

Czech University of Life Sciences Prague

Faculty of Economics and Management

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Bachelor Thesis

**Evaluation of food
delivery applications in the Czech Republic.**

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

Maksim Zyrianov

Informatics

Thesis title

Evaluation of food delivery applications in the Czech Republic.

Objectives of thesis

The main goal of the thesis is to analyze various criteria of food delivery applications(UI,UX,etc.) and suggest model of application based on research information with some minor improvements.

Methodology

The work will consist of several parts. The first part will be based on study and analyzing literature and information.In the second part we will pick several applications for research comparison. In the final one we will compare and pinpoint problematic areas of research subjects and take it into account during design stage of an app prototype.

The proposed extent of the thesis

35-40 pages

Keywords

UI, UX, Analysis, Application, Food Delivery.

Recommended information sources

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Declaration

I declare that I have worked on my bachelor thesis titled "*Evaluation of food delivery applications in the Czech Republic*" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 30.11.2023

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I want to extend my deepest gratitude to my parents for their unwavering support throughout my four years of study. Their support has been priceless, and I am committed to repaying it in the near future.

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Evaluation of food delivery applications in the Czech Republic

Abstract

This bachelor thesis navigates the intricate landscape of food delivery applications, undertaking a comprehensive analysis of industry leaders—Bolt, Wolt, and Foodorha. Through meticulous evaluation of User Interface (UI), User Experience (UX), and other critical criteria, the study provides valuable insights into user preferences and expectations. The exploration extends to real-world ordering scenarios, employing a Likert-scale method for a nuanced understanding.

Building upon this analysis, the thesis introduces "DELIVER'S," a prototype application crafted using Adobe UX and Proto Pie. This innovative application amalgamates diverse log-in functions, offering users multiple options. The streamlined design, featuring four main icons on the home page, aims to simplify the meal-ordering process.

The "DELIVER'S" prototype, specialized in the delivery of prepared meals, boasts features like geofencing, multiple log-in options, satellite maps, cash on delivery, and real-time order tracking. Furthermore, it explores cutting-edge features such as group ordering with split bills and voice-chatbot assistance, along with potential integration with smart home devices.

While the prototype showcases promising advancements, limitations include the absence of real-life testing, user-testing constraints, and integration challenges. This thesis, bridging critical evaluation with innovative prototyping, contributes to the evolving landscape of user-centric food delivery applications, acknowledging limitations as avenues for future research and refinement.

Keywords: UI, UX, Analysis, Application, Food Delivery.

Hodnocení aplikací pro rozvoz jídla v České Republice

Abstrakt

Tato bakalářská práce se zabývá složitým prostředím aplikací pro rozvoz potravin a provádí komplexní analýzu lídrů v oboru - společností Bolt, Wolt a Foodorha. Prostřednictvím pečlivého hodnocení uživatelského rozhraní (UI), uživatelského zážitku (UX) a dalších kritických kritérií poskytuje studie cenné poznatky o preferencích a očekáváních uživatelů. Zkoumání se rozšiřuje na reálné scénáře objednávání a využívá metodu Likertovy škály, která umožňuje jemné porozumění.

Na základě této analýzy práce představuje "DELIVER'S", prototyp aplikace vytvořený pomocí Adobe UX a Proto Pie. Tato inovativní aplikace spojuje různé přihlašovací funkce a nabízí uživatelům více možností. Zjednodušený design se čtyřmi hlavními ikonami na domovské stránce má za cíl zjednodušit proces objednávání jídla.

Prototyp "DELIVER'S", který se specializuje na rozvoz hotových jídel, se může pochlubit funkcemi, jako je geofencing, více možností přihlášení, satelitní mapy, dobírka a sledování objednávek v reálném čase. Kromě toho zkoumá nejmodernější funkce, jako je skupinové objednávání s rozdělenými účty a asistence hlasového chatbota, spolu s potenciální integrací s inteligentními domácími zařízeními.

Ačkoli prototyp ukazuje slibné pokroky, mezi omezení patří absence testování v reálném provozu, omezení uživatelského testování a problémy s integrací. Tato práce, která propojuje kritické hodnocení s inovativním prototypem, přispívá k vývoji aplikací pro doručování jídla zaměřených na uživatele a uznává omezení jako cesty pro budoucí výzkum a zdokonalování.

Klíčová slova: UI, UX, analýza, aplikace, rozvoz jídla.

