



DIGITAL ANNAPURNA: A Unique Solution for Informal Vendors in Urban Design

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ABSTRACT

The application software that delivers more wages to the vendors and provides more conveniences to the home staying people is the solution to the problem stated in the problem statement. This application software is the icing on the cake for both house people and vendors. The solution that we have presented, which we call "DIGITAL ANNAPURNA," involves finding the greatest meal service provider and having them come to your home at a predetermined time to give you the best handmade cuisine that you have prepared in your own kitchen. Both men and women who have jobs have to deal with the problem of not always being able to provide their families the finest meals since their jobs require them to work long hours or shifts at night. Therefore, our app can be utilized in such situations as well; for example, if you want to invite your relatives, business colleagues, or other people to a holiday or other event and you require a chef for a set amount of time, then you can also take use of our facility during those times. The program is designed to function on the basis of the amount of time that is made available by vendors in order to make more money in accordance with the requirements of individuals. The application software has Customer and Service Provider windows, which allow the user to access various suppliers according to their time requirements while simultaneously matching the availability of the vendor's time. When the vendor's services are required for the necessary task, they will be contacted as soon as possible. Additionally, the position that is closest to either window will be monitored or determined. The fact that the solution is beneficial to both parties and offers assistance to them both contributes to the successful operation of the application.

Keywords: Street Vendors, Urban Design, Artificial Intelligence, Machine Learning, Application Design

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1. INTRODUCTION

The fact that we constantly join together to trade products and services demonstrates how fascinating it is, as all of us here can see for ourselves. Although we are all familiar with marketplaces, we do not know how they first came into being a thousand years ago. The development of the currency, goods, and people, among other things, are all visible to us as the years pass by in the marketplace, and we can see the changes that are taking place there. The marketplace that we see today goes back to at least 3000 BCE, and the size of marketplaces always varies from one nation to the next. Vendors, often known as those who

sell the company's products, join together in one location for a central gathering. People who are interested in purchasing products and assets travel to a variety of sellers in order to compare prices and assess the quality of the items being sold. When someone discovers an item that satisfies his needs, the process of bartering and trading may then begin. Individuals congregate in the town's marketplaces for a variety of reasons: some people are looking for assistance, others want to exchange ideas, and still others want to talk about issues facing the community. Many things have evolved and advanced to the point where they can teach us something new since that time.



1.1. The Historical Vendor Displays

Even the vendors in historical marketplaces need to differentiate themselves from the other sellers in order to be successful. To differentiate themselves from the other vendors in the market, each one attempted a variety of methods. Some vendors began making discounts available, while others began charging a premium and making claims such as "this fruit is produced in a sacred region," etc [1]. Some of the sellers began cooperating with one another in order to distinguish themselves from the other vendors. The need to differentiate oneself from the competitors is as ancient as the concept of a market itself [2].

1.2. Vendor Markets Today

The marketplaces of today are quite similar to those of the past; the only difference is that we now call them farmer's markets, expositions, and conferences. We cooperate in order to increase sales of our goods in the marketplace [3]. To distinguish oneself from the other competitors and emerge victorious from the pack, partnerships are still an option. The only difference is in the way that we go about doing it. In today's market, developing a product and turning it into a recognized brand is a task that is fraught with difficulty. If we are going to create a brand, we need to ensure that both the product quality and the level of service we provide to customers are exceptional [4]. While it's possible that our ancestors earned their position in the market via years of toil, it won't be simple for us to replicate their success for you since you don't have the same advantages they had. The advertising of businesses need to be done aggressively both online and in-person and at retail locations. We are in a position to gain some wisdom from our predecessors[5]. We are able to provide a product that is one that solves the issue. It won't take too much time for the product to become a brand if it solves a need that people have and if we do a good job promoting it [2].

1.3. Street vendors in India

Those who sell their wares on the street are considered to be street vendors since they do not own permanent shops[4]. It is believed that there are between fifty and sixty lakh street vendors operating in India, with the majority of the country's largest businesses located in the cities of Delhi, Mumbai, Kolkata, and Ahmadabad[6]–[8].

The vast majority of them are immigrants, and their typical workdays consist of ten to twelve hours of labour. According to estimates provided by the Indian government, street selling is responsible for 14% of the total non-agricultural urban informal employment in the country [9].

