



## An Empirical Study on E-Commerce Site Using Unique AI Based Features and Data Science Tools

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# An Empirical Study on E-Commerce site using unique AI based features and Data science tools

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## Abstract:

As with the advancement of modern day techniques in the field of Information Technology, the way of shopping through E-Commerce site is becoming outdated. there are two ways through which an individual can do shopping first is the online method and second is the offline one in today's world online shopping by having more variety of products available on individual platform with easy way of shopping because of this day by day the businessman who are doing business with offline method are facing daily challenges to increase their sales and getting data of demanding products that are available in the market , now with the growth of artificial intelligence ,they can use lot of beneficiary tools to boost their business. If a giant next generation E-Commerce site is made with which we can connect all the wholesalers ,retailers and customers with their own point of profits ,then it can bring a new revolution in the market where there will be different layers will be available with separate user friendly graphic user interface for all wholesalers, retailers and customers, where they will be allowed to access their own layers accordingly with several unique features and benefits to save time and making shopping more amazing for customers and selling their products and boosting daily sales for the retailers with the influence of top wholesalers available to help them with the unique kind of trading system and daily analytics and progress report using data science.

**Keywords:** E-commerce, image recognition, machine learning, QR code, Virtual reality, augmented reality.

## Introduction

Now a day's business is becoming difficult for small retailers as with the entry of e-commerce Giants [1] in the business by introducing technology based time convenient method of shopping with wide range of products to choose from. To survive in the market working isolate that can be a depressing job for the retailers ,it is possible to combine all these retailers together into one digital platform of social media where the with

the help of Information Technology their business can be accelerated with the involvement of modern day tech tools powered by Artificial Intelligence.

This E-commerce can provide the sellers and wholesalers [2] with advanced Lead Management System, daily report of sales and business with daily, weekly, monthly

and yearly progress report, manpower management with daily performance charts,

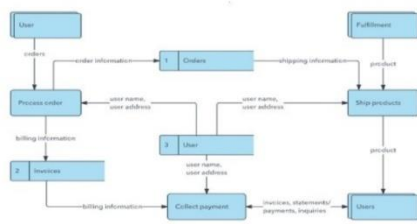


Fig 1: E-commerce Architecture

accessing and forwarding options of stock available with associate businessman, filter system with image recognition technique using artificial intelligence, Marketplace options by the wholesalers with live auction facility advance artificial system for viewing the most demanded products that are being purchased by the customers online.

With the help of IT influences the performance of inside sales is growing rapidly, still there is a lack of research in this field. On capturing the impact of lead management systems [3] on inside sales performance through the following methods, with option using information technology in the web page that is included inside a whole system, the retailers or wholesalers can view the products that is already added on the database with all the attribute they had filled so that whenever when a new customer comes into site to buy a new product from then they can used the page that is including all the details of the product that they are interested to buy with all the details available in one single unit is a category wise, so if they are interested to buy the product after checking all the details and pros and cons they can simply click on the buy button or if the product is expensive or it needs to be verified realistically then they can fix an appointment by clicking on an appointment button.

This way retailers can easily get the details of all the customers who are potential buyers from a bunch of scrap customers that he got the data from the website and all the others attributes like their names and image, phone number, location and the status that how they are interested to buy the product like buy now or not interested by this way it will make the employees much more efficient and they can focus time on the potential customers only.

## Methodology:

### Product Management

It's a challenging task for all the retailers in the business to manage the products the products that are already present in the store and was stock out and the product that he has to buy from new add a product is a feature that will help the retailer or wholesaler to add the product in the menu with filling all the attribute, that can be used to describe it by adding the product with filling all the attribute in the add products option an individual can make the business flow very efficient by afterwards viewing it in the display, my products and can target the customers efficiently by displaying the perfect category of the product that are displayed in my products without giving them more details about the product as already the attributes are fulfilled by the users and all the details are present when the customers, click on the detail section of the product including the images ,prices, dimension and others this way the product column with all the attributes as a single unit can be very useful.

When marketed online on different platform [4] like available social medias in other apps as just with the click by the user they can be able to view all the product details at once and can book an appointment with just filling a simple forms, just with a click if they had already registered with the application or website where the product is already available and directly on the lead section the retailers

and the wholesalers can get a notification with all the details of the customers who has shown the interest in buying the product and store it in the database or can use it afterwards for displaying ads or more products similar to it and using the status option of the product , also this way managing sales can be boost rapidly.

