



THE TENDENCIES OF DEVELOPMENT OF DIGITAL MARKETING TECHNOLOGIES IN GARMENT AND KNITTING ENTERPRISES

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Abstract. *The current article concentrates on the tendencies of digital marketing technologies, digitalization and the studies frameworks of digital marketing technologies use in garment, knitting, textile enterprises, At the same time, it studies the elements of digital marketing technologies being used in garment and textile enterprises, as well as digital technologies being used in garment, textile, apparel production industries and in the field of fashion.*

Keywords: *digital marketing, digitalization, garment, textile, CAD, CAM, fashion.*

ТИКУВ-ТРИКОТАЖ КОРХОНАЛАРИДА РАҚАМЛИ МАРКЕТИНГ ТЕХНОЛОГИЯЛАРИ РИВОЖЛАНИШ ТЕНДЕНЦИЯЛАРИ

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Аннотация. *Ушбу мақолада рақамли маркетинг технологияларининг ривожланиш тенденциялари, рақамлаштириш ва тикув-трикотаж, кийим-кечак, ва тўқимачилик корхоналарида рақамли маркетинг технологияларини қўллашни ўрганиш асосларига эътибор қаратилади. Шунингдек, унда тикув-трикотаж ва тўқимачилик корхоналарида рақамли маркетинг технологияларидан фойдаланиш элементлари, ҳамда, тикув-трикотаж, тўқимачилик, кийим-кечак ва мода саноатида рақамли технологияларни қўллаш масалалари ўрганилади.*

Калит сўзлар: *рақамли маркетинг, рақамлаштириш, кийим-кечак, тўқимачилик, CAD, CAM, мода.*

ТЕНДЕНЦИИ РАЗВИТИЯ ЦИФРОВЫХ МАРКЕТИНГОВЫХ ТЕХНОЛОГИЙ НА ШВЕЙНО-ТРИКОТАЖНЫХ ПРЕДПРИЯТИЯХ

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Аннотация. *Данная статья концентрируется на тенденциях развития цифровых маркетинговых технологий, цифровизации и основам изучения применения цифровых маркетинговых технологий на швейно-трикотажных и текстильных предприятиях. Одновременно рассматриваются элементы использования цифровых маркетинговых технологий на швейных и текстильных предприятиях, а также применение цифровых технологий в швейной, текстильной, швейной промышленности и в сфере моды.*

Ключевые слова: *цифровой маркетинг, цифровизация, одежда, текстиль, CAD, CAM, мода.*

Introduction.

In the period of transformation to digital technologies, the advancement of digital marketing technologies is crucial for all businesses regardless of their types, sizes, particularly in sectors such as textiles, garment, knitting products production, clothing, and fashion. As technology progresses, the platforms and digital marketing tools encompass aspects such search engine optimization, social media channels, corporate websites as well as 3D printing, CAM computer aided manufacturing, computer aided design CAD. Due to the reason that these elements are essential for increasing market share, enhancing brand visibility, and fostering close relationships with customers, which together provide a significant competitive edge in ever-evolving markets. By implementing digital marketing technologies, businesses can stay ahead including in the field of garment, knitting, apparel, clothes production and fashion area. in the competitive landscape.

Literature review.

