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Dark Store E-Commerce Website using Sentiment Analysis Prediction

Satish Tiwari[1], Shubham Mishra[2], Summy Kumar Verma[3], Venus Tanwar[4], Sreenu Banoth[5]
[1, 2, 3, 4]*UG Student, Department of Computer Science and Engineering, IIMT College of Engineering, Greater Noida, Uttar Pradesh, India*
[5]*Assistant Professor, Department of Computer Science and Engineering, IIMT College of Engineering, Greater Noida, Uttar Pradesh, India*

Abstract: ***The Dark Store is a physical store that has been closed and turned into a fulfilment centre. These distribution points are not open to the public, which allows more space for inventory and the ability to fill orders quickly and accurately. Dark Stores has the facility to provide customers with innumerable and expanding resources availability and provides options such as of buying online products, the very same-day delivery or even in instance of hours, or in-store pickup. However, this concept is not new.***
Companies that have used variations of this process include Whole Foods, Walmart, Target, Bed Bath & Beyond, and most major clothing retailers. But as brick-and-mortar stores struggled during the closures, the number of blind shops has risen dramatically.
The development of Dark Store, for which our team is working on uses the technology of NLP and analyses the real time sentiment of customer feedback and their review, on the basis of this results we plan to rank the products which automate the quality for the build-up customers.
Keywords: Dark store, brick-and-mortar, lockdown, shoppers, Bed Bath & beyond, Natural Language Processing, Sentiment Analysis.

I. INTRODUCTION

Dark Store an E-Commerce store uses Sentiment Analysis Prediction in and as technology of MERN Stack Project for selling products and analysis the feedback of the customer for improving the product marketing strategy.
The accelerated rise in E-Commerce and the drastic downfall or decline of in-store purchasing predated is the time when covid speeded and covered almost every cities and towns of the earth, but then the pandemic occasioned and relieved for a surge and growth in E-Commerce that has lot now businesses re-evaluating their retail space. Dark stores spaces are eCommerce warehouses that do use and acts as physical outlets, distribution centres or hubs for micro-fulfilment. The Dark stores got its name from being dark, that is they are only being used for fulfilment of online orders and closed for the public in general. Highly common to the grocery and food sectors market, dark stores are becoming prevalent and increasingly popular for its ease in fashion, as in like homeware, big box retail and the furniture industries.
These reliable customer-free, highly automated stores combine the strength of online shopping with the helping hand and convenience of a physical store to provide an optimal customer experience. All customer needs to do is to place an order online and have it delivered directly to their door or pick it up from a collection point as specified.

II. LITERATURE REVIEW

Around 40 times ago E-commerce was presented. The tenure was first assumed and chased by Dr. Robert Jacobson. Since also, E-commerce has helped number of companies grow by utilizing ultimate technologies and numerous advancements in internet connections, adjoined secure payment gateways, and extensively business and consumer acceptance.
In history there are that closely all popular E-Commerce blots had their inception by dealing books. There are still some who looks for the places where they can get popular and uncommon books and get them delivered to their home.
Still, you see that a single website isn't enough for that If you ’re one of them. preferably, you should have a collection of websites that you can keep an eye on. We understand this can be a challenging task, and we concluded to support a fleck.

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III. RELATED WORK

Then for storing the product details, leverage information and stoner details, we're utilizing MongoDB Database. For breakdown the client's feedback NLTK module is exercised. When any client purchases the product also he she can give the feedback on that product that's automatically analysed by passion Server(sub portion of the design utilizing NLTK and python) and grounded on this breakdown, our model is to revise the rank of the product. This rank goods real- time visibility of the product.