With adoption using information technology [5] in the web page that is included inside a giant ecommerce site the retailers or wholesalers can view the products that they had already added on the database with all the attribute they had filled so that whenever when a new customer comes into buy a new product then they can used the page that is including all the details of the product that they are interested to buy with all the details available in one single unit in a category wise table so if they are interested to buy them after viewing all the details and pros and cons they can simply click on the buy button .

### **Lead Management**

If the product is expensive or it needs to be verified realistically then the customers can fix an appointment by click on an appointment button by directly clicking on making an appointment this way retailer can easily get the details of all the customers who are potential buyers from a bunch of crap customers that he got the data from the website and all the others attributes like their names, image, phone, number, location and the status that how they are interested to buy the product like interested now, interested later or not interested.

This will make the employees much more efficient and they can focus their time on the potential customers [6] and can know about the customers who were just here to pass the time and discuss the product details on the live call the view products page can be beautified as a menu card and can be advertised by the retailers on the several platform like YouTube and Facebook and

other important websites so if there is a user who is interested to buy the product and directly clicking on the link can view the products available or being displayed and if they are interested to buy the product they can directly click on the link and view the product available or if they're interested to buy the products then they can just fill up the form and wait for the seller's response by message or phone call.

This will be a separate page for all the sellers available on the side where they can view the statistics of the product sales and this data will be easily used by the customer that can be spread by the sellers to the popular sites like YouTube and Facebook as all in one menu card for their products even if a customer is standing manual in front of a store and without enquiring with the shopkeeper he can just scan a QR code just like a payment method and can get all the details as said before of the product present that can be revolutionary idea that can make their transactions more efficient and comfortable for both the parties.

It is easily possible to make with the help of nice GUI [7] that can be developed with HTML CSS and java script using certain framework and connecting it to a database and generating links of the product pages .Artificial Intelligence can also play important role in IT while making a daily transaction and shopping much more efficient and creative.

### **Employee Management**

Managing employees is another difficult task when your business is big and on daily basis huge number of leads is approaching to your shops employee play a very vital role when it comes to filtering the potential leads from scrap leads and converting them into guarantee buyers.

Employee management system [8] provide us separate page for storing data of employee like their photo, email, phone

,address, documents, attendance and daily progress when we talk about daily progress report of an employee mean that the ratio of buyer to the number of leads your employees handling on daily basis system is built like that it can track this ratio and can give reports on daily, weekly, monthly and annually basis, so an owner of a company can easily figure out that which of his employee is more and less dedicated to work every individual employee working under a private organization have their individual performance graph through which they can also try to improve the slope by this way company will certainly grow to more heights of profit that's why we conclude that employee management will play a very important role in development of business.

### **My Circles (Sharing of stocks with associate retailers.)**

My Circle [9] is a very useful tool for retailers where they can share their stock with their associated friends so whenever a customer is showing up or they have got one lead that is interested to buy one product that is not available in their store so with the help of the tool “ my circle “ they can simply search the product on the portal that whether it is available with their associate friends or not and if it is available then they can just forward the lead to them with some fixed commissions this way they can earn on those deals also where they don't have the product and in vice versa they can also get the leads from the associate retailers where they had the product ready and the customers are coming from different source to them from this technique the sales of a businessman along with his associates can grow rapidly without every time contacting the associate retailers on availability of the product and the business will run in very efficient and Hassle Free way.

### **Live Auctions and Market place**

The platform will provide a separate Marketplace for all wholesalers and retailers [10] only where they will be able to do trading of bulk products , the trading will be of two types first will be exclusive live auctions and other will be a kind of normal trading by this way all the retailers who are present on the platform can get access to lot of variety of products at very nominal rates so that they don't have to worry about buying it from the different places .Money transactions will take place inside the market place only with the proper E-bill provided from the sellers with the proper delivery pipeline.

### **Data analytics and Progress Report**

Data Analytics and progress reports will play a very important role when it will come to the development of a particular business with the facility one business owner can get like the actual report of how the business is operating with some features like,

- (i) Details of number of leads that is coming per day to the store.
- (ii) Which product in the repository are more demanded and which is less demanded.
- (iii)Daily performance of their employees
- (iv)Most demanded products on the market
- (v) Growth graph with daily profit and loss

By this features the organization can grow rapidly, it does not matter whether they are big or small in nature if worked properly with constant growth the success is confirmed lot of business get failed because they are not available to track down the things that are growing around the business how the employees are giving effort how sales graph is growing whether slope is inclined or declined which product is easily selling and which one is still stuck this Data Analytics powered by

artificial intelligence will create tools that can turn the future of a business to the new heights.

