

بسم الله الرحمن الرحيم

Requirements of Graduation Project report



Computer engineering

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A-Z DELIVERY

1. Abstract

Up to this point in time, many digital solutions have been created for all types of problems in the day to day activities. Despite these solutions people still visit supermarkets, shops, dealers, and restaurants etc. during these visits individuals may experience long drives, traffic and all sorts of unpleasant elements only to find out that the desired item, product, or service is not available. Which leads to the need of a solution that addresses this issue.

A-Z Delivery was developed as proposed solution for this problem, it's a detailed web platform as well as a mobile platform that facilitates the direct connection between a wide net of stores varying in all categories, restaurants, stores, and electronics, and all sorts of products and services.

A-Z Delivery offers a mixed marketplace that gives the customers a chance to browse, order and receive products from various vendors that are local to the customer, it simply creates a web of connection between the customer and all the local stores and vendors around all in a user friendly platform.

The creation of this platform simplifies the process of driving to multiple stores, browsing through many items in addition to dealing with all the unnecessary time wasting headaches of physically going out shopping while having to cancel plans or be excused from work.

The idea for this project was inspired by having a centralized system that includes diverse stores that tend to the different needs of individuals as the same time, which separates it from all the existing delivery systems that have saturated the current market, not only that but it also includes a logistics system that people can use to transport personal items.

JavaScript modern technologies was utilized to develop this project, as for the highly responsive and dynamic front-end interface React was used, as well as Node.js powers was used to develop the back-end server-side logic.

The final developed system was developed, tested, and evaluated to make sure the system is reaching its potential when it comes to enhancing the customer's convenience in addition to optimizing urban mobility by reducing the need for unnecessary travel.

2. Chapter 1: Introduction

2.1.General background

Due to the dynamic nature of the technology fields, the technological advancements have evolved the expectations of customers and as a result customers slowly changed their behavior. Different and new platforms have emerged like e-commerce and mobile applications which only increased the customer's need and demand for comfort, convenience, speed, and most importantly easy accessibility for the daily life transactions. (Smith, 2020)

With all the new and easy to use technologies many individuals still prefer the more traditional and in person shopping experience, that include long drives, traffic, and the possibility that the product or service is not available which renders the whole process a waste of time and energy as well as environmental impact. (Chen, 2019)

Even though there are many applications that can address these issues and challenges they all can be very narrow in scope, because they only focus on specific categories and sectors like electronics, food, and clothes etc. which leads to customers to have to resort to browse multiple applications and platforms to meet their needs which can be a frustrating process that can lead to customer frustration. (Ahmed, 2021)

As a result of this gap A-Z Delivery was created to create a unified solution to solve this problem that combines the various shopping categories in one platform. A-Z Delivery allows customers to browse from different stores from all the different categories wither they are looking for groceries, household goods, electronics, or even cosmetics in one platform, in addition to having a special feature of having a transport service that can be used for personal items that only adds to the platform's utility.

A-Z Delivery was developed using modern JavaScript technologies, and React to develop front-end and Node.js for the back-end, the project started as a food delivery project then it later on evolved into this multi category delivery system that aims to ease the effort of customers and traffic jams.

And that's not everything, A-Z Delivery also provides a service for clearing imported products from foreign countries. In other words, it offers clearing services from the ports regardless of the size of the shipment. It has the capability to clear the imported shipment from the port and deliver it to customer's home.

2.2.Objectives (Purpose or Aims) of the work

Up to this date 269,550 vehicles in this west bank have been registered according to the Palestinian Central Bureau, which is where this idea for this project originated. If only 20 % of the vehicle owners go on the roads on the mission of searching for products that means nearly 53,910 vehicles will occupy the streets every day, which leads to traffic jams, accidents, pollution in addition to extra unnecessary fuel consumption.

These issues become worse when people don't find what they are looking for in one store and they have to drive and search for the needed product in more than one place and continue to drive to multiple stores in different locations which only wastes time, effort, and resources, that's where A-Z Delivery comes in.