As digital technology continues to advance rapidly, the promotional methods within the fashion sector have truly undergone notable transformations. Traditional marketing approaches, such as magazine advertisements and fashion displays, are slowly being displaced by social media marketing on platforms such as Instagram and TikTok. These social media platforms have emerged as crucial tools for fashion brands to connect with the desired audience. Moreover, increasing potential of online commerce has empowered companies to market their products directly to consumers. Consequently, digital platforms have evolved into vital determinants of whether fashion brands can thrive in a competitive marketplace. Moreover, digital platforms have profoundly changed the way consumers shop today. New shopping methods, such as social e-commerce allow consumers to directly access fashion information and make purchasing decisions through the platform, significantly make simpler the shopping experience. Digital platforms have enhanced consumer involvement by boosting the interaction between shoppers and brands, and the emergence of user-generated content and the influencer economy has further strengthened the connection between consumers and brands. Additionally, digital platforms assist fashion brands in crafting and conveying their brand identity, and by collaborating with so called and well known as key opinion leaders and influencers, in that way brands can rapidly enhance the visibility. Digital media platforms facilitate a variety of marketing efforts, enabling brands to adapt culturally in various markets through precise data analysis and tailored digital marketing strategies, ensuring global uniformity while catering to local consumer demands. Furthermore, these platforms have given rise to innovative business models such as social e-commerce which has reshaped the sales channels within the fashion sector and allowed brands to interact more directly with their consumers. The direct-to-consumer (DTC) approach has also started to gain popularity, allowing brands to eliminate traditional intermediaries and engage directly with customers through different digital platforms. Thus, digital marketing development enhances sales efficiency and fosters customer loyalty. (Xu,2025).

Digital innovations and technologies, which drive evolution in manufacturing, business frameworks, and the essence of workforce, can be utilized across all enhancements of operations within companies and are employed to meet evolving customer expectations. As a consequence of the accelerated digital transformation initiatives within businesses during the Industry 4.0 era, manufacturing plants have begun to evolve into intelligent factories, resulting in increased adaptability in production processes, allowing for diverse products to be manufactured on a single production line (Yoşumaz and Özkara, 2019). The integration of digital technologies into the field of research, development, and production in textile and fashion design is increasingly prevalent. Numerous software advancements specifically aimed at these sectors are being adopted by mass production textile enterprises, companies and firms at a rapid temp. The duration from yarn designing process to the manufacturing phase of

products can now be managed with greater efficiency, allowing for better control over time and material expenditures. Due to rapid technological advancements and globalization, the fashion industry is undergoing a transformation. Within this new landscape, the responsibilities of fashion designers have expanded beyond simply crafting attractive sketches or producing stylish garments; thus, designers are now embracing collaborative, adaptable, versatile, and innovative working practices in response to contemporary changes (Nadasbaş, 2020). The world of fashion has enabled more exceptional designs at current, enhancing the industry by offering digital fashion events through virtual reality and augmented reality innovations. As technological advancements open new avenues for fashion world, digital technology and fashion are becoming more closely linked. The influence of artificial intelligence in the field of fashion, art, and digital creation is undeniable. In recent years, due to the crossing of digital technology and fashion, the so-called line between the two has begun to disappear. Remarkably imaginative and pioneering designs have emerged, with fashion brands leveraging data on consumer preferences in their collection designs and more effectively in product development. It is evident that the application of digital marketing and artificial intelligence technologies to comprehend consumer behavior and forecast trends considered as critical. Moreover, textiles, fashion, and technology have something in common, leading to the seamless emergence of innovative product development and imaginative design systems wherever fabrics, garments, accessories, and textiles are involved. Over the years, the current type of synergy has significantly influenced various systems, including design, production, and sales, integrating them with the textile enterprises, industry and adapting new digital technologies accordingly. During the process of creating garment designs, technology has been a crucial element in the virtual crafting of samples using three-dimensional design software. (Tokgöz, S. 2024).