1.4. Government initiative for street vendors

In the context of the Pradhan Mantri Street Vendors' Atmanirbhar Nidhi Yojana, Prime Minister Narendra Modi not only distributed loans to an approximate total of three lakhs of road firms but also engaged in conversation with the program's recipients. Launched in June with the goal of providing road carriers who have been impacted by the Covid-19 issue with financing for operating capital, the PM SVANidhi initiative is supported financially by the Ministry of Housing and Urban Affairs [10], [11].

For providers, PM SVANidhi would give a working capital mortgage of up to Rs. 10,000 and will reward digital transactions. The benefits are open to any and all street sellers who were actively operating their businesses on or before March 24, 2020, and this requirement must be met in order to qualify for them. Nearly 50 lakh vendors would each get a stimulus package worth Rs. 5,000 crore, thanks to the government's decision to create this program in response to the COVID19 outbreak [9].

1.5. The Street Companies Act

The Street Vendor's Act, which was passed in 2014, was created to provide changes for street vendors in public spaces and to safeguard the rights of street vendors [12]. In September of 2012, the Union Minister of Housing and Urban Poverty Alleviation was the one responsible for adding it on the Lok Sabha's agenda. The Act defines a "street vendor" as a person who engages in daily usage or presents offers to the general public in any public area or private area, operating from a temporary set up form or by moving from one location to another. Workers in cities provide a wide array of functions that are essential to the functioning of the cities. A daily turnover of around 80 crore may be attributed to the economics of vending machines. According to the findings of the study, up to 75 percent of the vendors fall into the vulnerable group of (C) and (D), and only 11 percent of the merchants actually get loans. The poll was carried out just before the second wave of the pandemic made its appearance, which



produced a crisis for people who were employed in the informal sector [13].

While we're on the subject of surveys, do you have any idea how many people make their living as street vendors throughout the nation or even in our own state? According to the ministry of housing and urban poverty reduction, there are 10 million street vendors in India, with Delhi having 450,000, Ahmedabad having 100,000, and Mumbai having 250,000. Let me let you know that this information is available to you. The street vendors act makes provision of vending space capacity with fixed at 2.5 percent of the city population, which puts the vending space capacity at around 5 lakh for Delhi. This is just one example of the many acts that exist that provide advantages to the individuals who sell their goods on the street [9].

1.6. Street Vendor Act

The Street Sellers (Protection of Livelihood and Regulation of Street Vending) Act, 2014 was passed into law with the intention of regulating street vendors in public spaces and protecting the rights of those who work in this industry. On September 6, 2012, the bill was presented to the Lok Sabha by Kumari Selja, who was serving at the time as the

Union Minister of Housing and Urban Poverty Alleviation. According to the definition provided by the Act, a "street vendor" is "any individual engaged in the selling of products... of daily use or giving services to the general public, in...any public space or private area, from a temporary built-up structure or by traveling from place to place."According to NASVI, the street vendors Act provides for the capacity of vending space with a percentage specified at 2.5 percent of the city population. This places the vending space capacity at around 5 lakh for Delhi [14]. According to the findings of a study that was carried out by (Das, 2019) [15] for street food sellers in Guwahati City in 2019, he discovered that not a single one of the thirty respondents was aware of the street vendor act. This was shown by the histogram char in figure 1.

In the same survey [15], he discovered that just 26 percent of the vendors selling street food in the city of Guwahati in India had permanent stalls, while the other 74 percent are mobile vendors. Figure 2 presents a graphical representation in terms of pie chart of the two distinct groups of merchants: permanent vendors and mobile vendors.