The main purpose of this project to increase the efficiency of the shopping process, reduce any impact or consequences of traffic jams, while also increasing the convenience and the ease of the shopping process for the customers by providing easy accessibility to various products and delivery process.

The outcomes of this project can be measured by these points:

- Reduction in physical store visits
- Delivery efficiency
- User adoption rate
- Traffic impact awareness
- Store participation

2.3.Significance or importance of your work

The importance of this project stems from its ability to address the growing issues of the traditional shopping process of going store to store looking for products and services in a time sensitive environment.

Areas like the west bank are heavily congested by the increasing need of individuals owning their own personal vehicles, which raises the need for a smart solution that reduces traffic by reducing unnecessary travel, while enhancing the customer satisfaction and shopping experience, thus creating a smart urban living.

A centralized platform is offered in A-Z Delivery which is a transformative approach that connects all the near stores that ranges from different and multiple sectors. Not only does this platform help ease and facilitates a more enjoyable and efficient shopping process but it also gives a power to the customers by giving them access to real time to product availability, which removes the challenges that comes from physically going to multiple stores and searching for products from the equation.

In addition, to A-Z Delivery solving these issues it can have a better and a broader economic and environmental implications, this can be achieved by reducing the amount of vehicles trips thus decreasing traffic and more importantly the emission of carbon and fuel consumption.

Moreover, it gives small and medium businesses a chance to compete in a competitive market where previously they can't compete due to the lack of ability to create an independent online sales channel.

Another perspective is the technological aspect, where it offers a practical application of the modern web development frameworks like Node.js and React to solve real life world.

3. Chapter 2: Theoretical Background and Previous Work

3.1.Introduction

This chapter makes the foundation for the A-Z Delivery by making use of similar ideas that has been developments that has inspired that platform. The delivery service is a system that has been in the works for a long time and reviewing similar applications show why people are in need for a platform that has all of it in one place

3.2.Theoretical background

The growth of the online shopping and ordering has made a lot of effect on the people shopping instead of moving away to physical store which make it much easier to buy

and having delivered to their door. On a technical side we use tools like React, Node.js and the commonly used by experienced programmers and popular for web development

3.3.Related work

There exists many application similar to A-Z delivery like Talabat , Careem, and amazon, each of these apps offers a specific services .

While they all are successful, they mostly focus on one only they all work in their own niche and they don't offer a local platform

3.4.Gap in existing solutions

- The absence of a single platform that has one platform for local stores most apps don't let the users :
- Compare products from different stores
- Assist small and medium businesses that can't afford to pay for delivery systems

3.5.Summary

This chapter has made its way through many game changing ideas in online shopping and has went its way to main technologies that are being used to for website development and many of them are popular delivery applications used by many but there is a gap in this system one has to look for different platforms to be able to get what he wants from it. A-Z Delivery fills that gap that many doesn't seem to talk about by offering a unique solution that unites small business together.

4. Chapter 3: Methodology

• 4.1-features

I- sign-up page

On this page, the user is asked to create an account on the website so they can browse or bye from the app or website

II- sign in page

After signing up, congratulations, now you are a member of A-Z family now you have to enter your email and password to have access to all stores and buy whatever you want from any of them

III-home page

On the home page you can find the type of store we have in the site the stores are divided into categories according to the products each stores offer

You also can find the recommended product, however the recommended products are going to show up on the home page to you according to the product you buy the most

IV-search par

Here where you can search for your product name and you will be able to see the product name and the store offer the product and that's not everything you can also search for store name or the name of the place where you live and you will be able to see all stores near to you

V-profile page

On this page the costumer will be able to see there information's and update them

Such as their names profile picture and password

VI-my orders page

In this page the customer can see all ordered products and check there state such as, ordered, canceled, delivered, etc.

VII-Request Delivery Pickup Service

On this page the customer can request pickup service and specifies what the amount of the charge is, its weight, and its details.