Table of content

1. Introduction	10
2. Objectives and Methodology	11
2.1 Objectives.....	11
2.2 Methodology	11
3. Literature Review.....	12
3.1 Food delivery definition	12
3.1.1 Reasons	13
3.1.2 Customer reviews.....	13
3.1.3 Consumers' cost-effectiveness.....	13
3.1.4 In an emergency, meal delivery apps may help	13
3.2 Applications that are used in the Czech Republic	14
3.2.1 Bolt.....	14
3.2.2 Dame jídlo.....	14
3.2.3 Wolt.....	15
3.3 Important features of food delivery applications	15
3.3.1 Application aspects	16
3.4 UX and IX	18
3.4.1 Content requirement.....	20
3.4.2 Log – in requirements	21
3.4.3 Error Handling	22
3.4.4 Design context.....	22
3.4.5 Navigation Design.....	22
3.4.6 Design Consistency.....	23
3.4.7 Color patterns and Typography.....	23
3.5 Prototype and its essence.....	24
3.5.1 Benefits of prototype.....	24
3.5.2 Limitations of prototype.....	24
4. Practical Part	26
4.1 Wolt	26
4.1.1 Log – in function.....	26
4.1.2 Location settings	27
4.1.3 Main page.....	27
4.1.4 Restaurant options.....	28
4.1.5 Stores options	29
4.1.6 Search option.....	30
4.2 Dame Jídlo – Foodora	31

4.2.1	Log – in.....	31
4.2.2	Location settings	32
4.2.3	Main page	32
4.2.4	Restaurant/search option.....	34
4.2.5	Customer support.....	35
4.3	Bolt – Food.....	35
4.3.1	Log – in option.....	36
4.3.2	Location settings	36
4.3.3	Main page	37
4.3.4	The search options	38
4.3.5	Orders and profile	39
4.4	Competitive analysis	40
4.4.1	Ordering scenarios	41
4.4.1.1	Bolt delivery	42
4.4.1.2	Foodora delivery.....	42
4.4.1.3	Wolt delivery	43
4.5	Prototype version of application	44
4.5.1	Deliver’s log – in	44
4.5.2	Choosing a country	45
4.5.3	Locating setting.....	45
4.5.4	Home icon.....	47
4.5.5	Discovery icon/ Search icon	48
4.5.6	Profile icon.....	50
5.	Results and Discussion.....	51
5.1	Limitation of work	52
6.	Conclusion.....	53
7.	Bibliography	54
8.	List of pictures, tables, graphs	56
9.1	List of tables.....	56
9.2	List of graphs.....	56

1. Introduction

The advent of digital technology has revolutionized the way we experience and interact with various services, and the food delivery industry stands at the forefront of this transformation. In the context of the Czech Republic, where convenience and efficiency in daily life are increasingly prioritized, the evaluation of food delivery applications becomes paramount. This study delves into a comprehensive analysis of three major players in the Czech food delivery landscape: Bolt, Wolt, and Foodorha. Through an in-depth examination of their features, functionalities, and user experiences, this research aims to discern the strengths and weaknesses of each platform.

The selected applications represent significant market presence and showcase diverse approaches to address the burgeoning demand for food delivery services. By scrutinizing these industry leaders, we gain insights into the evolving preferences and expectations of consumers in the Czech Republic regarding food delivery applications. This exploration serves as a foundation for the subsequent phase of the study: the development of a prototype for a food delivery application tailored for the European Union market.

The decision to prototype a new application arises from the identified gaps and opportunities observed in the existing platforms. By amalgamating the best features and addressing the shortcomings of Bolt, Wolt, and Foodora, the envisioned application aims to offer an unparalleled user experience in the realm of food delivery. The emphasis extends beyond the Czech borders to cater to the diverse preferences and cultural nuances prevalent across the European Union.

As I embark on this journey of evaluation and innovation, the overarching goal is to contribute valuable insights to the burgeoning field of food delivery applications, fostering a greater understanding of user needs and expectations. Through this analysis and prototyping endeavor, I aspire to pave the way for enhanced culinary experiences, blending technology, efficiency, and cultural diversity across the European Union

2. Objectives and Methodology

2.1 Objectives

The primary objective of this bachelor thesis is to conduct a comprehensive analysis of diverse criteria within food delivery applications, including but not limited to user interface (UI) and user experience (UX). The aim is to leverage research findings to propose a refined application model, incorporating insightful enhancements for an optimized user experience.

2.2 Methodology

The thesis will be structured into distinct phases. The initial segment involves an in-depth examination of literature and relevant information. Subsequently, the second part entails the selection of multiple food delivery applications for a comprehensive comparative analysis. In the concluding phase, the research will focus on identifying and highlighting problematic areas within the selected applications, incorporating these insights into the design stage of an application prototype. The theoretical foundation will predominantly center on the UI/UX context. The practical aspect will involve the author utilizing Adobe XD and Proto Pie applications to develop a prototype for a food delivery application.

3. Literature Review

The literature part covers the definition of “Food delivery” its applications and users.