Digital knitting has truly transformed manufacturing by enhancing accuracy and eco-friendliness. Utilizing CAD and cutting-edge knitting software, complicated designs can be created swiftly and with little excess material. (Buss, 2001, as cited in Ahmed, 2025). CAD fosters environmental responsibility by streamlining design processes, decreasing material waste, minimizing prototyping, enhancing fabric utilization, and boosting production efficiency. By improving collaboration, accelerating product advancements, and eliminating manual tasks, it renders textile manufacturing more efficient, adaptable, and responsive to evolving consumer preferences through automation and seamless CAD-CAM integration (Zaharieva-Stoyanova, 2009 Kaspar, 2019, Sun, 2024 as cited in Ahmed, 2025) The primary focus of computer graphics in the knitting industry, specifically CAD/CAM frameworks, is the development of knitting designs and textiles. CAD stands for Computer Aided Design, while CAM refers to Computer Aided Manufacturing. (Dwivedi, 2013, as cited in Ahmed, 2025). Online retailing, online shopping, electronic commerce, stand as the leading online pursuit across the globe, and the primary advantage of advanced image recognition technologies in e-commerce exist in their capacity to rapidly and precisely identify products. Nonetheless, the trends of global digitization and the incorporation of cutting-edge technology within the apparel, knitting, garment sectors are progressing at quite slow pace, despite the growing need for automated solutions and the clarity of the challenges that have been widely examined previously. Fundamentally, the main obstacle relates to the extraction of clothing data such as general descriptions of garments, automated size extraction, and text information gathering from labels including size, brand, material composition and others (Paulauskaite-Taraseviciene, 2022). The digital revolution in textile area entails the integration of cutting-edge technologies, including IoT, AI, blockchain, and big data analysis, into traditional textile production and supply chain operations. These digital innovations foster more sustainable practices within the textile sector. For instance, IoT devices can track and enhance energy usage, while blockchain guarantees material traceability and minimizes waste. The textile, garment, apparel sectors are experiencing a significant digital evolution driven by technological advancements and shifting consumer expectations. Innovations such as automation, artificial intelligence (AI), the Internet of Things (IoT), and 3D

printing are transforming the processes of textile design, manufacturing, and application. These advancements offer improved efficiency, sustainability, and flexibility, but they also introduce challenges that need to be confronted. A major advantage of digital evolution is the automation of tasks that require substantial labor. AI and machine learning (ML) play crucial roles in refining production methods by processing large amounts of data, spotting trends, and forecasting potential problems. For example, AI can predict defects, suggest machine modifications, or assess product demand, ensuring more seamless operations. Digitalization also facilitates product personalization and the just-in-time production of customized textiles, catering to consumer preferences. (Glogar et al., 2025).

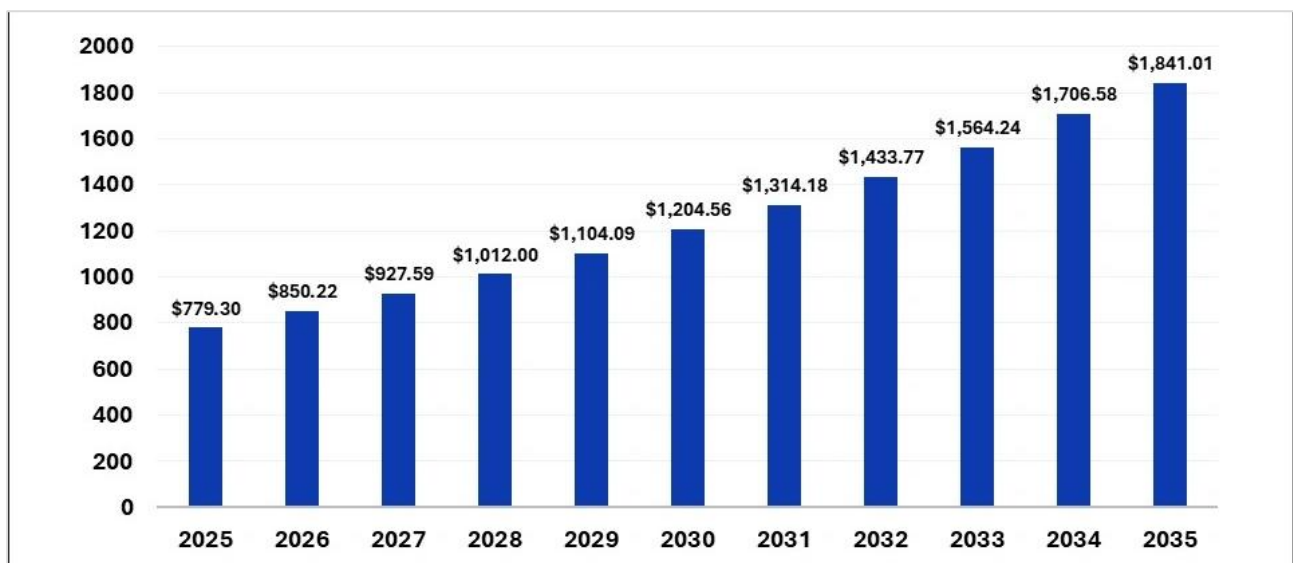
Research methodology.

