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Attracting Small Businesses to Come Online and Promoting Them to Increase Their Business Growth During the COVID-19 Pandemic

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Abstract— The COVID-19 pandemic has a major impact on small businesses/stores and compelled them to come online, but they can't afford their own website and also the existing system simply facilitates them to grow however doesn't enable them to show their presence/existence on their platforms. So, we have come up with an e-commerce platform that will help local stores to make their existence online as a separate e-shop which will allow them to keep their shop open 24/7. Ultimately, providing plenty of opportunities to small and local businesses including the benefits of the current ecosystem of e-commerce. Furthermore, the platform will deliver a great user experience to the users and also the benefits of the most recent technologies like machine learning.

Keywords— E-Commerce, Local Shops, Machine Learning, Small Businesses, User Experience, Web Application

I. INTRODUCTION

E-commerce is a boom in modern business. E-commerce means electronic commerce. E-commerce (Electronic commerce) involves buying and selling goods and services, or the transmitting of funds or data, over an electronic network, predominantly the Internet. E-commerce is more than just another way to spice up existing business practices.

India has numerous amounts of physical small businesses or stores. A major share of those stores or businesses is not selling their products online. However, those are compelled to come online & make an entry in e-commerce by the COVID-19 pandemic. Current e-commerce platforms have several issues such as operational complexity, navigation, clear data presentations via menus/catalogue, and UI problems. Furthermore, these platforms solely enable selling products and acting as an intermediary body and do not allow those stores/businesses to make their presence as an e-shop. We're proposing an e-platform that will make stores' or businesses' presence as an e-shop and sell their products on the same platform. Ultimately, allowing them to be a 'seller for everybody' and capture a large market over India.

The proposed platform comes with a novel feature beneficial for both buyer and seller i.e., the buyer can find e-shops according to pin code they enter on the platform i.e., able to find local shops (for that pin code) and view as well as buy products listed by that particular e-shop. This feature will reduce the shipping time and cost required for it. Transportation will be less because buyer and seller will be fall under the same locality. Hence, carbon emissions are going to be less.

II. BACKGROUND/LITERATURE REVIEW

There is a drastic impact of global trends in e-commerce during this COVID-19 pandemic. There has been an increase in overall sales of e-commerce in both developed and developing countries because of Coronavirus. People are avoiding going out, keeping social distance, and buying from home. Hence, people are moving towards e-commerce [1].

E-commerce is a boon for any country- if given the correct impetus and sensible environmental framework to prosper will considerably result in a country's progress and development. The 18-25 years of age group has been the fastest-growing age segment online with user growth being contributed by both male and female segments [2].

Design quality plays a vital role in the overall success of a business. Following graphical elements are key factors contained in an e-commerce website that impact on business growth:

- Brand logo
- Banners and sliders
- Promotional banners
- Product discount carousels
- Product images
- Payment option/shipping methods banners [3].

India is the fastest-growing e-commerce market. AI will have a significant effect on the way e-commerce businesses attract and retain customers. There are different applications of AI in e-commerce like,

- Real-time product targeting

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- Visual search
- AI-based hiring processes
- Voice Powered Search
- Assortment Intelligence Tool
- Conversational commerce
- Customer Service
- Virtual personal shoppers
- Virtual Assistant [4].

User Experience relies on several factors such as Usability, Aesthetics, Colour, and more. By varying these factors, one can then achieve an optimal solution that is unique to their downside [5].

III. EXISTING SYSTEM

There are two kinds of existing systems:

A. Offline/In-Store Shopping

Many customers prefer to make purchases offline in stores because they can see & touch products and hold possession of the bought product immediately. In other words, offline shopping has a sense of immediacy. This way a customer ger more confident on his/her purchase. Following are the limitations on in-store/offline shopping:

- Time-consuming
- Refunds / Returns disputes
- Lack of choices
- Cashback offers not present
- Might be bad customer service

B. Existing Online Shopping

Existing e-commerce websites only promote big sellers and do not much promote small businesses or local stores. Furthermore, these platforms have several issues like

1) Operational Complexity: There are plenty of operational complexities such as problems in searching particular products and difficulties to look at diverse options in the same category.

2) Navigations: Nowadays navigation has become a problem for e-commerce sites due to its clumsy design, complex structure & arrangements.

3) Clear Data Presentations via Menus or Catalogue: Lack of proper presentation of existing categories and their subcategories is one of the issues in current systems. Overpopulated options of different categories are leading users to confusion

4) UI Problems: Many e-commerce websites have UI problems like cart abandonment, poor quality pictures, poor product descriptions, and other UI problems that compel users to make negative impressions on the platform.