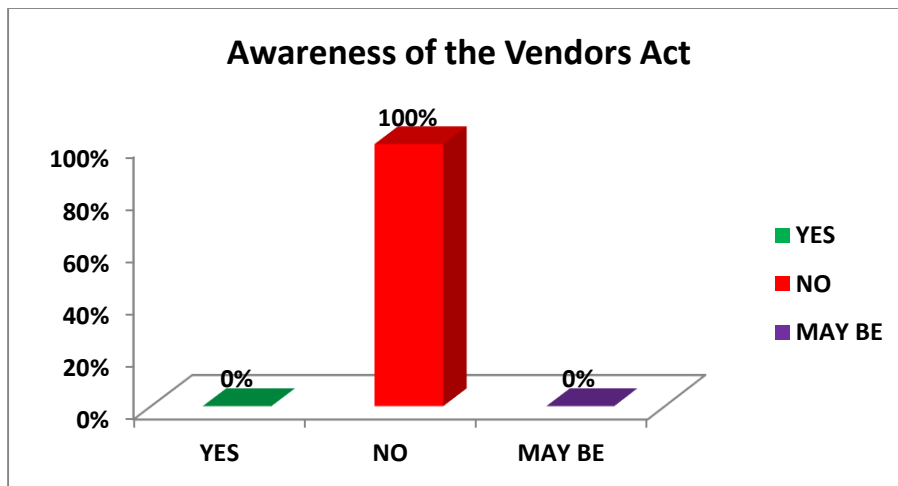


Fig.1: Awareness of Street Vendor Act 2014[15]



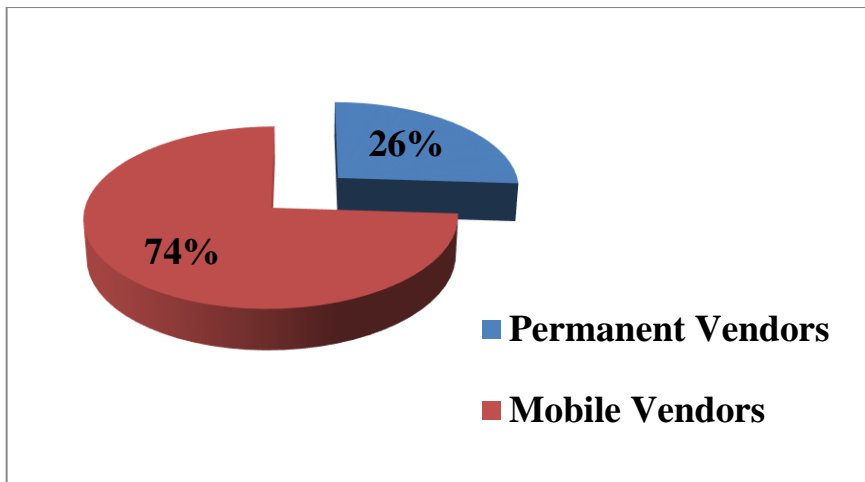


Fig.2: Category of vendors [15]

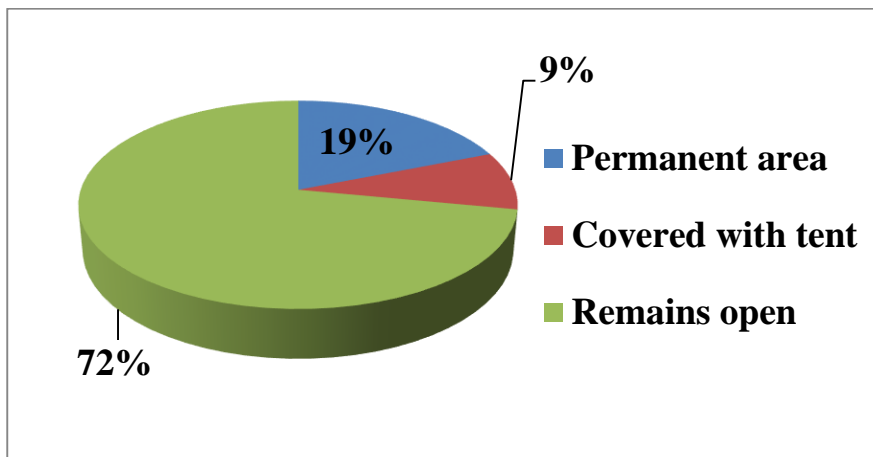


Fig.2: Street food vendors protection from dust, heat, and rain[16]

Similarly, according to a study that was reported by [16] in the city of Guwahati, which is located in the state of Assam in India, for the purpose of protecting street food vendors from rain and dust, only 19 percent of vendors have permanent covers, 9 percent have covered with tents, and the remaining 72 percent are open. According to the pie chart in figure 3, 72 percent of the street food vendors do not have any kind of cover to protect them from the elements, including the heat, the rain, and the dust.