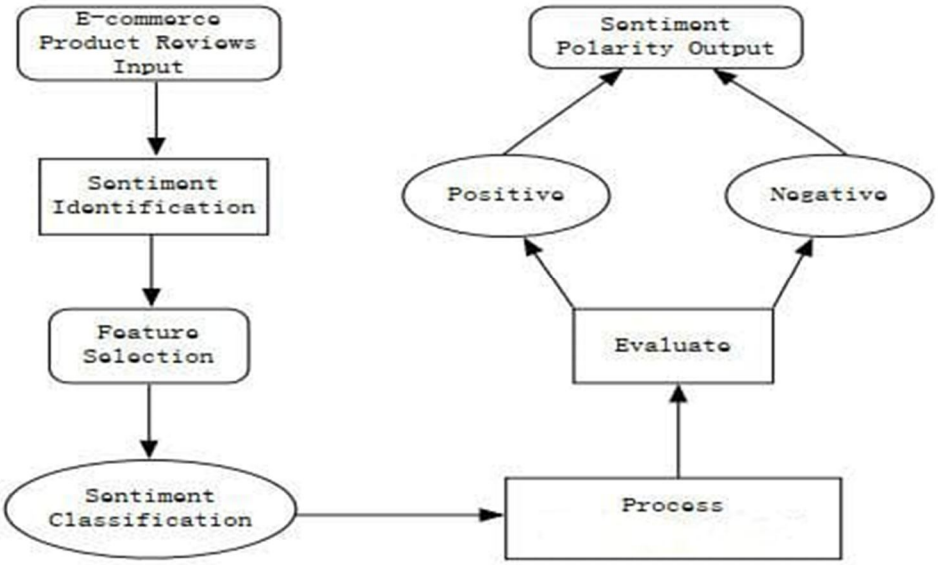
A product having more positive rank will be shown off first and consequently on. Passion breakdown is exercised in numerous fields and in the field of Ecommerce it's formerly exercised. But our moto is to exercise this on real- time base.

A. Technology

For Developing the website: -

Frontend: React JS, Tailwind CSS
Backend: Node JS, Express JS
Database: MongoDB

For Analysis: - NLTK, Python



IV. HOW DOES DARK STORE WORKS?

Dark stores operate around the timepiece to fulfil online demand. Digitisation and robotization are basic to the success of dark stores – still, companies appearing to apply the dark store conception don't need to invest voluminous totals of capital into full robotization and AI technology.

The basic missions of any dark store can be accepted. A dark store varies for a retailer outlet because it is set up solely and completely for functionality and rapid-fire order performance. Introductory storehouse anguishing is exercised to store force stock, which is strategically deposited for release and celerity of picking.

Dark stores order processing steps are highly to be similar like taken for warehouse order fulfilment, but this is however on a smaller scale.

1) Online orders are processed and received.
2) Orders are electronically sent to the shop floor.
3) Employees pick orders displayed on a digital screen attached to their shopping trolley.
4) Multiple orders can be done and collected simultaneously.
5) Orders are packed and shipped.

In other words, dark store does have all the quality facilities that you would find in a traditional, customer-centric retail outlet.

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V. BENEFITS OF DARK STORE

Dark stores offer the luxury of online shopping with the asset of immediate delivery of your productions. It also helps conserve the security and socio distancing measures during the pandemic. That's the main cause for dark stores which created a room for quicker and contact free shopping. The dark store is the faster and expressway to give instant order fulfilments and deliver more efficiently by involving a variety of division options. It helps bring the productions closer to a special portion of the request.

A. Better SKU Management

The main asset of the Dark Store conception is that it can enhance SKU operation by concentrating on capabilities similar as storehouse and relate- and- collect. It's good for a grocery store to have as numerous SKUs as there are customers.

B. Range of Products

The dark store layout can be blueprinted for further storehouse and better picking capabilities. Advanced storehouse capacity means better product operation, further space for an expansive range of productions, and quick order performance.

C. Inventory Control

Dark Store also supports the conception of force control in the same geographic region. As these dark stores are kind of storages that are client- free, better force control can be played for larger order volumes.

VI. CHALLENGES OF DARK STORES

While dark storages breathed life into a floundering retail sector when it demanded the most, in due time, drivers set up a multitudinous catch along the way in the operation of a dark store model.