IV. METHODOLOGY OF PROPOSED WORK

During the literature survey, we got to know about issues in current e-commerce platforms and decided to make a system or e-commerce platform that'll take away a number of those issues. We've selected the footwear category as an example for the purpose of a project because research has shown that the young generation tends more to buy footwear for their daily desires and have an interest as well as trust to buy products online. (Note: Currently, this project is being developed by all authors of the paper). Following is an elaboration of our methodology:

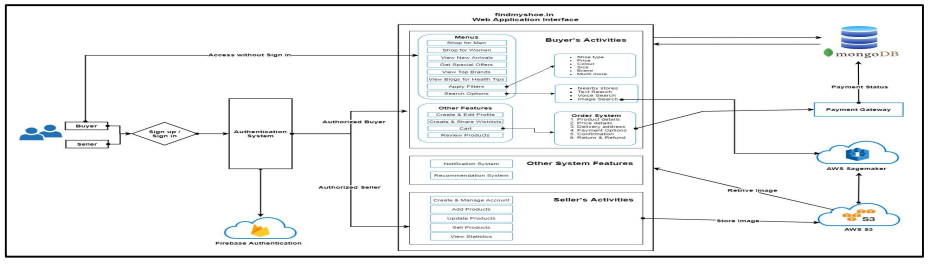


Fig. 1 Conceptual System Architecture

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A. Technology Stack

Following stack being used in the development of the project,

1) Design Tools:

a) *Figma:* We are using it to do all kinds of graphic design work from the wireframing website, designing mobile responsive interfaces, prototyping designs, etc.

b) *Adobe Photoshop:* Being used for image editing & photo retouching.

2) Frameworks & Languages:

a) *React.js:* It is an open-source JavaScript library being used to build the frontend and allows to development of single-page web applications

b) *Redux:* It is an open-source JavaScript library being used for managing the state of the application

c) *Django*: It is a Python-based open-source web framework being used as the backend of the project. API's are being developed using Django Rest Framework.

3) Database & Storage:

a) *MongoDB:* It is a versatile and NoSQL database being used to serve store and retrieve data whenever needed as a primary database for the project.

b) *AWS S3 (Simple Storage Service):* All kinds of images and documents of the project will be stored in S3 buckets

c) AWS Sagemaker: It will be used to deploy machine learning models

B. Users

1) Two main types of users on the platform:

a) *Seller/Shop:* An entity that will sell footwear products on the platform

b) *Buyer: A person who will buy products listed on the platform.*

2) Authentication:

a) Both buyers and sellers are being authenticated using Google's Firebase Authentication system permitting users to create accounts and access all features on the platform.

b) The buyers who are not authenticated will only be able to view and filter products. And the unauthenticated sellers can't do anything on the platform.

C. About Platform & Its Features

This platform is an e-commerce web application that sells footwear products as the main category. The main objective of this platform is to attract small businesses to make their presence online & facilitate them to grow. That's why we come with a brand new & separate feature named 'Local Shops' on our platform. The main idea behind this is to provide a dedicated e-shop for the sellers and those e-shops will be shown to buyers according to the pin code/zip code they enter in the Local Shops' search option. This idea attracts both buyers & sellers because buyers can buy products in local shops online and sellers can sell their products online just like an offline shop. Also, the platform will provide offers & coupons to buyers for attracting them to buy from e-shops.

On the platform, there are main three categories for footwear as MEN, WOMEN, & UNISEX. Under these main categories, there are sub-product categories like shoes, sandals, boots, slip-on, etc.

Following are the features of our platform:

Diverse options of products for both Men & Women:

1) Various Searching Methods:

a) *Text Search: The user can search relevant products using a text query.*

b) *Image Search:* The user can upload any footwear image and can search for similar-looking products on the platform. We are using Convolution Neural Networks, a machine learning algorithm to build ML models to infer information like colour, footwear type, and brand name, etc. from images.

c) *Speech to Text Search:* User can search products by voice typing. We are using Google Speech-to-text APIs for the same purpose.

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2) Various filters can be used to find products such as,

a) Shop Location

b) Sizes

c) Price Range

d) Colours

e) Top Brands

f) Type

g) Discount Range etc.

3) Finding Local Shops: This feature allows buyers to find local shops according to the pin code/zip code enter on the platform. Here, local shops are listed as e-shops. Buyers can see information like the name of the shop, rating of a shop on the platform, physical address, etc. about these listed e-shops. Furthermore, he/she can view all products listed on the platform of any particular shop.

4) *Special Offers/Offer Zone: Will show different bank offers and ongoing sales.*

5) New Arrivals: Buyers can view newly added products on the platforms so they can be updated with the latest fashion trends.

6) Top Brands: There will be a wide range of products from top brands.

7) Right Shoe for Right Need: Finding footwear consistent with the requirement of the buyer. For example, trekking, flat-feet, etc.

8) Blogs on Health Tips: Different links to blogs related to health tips are available here.

9) Manage Profile: In here, the users are ready to manage & view

- *Personal information*
- *Addresses*
- *Orders*
- *Payment options*
- *Wishlists*

10) Cart: Only authenticated buyers will be able to add products to the cart and make the purchase in the future

11) Save for Later: This is a list that enables users to move and save products from a cart for future purchases.

12) Wishlist: Platform let authenticated users to wishlist products.

13) There are two kinds of wishlists:

a) Private: These wishlists will be private to the wishlist's owner.

b) Shareable: These wishlists can be shared with other registered users on the platform allowing them to view products in their respective wishlist on their profile.