VIII- Pickup Requests page

On this page the customer can check the state of their shipment

VIII-Your Cart

This is the page the product will be added before the customer confirm the order

X-Account Balance

Amount of money currently available in Your A-Z account

XI-type of user

We have three type of users which are

1-customer user

The regular user, who can buy and browse only

2-Store manager

They are the owner of the stores that have been included in the website

And they have access to their store only

they can add and delete category

they can add and delete product

and they can update store information such as name location, etc.

Also the store manager can charge any user account balance

3-Admin

They are the supreme authority on the site

They can add and delete category

They can add and delete store

Charge account balance for any user

and the admin also can change the store manager and them selects who will be the store manager from any user on the site.

- **4.2-How the web works**

For user: all you have to do is enter your email and password

And then you can browse and buy whatever you want

For store manager: As I mentioned earlier the store manager is selected by admin

So the store manager is a user who have more access than the regular user

Which is Manager Dashboard

Manager Dashboard is a page store managers have access to
it's the place where the managers can update their stores

For admin: admin is a user that have the supreme authority on the site

But how can I have admin in the web site?

They we can add admin is for data base directly

However the admin can add and delete other admin

The admin have access to the admin Dashboard

Admin dashboard is a page admin have access to

And there the admin can change the store manager for any store
the admin can add and delete category, add and delete store from admin dashboard

- **4.3-Economy**

Since we are working on a software project, it has not cost us money as it has consumed a lot of time.

The plan we followed to generate profit from our project is that we will add a number of stores to the site, and we will charge a fee for hosting your store on our website.

- **4.4-Society**

The main goal of our project is to save time and effort for people.

In short, we have taken the advantages of online shopping, such as the ease of shopping, and combined them with the benefits of traditional shopping, such as knowing the name and location of the store, as well as ensuring product quality, and merged these features into one site.

We have avoided the drawbacks of online shopping, such as the abundance of products whose authenticity and quality are in question, as well as the drawbacks of traditional shopping, such as the lack of guarantee that the product you are looking for is available.

However, to make sure that our project can help society, we made a research form

And we asked the following questions

Where are you from

How old are you

What is your gender?

How many times do you go out to buy stuff during the day?

Do you always find what you look for?

Have you ever used an online shop like amazon?

Do you prefer online shopping over regular shopping?

What is the most annoying thing about online shopping?

In scale of 1 to 10

how satisfied are you with the idea of online shopping?

Which one do you prefer?

1-Cash on Delivery (COD)

2-use visa card

In scale of 1 to 10

how satisfied are you with the idea of online shopping if you will know the product's source

What kind of things do you usually buy from online shops?

If there were an app or website that shows all the nearby stores in your neighborhood displaying what they sell and the prices too, would you still prefer buying stuff online instead of visiting the stores in person?

And the answers were as following:

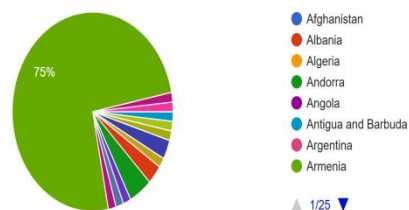
Total Responses: 64

Demographics

Most Common Location:

Palestine (48 responses)

where are you from
64 responses



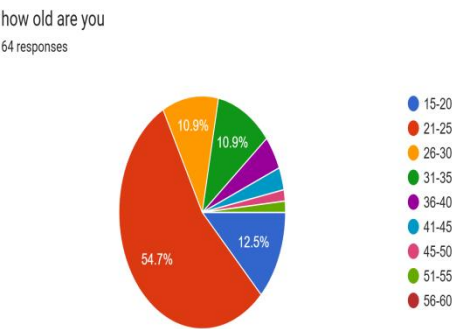
And the other 16 came from

Greece (3) , Egypt(2), Germany(2) ,Antigua and Barbuda(1) , Bulgaria (1), Czech Republic(1), France(1), India(1), Italy(1), Jordan(1), Tunisia(1), Turkey(1)

Age Distribution:

21–25 years old (35 responses)