The methodology that has been used in the current paper can be considered as the main use of secondary data, a variety of published sources from academic literature, inductive approach method to describe a variety of data scrutinized in the current article. Thereby, digital marketing technologies digital marketing technologies are pivotal in the garment, knitting, apparel, textile enterprises, and fashion industry, especially in the fashion sector.

Garment, knitting textile enterprises and fashion began to become quite successful due to digital technologies such as machine learning, artificial intelligence, internet of things, CAD, CAM and other ones.

Analysis and discussion of results.

The worldwide e-commerce apparel market as shown in Figure 1 is estimated to reach USD 779.30 billion in 2025 and expected to grow from USD 850.22 billion in 2026 to around USD 1,841.01 billion by 2035, evolving at a compound annual growth rate (CAGR) of 8.98% from 2026 to 2035. Moreover, e-commerce apparel market pertains to the digital arena for garments and accessories. It encompasses the buying and selling of these items through various digital platforms, including e-commerce marketplaces, online retail websites, and social media channels. The e-commerce apparel market has seen remarkable expansion in recent years, spurred by factors such as the rising usage of mobile devices, the ease of online shopping, and the accessibility of a wider variety of products and styles compared to what is typically found in brick-and-mortar stores.



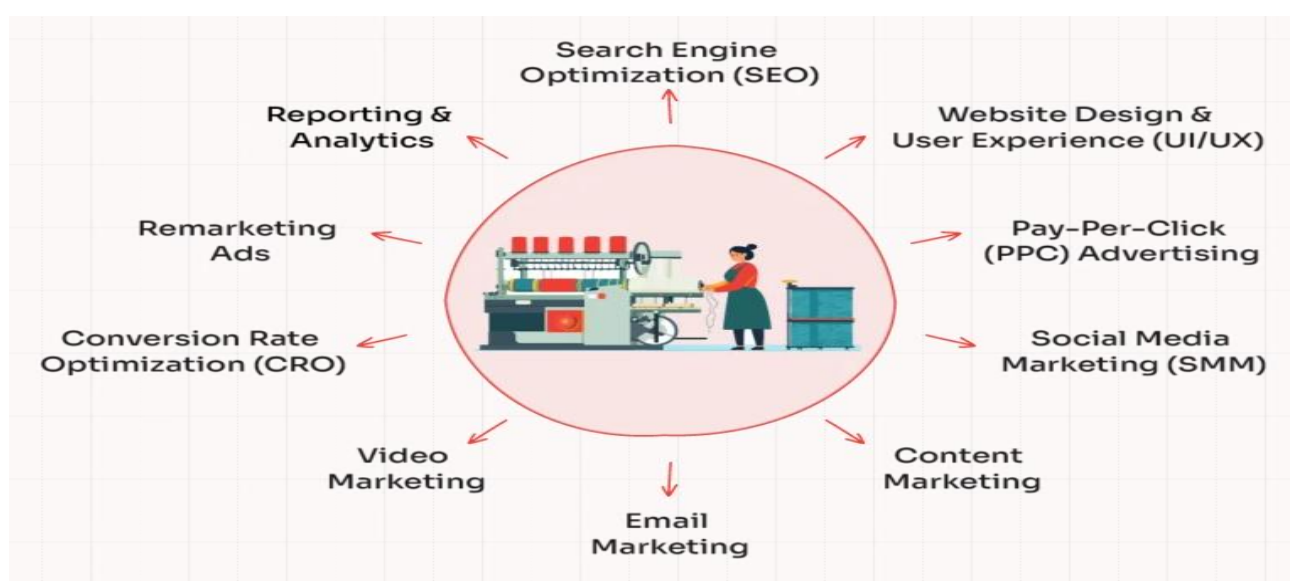
Picture 1. E-Commerce apparel market size 2025 to 2035 (USD billion)

