiences, whether by recommending products or services to their social circles, leaving glowing reviews on digital platforms, or actively sharing positive feedback via social media channels <sup>[2]</sup>. Such endorsements wield substantial influence, as they emanate from trusted sources and significantly impact consumer decision-making processes <sup>[4]</sup>. Conversely, negative customer WoM pertains to dissatisfied individuals sharing unfavorable experiences, manifesting through the posting of adverse reviews or critical responses to brands' social media content. The potential repercussions of negative WoM cannot be underestimated, as it has the potential to tarnish a company's reputation and undermine sales performance. Consequently, comprehending and effectively managing the spectrum of customer WoM, encompassing both positive and negative expressions, assumes paramount importance for businesses striving to cultivate and sustain a positive brand image while meaningfully engaging with their target audience <sup>[5]</sup>.

In recent years, brands have embraced the trend of engaging and communicating with consumers through online social media. The comments and interactions of customers on these platforms carry valuable messages that are crucial for businesses to establish and nurture strong customer relationships <sup>[6]</sup>. Consequently, numerous studies have emerged to address the growing significance of social customer-brand interactions. One particular research direction has focused on guiding for enhancing CE <sup>[7]</sup>. Within this scope, artificial intelligence (AI) has been integrated to leverage the wealth of social data available. For instance, Perez-Vega et al. <sup>[8]</sup> proposed a conceptual framework that elucidates how businesses and consumers can enhance the outcomes of both solicited and unsolicited online customer interactions. The authors identified various forms of online CE behaviors, initiated by the firm or the customer, that serve as stimuli for AI analysis of customer-related information. This analysis leads to AI-generated and human responses, shaping the future contexts of online CE.

### 2. Customer Advocacy in Online Environments

In the digital age, the notion of customer advocacy has undergone a profound metamorphosis. No longer confined to whispered recommendations among friends or local community gatherings, advocacy has now transcended geographical boundaries and time zones <sup>[9]</sup>. It manifests through tweets, shares, comments, and reviews on the expansive canvas of the internet <sup>[10]</sup>. At its core, customer advocacy on social media represents a potent fusion of authenticity and amplification. It is the unscripted voice of a satisfied customer, resonating across the digital realm. These advocates are not bound by corporate contracts or scripted endorsements; they are driven by their genuine affinity for a brand's products or services <sup>[11]</sup>.

Brand advocacy encompasses the proactive promotion and support of customers' interests and requirements within an organizational context <sup>[12]</sup>. It entails championing the voices of customers to ensure their perspectives are duly considered in decision-making processes and diligently addressing their pain points and needs to enhance the overall customer experience <sup>[13]</sup>. Customer advocacy can be facilitated by a dedicated team specifically focused on advocating for customers, or it can be embraced as an individual commitment by employees who are genuinely passionate about enhancing the customer experience. The ultimate objective of customer advocacy is to establish a symbiotic relationship between the organization and its customers, characterized by positivity and mutual benefit. By actively engaging with customers through social media platforms and other online channels, businesses can foster a sense of community and cultivate brand loyalty. This, in turn, has the potential to transform customers into advocates who actively promote and endorse the business to others, amplifying its reach and impact <sup>[14]</sup>.

The study of customer advocacy in this dynamic landscape is a key aspect for businesses aiming to navigate the complex maze of online interactions, leverage the power of authentic endorsements, and build lasting relationships with their digitally empowered customer base. In this context, various attempts have been made to tackle this issue. For example, Kulikovskaja et al. <sup>[15]</sup> reported how social media marketing content can stimulate social media-based customer engagement and subsequently lead to marketing outcomes. In particular, the authors introduced two new consequence variables, word-of-mouth (WOM) and customer loyalty, thereby providing a more comprehensive view of the outcomes of customer engagement. This not only helps in understanding the immediate impact of engagement but also the long-term effects on customer behavior. Another study examined the significance of sentiment analysis in customer engagement <sup>[16]</sup>. The authors developed a machine learning model to detect Conversation Polarity Change (CPC) to detect the ultimate sentiment polarity that customers will harbor as their conversations evolve with the brand. Modeling customer engagement on social media has also been reported in various industries, including transportation <sup>[17]</sup>, finance <sup>[18]</sup>, healthcare <sup>[19]</sup>, sports <sup>[20]</sup>, etc.

#### **3. Social Customer Advocacy Incorporating Knowledge Graphs**

The literature on modeling online customer advocacy incorporating AI has made significant strides in various areas, such as extracting engagement patterns <sup>[21]</sup>, examining brand engagement with both positive and negative valence <sup>[22]</sup>, assessing the return on investment of advocacy efforts <sup>[23]</sup>, and identifying factors influencing online CE <sup>[24]</sup>. In

a particular AI domain, KGs have received great attention due to their abstract underlying structure <sup>[25][26][27]</sup>. For example, Yu et al. <sup>[28]</sup> developed a framework called "FolkScope" that aims to construct a KG for understanding the structure of human intentions related to purchasing items. Since common knowledge is often implicit and not explicitly expressed, extracting information becomes challenging. To address this, the authors propose a novel approach that combines the power of large language models (LLMs) with human-in-the-loop annotation to semi-automatically construct the knowledge graph. The LLMs are utilized to generate intention assertions using e-commerce-specific prompts, which help explain shopping behaviors. Constructing a KG for the fashion industry is proposed in <sup>[29]</sup>. The constructed user-item KG assisted the author in mitigating the cold-start problem. Building a KG for a recommender system in the context of CE was also discussed in <sup>[30][31][32]</sup>.

An attempt to model customer understanding was made by <sup>[33]</sup>, whereby the authors proposed a solution that involves formalizing the interaction between customer requests and enterprise offerings by leveraging Enterprise Knowledge Graphs (EKG) as a means to represent enterprise information in a way that is easily interpretable by both humans and machines. Specifically, they developed a solution to identify customer requirements from free text and represent them in terms of an EKG. Customer segmentation is proposed in <sup>[34]</sup>. The authors proposed an unsupervised method for segmenting customers based on their behavioral data. They utilized a publicly available dataset consisting of 2.9 million beer reviews covering over 110,000 brands over a span of 12 years. The authors modeled the sequences of beer consumption as KGs and employed KG embedding models to learn representations of the data. They then apply off-the-shelf cluster analysis techniques to identify distinct clusters of beer customers. Customer segmentation and clustering incorporating KG technology were also discussed and reported in <sup>[35][36]</sup>.

However, a comprehensive analysis of the broader social conversations between brands and their customers, specifically in terms of identifying advocates through textual inference derived from these dialogues, has been lacking. Hence, researchers' study presents a novel approach that integrates social media data as well as various knowledge repositories to gain deeper insights into the inferred relationships between brands' tweets and customers' replies.

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