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Go Cart

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ABSTRACT: This paper introduces GoCart, a digital platform that connects thela (cart) vendors and load transporters directly to consumers. The application establishes a seamless ecosystem, offering convenience for street vendors, consumers, and transporters. By leveraging location-based services, order tracking, and digital transactions, GoCart bridges the gap between supply and demand in urban and semi-urban areas. The platform enhances accessibility, reduces idle time for transporters, and enables vendors to scale their reach beyond traditional methods.

I. INTRODUCTION

With the rise of digital transformation in local commerce and urban logistics, there is a pressing need to integrate informal sector participants like street vendors and local transporters into the mainstream economy. GoCart addresses this gap by offering a unified platform where consumers can engage with thela vendors for food and produce, and also book thela transporters for load carrying. This solution promotes livelihood opportunities and makes essential services accessible through technology.

GoCart is a platform designed to revolutionize urban logistics and local commerce by connecting consumers with street vendors and local transporters. With the rise of digitalization, many informal sector workers, such as street vendors and small-scale transporters, lack the exposure and infrastructure to reach a larger audience. GoCart aims to bridge this gap by providing these service providers with an online platform where they can easily list their services and be discovered by consumers.

Street vendors and local transporters are a backbone of the informal sector but often operate without the support of modern digital tools. This limits their ability to grow, reach new customers, and manage their businesses efficiently. GoCart seeks to address these challenges by offering an integrated platform that empowers these service providers, enabling them to grow their businesses and provide consumers with a seamless shopping and transportation experience.

II. LITERATURE REVIEW

In recent years, digital transformation has become a significant factor in reshaping local commerce and urban logistics. With the rise of online platforms for goods and services, small businesses, especially informal sector participants like street vendors and local transporters, are increasingly being incorporated into the mainstream economy. However, despite the growth of online marketplaces, these sectors still face challenges in terms of visibility, accessibility, and affordability. This review explores existing research on similar initiatives and technological advancements that have addressed these issues and laid the groundwork for platforms like GoCart.

1. Informal Economy and Local Commerce

The informal economy, including street vendors and local transporters, plays a crucial role in many urban settings, providing affordable goods and services to communities. Despite their contributions, these sectors are often overlooked in digital commerce strategies. A study by Arvidsson et al. (2017) highlights how digital platforms have increasingly integrated informal vendors into the economy, enabling them to reach a broader consumer base. However, the research emphasizes that vendors and transporters still face significant barriers, including lack of technological infrastructure and limited digital literacy.



2. Challenges in Urban Logistics

Urban logistics, especially for small-scale transporters, faces numerous challenges in optimizing routes, managing orders, and ensuring timely deliveries. According to Cohen and Frazelle (2019), traditional logistics systems in urban areas are fragmented, and local transporters often lack access to efficient tools for managing their services. GoCart addresses this challenge by providing a unified platform that enables local transporters to manage load-carrying tasks more efficiently, improving service quality and reducing operational costs.

3. Role of Mobile Applications in Local Commerce

Mobile applications have become key enablers in bridging the gap between informal vendors and consumers. Chen et al. (2020) propose that mobile platforms can empower street vendors by providing an accessible, cost-effective means to reach customers, manage orders, and receive payments. However, the success of such platforms depends on ease of use, accessibility, and trust. GoCart, with its simple user interface and integrated payment system, addresses these concerns, enabling both vendors and customers to engage in transactions securely and effortlessly.

4. Technological Integration and Livelihood Opportunities

Platforms like GoCart are not only helping to improve business efficiency but are also creating new livelihood opportunities in the informal economy. Wagner (2018) discusses how digital platforms have created scalable opportunities for vendors and service providers to increase their income. GoCart's model promotes inclusivity by integrating the informal sector into the broader digital economy, giving local vendors and transporters the tools to expand their businesses, increase visibility, and reach a larger audience.

5. Security and Trust in Digital Platforms

A significant concern for both consumers and vendors in digital commerce platforms is the issue of security and trust. As Singh et al. (2021) observe, digital platforms in local commerce must ensure secure transactions to build trust among users. This is especially important for small vendors and transporters who may be hesitant to adopt new technologies. GoCart's integration of secure payment gateways and customer reviews helps mitigate these concerns, ensuring that both vendors and customers feel confident using the platform.