14) Sellers will have a separate profile from they will do the subsequent things:

a) Add/List new products on the platform

b) Manage listed products

c) Ultimately, sell products

d) View statistics of sales/sold products.

V. LIMITATIONS AND FUTURE SCOPE

All Right now, on this platform e-shops are solely visible to local buyers according to the Pin code/Zip code they enter. However, in the future, we can overcome this limitation by showing Sort options like shop/seller rating, alphabetical orders of shop names, etc. which will show all shops from all regions. AI-based product recommendation systems, Virtual personal shoppers, Customer Service, etc. can be used to improve user experience. We can use this concept for other categories like groceries, healthcare, etc.

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VI. CONCLUSIONS

The e-commerce platform that we are proposing can attract small businesses/stores to come online. Ultimately, due to availability of local shops and their products on the platform will reduce the cost of shipping as well as save the time needed for it. Therefore, transportation is going to be less and there'll be reduced carbon emission. Moreover, selecting and focusing single product category will prevent consumers from being distracted and focus on shopping for what they required with immense variety in the underlying category. Furthermore, the use of design strategies, color theory, usability methods, Artificial Intelligence, etc. can enable the platform to serve a better user experience.

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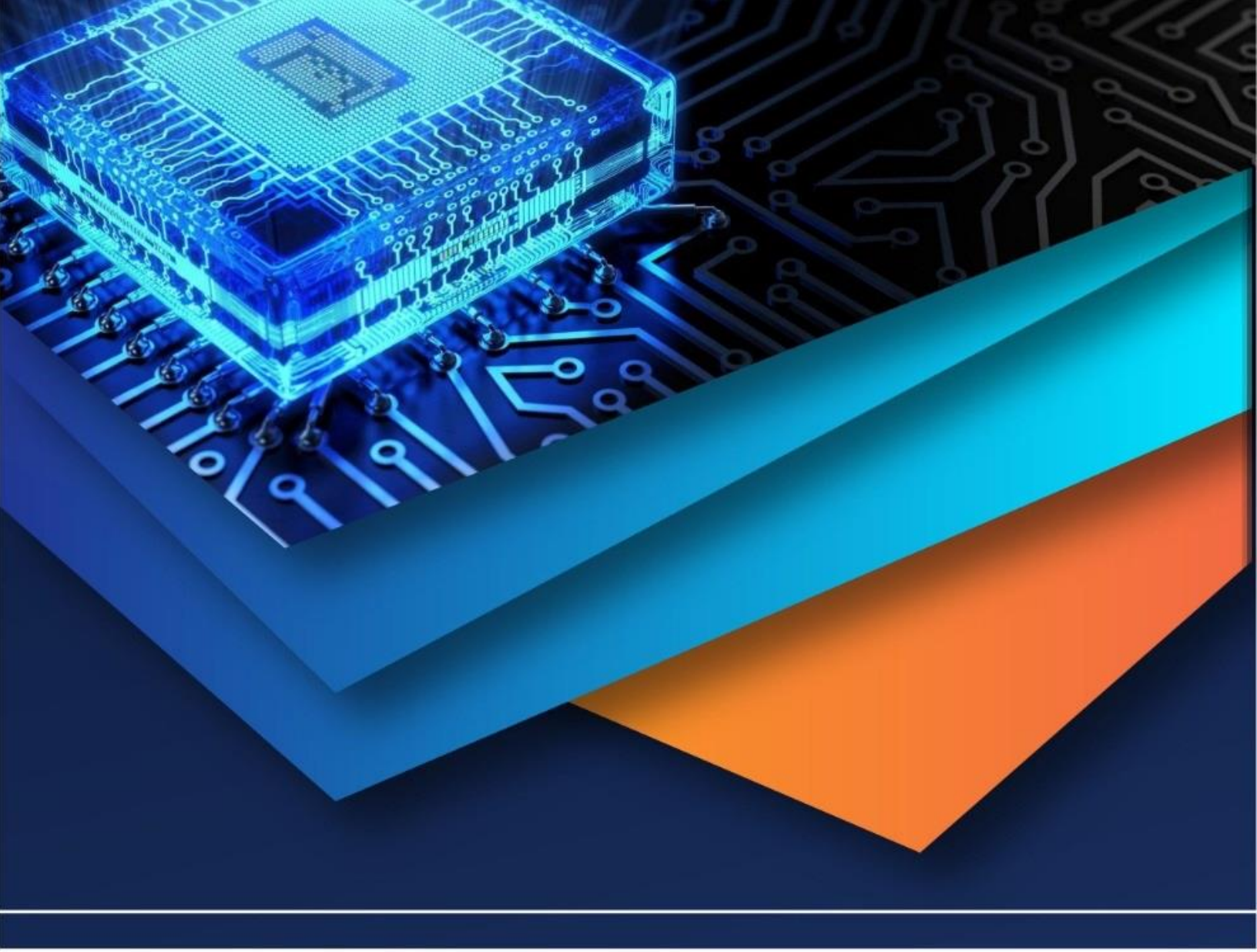
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