



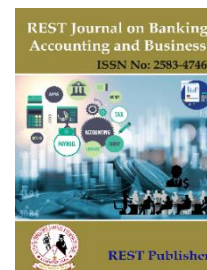
REST Journal on Banking, Accounting and Business

Vol: 3(4), December 2024

REST Publisher; ISSN: 2583 4746

Website: <http://restpublisher.com/journals/jbab/>

DOI: <https://doi.org/10.46632/jbab/3/4/7>



Video Generative AI in Digital Marketing: A SWOT Analysis on E-Commerce

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Abstract: Artificial Intelligence (AI) is reshaping the way various business processes are performed, most rapidly in digital marketing, due to its advanced computational capabilities. ECommerce companies are in advantageous position to adopt and reap the benefits of AI for many reasons including the readily available computational infrastructure and big data related to their users and processes. Meanwhile, big tech companies and startups are competing to create and improve generative AI models, that create high-definition videos based on inputs in the form of text, image or videos. The current research specifically aims to analyse the video outputs of various video generating AI models available for digital marketing purposes in ecommerce businesses and to rationally analyse how those video generative AI models benefit or affect e-commerce companies. To meet the research objectives, mixed methodologies of experimentation and content analysis were deployed. It was observed that the video outputs from the tested models were not yet suitable for digital marketing and appeared underdeveloped. Additionally, the SWOT analysis revealed advantages like low costs, alongside concerns such as intellectual property issues.

Keywords: generative AI, digital marketing, AI-generated videos, SWOT analysis, e-commerce.

1. INTRODUCTION

Artificial intelligence is already here, marking the start of an AI era. AI is making significant strides, transitioning from providing access to information at our fingertips to offering expertise at our fingertips. With the launch of OpenAI's off-spring ChatGPT in 2022, many have been using ChatGPT in their personal and professional lives regularly.

“Artificial intelligence (AI) is a technology that enables computers and machines to simulate human intelligence and problem solving capabilities”¹. Simply by this, AI can be understood as a replica of human cognitive abilities, such as thinking, reasoning, and decision-making. When it comes to ChatGPT, it is a generative artificial intelligence, or in short generative AI. “Generative AI is a type of AI that can create new content and ideas, including conversations, stories, images, videos, and music.”² There can be different types of generative AI application models, such as text-to-text, text-to-speech, text-to-image, text-to-video, image-to-video, video-to-video and others.

AI is crucial in the fourth industrial revolution, boosting business operations including HR, supply chain, and marketing, while encouraging adoption for competitiveness (Sami N. M. Abushammala et. al., 2022). This revolutionary technology is set to disrupt many industries in many different ways already. Right from the stage of product development to marketing, sales and after-sales, AI is already changing and will continue to change the way these activities are performed due to its unmatched computational capabilities.

With the boom in the use of internet and smartphone users in India, ecommerce industry has been experiencing significant growth—mainly in terms of funding, sales and userbase. The Ecommerce industry in India is characterized by smartphones, fashion and apparel, electronics and appliances, Food & FMCG, Furniture and home décor, beauty and personal care, and others, ranging from B2B, D2C, C2C and C2B segments.

2. E-COMMERCE LANDSCAPE IN INDIA

According to the E-Commerce Industry Report March 2024 by India Brand Equity Foundation (IBEF), Indian e-commerce achieved Gross Market Valuation of US\$ 60 billion in the year 2023. It is expected that the Indian e-commerce will grow at a CAGR of 27% to reach US\$ 163 billion by 2026. By 2030, it is estimated that the e-commerce market will reach US\$ 350 billion.

As per Inc42 Media's State of Indian Ecommerce Q1 2024 Report, this industry has received a venture capital funding of over US\$ 33 billion from the years 2014-2023. The Funding CAGR was at 22% in the post-covid period from 2020-2023. The industry has 25 Unicorns and 18 Soonicorns, with a combined valuation of over US \$89 billion and US\$ 6 billion respectively. Clearly, all this indicates that the Ecommerce is among the prominent industries in India.

AI is the latest technological disruptor and holds immense marketing transformation potential. (Sanjeev Varma et. al., 2021). Marketing—especially digital marketing—is among the first areas where AI can be leveraged for the optimum results. This is totally true in the ecommerce industry, given its edge over other companies to have ready access to the bigdata of its users and their processes, and existing digital infrastructure. They can use AI to target the right customers with the right products at the right time with more precision and perfection than ever before.

3. REVIEW OF LITERATURE

The realm of generative AI is rapidly evolving, particularly in video production, with significant implications for marketing and various industries. Studies by Nir Kshetri et al. (2024) and Will Douglas Heaven (2023, 2024) emphasize the transformative potential of AI in creating tailored content and improving marketing efficiency. The launch of sophisticated tools like OpenAI's Sora, capable of producing high-definition video content just from basic text descriptions, signals a major shift in content creation. Such advancements have diverse applications, from advertising to specialized fields such as neurosurgery (Mohamed, A.A et al., 2024).

