

Cool Guru E-Commerce Website using Sentiment Analysis Prediction

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ABSTRACT

The Cool Guru is a brick-and-mortar establishment that has been repurposed into a fulfillment center. These distribution hubs are not accessible to the general public, allowing for ample inventory space and efficient order fulfillment. Cool Gurus offer an extensive and ever-expanding array of resources, enabling customers to purchase products online with options for same-day delivery or even within hours, as well as in-store pickup. While the concept is not novel, various companies, including Whole Foods, Walmart, Target, Bed Bath & Beyond, and numerous major clothing retailers, have employed similar strategies. However, with brick-and-mortar stores facing challenges during closures, the prevalence of Cool Gurus has surged. Our team is currently developing a Cool Guru utilizing NLP technology to analyze real-time customer feedback and sentiment, enabling us to automate product ranking and enhance customer satisfaction.

Keywords: Cool Guru, brick-and-mortar, lockdown, shoppers, Bed Bath & Beyond, Natural Language Processing, Sentiment Analysis.

I. INTRODUCTION

The E-Commerce platform, Cool Guru, harnesses the power of Sentiment Analysis Prediction within the innovative framework of the MERN Stack Project. This integration not only facilitates product sales but also enhances marketing strategies through the analysis of customer feedback. The surge in E-Commerce predates the

global onset of the COVID-19 pandemic, signalling a significant shift in consumer behaviour towards online purchasing.

As the pandemic unfolded, its impact accelerated the growth of E-Commerce, prompting businesses to reassess their retail strategies. Cool Guru's adaptation of dark store spaces exemplifies this trend, utilizing these facilities as

eCommerce warehouses and micro-fulfillment hubs. Named for their operational opacity to the public, dark stores are emerging as key components in sectors such as grocery, food, homeware, big box retail, and furniture industries.

Cool Guru establishments provide a fusion of online shopping ease and the accessibility of physical stores, culminating in an exceptional customer journey. With a foundation rooted in automation, these customer-centric spaces redefine the purchasing journey, enabling individuals to seamlessly place orders online for direct doorstep delivery or hassle-free pickup from designated collection points. As the retail landscape undergoes continuous transformation, Cool Guru's pioneering strategies remain at the vanguard, adeptly catering to the evolving tastes and requirements of contemporary consumers.

The utilization of advanced technologies like Sentiment Analysis Prediction within the MERN Stack Project underscores Cool Guru's commitment to enhancing customer satisfaction and refining marketing strategies. By delving into the nuances of customer feedback, Cool Guru can tailor its offerings to meet the evolving demands of its clientele, fostering brand loyalty and driving sales growth.

The rise of Cool Guru establishments, driven by the rapid expansion of E-Commerce, signifies a pivotal shift in retail dynamics. These adaptable spaces not only function as fulfillment centers but also represent a strategic response to the challenges presented by the pandemic. In the face of closures and limitations imposed on traditional brick-and-mortar stores, Cool Guru emerged as a nimble solution, effortlessly navigating the evolving retail landscape.

Moreover, the versatility of Cool Guru extends beyond the boundaries of E-Commerce, permeating various sectors including homeware, big box retail, and the furniture industry. Their seamless integration of online convenience with physical accessibility positions them as essential elements in modern retail strategies. As Cool Guru continues to innovate and refine its approach, these establishments are poised to play a fundamental role in shaping the future of retail, offering customers unprecedented convenience and efficiency.

II. LITERATURE SURVEY

Around four decades ago, E-commerce emerged as a groundbreaking concept. Dr. Robert Jacobson was among the first to recognize its potential and drive its adoption. Since then, E-commerce has revolutionized the way businesses operate, taking advantage of cutting-edge technologies, faster and more reliable internet connections, secure payment gateways, and widespread acceptance among both businesses and consumers.

Historically, many of the most successful E-commerce platforms began by focusing on book sales. This trend highlighted the significant demand for a wide range of books, from bestsellers to hard-to-find editions. Even today, many individuals prefer to search for websites that offer a variety of books and convenient home delivery options.

However, relying on just one website often isn't enough to meet the diverse needs of book enthusiasts. Instead, having a curated list of multiple websites is more practical and efficient. This way, you can compare prices, availability, and services, ensuring you get the best possible deal and the books you desire.

III. RELATED WORK

To store product information, user details, and other relevant data, we utilize a MongoDB database. For analysing customer feedback, we employ the NLTK module. When a customer purchases a product and provides feedback, this feedback is automatically analysed by our sentiment analysis server (a component of the project using NLTK and Python). Based on this analysis, our system updates the product's ranking. This ranking directly influences the product's visibility in real-time. Products with higher positive rankings will appear more prominently, and so on. Sentiment analysis is widely used in various fields, including E-commerce. Our goal is to implement this in real-time.

A. Technology Stack

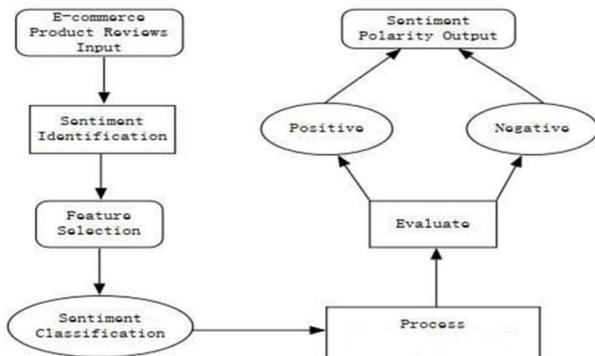
For Developing the Website:

Frontend: React JS, Tailwind CSS

Backend: Node JS, Express JS

Database: MongoDB

For Analysis: NLTK, Python



4. Multiple orders can be picked and collected simultaneously.
5. Orders are packed and shipped.

In essence, cool guru facilities offer all the essential features you would find in a traditional, customer-focused retail outlet, optimized for efficiency and speed.