1.7. Schemes for Street Vendors

On Tuesday, October 27, Prime Minister Narendra Modi presented loans to approximately 300,000 street sellers as part of the Pradhan Mantri Street Vendors' Atmanirbhar Nidhi Yojana. He also met with the program's recipients through video conferencing. The PM SVANidhi initiative, which is

being supported by the Ministry of Housing and Urban Affairs, was started in June with the goal of providing street vendors who have been impacted by the Covid-19 issue with credit for working capital. The scheme has an objective to offer credit for working capital [10].

Vendors are eligible for a capital investment loan of up to Rs. 10,000 thanks to the PM SVANidhi program [10], which also encourages digital purchases. To qualify for the rewards, a street vendor must have been selling their products and services on or before March 24, 2020. This applies to all vendors. Nearly 50 lakh vendors are eligible to receive a portion of the Rs 5,000 crore in stimulus funds that the Central Government has set aside for this program, which was created in response to the new coronavirus outbreak. The program, which is a part of the AtmaNirbhar Bharat initiative, has received 31,64,367 applications from



various parts of the nation as of this point (except from Sikkim, which is officially not taking part in it). Out of the entire applications, there have been a total of 16,77,027 approvals, and 12,17,507 payments have been made.

Because to the COVID-19 epidemic and the lockdown, daily wage employees and street sellers are being forced to suffer and stop their job [17], [18]. The objective of the program is to assist the vendors in resuming their normal activity and regaining their financial footing. Its long-term goal is to provide the vendors with a credit score and a digital record of their socio-economic standing, allowing them to eventually take use of various government assistance programs if they meet the requirements. The program will also make an effort to formalize the unofficial sector of the economy so that it may be protected and given access to financing opportunities in the future [19], [20].

2. Proposed Methodology

In this article, we have suggested a project called Digital Annapurna, which would provide local and street sellers the option to earn additional earnings at no additional expense to themselves. The goal of the project is to create a one-of-a-kind solution that will be based on the web and mobile applications and will give clients with a meal

service that is both sanitary and of high quality, giving them the impression that the food was prepared in their own kitchens. The informal vendors will have the opportunity, under this platform, to become a member of the official vendor community at no additional cost and with a great deal of additional benefits. We will offer the informal sellers a variety of different types of jobs, like cooking, needlework, decorating, cleaning, and so on. Food is the primary concern of our company. There will be a search for street sellers who are also good cooks, and the data from such vendors will be gathered and put to the app. To summarize, the app Digital Annapurna will provide you a comprehensive answer in a single location. Our app is broken up into two distinct parts: the Service Provider Window, on the one hand, and the Customer Window, on the other. People who need a chef for a certain amount of time, whether because of their working hours or in preparation for a festival or other occasion, can get one within a short amount of time. This service is available to such people. This not only helps people make more salaries but also raises their demand and cost, and as a result, the design of the urban development was not disrupted in any way. The features included in the application for the customers and vendors has been presented in table 1.

Table 1: The proposed application dashboard features

CUSTOMER WINDOW	SERVICE PROVIDER WINDOW
1) Sign-In	1) SERVICE PROVIDER PROFILE
2) Track a Vendor	a) Cooking Experience
3) Time duration	b) Types of Dishes
4) Call button	c) Availability of Time
5) Cancellation Window	d) Service History
6) Modes of Payment	2) ROUTE BUILDING
7) Service Provider History	3) CUSTOMER PROFILE (AFTER APPROVAL)
8) Activity Alert	





Fig. 4: The proposed dashboard view of Digital Annapurna Application

Vendors may make additional money and serve consumers with healthy and delicious food prepared in their own kitchens via Digital Annapurna, a project that aims to achieve both. So, Digital Annapurna is essentially a one-stop shop for your needs. Our app has two areas, one for the service provider and one for the end user. Vendor data will be obtained first, and they will be registered as well. The proposed dashboard view of the Digital Annapurna application has been shown in figure 4.

3. THE DIGITAL ANNAPURNA APPLICATION

The Digital Annapurna platform is an application that is web-based and mobile-based, with an interactive and extremely basic dashboard that can be readily accessed and understood by ordinary people. The steps that need to be taken in order to use the application are outlined in the following paragraphs.

