

CLOUD BASED PRODUCT PURCHASING ANDROID APPLICATION

(Ms.P. Suganya¹, P. Arulnithi², V. Nithish³, T. Vikram⁴)

Dept.of Information Technology of (M.A.M. College of Engineering and Technology), Tiruchirappalli, India.

(suganya.it19@mamcet.com, arulnithi.it19@mamcet.com,
nithish.it19@mamcet.com,vikram.it19@mamcet.com)

Abstract- *Implementing a mobile application to facilitate the electronic commerce and enhance the spending time efficiency of the customer then it is helpful for selling of products including different product from the different retailers from the nearest area. It will reduce time spent to purchasing the product, then it satisfies the user requirement and easy to purchase from the desired retailer. It encloses good user interface, easy to understand and use it by the customer and retailer, this application reduces the effort and time spent on the respective retail shops and different areas. This project is aimed to overcome the more computation time, more manual calculations and complexity involved in purchasing of products. It leads to the new advanced and modernized system achieved through this mobile application. The application's user-friendly interface, scalability, and cost-effectiveness make it an attractive option for businesses looking to expand their online presence and provide a seamless purchasing experience for their customers.*

Keywords— *Mobile application, Efficiency, desired products, different retailers & shops*

INTRODUCTION

In today's digital age, online shopping has become a popular way for consumers to purchase products from the comfort of their own homes. With the increasing demand for online shopping, businesses are constantly seeking new ways to improve their online presence and provide their customers with a seamless shopping experience. One solution to this challenge is the development of a cloud-based product purchasing Android application. A cloud-based product purchasing Android application provides businesses with an efficient way to manage their inventory, track sales data in real-time, and offer a seamless shopping experience to their

customers. The application allows customers to browse and purchase products directly from their mobile devices, providing a convenient and user-friendly shopping experience. Additionally, businesses can leverage cloud technology to easily scale up or down their infrastructure as needed, reducing upfront costs and increasing flexibility. The development of a cloud-based product purchasing Android application requires careful consideration of user experience, security, and scalability. The application should be designed with an intuitive user interface, personalized recommendations, and easy checkout features to enhance the overall shopping experience. Security measures such as SSL encryption, secure payment gateway, and two-factor authentication should also be integrated to protect user data and transactions. Furthermore, the application should be scalable to accommodate growth and future changes in user demand. Overall, a well-designed cloud-based product purchasing Android application can help businesses stay competitive in the digital market and improve customer satisfaction, resulting in increased sales and revenue. People must buy their essential products and being purchased through online. Other digital shopping systems have been challenged due to a lack of transparency and time efficiency. This makes more difficult for the consumer to buy and retailers to sell. Primary objective is to reduce the time spent and overcome traditional purchasing problem, which include any kind of products should be purchased during the process of purchasing from the desired retailer and it is a technology can be used to reduce the time efficiency. This appraises the need for a solution to buy the product from through online from a specific retailer and from the particular area and distributor.

LITERATURE SURVEY

In a case study T. Tandel, S. Wagal, N. Singh, R. Chaudhari and V. Badgular in proposed, to develop an android application that can help local shopkeepers in India manage their inventory efficiently and make informed decisions using Regression Analysis for a sales prediction model, the independent variable can be the value of investment. As a result of customers will avail of the experience of accessing the right products at the right time and the app will bringing about social empowerment and development. K. Singh and R. Wajgi in proposed, to perform a comprehensive data analysis of sales data to identify trends, patterns, and insights that can help in making data-driven decisions and identify the impact on sales performance, such as seasonality, pricing, and marketing campaigns, using visualization techniques, Methods, Tools data is processed under certain functions such as parsing, cleaning and transformation and then stored in the database. After data processing, data is to be visualized as a result of the end user can make decision, predict the future sales, calculate regional sales and increase the production dependencies on the demand. Z. Pirani, A. Marewar, Z. Bhavnagarwala and M. Kamble, in proposed, identify the key drivers of online sales, such as website traffic, conversion rates, and customer retention, and understand the factors that impact these metrics and also identify the Customer segments that are most profitable and understand their preferences and behaviors using logistic and linear regression, Sales Strategy, Market Trends, Product Selling Patterns, Sales Strategies. Algorithms like Market Basket analysis helps to produce patterns product sales as a result to categorize the products as fast-selling and less-selling products using algorithms like logistic and linear regression. Accordingly, the user will update stocks of fast-selling products. R. Padaya, S. Suvarna, A. Channe and C. Shah in proposed, that to provide the statistics of the demand for items in a particular locality to the shopkeeper thereby helping them to maintain the supply of commodities and provide appropriate recommendations to users based on their search history and the centralized database including ML engine and consisting server for authentication. It will retrieve the list of shops which are nearer. Then the