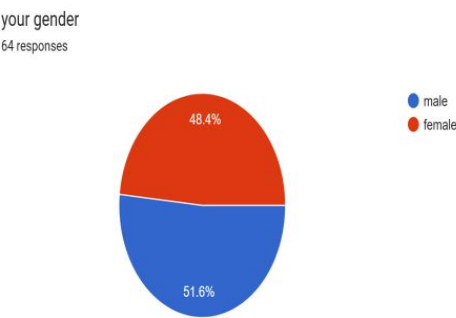
Followed by 15–20 and 26–30



Gender:

Male: 33

Female: 31



Shopping Habits

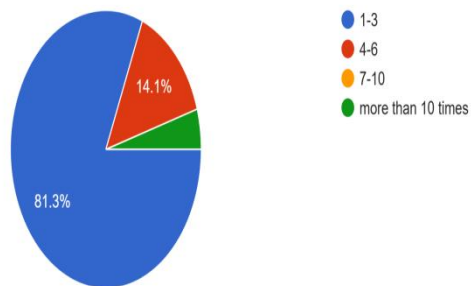
How Often People Go Out to Shop:

1–3 times/day: 52

4–6 times: 9

More than 10 times: 3

How many times do you go out to buy stuff during the day
64 responses



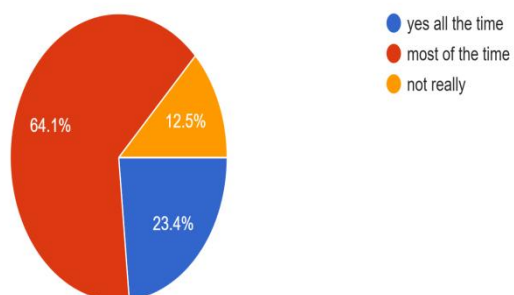
Do They Find What They Look For in Stores?

Most of the time: 41

Always: 15

Not really: 8

do you always find what you look for
64 responses

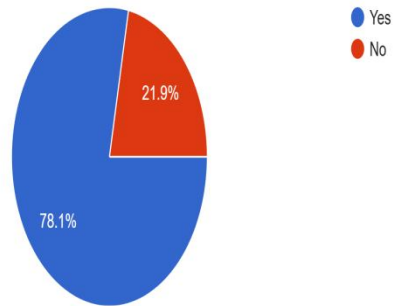


Used Online Shopping Platforms (like Amazon):

Yes: 50

No: 14

have you ever used an online shop like amazon
64 responses



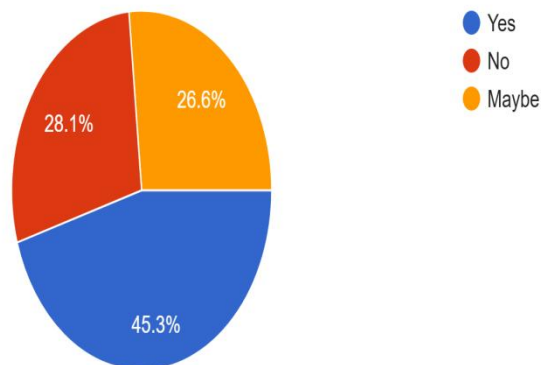
Do They Prefer Online Shopping Over In-Person?

Yes: 29

No: 18

Maybe: 17

Do you prefer online shopping over regular shopping?
64 responses



Problems with Online Shopping

Most Annoying Aspects:

"All" issues: 22

Don't know the product's source: 12

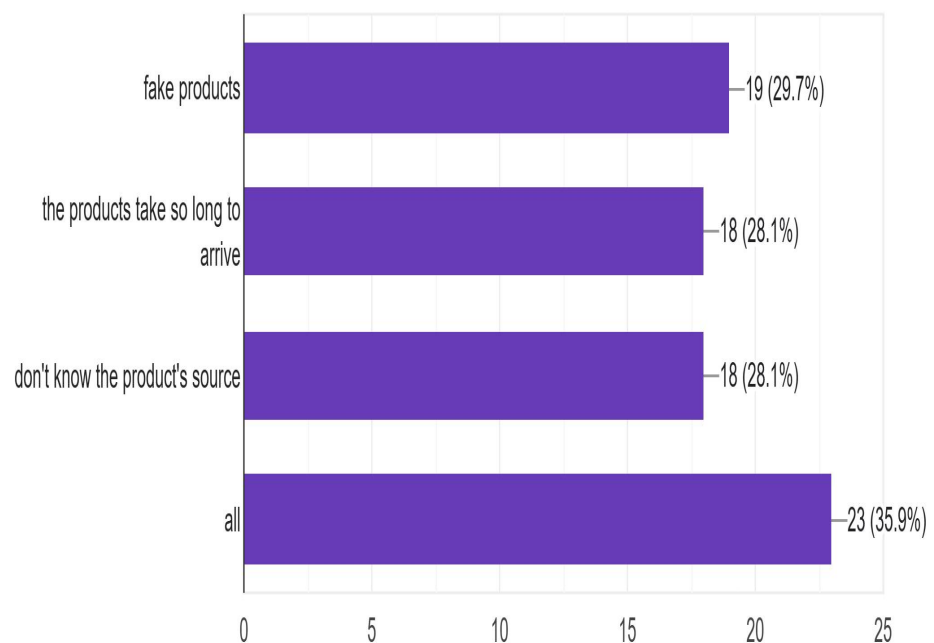
Fake products: 10

Delayed delivery: 8

Mixed combinations of the above: 12

What is the most annoying thing about online shopping?

64 responses



Satisfaction Ratings (1–10 Scale)

Online Shopping Satisfaction:

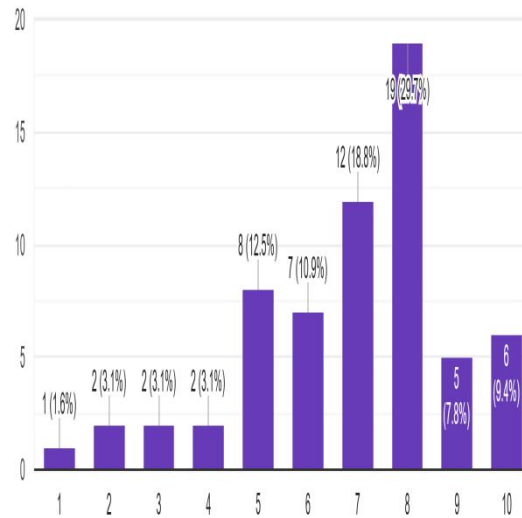
Mean: 6.9

Median: 7

Most people rate between 6–8

in scale of 1 to 10 How satisfied are you with the idea of online shopping?

64 responses



If Product Source Is Known:

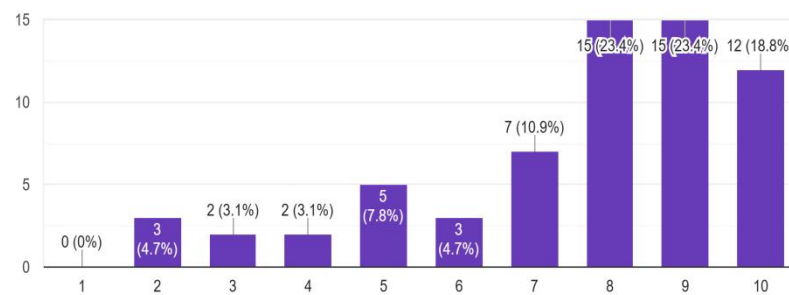
Mean: 7.6

Median: 8

Satisfaction improves when the product source is clear

in scale of 1 to 10 How satisfied are you with the idea of online shopping if you will know the product's source

64 responses



Payment Preferences

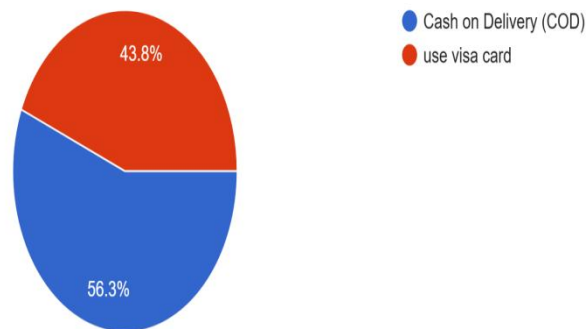
Preferred Method:

Cash on Delivery (COD): 36

Visa Card: 28

Which one do you prefer?