3.1 Food delivery definition

According to Deliverect.com, apps that deliver food will be one of the top categories in countries' economies by the year 2023. Deliverect.com projects those global sales of food delivery applications will be around 73 billion euros globally by that year, with Europe contributing 7 billion euros to that total. There are many various models that companies that deliver food employ, and these models vary depending on the aim of the organization. There are also many distinct kinds of food delivery services. The objective, on the other hand, is to provide meals that have been freshly prepared in a more expedient and risk-free manner. (Fareye, 2020).

Examples of applications that are excellent representations of the Platform to Customer approach are Wolt, Bolt food, and Dame jidlo. According to Copolla (2022), the value of the global sector of online meal delivery reached 111.32 billion dollars in the year 2020. These platforms, in most instances, remove between 20 and 30 percent of the purchase value in order to pay any extra shipping charges that may arise. According to Fareye and 2020's research, this kind of food delivery accounts for more than half of the entire money made each year.

As a result of today's lifestyle and the increased pace of life, it is now much more difficult for homes with two incomes to prepare an appropriate dinner. Additionally, going out for dinner and a meal, or even cooking, becomes almost unattainable for students who do not have expertise in the kitchen and have deadlines to fulfil as a consequence of a lack of time as a result of a strict office schedule. This is especially true for students who are inexperienced in the kitchen. The option of using food delivery services is the answer that many people turn to in these kinds of situations. Additionally, during the lockout, many customers have discovered that having food delivered to their homes is a blessing that has saved their lives (Fareye, 2020).

3.1.1 Reasons

Applications that facilitate food delivery provide customers the ability to make selections from a diverse variety of options while remaining in the comfort of their own homes. They have the option of selecting the cuisine of their choice from a number of different eateries. (Fareye, 2020).

3.1.2 Customer reviews

The accessibility of authentic user experiences in relation to one's order is one of the aspects that lends a meal delivery app its most alluring quality. When people were initially exposed to the idea, they had an immediate like to it and it became quite popular very quickly. Applications that facilitate food delivery have gained widespread popularity owing to the ease with which they may be used. (Upadhye, 2021)

3.1.3 Consumers' cost-effectiveness

Ordering meals online may save customers money that they would have otherwise spent on transportation and time, making it the most financially prudent option for them. They may also reduce their expenditures by taking advantage of limited-time deals and savings opportunities, such as sales and rebates. According to Fareye (2020) research, ordering food to be delivered for supper at home is often more cost-effective than eating out.

3.1.4 In an emergency, meal delivery apps may help

In covid or unanticipated lunchtime visits, the order may be done in a few clicks (Upadhye, 2021).

Overall, many factors boost food delivery. Still, it takes a mindset change, restaurant buy-in, and the right technology to properly supply these services. The globe changed culturally. Smartphones are used for nearly everything by younger generations. Older generations have welcomed the cultural transition. (Kida, 2022)

3.2 Applications that are used in the Czech Republic

3.2.1 Bolt

Bolt, which is more well known for its taxi services, has only lately expanded into the food delivery industry and introduced a brand-new food delivery service in Prague. There are locations all over the globe that sell Bolt Food; more specifically, in the Czech Republic, there are 24 distinct cities and towns that Bolt delivers to (Bolt, 2022).

Bolt Food launched the food delivery business in 2020 through Covid and introduced non-contact delivery as an anti-coronavirus measure. This meant that there was no physical contact with the drivers and the consumers and that the carriers would rather depart the package in an area chosen by the customer (Zubarev, 2021).

As a part of the initial advertising campaign that they ran at the beginning of their introduction, delivery was free across a four-kilometer radius. According to Johnston (2018), customers in the Czech Republic were most likely to order burgers via the Bolt meal delivery service. This service was responsible for the delivery of almost 28,000 burgers from McDonald's only. On weekdays, customers located in the Czech Republic place orders for lunch, while on weekends, they make orders for supper. In addition, meals based on meat were the most popular, with less than 5% of orders being vegetarian. Meat-based dishes prevailed overall. CZK The one lunch that cost the highest, at 40,600, was one that was ordered by Johnston (2018). According to Jevgeni Kabanov, Chief Product Officer of Bolt, the company's objective for its food delivery service would be to leverage on the company's 25 million customers and provide delivery price that is more affordable than that of rivals. Moreover, kabanov believes that the business would result in "greater profits for carriers" (Eschulze, 2019).