Shopkeeper will be provided with the statistics as a result more people moving online for simple purchases, the shop centers are likely to experience few rush hours. Less time spent in shopping queues will result in fewer frustrating shopping experience. P. Wachter, T. Widmer and A. Klein, in proposed to Analyze pre-purchase online search data for automotive products to identify patterns and insights that can help predict sales performance. Forecast sales performance based on some relevant variables, such as pricing, marketing campaigns, and economic indicators using some forecasting techniques Google Trends tool, Keyword selection, Data processing, Preliminary analysis, Regression analysis as a result to find an improvement of the out-of-sample accuracy of up to 27%. It findings help manufacturers to obtain better forecasts and to make more informed decisions regarding business strategies for production planning.

EXISTING SYSTEM

It typically involves customers accessing an e-commerce website or mobile application to browse, select, and purchase products. The website or application is hosted on a server in the cloud, providing scalability, availability, and cost-effectiveness. The customers can create an account on the website or application, which allows them to save their personal information, track orders, and receive personalized recommendations. The existing system also includes a database to store information about the products, customers, orders, and payments. The database is typically hosted on a cloud server, providing reliable and secure access to the data. The database is integrated with the e-commerce website or application, allowing customers to search for products, view product descriptions and images, and add products to their shopping cart. The existing system typically involves multiple third-party services, such as payment gateways, shipping providers, and analytics tools. Payment gateways allow customers to securely make payments using their credit card, PayPal account, or other payment methods. Shipping providers provide shipping services to deliver the products to customers. Analytics tools allow businesses to track and analyze customer behavior, sales data, and website traffic to improve their marketing strategies and customer experience. Overall, the existing system for a cloud-based product purchasing Android application is well-

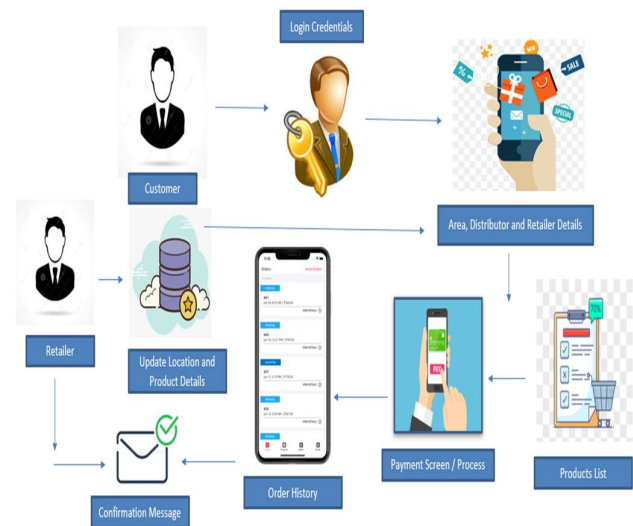
established and widely used, providing businesses with a convenient and cost-effective way to sell products online. However, there is always room for improvement, and businesses can leverage new technologies and features to enhance the user experience, improve security, and increase sales. Purchasing product through online it will take two to three days to delivered. In case any failure occurred, the product should be return and the customer get disappointed. Then the Customer move to purchase the products in nearby Shops or centres, it will take too much time to buy their desired and quality product. If the product or thing is not in a good quality and the customer 's favourite things brand, cost efficiency is not means, the customer moves towards to another shop. Until the customer get satisfied, they would wander among various shops to buy the products and it takes huge amount of time.

PROPOSED SYSTEM

This application builds upon the existing system by introducing new features and technologies to enhance the user experience, improve security, and increase sales. It provides personalized product recommendations to customers based on their browsing and purchasing history. This can improve the customer experience and increase sales by presenting relevant products to customers that they are more likely to be interested in. Another important feature of the proposed system is the use of biometric authentication, such as fingerprint scanning, to provide a more secure login process. This can help prevent unauthorized access to customer data and ensure the privacy and security of their personal information. Additionally, the proposed system can integrate with social media platforms to provide a more social shopping experience, allowing customers to share products with their friends and followers and receive feedback and recommendations from their social network. It can also incorporate various technology to improve transparency and security in the supply chain, allowing customers to track the journey of their products from the manufacturer to their doorstep. This can help build trust and confidence in the purchasing process and provide a competitive advantage for businesses. And it is used to show the accurate product details and real-time destination of the shops and desired products availability. As a customer goes for shopping through this mobile application, The Customer would be able

to select the area and desired retailer and shops and known about the product availability. It encloses products list in that range and any offers and discounts related to the products. Once the customer added the desired or needed products in a cart, it moves to the payment process with that the customer will verify the order history also. The given solution reduces the time efficiency and improves the customer satisfaction while purchasing the product compared to others. Overall, the proposed system for a cloud-based product purchasing Android application offers a range of innovative features and technologies to enhance the customer experience, improve security, and increase sales.