### **QR code page display for offline shopping**

Now a day's customer can get a lot of frustration standing in a queue of people waiting to ask for their favorite products and if the products are not available they loses a lot of time in between so somehow, If we can make an online application where each shop owner is manually uploading the details of products, their availability, prices, expiry date that is present in their shop and when someone visits their shop, they can easily scan the QR code with the inbuilt scanner system available outside the store and can get the details of products in a product wise page so that without any enquiry or hesitation they can get the details of the products present inside the shop and can directly buy it using a UPI system present inside the same application if the product is available.

There will be a separate login page for the shopkeepers where they can access their profile page and can upload the details of the product, where they can see the daily or monthly analytical data of which product has more demand and can manage their repository by this way shopping can be more easy and convenient. If in future we want to develop E-Commerce site [11] where local stores will be connected and if someone wants to visit the store offline or he is nearby the store just going in front of the store scanning 1 QR code that he will be displayed in the front of the store he can get all the products inside the stores in seconds.

### **Image Recognition (AI) as filter option**

As the technology is growing day by day the process of working is also changing while shopping from an E-Commerce site, we basically search over desired product through filtration process where we input the attributes

of the product that we are searching like color, brand, size and other details. If we are able to add a filter system [12] using image recognition technique where a user will use the option and upload the image that he downloaded from the sum of a source then he will get the results of product similar looking to that he uploaded.

Machine learning can predict the multi axial fatigue life however it cannot directly accept input from the loading path because it is a graphical data image recognition method is used to extract the loading path features and transform them into numerical data using the bilayer features data is kept in the first layer and together with the second layer identify cable strain amplitude data to construct a machine learning method that can be later used for adding a similar image identifying also on The E-Commerce platform.

### **Use of Artificial Intelligence and Virtual Reality in E-Commerce**

Augmentation Reality: The combination of real world and computer generated content is known as Augmented reality it is experience that is very interactive for the users that can be explained as a system that incorporates 3 basic features a combination of real and virtual world real time interaction and accurate 3D registration of virtual and real objects they contain can multiple sensory modulators including visual auditory haptic.

Inside an e-Commerce platform Augmented reality Technology [13] can play a very important role as in present while buying a product user is allowed to view the products that he or she desires to buy in 2D mode only but if we introduced AR to the platform then the user can experience the product in 3D mode and he can experience in his home Virtually through this it can give more visibility of the product that he wants to buy.

**Virtual Reality:** If we can develop a virtual world using Autodesk Maya [14] or unity a shopping mall that is nearby of our home where we can visit using virtual reality glasses [15] and can shop like clothes, shoes, foods and other products that is present in real world with help of controllers all products available in the real world and with just a buy button the shop will deliver the product to the home then we can save a lot of time.

**Results:**

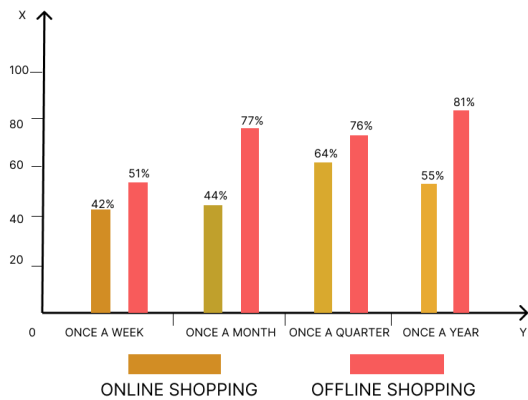


Fig 2: Graph representing online Vs offline shopping

1. Home page

- a. Navigation bar – home, brands, sellers, categories, services , help , login button
- b. Services and appointment button.
- c. Search box for searching a car or dealer or a location.
- d. Product listing with filters.
- e. Footer

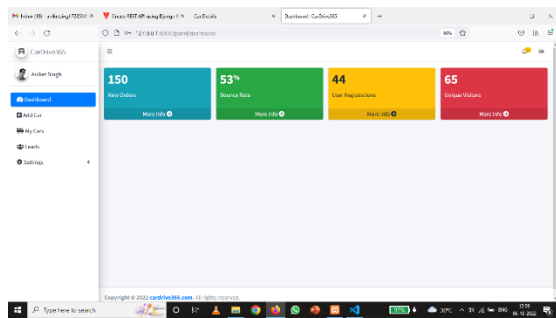


Fig 3: Web layout of seller’s and wholesalers

Dashboard containing daily analysis and reports

2. Admin page

- a. Profile image and home page and sign out button
- b. Dashboard (data analytics and progress report)
- c. Add Products
- d. My Products
- e. My circles
- f. Circles
- g. Leads
- h. settings

3. Dealer

This page will contain search box for searching stocks of a specific sellers, then there will be a tables for top sellers in the area so that the users can view their preferred dealers profile with one click and access to their stocks, their address, and can book an appointment with them.