3.2.2 Dame jídlo

According to Kopriva and Cerny (2015), the most notable player in the food delivery sector in the Czech Republic is Dáme jídlo, which was established in 2012 and is owned by the German company Delivery Hero, which also provides food delivery services. Dame jídlo is now capable of delivering to 170 different towns and cities in the Czech Republic, and it offers the widest range possible, with more than 5,500 different restaurants and stores to pick

from (Dàme jídlo, 2022). According to Dun & Bradstreet (2019), Dame Jidlo has around 200 workers and produced sales of \$17.8 million. The company's chief executive officer is Lukas Uhl. Recently, Dàme Jídlo was sold to Foodora company, which is a German company.

3.2.3 Wolt

Wolt is a startup company based in Finland with headquarters in Helsinki. It was founded in 2014 by a group of six individuals and now has delivery operations in over 20 countries (Wolt,2022). The company's mission is to spread joy and happiness via the medium of food all over the globe.

Wolt, which entered the Czech market on July 20, 2018, began its operations in the Czech Republic's capital city of Prague, namely in the districts of Vinohrady, Letná, Holesovice, and Karlin, in addition to areas of Zizkov and Smichov. Prague was the first city in the Czech Republic in which Wolt did business. According to Dun & Bradstreet (2018), Wolt employs around 126 workers and produces revenues of 802,404 dollars. In addition to being accessible over the web, Wolt may also be downloaded as a mobile application, for which it was given an Editor's Choice award by Apple. Users may, for instance, use the app to follow the movements of couriers while they are in the process of delivering packages. The ability of Wolt to turn a profit in less populous cities and towns is one of the company's key competitive advantages. Their competitive advantage comes from the fact that they place a premium on technological advancement, operational effectiveness, and quality of service to customers (AppsFlyer, 2021).

3.3 Important features of food delivery applications

Food delivery services have been an increasingly significant part of our day-to-day lives ever since the establishment of Covid the year before. Consumers who have utilized apps for food delivery have either had positive or negative experiences as a result of their use. Because satisfied customers are the key to a business's continued success, it is essential that they have a positive overall experience with the product or service that the firm provides. A satisfied consumer will come back for more and may even become loyal to the Food delivery application as a result of their positive experience. As a consequence of this, in order for the

organization to have a competitive advantage in the market, they need to provide the highest possible level of food delivery service and experience (Yusra and Agus, 2020).

According to factor analysis (Upadhyay Henna & Kukreja Mansi, 2019), the five most important factors that contribute to the success of food delivery services are the quality of the application, the quality of the service, the social impact, the quality of the food, and advertising. In the context of placing orders via a meal delivery app, the food itself is not physically present. Consumers are unable to taste, smell, or see their food. Instead, customers depend on images of food to evaluate the quality of both the meal itself and the apps that provide it to them. According to Yeik, Cheah, and Chang (2022), adding photographs has a favorable influence on customers' sentiments regarding the menu item, their willingness to pay, and their buy intents and descriptions offered in a meal delivery application. It is advised that apps give precise details about the components in order to look credible to the users of food delivery applications (Upadhyay Henna & Kukreja Mansi, 2019). This will allow the applications to look trustworthy to the consumers.

3.3.1 Application aspects

There is no denying that mobile apps that facilitate food delivery have altered the manner in which individuals place orders for their preferred cuisines. These apps have made it easier for people to experience a range of cuisines from the comfort of their own homes by making it possible for them to order takeout or delivery from the restaurant. Food delivery apps make it possible for restaurants and food chains to reach a larger client base and increase their revenue. This is a significant benefit from a commercial perspective. Research conducted by American Express found that an overwhelming majority of customers (86 percent) are willing to spend more money for an improved experience. According to research conducted by the Temkin Group, businesses with an annual revenue of one billion dollars may expect an additional seven hundred million dollars in three years if they invest in the quality of the experience their customers have. In only thirty-six months, it amounts to a revenue gain of seventy percent (Rai, 2021).

The software used for food delivery shouldn't be very difficult to use and should be user-friendly. By combining the processes of registering and logging in, the user experience may be made more convenient for customers. This decreases the likelihood of the user

abandoning the food delivery service, which is a regular occurrence with e-commerce applications that include a multi-step registration process.

The creator of an app for food delivery should have sign-in capabilities that are compatible with various social networking platforms to make it simpler for users to log in to the app. Because users may make use of the social networks they already have, there is no longer a need for them to create numerous profiles in order to place an order. A meta-analysis of the TAM (King & He, 2006) found that among the variables in the TAM, the connection between perceived ease of use and perceived usefulness demonstrated the most considerable causal link. This conclusion was reached as a result of the study's findings about the TAM. Therefore, the link is suitable in food delivery apps as well, since when a user can use the app more efficiently, they can quickly receive the restaurant and menu information that they wish, which results in the user seeing the app as being beneficial. Consequently, the link is applicable in food delivery applications.