SYSTEM DESIGN



MODULE DESCRIPTION

- **Login Module**
- **Fingerprint detection**
- **Distribution management**
- **Payment gateway**
- **Result Prediction**

Login Module

It is a crucial component of the system, providing secure access to customer accounts and personal information.

The login module should be designed to ensure the privacy and security of customer data and prevent unauthorized access to the application. The login module can incorporate biometric authentication, such as fingerprint scanning, to provide a secure and convenient login process for customers. This can help prevent fraudulent access to customer accounts and ensure the privacy and security of their personal information. Additionally, the login module can include a password reset feature that allows customers to reset their passwords in case they forget them. This feature should be designed to ensure the security of customer data and prevent unauthorized access to their accounts. To further enhance the security of the login module, the system can implement multi-factor authentication (MFA) that requires customers to provide additional authentication factors, such as a verification code sent to their mobile phone or email, in addition to their login credentials. Overall, the login module for the cloud-based product purchasing Android application should be designed to provide a secure and convenient login process for customers while ensuring the privacy and security of their personal information. By implementing biometric authentication, password reset features, and multi-factor authentication, the login module can provide customers with a seamless and secure login experience.

User Registration: Users should be able to create an account within the application by providing their basic details like name, email address, and a password. Users should be able to log in to their accounts using their email address and password or any other form of authentication method like biometric authentication.

Forgot Password: Users may forget their passwords, and therefore, the application should provide a password reset option. By implementing these functionalities, the login module of a cloud-based purchasing Android application can provide a secure and user-friendly experience to its users.

Fingerprint detection

It is responsible for capturing and verifying the customer's fingerprint and ensuring the security and privacy of their personal information. To implement the fingerprint detection module, the Android application can use the

device's built-in fingerprint scanner, which provides a secure and reliable way to authenticate the user. The module can be integrated with the login module and activated when the customer attempts to log in to their account. The fingerprint detection module should be designed to capture and store the customer's fingerprint securely, using encryption and secure storage mechanisms to ensure the privacy and security of their biometric data. The module should also be designed to detect and prevent fraudulent attempts to bypass the authentication process, such as using a fake fingerprint or other spoofing techniques. In addition to its use in the login module, the fingerprint detection module can also be used for other features in the application, such as verifying payment transactions or authorizing certain actions within the application. Overall, the fingerprint detection module is an essential component of the biometric authentication feature in the cloud-based product purchasing Android application. By implementing this module securely and reliably, the application can provide customers with a convenient and secure authentication process that enhances their overall shopping experience. Fingerprint detection provides a seamless and convenient user experience and it is fast and accurate. The fingerprint scanner can identify the user's fingerprint within a fraction of a second, which speeds up the login process and reduces the user's waiting time. Users can access the application quickly and securely, and the application can protect their personal and financial data from unauthorized access.

Distribution management

It enables users to view and purchase products from various distributors and retailers. These are the key functionalities and benefits of this screen

Retailer Name: The application can display the name of the retailer or seller of the product. This provides users with options to choose from multiple retailers, compare prices and delivery times, and make the best purchase decision.

Distributor Name: The application can display the name of the distributor or supplier of the product. This provides users with transparency and accountability, enabling them to track

the source of the product and make informed purchasing decisions.

Area Selection: The application can allow users to select their area or location to view products available in their vicinity. This enables users to find products that are available locally and reduces the time and cost of shipping.

Product Information: The product screen provides detailed information about the product, including its name, description, price, and image. Users can browse and search for products based on their preferences and requirements.

Order Placement: Users can place orders directly from the product screen. They can select the product they want, add it to their cart, and proceed to checkout. The application can also provide various payment options, such as credit card, debit card, net banking, or mobile wallet, to enable users to make secure and convenient payments. It enables users to find, view, and purchase products from various distributors and retailers in their vicinity. By implementing this feature, the application can provide users with a seamless and convenient shopping experience, while also ensuring transparency, accountability, and security in the purchasing process.