- **Login/Sign In:** In order to use the application, all users, including customers and suppliers, are required to first sign in.

Case 1: Any kind of identification, such as an Aadhar card, a Pancard, or a ration card, may be used for the purpose of registration at very first time. If they do not have any of those things, then they will be evaluated for the second category, in which the team will review all of the facts that they have provided.

Case 2: We are able to set up camps for those suppliers who do not have access to phones or who do not have android phones but are interested in working with us.

As a result of the fact that the Digital Annapurna platform will be made accessible to both consumers and service providers, the actions that need to be undertaken by customers and vendors may differ to some degree.

3.1. Procedure for Customer

This platform also allows the consumer to register or update his or her profile, which is helpful for the subsequent processing.

1) Track a Vendor: This feature, which is based on our service (FOOD), will look for a vendor in the

vicinity of the customer's location or depending on the customer's search choice.

Condition 1: There should always be proper availability of GPS and an internet connection, otherwise the client may search on behalf of other people as well.

2) Choose a vendor: Choose a vendor based on the requirements, including location and accessibility - the vendor's preferred area should be based on the data that they have filled up. The first condition stipulates that the correct address that was registered on the app must be taken into account.

3) Time slot matching: The seller and the client will work together to find a time window that works for both of them. (This is the most important phase since it is at this point that the real execution of the app begins; when the time slot of the vendor and the consumer has been matched, the information will be sent.)

Case 1: If the match does not take place correctly due to a mistake or because the customer does not have the appropriate internet connection, the client may need to re-login or restart the application.

Condition 1: In the event that there is no vendor accessible within the allotted time period, the client may phone in a request, and we will try our best to fulfill it by dispatching an employee from our end.

4) Fare estimate: An estimate of the price will be determined according to the needs of the client; however, even this estimate is not final since they need to keep the total cost down to a certain minimal level; if the amount of labor or time required increases, the charge will also rise.

Case 1: The vendor will be provided with specific contact numbers of certain team members of Urbanian Annapurna. Urbanian Annapurna will always cooperate with the merchants to ensure that they may obtain their fee in the correct manner.

Case 2: We may also include various price ranges for the food so that when the consumer is going to make a purchase, he or she will have a better sense of how much money will be required for that particular item. Not only will it enable people to contribute money in the appropriate manner, but it will also assist the sellers make more money.

5) Payment method: The all payment option will be available for the customers and vendors such as UPI, UPI apps, payment Apps, banking Apps, Debit Cards, Credit Cards, payment card, and Cash payment. .

6) Communication and Notification: After the consumer has confirmed a vendor, the contact number and other data will be sent to both the customer and the vendor. Additionally, the estimated time of arrival and everything else will be provided. 486

The first condition is that there must be enough communication between the client and the seller in order for both parties to get an understanding of the requirements of the other. After the final pick has been made, the particulars, such as phone number and address, will be shown. In addition to this, the team will also place a recorded call to the vendor in order to ensure that they are appropriately alerted.

7) Emergency Alert Option: You have the ability to employ this option in the event of any kind of emergency. It will put you in touch with the individuals who are on your list of emergency contacts as well as put you in touch with the other members of the team. Moving forward, individual members of the team will step up and take the initiative to find a solution to the problem.

Case 1: If there is an urgent problem that has to be resolved right away, then they may choose the number for the local police station from the drop-down menu.

3.2. Procedure for Vendors

1) Service Provider Profile: They will need to create a profile in which they will explain about their experiences, the kind of dishes they are able to cook, and other relevant information. They will also be shown the variety of cuisine available so that they may customize their dining experience. After working more and more, they will be able to alter the specifics of their encounters, including the meals.

Case 1: Both the English and the Hindi languages will be taken into account, depending on the requirements of the suppliers. They also have the option to contact and inquire if they are stranded in between.



Condition 2: The team will do another check on their profile to make sure that nothing unexpected occurs.

2) Time Slot: At this point, they are looking for someone to fill an available time slot during which they are able to deliver a service.

Case 1: The time slots are flexible and may be adjusted as needed.

3) Matching of time slots: The seller and the client will work together to find a time window that works for both of them. (This is the most important phase since it is at this point that the real execution of the app begins; when the time slots of the

vendor and the consumer have been matched, the information will be sent.)