However, there exists critical gaps in our understanding of AI-generated videos, particularly in the context of digital marketing for e-commerce. Thomas Buckley et al. (2024) discuss the potential impact on traditional content creation industries, there is a noticeable absence of research specifically examining the application and effectiveness of AI-generated videos in e-commerce marketing strategies. AI adoption in marketing is primarily occurring at an operational level, indicating a need for more strategic research in this area (Vysoká škola ekonomická v Praze, 2019). Given the raising concerns like accuracy, potential misuse, and societal impacts of generative AI technologies coupled with the rapid pace of technological advancement necessitate the need for a comprehensive evaluation of various video generative AI applications available for digital marketing purposes in e-commerce landscape.

4. RESEARCH GAP AND OBJECTIVES

The current article aims:

- to analyse video outputs generative AI applications so as to study their suitability for digital marketing in e-commerce.
- to evaluate the use of the video generative AI models in the e-commerce landscape.

5. RESEARCH METHODOLOGY

The present study employed a mixed methods research approach by experimenting and observing the video outputs produced by various popular video generative AI applications suitable for digital marketing purposes as well as a rational SWOT analysis of the deployment of such video generative AI models in the e-commerce landscape to meet the objectives of the current research. The data required for performing the observation and SWOT analysis was gathered from trustworthy, highly reputed journals, publications, and reports, including those from MIT Technology Review and Inc52. To meet the first objective, video outputs from available video generative AI models have been generated and observed for its effectiveness. For the second objective, existing literature secondary data has been evaluated critically and a SWOT Analysis has been performed on e-commerce businesses.

6. DIGITAL MARKETING USING VIDEO GENERATIVE AI

Many companies now have an exclusive digital marketing department, working independently, unaffected by the marketing department. Digital marketing, in easy terms, means marketing on digital platforms including internet, emails, social media, websites, apps, metaverses like AR/VR worlds. Different forms of digital marketing include video marketing, search engine marketing, content marketing, social media marketing, email marketing, affiliate and influencer marketing.

Marketers today closely monitor customer's journeys in real time through data metrics, thereby tailoring content to preferred digital channels. This enables them to identify seasonal trends and also make personalized promotions. And AI only adds to that. Digital marketing combined with video generative AI technology can unlock creativity and innovations in advertising, drive sales and profits, and increase an organization's presence online, reaching more and more potential customers.

On February 15, 2024, OpenAI officially announced its new text-to-video generating AI model— Sora—that can generate high quality original videos of up to a minute length based on user prompts. Just like with ChatGPT, OpenAI surprised the world with its new model, Sora, a Japanese term meaning 'Sky'.

OpenAI's Sora can be truly ground-breaking when compared to previously created video generating AI research projects (on which research is still ongoing), such as Gen-2 by Runway, Make-A-Video by Meta, and Lumiere by Google, which used to create videos of not-so-great quality. But that's not the case with Sora, if one observes the original samples generated and displayed on OpenAI Sora's official website, the AI-generated videos are incredibly high definition and astoundingly realistic.

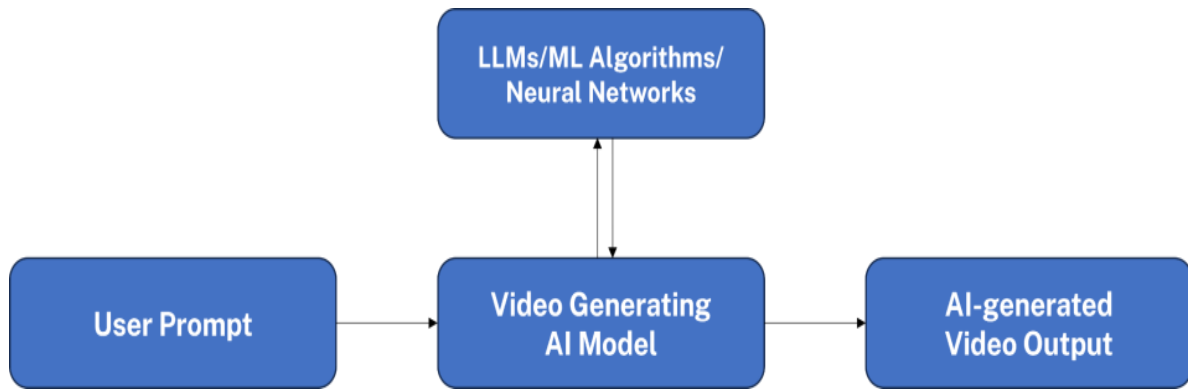
Similarly, like OpenAI, other existing companies and startups are working on this revolutionary video generative AI technology. See Table 2 below for a layout of all the popular video generating AI models.