Source: E-Commerce Apparel Market Size, Share, and Trends 2026 to 2035 (Precedence Research, 2026)

The e-commerce apparel market is anticipated to experience a substantial transformation during the forecast period due to the increasing inclination towards online shopping. More shoppers are switching to online purchasing for their clothing and accessory requirements as e-commerce becomes increasingly global and user-friendly. Online retail provides a more extensive selection of products and styles, along with the ease of shopping from consumers own houses.

The growing use of mobile gadgets, such as smartphones and tablets, has facilitated online shopping for consumers, even while they are on the move. Numerous e-commerce fashion retailers have optimized their sites and applications for mobile devices, enhancing the experience and convenience for customers seeking to browse and shop from their mobile devices. The increasing influence of social media worldwide is recognized as a crucial driver for the market. Social media channels have emerged as vital avenues for marketing and sales for online clothing retailers, with influencers and content created by users significantly boosting revenue. E-commerce garments, knitwear, clothing sellers can connect with a global audience, enabling them to extend their customer reach beyond local areas of the markets. Therefore, the ease that these platforms provide for merchants to broaden their operations across the globe is propelling the expansion of the online clothing market.

For garment, knitting products, textile producers, SEO serves as an essential approach to enhance online presence as shown in Figure 2 and engage with prospective buyers. At the same time, the internet interactions initiated through a search engine, optimizing your site guarantees that your business achieves a higher ranking in search results. For garment, knitting products, textile producers, a well-structured website is vital for transforming visitors into customers. Since 88% of online shoppers are less inclined to revisit a site after a poor user experience, investing in a user-friendly and visually appealing website is crucial. PPC advertising stands out as a highly efficient method for textile producers aiming to generate immediate web traffic. By devising targeted Google Ads campaigns centered on textile-related keywords, businesses can draw in relevant prospects actively searching for fabrics, textiles, or manufacturing solutions. Social media marketing is a key instrument for textile producers seeking to increase brand recognition, connect with potential clients, and display their products. Content marketing acts as a robust strategy for textile producers striving to establish themselves as thought leaders, foster trust with their audience, and improve their SEO initiatives. By developing personalized email campaigns, producers can directly interact with their buyers, distributors, and existing customers.



Picture 2. Essential digital marketing strategies and channels for textile manufacturers

Source: Digital Marketing For Textile Manufacturer (Tushar, 2024)

Conversion Rate Optimization (CRO) is critical for textile producers to convert website visitors into paying clients. Effective reporting and analytics are vital for textile producers to assess the effectiveness of their digital marketing strategies.

Conclusion and suggestions.

The modern world of garment, knitting, textile and apparel industries require the latest technologies by concentrating on use of digital marketing technologies, as well as apparel, knitwear manufacturing enterprises, textile firms, and the fashion sector significantly depend on digital marketing strategies to enhance brand visibility, engage with clients, and elevate sales via a variety of social media platforms and e-commerce. The integration of such digital marketing strategies enables tailored experiences, rapid adaptation to trends, and direct communication with customers.

Thereby, digital marketing technologies tailored for the garment and knitting sectors, as well as the fashion and apparel industries, can significantly enhance the operational effectiveness of these businesses. The implementation of variety of digital marketing technologies, tools is closely associated with improved key performance indicators, which feature heightened brand exposure, better engagement on social media platforms, and elevated rates of customer acquisition.

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