Payment gateway

This module should be designed to ensure the security and privacy of customer payment information, prevent fraudulent transactions, and provide a convenient payment process for customers. The payment gateway module should also include fraud detection and prevention mechanisms to detect and prevent fraudulent transactions, such as by monitoring for suspicious activity or requiring additional authentication steps for high-risk transactions. Overall, the payment gateway module is an essential component of the cloud-based product purchasing Android application, providing customers with a secure and convenient payment process while ensuring the privacy and security of their payment information. By implementing this module securely and reliably, the application can increase customer trust and loyalty, leading to increased sales and revenue for businesses.

Payment Processing: A payment gateway allows users to

make payments for their purchases securely and efficiently. The gateway securely encrypts the user's payment details and

transmits them to the payment processor for verification and approval. **Secure Transactions:** A payment gateway uses various security measures, such as encryption, tokenization, and fraud detection, to ensure that the payment transaction is secure and protected from fraudulent activities.

Result Prediction

Personalization: Result prediction can be personalized based on the user's past purchase history, preferences, and behaviour. The application can analyse the user's data to predict which products the user is likely to purchase or which offers the user is likely to avail of.

Recommendations: Result prediction can also provide recommendations to users based on their predicted outcomes. For example, if the user is predicted to purchase a particular product, the application can recommend complementary products or offers that may enhance the user's experience.

Trend Analysis: Result prediction can analyze trends and patterns in the user's purchasing behaviour to predict future outcomes. The application can use machine learning algorithms to analyse the data and identify trends, such as which products are likely to be popular in a particular season or which offers are likely to be in high demand.

Sales Forecasting: Result prediction can also help the application to forecast future sales and revenue based on the predicted outcomes. The application can use the predicted outcomes to estimate the expected demand for a product or offer and adjust its inventory or pricing strategy accordingly.

Customer Retention: Result prediction can help the application to retain customers by predicting which customers are likely to churn or leave the platform. The application can use this information to offer personalized incentives or offers to retain the customer. It is a crucial feature in a cloud-based purchasing Android application that can help users make informed purchasing decisions, while also enabling the application to optimize its sales and marketing strategies.

By implementing this feature, the application can provide users with a personalized and convenient shopping experience, while also improving its profitability and customer retention.

CONCLUSION

The development of a cloud-based product purchasing Android application can be a valuable project for businesses looking to increase their online sales and improve customer experience. By leveraging cloud technology, businesses can manage their inventory and sales data in real-time, while customers can enjoy a seamless shopping experience from the comfort of their mobile device. To ensure the success of the project, it is important to prioritize user experience, security, and scalability. The application should be designed with an intuitive user interface, personalized recommendations, and easy checkout features to enhance the overall shopping experience. Furthermore, the application should be scalable to accommodate growth and future changes in user demand. Overall, a well-designed cloud-based product purchasing Android application can help businesses stay competitive in the digital market and improve customer satisfaction, resulting in increased sales and revenue.

FUTURE ENHANCEMENT

Voice-enabled search and navigation: Implementing voice-enabled search and navigation can provide users with a more convenient and hands-free experience when browsing products and making purchases.

Augmented Reality (AR) integration: Integrating AR technology can allow users to view products in 3D and visualize how they would look in their own space, providing a more immersive and engaging shopping experience.

Integration with social media platforms: Integrating the application with social media platforms such as Facebook and Instagram can help businesses expand their reach and engage with customers through targeted ads, promotions, and social commerce.

Chatbot integration: Integrating a chatbot can provide users with quick and personalized assistance, answering their questions and resolving issues in real-time.

Integration with digital wallets: Integrating the application with popular digital wallets such as Google Pay, Apple Pay, and PayPal can provide users with a faster and more secure checkout experience.

REFERENCES

- [1] T. Tandel, S. Wagal, N. Singh, R. Chaudhari, and V. Badgujar, "Case Study on an Android App for Inventory Management System with Sales Prediction for Local Shopkeepers in India," 2020
- [2] K. Singh and R. Wajgi, "Data analysis and visualization of sales data," 2016 World Conference on Futuristic Trends in Research and Innovation for Social Welfare (Startup Conclave), Coimbatore, India, 2016
- [3] Z. Pirani, A. Marewar, Z. Bhavnagarwala and M. Kamble, "Analysis and optimization of online sales of products," 2017 International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS), Coimbatore, India, 2017
- [4] R. Padaya, S. Suvama, A. Channe and C. Shah, "Smart Local Shopping System," 2018 Second International Conference on Electronics, Communication and Aerospace Technology (ICECA), Coimbatore, India, 2018
- [5] P. Wachter, T. Widmer and A. Klein, "Predicting Automotive Sales using Pre-Purchase Online Search Data," 2019 Federated Conference on Computer Science and Information Systems (FedCSIS), Leipzig, Germany, 2019