The app design company Mindsea found that twenty-four percent of all apps are blue. This is likely because the color blue is associated with dependability, trust, honesty, loyalty, and tranquility (Mindsea, 2018). What is more noteworthy, though, is the conclusion that the survey suggests with respect to applications that deal with food and drink. The majority of them are colored red. The color red is used by thirty percent of the top fifty apps in the Food & Drink category of the App Store. It's possible that the reason why food apps are so fond of the color red is because of an argument that's founded on the same assumptions about fast food, that red tends to make people hungry, which is why firms such as McDonald's, Burger King, and Wendy's employ it for their cafes and logos (Mindsea, 2018).

According to Grottes (2009), the most prevalent reason for using food delivery apps is the convenience and simplicity of use of the design of the app to explore and place an order. As a consequence of this, it is acceptable to draw the conclusion that a flexible application needs to be developed for simplicity of use and ought to be accessible at all times and places. On the other hand, the fact that customers despise utilizing meal delivery apps to organize their "food" should not be ignored, especially when contrasted to the option of actually buying the commodity.

3.4 UX and IX

This chapter introduces the two elements of web design, UX and UI. These two areas work together in web design. However, they are two unique approaches that contribute to the overall web design using different elements (Razo, 2021).

UX, user experience or simply translated as user experience, refers to the experience of each user interaction with a product or service. UX design takes into account every single element that affects this experience. This can be everything from the experience of the physical product's appearance to the experience of checking out through an online checkout. UX from a web design perspective requires logical thinking and understanding of how the web visitor interacts with the interface and creating a plan for how to take the visitor from page to page (Razo, 2021).

A summary of the goals of UX design could be to create a user experience that is simple, effective, relevant, and enjoyable in every way (Stevens, 2021). UX is an interdisciplinary field that, according to Gett and Cao (2016), is the intersection of three areas - technology, design, and business, see *Figure – 1*.

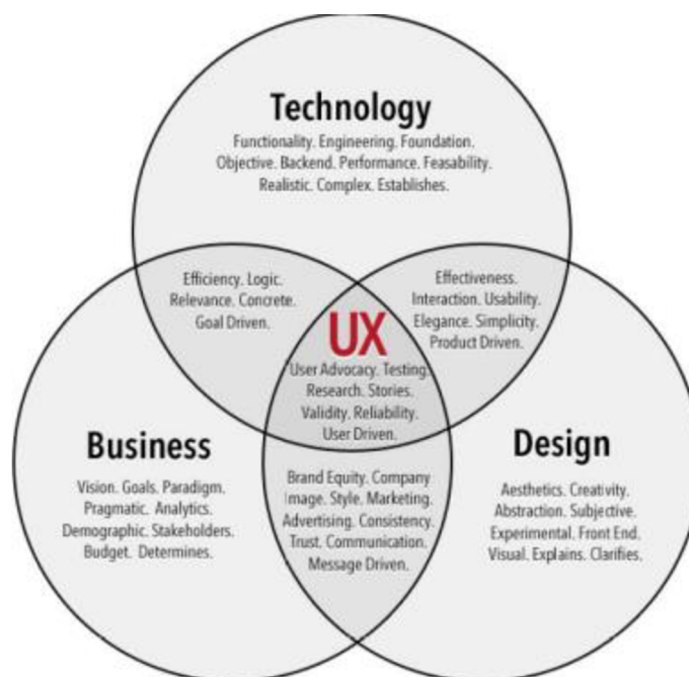


Figure 1: UX attributes

Source: Gett and Cao (2016).

UX thus combines testing, research, validity, reliability, storytelling and orientation to the user.

UI, user interface, or simply translated as user interface, is a term that refers to the design, presentation, and execution of the elements that make up a website (Bank & Cao, 2014). These UI elements can be divided into four areas (Usability.gov, 2013):

- **Input control** - behind this term there is nothing more than buttons, text fields, checkboxes or switches that the user can interact with.
- **Navigation components** - UI is dedicated to breadcrumb navigation, sliders, search fields, pagination, icons or labels.
- **Information components** - this includes text fields, information messages, icons or notifications that require interaction to trigger.
- **Containers** - which include, for example, so-called accordions, which denote vertically stacked lists of items.

As can be seen, the UI elements mentioned in this breakdown overlap in places with selected web design elements that were mentioned in section 1.3.2, which is fine as UI is a component of web design (Razo, 2021).

Relationship between UX and UI

As UX and UI may be similar in purpose, it is also necessary to clarify the relationship of these two areas to each other in the context of the web. User experience is the abstract feeling a user gets from browsing the web. Conversely, the UI is everything that the user interacts with directly on the site. Typically, on a website, the design team works on the UI to elevate the UX (Bank & Cao, 2014). And while the UX field is more data-driven regarding the user's overall feelings when encountering a website, UI focuses more on the design process of specific elements (Razo, 2021).