6. Opportunities for Further Research

While numerous studies have explored the integration of small businesses into digital platforms, there is still a gap in research when it comes to tailored solutions for informal sector participants, especially in developing regions. Future studies could explore the effectiveness of platforms like GoCart in improving the economic stability of local vendors and transporters, with a focus on measuring long-term impacts on livelihoods and economic growth in urban areas. Additionally, research on the scalability of such platforms to rural areas could offer valuable insights into their broader applicability.

III. METHODOLOGY OF PROPOSED SURVEY

The development of GoCart, a digital platform designed to connect local vendors with transporters and consumers, follows a systematic approach that incorporates both technical and operational considerations. This methodology emphasizes user-centric design, integration of relevant technologies, and iterative development to ensure that the platform meets the needs of its target audience while addressing the challenges of the informal economy. The following sections describe the methodology used in the GoCart project.

1. System Architecture Design

The GoCart platform employs a client-server architecture that ensures scalability, security, and flexibility. The system consists of two main components: the mobile application for vendors and customers and the web application for administrators and logistics managers.

Frontend Design:

The frontend of the GoCart platform is developed using Tailwind CSS, JavaScript, and Vite+ React frontend for the web application. This allows for cross-platform functionality, ensuring compatibility with both Android and iOS devices.

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Backend Development:

The backend of the system is built with Node.js and Express.js to provide a robust and scalable environment for handling user requests, processing payments, managing deliveries, and maintaining product listings. MongoDB is used as the database for efficient document-based data storage, enabling easy retrieval and manipulation of dynamic information like product listings, user profiles, and order statuses.

2. User-Centered Design

The success of GoCart depends on its usability and accessibility. Therefore, the design process follows a user-centered design (UCD) approach to ensure the platform addresses the needs of its users—local vendors, transporters, and customers. The development of GoCart includes the following steps:

User Research:

Interviews and surveys with local vendors, transporters, and consumers were conducted to understand their needs, preferences, and pain points. The insights gathered from these sessions helped inform the design of the platform, ensuring it provided the necessary tools and functionalities for all user groups.

Usability Testing:

The prototypes were tested with a small group of vendors and customers, gathering feedback on the ease of use and any potential issues. The iterative feedback process was used to refine the user interface (UI) and user experience (UX), ensuring that the platform was intuitive and accessible.

3. System Development Life Cycle (SDLC)

The GoCart platform follows an agile development methodology, which promotes iterative and incremental development to accommodate changes and ensure continuous improvement. The SDLC consists of the following phases:

Requirement Analysis:

The project began with a thorough analysis of user needs, business requirements, and technical feasibility. This phase involved collaboration with stakeholders to define the scope and objectives of the platform.

System Design:

Following requirement analysis, the system architecture and database schema were designed. The focus was on creating a scalable and maintainable system that could handle high volumes of transactions and users, especially considering the growth potential in urban and rural areas.

Implementation:

The development team implemented the system according to the designed architecture, beginning with the core features such as user registration, vendor onboarding, order management, and payment processing. The application was built iteratively, with continuous integration to ensure smooth testing and deployment.

IV. CONCLUSION AND FUTURE WORK

GoCart stands as a robust and user-centric platform designed to digitally transform local commerce by seamlessly connecting consumers, vendors, and transporters. Built using React with Vite and integrated with JavaScript, the application offers fast rendering, efficient component handling, and an intuitive user interface that enhances usability and navigation. Its architecture emphasizes modularity and performance, enabling efficient product browsing, real-time updates, and streamlined order processing. By digitalizing traditional market interactions, GoCart not only improves accessibility and transparency but also fosters economic inclusivity by empowering small businesses to participate in the digital marketplace without the need for heavy infrastructure or technical expertise.

Looking ahead, GoCart holds significant potential for growth and innovation. Future enhancements could include integrating real-time chat support, intelligent inventory management, and AI-driven analytics for vendor insights. Expanding the platform with a dedicated mobile application would further increase reach, particularly in areas with limited desktop access. Enhanced localization features, such as regional language support and location-based service discovery, would make the platform more inclusive. Additional advancements like API integrations for third-party

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logistics and payment services, as well as dynamic pricing tools, could further elevate the platform into a full-scale smart commerce solution capable of driving digital transformation in underserved markets.

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