IV. HOW DOES COOL GURU WORKS?

Cool guru facilities operate around the clock to meet online demand. Digitization and automation are crucial to the success of these facilities. However, companies looking to implement the cool guru concept do not need to invest heavily in full automation and AI technology.

The core functions of any cool guru facility can be defined. Unlike a traditional retail outlet, a cool guru is designed exclusively for functionality and rapid order fulfillment. Basic warehouse shelving is used to store inventory, strategically positioned for quick and efficient picking.

The order processing steps in cool guru facilities are similar to those in warehouse order fulfillment, though on a smaller scale:

1. Online orders are received and processed.
2. Orders are electronically transmitted to the shop floor.
3. Employees pick orders displayed on a digital screen attached to their shopping cart.

V. BENEFITS OF COOL GURU

Cool guru facilities offer the convenience of online shopping with the added benefit of immediate product delivery. They also help maintain safety and social distancing measures during the pandemic, which is a primary reason why cool guru facilities have become popular for quicker and contact-free shopping. These facilities provide a fast and efficient way to fulfill orders instantly, utilizing various distribution options to deliver products more effectively. This approach helps bring products closer to specific market segments.

A. Enhanced SKU Management

A significant advantage of the cool guru concept is its ability to improve SKU management by focusing on capabilities such as storage and click-and-collect services. This is especially beneficial for grocery stores, allowing them to manage a large number of SKUs effectively.

B. Product Range

The layout of a cool guru facility can be designed for optimized storage and efficient picking. Increased storage capacity leads to better product management, more space for a wide range of products, and quicker order fulfillment.

C. Inventory Control

Cool guru facilities also support better inventory control within the same geographic area. As these facilities operate without customers present, they can handle larger order volumes with improved inventory management.

VI. CHALLENGES OF COOL GURU

While cool guru facilities revitalized a struggling retail sector when it was needed most, operators have encountered several challenges along the way.

1. *Increased Transportation Costs:* Although cool guru facilities are strategically located to minimize logistical expenses, orders that require more extensive routes can increase transportation costs over time. Such orders incur additional handling expenses, leading to higher operational costs and the need for extra capital.
2. *Impact on In-Store Sales:* With restrictions now lifted, store owners are hoping for a return to traditional in-store shopping. However, it is difficult to predict consumer behavior and economic trends. As more people become accustomed to the convenience of home delivery, the cool guru model presents a significant challenge for retailers trying to regain foot traffic.
3. *Infrastructure Costs:* Depending on the scale of the operation, the initial setup cost for a cool guru facility can be substantial. This includes robust technological support, skilled labor, and a large operating area, among other requirements, which can pose a financial challenge for some businesses.

VII. WHY COOL GURU?

Retailers have been experimenting with back-end operations or cool guru facilities for various reasons, ranging from testing concepts to long-term strategies, for more than a couple of decades now. Given this, why are we focusing on them now? The answer is straightforward: the increasingly slim margins in retail, coupled with intense competition and rising customer expectations, have necessitated a shift. The COVID-19 pandemic significantly accelerated the adoption of cool guru facilities. With customers staying home during lockdowns, physical store visits dropped drastically, while visits to retailer websites surged. This led to a substantial increase

in customer registrations and a rapid expansion of the customer base.

Moreover, digital adoption in the past couple of years has made India conducive to E-commerce growth. By 2020, the number of Internet users in India surpassed 550 million, allowing online shopping platforms to reach roughly 41% of the population. This significant milestone marked the beginning of a futuristic digital pathway for India. The digital payment landscape is evolving rapidly, with more than one-third of the population using one or more of the 50+ wallet providers available in India. All these factors collectively make it easier for customers to shop online.

The changes in consumer shopping behavior during the lockdowns have paved the way for a business model centered around cool guru facilities. These facilities can meet the growing demand for online shopping and fast delivery while maintaining cost efficiency.

VIII. COOL GURU MARKET OUTLOOK

The cool guru market is projected to thrive at a robust CAGR of 38% from 2024 to 2034. The market is expected to surpass a market share of USD \$414.31 billion by 2024, up from a net worth of USD \$16.54 billion in 2024.

This research report on the market analysis of online systems and cool guru facilities illustrates how evolving lifestyles and the expanding reach of online shopping have driven the demand for these facilities.

The Direct-To-Consumer (D2C) model, another business strategy within B2C retail, is gaining traction. The increasing popularity of instant and faster delivery options represents a sophisticated method of storing groceries while seamlessly integrating with online delivery systems.

IX. CONCLUSION

Ordering products and managing inventories through cool guru facilities has been immensely beneficial for customers during the COVID-19 lockdown due to health concerns and government restrictions. This period has allowed many to appreciate the advantages and drawbacks of online shopping and the cool guru model. A significant benefit of cool guru facilities is their ability to reach rural areas and underserved sectors, ensuring product delivery even after lockdown restrictions were lifted.

With a large number of people ordering from online platforms, including cool guru facilities, the speed of delivery and the convenience of not having to visit stores have been major advantages. According to current statistics, there is a significant shift towards online shopping systems as rural and suburban areas are being upgraded with modern amenities. The adoption of online systems and the establishment of online stores by the general population have driven substantial growth.

The popularity and expansion of cool guru facilities in recent years suggest that this model will continue to thrive and evolve, providing customers with increasingly sophisticated features.

- Market size value in 2024: USD \$16.54 billion
- Market forecast value in 2024: USD \$414.31 billion
- Global growth rate 2024 to 2034: 38% CAGR
- Forecast period: 2024 to 2034

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