The most fundamental difference between these related disciplines is that UX *design is concerned with the overall experience*, whereas AI *design is concerned with the aesthetic experience* of a particular encounter with a particular AI element. UX requires working with users to understand their needs, whereas UI is mostly the work of the individual. Another

difference is that UX designers work with a complex user problem and try to find solutions to it, while the UI designer takes care of finalizing the look and feel and elements of the project (Lamprecht, 2021).

A good example to explain the difference between these disciplines is the Spotify music app, where UX designers try to figure out what people want in the app, what features they would like to have, how many songs should be in a playlist, and so on. The UI designers then take care of the visual representation of the given solutions - they deliver visuals, highlights, buttons and other elements (CareerFoundry, 2021).

In addition to the UX and UI benefits for the user, there are also several economic benefits for the company. Razo (2021) summarizes several reasons why it makes sense for a company to engage in UX and UI design. Aside from reducing the rate of immediate page bounces and the number of leads, UX design additionally increases the number of conversions made on the site. Further, it can reduce the cost of customer service as everyone can find the answer to their queries on the site. In addition, it improves the SEO results of the site, with the help of good Core Web Vitals results, optimized content and other elements. UI design will help in building brand identity and credibility by using colors or typography, turning site visitors into customers and making customers happy to return to the site.

3.4.1 Content requirement

According to (Benyon, 2021) a *starting page* must have:

- The starting page is going to be an information page, which means it will include general information and a guide for how to use the app. The guide includes how to connect your device to the product and the general information will contain what information the app provides.
- The opening page of the application is dynamically determined based on the contents of the user's table. It is possible for the first page to vary.

The navigation menu is another must have:

- According to Material Design guidelines, the navigation menu is intended to smoothly move out from the left side to the right side (Benyon, 2021). The navigating menu encompasses three main components: desktop applicators, assistance, and

social networking sites. In the event that the user is signed into the system, they will have access to additional features such as a "My Profile" screen, a "Log out" button, and a section titled "My Applicators" that encompasses the flatbed applicators that the user has entered. In the event the user's account is not authenticated, the aforementioned content cannot be demonstrated. However, an option labeled "Log in" will be presented.

Profile page must have:

- User's picture, possible.
- User's information, name, surname, date of birth.
- Contact details, street address in case of service delivery, support button.

Customer support page must have:

The support page provides contact information, including a telephone number and email address, for the customer service team of the program. Furthermore, the application also provides a means to address issues by enabling users to submit emails via the app. Within the provided form, users are given the opportunity to choose the specific applicator concerning which they are encountering a difficulty (Benyon, 2021). Additionally, they are prompted to categorize the nature of the issue, specify a subject matter, and provide a detailed explanation of the problem at hand.

- The inclusion of an error log is recommended.
- Possibility of having an error log be considered.
- Attached is a visual representation that may potentially be included.

3.4.2 Log – in requirements

In order to access accounts information, it is essential that a user has the capability to log in. The following criteria is a must have in any application that is regarded services:

- It is essential that a user has the capability to log out in order to facilitate the process of switching between accounts.
- In order to prevent the use of invalid login credentials, input validation is required.
- Multilanguage menu (English, Czech, Polish, Finish, Russian and etc).

3.4.3 Error Handling

Errors made by users are likely to occur, thus necessitating the implementation of construction measures to mitigate the occurrence of such errors. One potential strategy for mitigating user errors involves the implementation of prompts, wherein users must verify their choice prior to implementing any modifications.

Within the framework of this design, there exist certain instances wherein user errors may transpire. For instance, during the process of logging out from the application, inadvertent activation of the button may transpire, thereby necessitating the difficult process of reestablishing the login credentials (Garrett, 2003). This recurrent inconvenience ought to be minimized for the users' benefit. These prompts can also serve as indicators of errors that might have taken place, which could be attributed to factors beyond the user's control, such as an incorrect establishment of the link among the app and a flatbed applicator. This approach doesn't fix the errors, but rather provides the consumer with feedback indicating the presence of an issue, which is also a crucial aspect to consider (Benyon, 2021).

3.4.4 Design context

When engaging in the process of design, it is crucial to consider the ease with which the user is going to understand the intended concept or functionality. Interface design involves a comprehensive examination of the appropriate placement of components with the goal to effectively cater to the requirements of users. In instances where a form necessitates the inclusion of a title and a brief description, it is advisable to employ input boxes of varying dimensions. This is due to the fact that the former typically contains only a few words, while the latter often accommodates entire paragraphs (Garrett, 2003).