4. Product page

Sl.	Brand	Model	Variant	Year	City	KM	Listed On	Price	Status	
1	Honda	city	cv	2015	kolkata	10000	07-09-2022 03:33 PM	78876	Status	
2	Lexus	m3	dix	2019	kolkata	32000	18-04-2022 01:35 PM	7800000	Status	
3	Chevrolet	cruze	bh	2012	kolkata	5600	16-04-2022 02:35 PM	230000	Status	
4	Jeep	compass	xl	2017	kolkata	7800	27-03-2022 06:29 AM	5.5 lakhs	Status	
5	BMW	x1	diesel 2.0	2019	kolkata	56000	16-03-2022 08:54 AM	400000	Status	
6	Mercedes	s class	smg	2019	kolkata	3200	08-03-2022 12:32 PM	5600000	Status	
7	BMW	2017	x5	2018	kolkata	5000	08-11-2021 09:21 PM	12000000	Status	
8	Jaguar	xf	vdj	2015	kolkata	7000	29-10-2021 04:39 PM	230000	Status	

Fig 4: Product Management System

- a. Photos
- b. General information
- c. Specific details
- d. Reviews
- e. Appointment
- f. Similar products

5. With this Platform customers can browse more varieties of car and compare the products of their preferred sellers without going anywhere in this corona period.

6. It will help sellers to increase their sales team remotely and keep an eye on them without going anywhere and they can know that which employee is actually doing work.

7. Sellers can use it as a link and put it in their YouTube videos as a method of contact and this will help infiltration of potential and valuable clients among time passers with one click appointment.

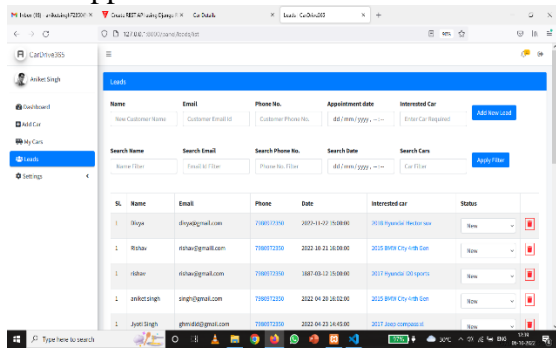


Fig 5: Figure representing lead management system.

### Discussion

With the help of my products and add products button a dealer can get tension free by just add the product at once after that changing it with one click without updating to his associates and The E-commerce Platform will automatically update the details in associates profiles . This will lead to sales growth as the associates will be able to generate more potential customers by having accurate information at less time.

The E-commerce Platform help sellers to store their leads information and check them any time .this helps a dealer to keep on a eye on the sales team and their performance . Associates can share easily any product with any leads with one click

With my circles feature sellers can get access to the product of their associative sellers and can boost sells by having more product in the hand with varieties so that no customer will go empty hand. Sellers can check their employee performance, their sales

rate , top charts , their customer demands and more through smart and attractive gadgets in home button.

With The E-commerce Platform customers can browse more varieties of car and compare the products of their preferred sellers without going anywhere in this corona period.

The E-commerce Platform helps sellers to increase their sales team remotely and keep an eye on them without going anywhere and they can know that which employee is actually doing work.

### Conclusion

Our goal behind this theory of next generation E-Commerce platform was to make online shopping experience for users more time efficient and exciting where the prudery can be minimized from the seller side by displaying details view of product in all direction in 360 way so that the users don't get confused that which one is better from a group of similar products available on the platform image recognition filter is used for the customers who are visiting the platform to save the time by getting the desired list of product they want to choose from in minimum time interval by just uploading one similar image of the product they want which they have downloaded or got from some other sources.

On the other hand products, leads and employee management is also made very convenient with innovative tools and page for the sellers available on the platform for smooth work flow and less hectic and they can understand their business that how it is running with the crops so that they can understand their business better and take right decision for both with Data Analytics and progress report powered by data science and artificial intelligence.



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