64 responses



Items Usually Bought Online

Most common:

Clothes

Electronics (phones/laptops)

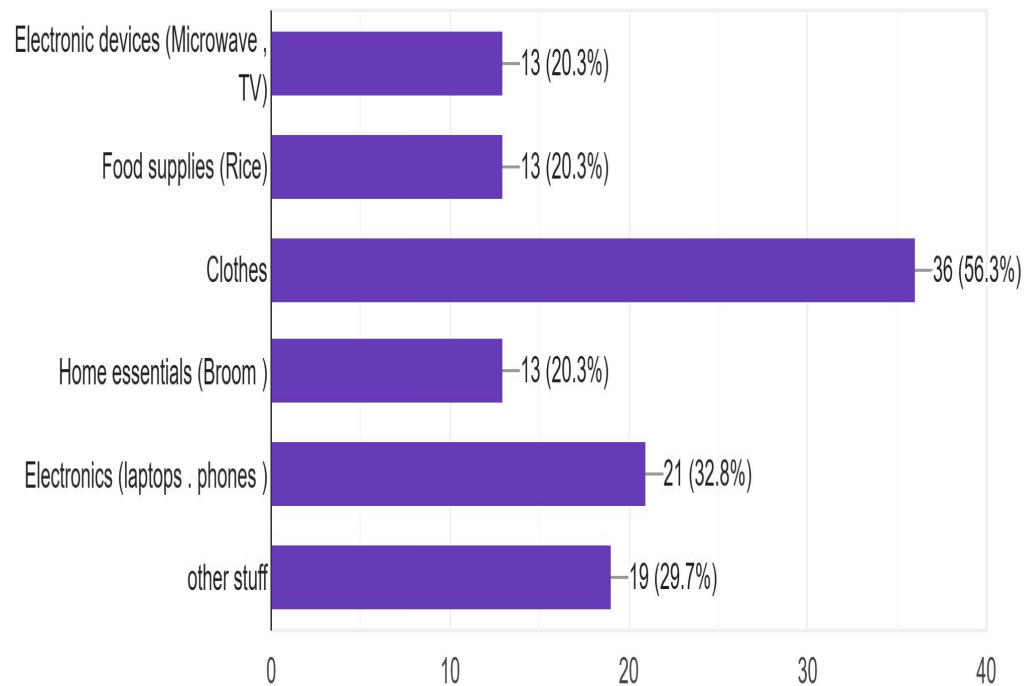
Other stuff

Home essentials

Food supplies

What kind of things do you usually buy from online shops ?

64 responses



Interest in Local Store App

If an app showed nearby stores with prices, would people still prefer online shopping?

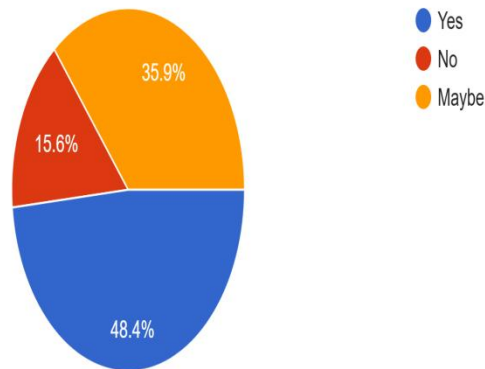
Yes: 31

Maybe: 23

No: 10

if there were an app or website that shows all the nearby stores in your neighborhood displaying what they sell and the prices too , would you still p...tuff online instead of visiting the stores in person?