3.4.5 Navigation Design

Navigation design primarily focuses on facilitating users' desired destinations and ensuring that the path to these destinations is clear and user-friendly. According to Garrett (2003) there exist three objectives that any navigation design must strive to achieve.

- Users need a way of going from one page to another.
- The relationships between links should be clear to the user.
- How content and links on a current page relate to each other.

3.4.6 Design Consistency

One frequently encountered issue in the realm of design is the challenge of achieving consistency. The app and other products within the organization lack consistency in their design language. The establishment of a consistent and precise representation of functions is of utmost significance, particularly within an internal product, necessitating its adherence throughout all instances. The subjective experience of internal and external products should be similar, despite potential differences in their visual appearance Garrett (2003).

The design of “DELIVERS” is derived from the Czech company “Dame Jidlo”, thereby establishing internal coherence.

3.4.7 Color patterns and Typography

The utilization of colors holds significant importance in the field of design, as it has the ability to influence feelings and shape impressions Garrett (2003). Pieces are utilized for the purpose of characterizing them, thereby enhancing their individuality (Ornelas and Muench, 2022). One prevalent approach to utilizing colors involves employing a main color in conjunction with a secondary color as a thematic framework for visually conveying the significance and functionality of various components. When making color selections, it is crucial to opt for colors which exhibit a harmonious relationship. This is where the principles of color harmonization come into play. Color harmony principles employ mathematical calculations to determine variations and select optimal colors that complement the selected primary color. There exist various rules, such as analogous, monochromatic, triad, and complementary, among others (Zena, 2010).

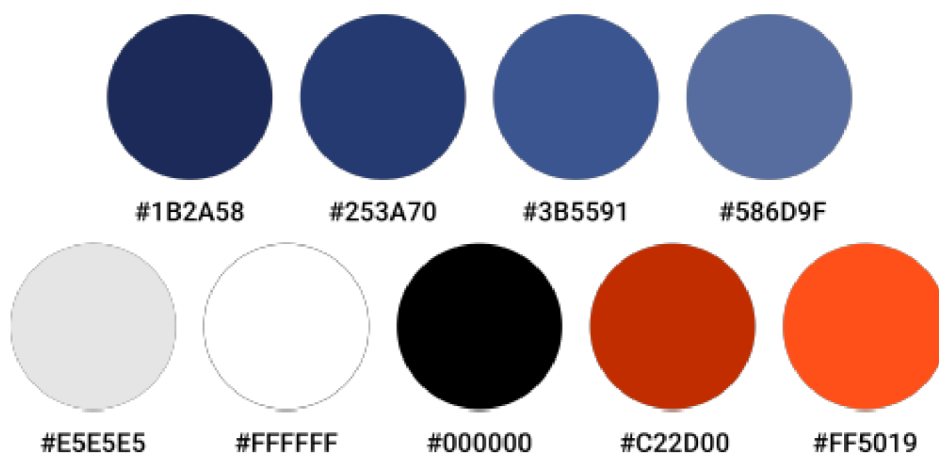


Figure 2: Combination of colors

Source: (Zena, 2010).

When making color selections, it is crucial to consider matters pertaining to accessibility. Color vision deficiency, commonly known as color blindness, is a prevalent condition that impacts approximately 1 in 12 males Garrett (2003). There exist various forms of color vision deficiency that pose challenges in designing for individuals affected by such conditions. One effective method for ensuring that colors do not exhibit excessive similarity is to employ the contrast tool described earlier (Zena, 2010; Ornelas and Muench, 2022).

3.5 Prototype and its essence

Prototyping for programs constitutes a unique approach to conducting testing for usability. Application prototype is commonly developed using HTML tools such as Microsoft Frontpage, Macromedia Dreamweaver, or Macromedia Homesite, which offer graphical or written interfaces (Foodtech, 2020). The prototypes encompass web pages in HTML that replicate either the application itself or its pre-release iteration. In the field of usability testing, numerous researchers utilize the term "application prototype" to refer to tools developed using the aforementioned methodologies. One instance of an individual employing this terminology is Stanford (2003), while another example can be found in the GUU survey on tools for app prototyping (GUU, 2002). In contrast to the practice of paper prototyping, the execution of usability tests for app prototypes requires participants to engage with a computer interface.

3.5.1 Benefits of prototype

Web prototypes are created using computer programs, which eliminates the issue of handwriting that is unreadable or inconsistent font sizes that can be encountered when using paper prototypes Stanford (2003).

Usability, participants involved in testing may have a higher level of comfort while interacting with a computer interface compared to a paper interface, given the ubiquity of computers in contemporary society.