1) *Increased Transportation:* Though dark stores are in a place that minimizes logistical costs, orders constantly involving further expansive routes start to hinder the expenditure distance in the longer run. similar orders dodge fresh handling expenditure, leading to an advanced pool and spare capital.
2) *An Implicit trouble to In- store Deals:* With the checks on restrictions now lifted, store possessors bank on people returning to the usual way of in- store shopping. But as is the case, one can no way prognosticate how client psychology presides over the frugality. With addicts getting affected to ordering from the comfort of their homes, dark store models have sluggishly set a monumental challenge for retailers to get back their footfall. While one always embraces new changes serving convenience for buyers, one must take cognizance that it might be at the cost of a sector scuffling for food.
3) *Structure Cost:* A bit private opinion as it's rested on what scale a dark store model works – but considering that a setup requires robust tech support, professed labour, and a large operating area, among others, the original structure cost for setting up a dark store storehouse might pose a fiscal challenge.

VII. WHY DARK STORES?

Experiment with back end or dark stores have been carried out by retailers for various prospect sometimes for the tag and eventually for more than a couple of decades now.

Though we know this, why we taking into consideration about them now? The answer is simple and lies in the increasingly margins of slim retail, surrounding with highly competitive nature and pressure, rocketing and drastic increase of customer expectations.

Ultimately, the pandemic of COVID-19 has acted as a big shot towards faster adoption of dark stores. With customers in-house during the lockdown, negligibly visits the mall or stores and prefer to visits the retailer's websites thus leading to large customer registrations and building up the base have increased manifold. All over and above, the digital adoption in the past couple of years has made India conductive to E-commerce growth efficiently and effectively. In fact, the number of Internet users in India has increased in a way that they crossed 550 million in 2020, and making online shopping platforms to reach out and be accessible to roughly 41% of the population. This data is really huge that marked the beginning of futuristic digital pay way and digital India. The digital payment landscape is also changing too fast, as more than one-third of the population using one or more of the 50+ wallet providers in India. All of this collectively making it easier for customers to shop online.

All the above, coupled with changes in shopping behaviour of consumers during current lockdown have paved the way for a business model built around dark stores that can fulfil customer requirement for online shopping and fast delivery along with the cost efficiency.

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VIII. DARK STORE MARKET OUTLOOK

The dark store is likely to thrive at a robust CAGAR of 38% from 2023 to 2033. The market is anticipated to cross the market share of US $414.31 Billion by 2023 where it holds a value of net worth US $16.54 Billion 2023.

This report of research for the market analysis of online system and dark store explains in an illustrative way that the changing and evolving lifestyle along with the expanding territorial online shopping activity, has led and started servicing and fuelling the demands of dark stores.

The concept of customer Direct-To-Customer (D2C), which is another Business strategy of B2C retail sales. The even rising popularity of instant and quicker delivery option marks a sophisticated way of storing groceries while integrating and merging them with online delivery systems.

IX. CONCLUSION

Ordering products and stocked inventories using the dark store has helped a lot to customers during the corona lockdown period due to obvious health concern and restrictions of the government guidelines.

This phase or duration has led many to understand the pros and cons of the online facilities and so for the dark stores. The major plus of dark stores is that it has even facilitated the rural areas or cornered sectors to be reached out for the purpose of product delivery even after unlock of corona guidelines. In large scale people order from online platforms one of such is dark stores as the delivery of product is quicker and a lot of time is being saved from purchasing the product by visiting the stores and carrying it all by own.

Looking into current statistics scenario, a large mass is moving towards this online dark store system as their colonial areas and sectors are being upgraded and meet all the modern period facilities.

For even to boost up the growth, adaptation of online system and setting up online stores by commons really mark the excellence and the seventh cloud it has reached.