64 responses



- **4.5-Politics**

Regarding race, color, or gender, we do not care what your gender, race, or even your political leanings are. You are free to use our site, and we, in turn, ensure safe browsing on our site and also guarantee that you will find what you're looking for on our site.

- **4.6-Ethics**

We built the site from scratch by ourselves and did not rely on any external source, not even a pre-prepared template.

The admins responsible for the site have a high level of credibility and integrity.

- **4.7-Manufacturability**

We built our site using React, which is mainly based on creating reusable components that can be used anywhere on the site.

- **4.8-Sustainability**

To ensure the continuous operation of the site, we have deployed it on Amazon Web Services. The site is also built entirely on React and Node.js, which are characterized by ease of reuse and maintenance.

5.Chapter 4 – Results and Analysis

We built a complete and user-friendly website that suits all individuals, and we ensured that the site is responsive, meaning you can open it regardless of the type or size of the device you are using.

Customers on our site have saved a lot of time and effort

This also affected the congestion in the area as you don't have to go and ride in your Own car to shop.

All you have to do is open the application, choose the store you want to buy from, Order everything you need, and within minutes you will get your order.

Our customers are not limited with one shop only you can order from, you have a variety of options to choose from food from restaurant to clothes.

Also, the pick-up request feature has made it easier for importers to clear their goods from the ports, it also has different sizes from small packages to containers that vary is weight and size and the price for it would change depending on the weight.

6.Chapter 5 – Discussion

6.1-Problem Resolution

The goal of A-Z Delivery is to spend less time in traffic and and give the users the choice to order from multiple stores and help them cover all there need from to clothing via a single platform. Our costumars have shown to “have saved a lot of time and effort” by have removed the need to go to stores in person

6.2-Key Contributions

Most delivery websites have a single category ,A-Z Delivery have food outlets, clothing stores, electronics stores, and more.A wide variety of options is marvel additon and is proved by a postive take across different product

6.3-Logical Implications

The A-Z Delivery saves time and trip consolidation prove that a Diverse delivery app that can change the course of a of people days saving them the trips and change the shopping behavior moving the users away from making countless errands to a single platform for “one stop” action. This not only effects the streamlines but also decreasing the traffic jams.

7.Chapter 6 –Conclusions

7.1-Summary And Key Results

This A-Z Delivery platform successfully united a diverse shopping to a single interface resulting in :

1. Time saving
2. Traffic Reduction
3. High satifaction

7.2-Lessons Learned

One stop model Drives Adoption: most people usualy prefer A Diverse catalog instead of using multiple applications

Transparency Builds Trust: Having the stores rating and origin is important for people and markets showing no hiding the quality of it

7.3-Lessons Learned

Future work:By monitoring our emissions, we can clearly see and measure just how much we’re helping the environment.

Open Problems:Balancing dynamic pricing with customer fairness and Protecting people’s privacy even as we share information about where the data comes from.

8. Chapter 7 – Future works

8.1 what we are planning to do

Looking ahead, we plan to establish our own delivery company.

This initiative aims to streamline logistics for shop owners by offering a unified delivery solution. By integrating the delivery service directly with our platform, shop owners will no longer need to coordinate with multiple providers, simplifying operations and improving overall efficiency.

8.2 -how is this going to work

We plan to create a dedicated section on the website for this company. The customer will request the product from the desired store through the main site. A notification will be sent to the shop owners about the type of order and the customer's location. When the shop owner prepares the requested product, they will change the product status from 'ordered' to 'Ready'. This will send a notification to one of the available delivery employees. Based on the customer's location, an appropriate delivery price will be set.

This report was written by students at the (Computer) Engineering Department, Faculty of Engineering, An-Najah National University. It has not been altered or corrected, other than editorial corrections, as a result of assessment and it may contain language as well as content errors. The views expressed in it together with any outcomes and recommendations are solely those of the students. An-Najah National University accepts no responsibility or liability for the consequences of this report being used for a purpose other than the purpose for which it was commissioned.

Thanks for reading