Table 1. List of popular video generating AI models that can be used for digital marketing

Company	Name of the Model	Model Type(s)	Accessible URL
OpenAI	Sora	Text-to-Video	openai.com/sora
	VideoPoet	Text-to-Video	sites.research.google/videopoet
Google	Lumiere	Text-to-Video	lumiere-video.github.io
		Image-to-Video	
	Imagen	Text-to-Video	https://imagen.research.google/video/
Pika	Pika AI	Text-to-Video	1. pika.art 2. pikartai.com
		Image-to-Video	
		Video-to-Video	
Stability AI	Stable Video	Text-to-Video	1. stability.ai/stable-video 2. stablevideo.com
		Image-to-Video	
Runway	Gen-3 Alpha	Text-to-Video	https://runwayml.com/
		Image-to-Video	
		Video-to-Video	
Meta AI	Make-A-Video	Text-to-Video	https://makeavideo.studio

Source: Authors' own (prepared based on official websites)

Below is a simple visual representation of video-generating AI models.



Source: Authors' own work

FIGURE 1. Understanding the Video generating AI model

The user prompt can be a query or description given by the user by way of a text, an image or a video itself to create all-new video content through generative AI. These applications are developed based on architectures or models called Large Language Models (LLMs), for instance, GPT-4 or Llama, while some other generative AI applications can be developed based on highly advanced neural networks or machine learning algorithms. The models are trained on a variety of data sets, ranging from varying topics available on the internet and from other sources.

At the present moment, the above mentioned video generating models are not yet perfect. To experiment, we have generated videos out of the above models, which are presently available for the public to try (Note: Sora, Make-A-Video, Lumiere, Imagen and VideoPoet are not yet available for public trial). The results were not satisfying but definitely appreciative, given its ability to generate new video content out of images and a few command lines as a user prompt. The following are the observations based on the AI generated video outputs:

- Videos consider only a part of the user prompt, completely ignoring the whole context
- Length of these video clips ranged only from 3-4 seconds
- Videos displayed distorted human faces and hand fingers
- Unclear texts and logos
- Very poor sound effects

The experimented video results were not suitable for digital marketing purposes yet. These AI-generated videos look unripe. However, though it is very far-fetched for businesses to use these models for digital marketing purposes, it is to be noted that the models are being upgraded at a rapid pace.

Video generative AI applications like for instance, OpenAI's Sora, can transform the way businesses advertise their products using AI-generated videos on online platforms in an efficient and cost effective way. AI-generated videos are the future and seem unstoppable given the tremendous power of AI models and the impact they would create on online platforms. The increasing acceptance of short videos, typically ranging in length from fifteen seconds to up to and beyond one-minute YouTube Shorts and Instagram Reels, evidences this statement.

The potential of AI-generated videos is unimaginative. According to a Bloomberg article, OpenAI is taking its Sora to Hollywood film studios and directors to integrate this video generating AI model into their work. The film editors and professionals at production and animation studios are already using Runway's Gen-2 text-to-video service for editing, previsualization and storyboarding purposes.

Soon, we will likely see movies featuring shots—at least some—that are not human recorded but generated by AI models, and the same is true with respect to advertising commercials that will soon be set to run on digital media in the near future.

7. SWOT ANALYSIS OF VIDEO GENERATIVE AI IN E-COMMERCE DIGITAL MARKETING

TABLE 3. SWOT Analysis on the use of Video Generative AI in Digital Marketing within Ecommerce

Internal Factors	
Strengths	Weaknesses
Personalized promotions	Financial disabilities
Existing data infrastructure	Data Quality for AI-level
Boundary-less access to global markets	Under-trained workforce
Programmatic promotions with data insights	Challenges in compliance with tech-regulations
Optimized supply chain	Existing data privacy and security issues
External Factors	
Opportunities	Threats
Easy adaptation to changing market trends	Ethical and IPR Complications
Low-cost promotions	Uncertainties and ambiguities in AI Regulation
Increased online presence and brand value	Increased marketing competition
Surge in leads, sales and profitability	Geo-political concerns
Creative and innovative advertisements	Loss of human control over AI systems

Source: Authors' own

The e-commerce industry has strategic advantages over other industries when it comes to databases and digital infrastructure. Carefully crafted strategies to implement AI for generating videos and using them for digital marketing purposes can deliver best results as expected.

8. CONCLUSION

The invention of AI is turning as a boon for businesses and mankind. Its advanced capabilities to read, process, analyse, generate outputs and making complex decisions are really unmatched. Video generative AI models, though they require a lot of improvement, can transform the digital marketing practices of companies in the coming future. E-commerce companies already have an edge over other companies as they have access to vast volumes of their user data and existing digital infrastructure. They can reap the benefits of generative AI early and revolutionize their digital marketing practices with the power of video generating AI models. A SWOT analysis of the same has given a clear picture of this industry, helping e-commerce companies to plan way ahead into the better future.

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