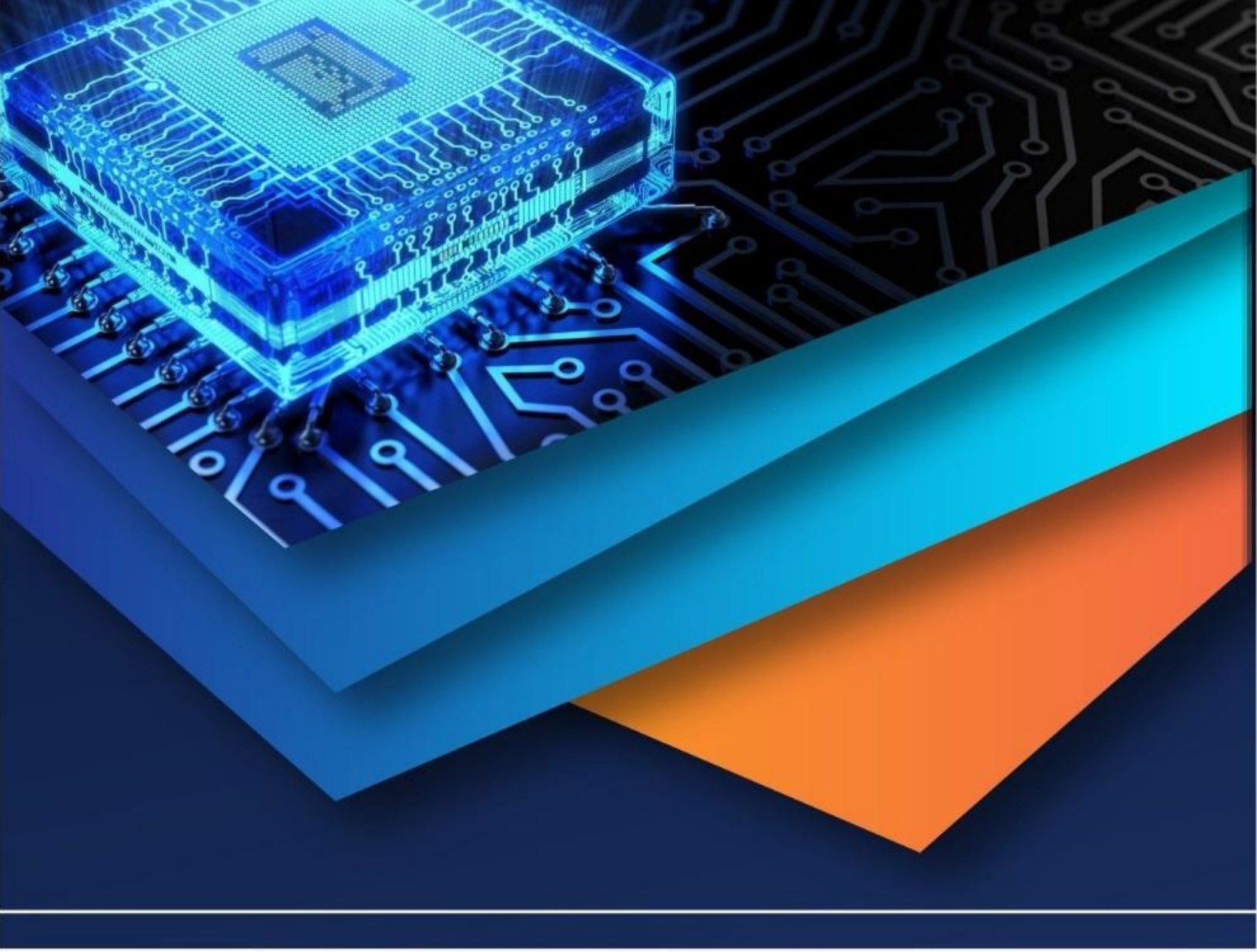
So, as the dark store has boomed in a few past years it will stay for the longer time period and for sure continue to facilitate the customers with all its evolving features along with modernising time.

Market size value in 2023	US$ 16.54 Billion
Market forecast value in 2023	US$ 414.31 Billion
Global growth rate 2023 to 2033	38% CAGAR
Forecast period	2023 to 2033

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