4) Route Building: After the confirmation, they will determine the route and location of the customer's preferred place to get the service.

Case 1: It's possible that the vendor is located some distance away from the customer's location; in this scenario, the seller may provide information on the route they took to get there and the means by which they were persuaded to make the purchase. They will see a rise in their revenue as a direct result of this. 487

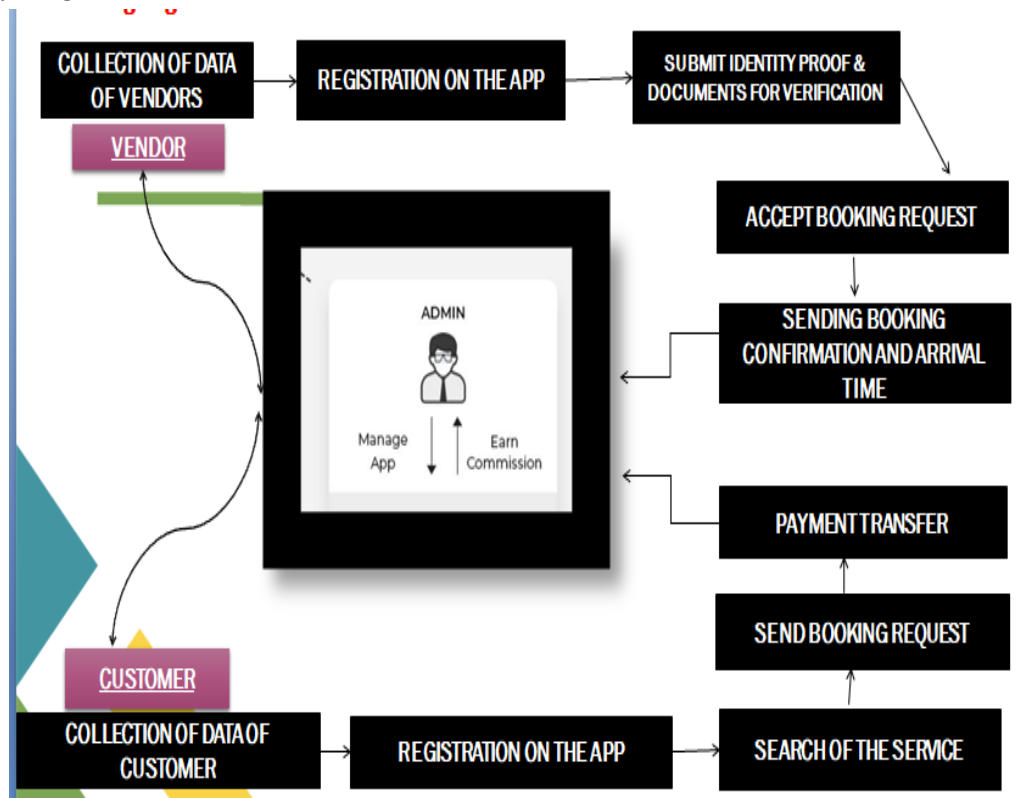


Fig. 5: The Flow diagram of the proposed application

5) Client Profile: After the customer has completed their booking with the vendor, they will be given permission to access their profile, which will include their contact number. Other particulars will be kept secret due to safety concerns. Through this new approach, it is now possible for the admin who is operating the app to earn commission. And the application process will continue in this manner throughout its whole. The flow diagram of the proposed application for the street vendors has been shown in figure 5.

4. Conclusion

An original answer to the problem of how to deal with street sellers was presented by the Urbanian Annapurna Team in this article. The solution consisted of giving the vendors a platform that was named Digital Annapurna. Street vendors may take use of both a web-based application and a mobile application by downloading the Digital Annapurna, a digital platform that was designed just for them. Even users with no prior expertise should have no trouble navigating the program's interface since it is so intuitively designed. This platform will be accessible to consumers as well as merchants, with



the intention of providing food that is both wholesome and sanitary to those who eat on the street. In addition, the purpose of this operation was to integrate street vendors working in the informal sector into the official sector of the economy by providing them with greater compensation at no additional cost. As a consequence of this, we may be able to accomplish this objective with the assistance of a software that is both interactive and simple to use.

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