3.5.2 Limitations of prototype

It actually might require a lot of time to develop a web/app prototype, the paper prototype is much easier Stanford (2003). The implementation of immediate modifications to the web prototype necessitates the physical presence of a developer at the location. The feasibility of

programming a web prototype during a usability testing session may be limited, since it requires a longer time commitment compared to physically manipulating a paper prototype (Hendry, 2005).

The cost of development requires the use of specialized human and material resources in order to create the web prototype using web development technologies.

4. Practical Part

Evaluating three biggest food delivery competitors in the Czech market “Bolt” and “Wolt”, and "Foodora - Dame Jídlo". Functionalities like restaurant listing, sort, filter, etc for both the apps are compared. The best user experience features are pointed out and are adopted in a wireframe as a takeaway. An explanation of the negative experience has also been explained with proper reasoning.

4.1 Wolt

4.1.1 Log – in function

The app welcomes and gives four different options to sign in, via: Google, Facebook, Email and continue with the google option. Further, the tester chooses the country, which is The Czech Republic.

Figure 3: Log-in options.

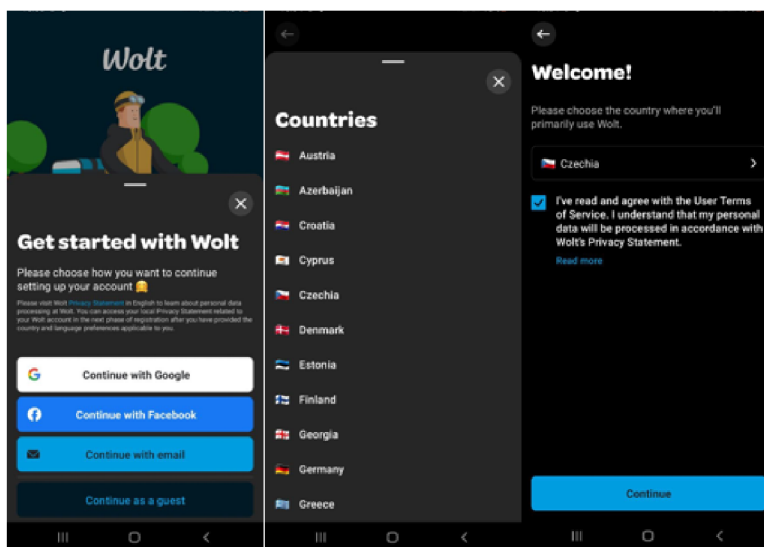


Figure 4: Log-in options.
Source: Own processing.

Key notes:

- Interface – clear, comprehensive.
- Usability – easy, comprehensive.
- Orientation – easy, comprehensive.
- Design – aesthetic and minimal design.
- Errors – none.
- Notification – none.

4.1.2 Location settings

The app asks for a permission to share the location in order for an applicant to be not mistaken with entering a wrong address, however, there is an additional option to put the address manually. When adding an address, the app allows to be as detailed as possible and considers the option of how “to get in” and what doorbell to ring. Additionally, there is a bar for a comment to leave.

Figure 5: Location set-up

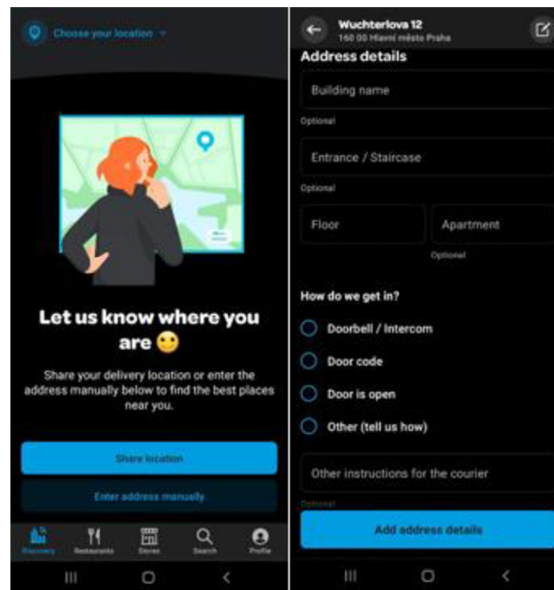


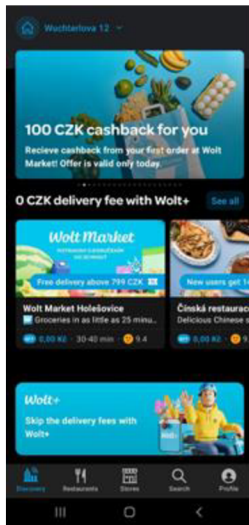
Figure 6: Location set-up
Source: Own processing.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, comprehensive.
- Understanding of a task – clear, logically driven.
- Errors – none.
- Notification – none.

4.1.3 Main page

The menu has got 5 main icons. They are placed horizontally which helps to jump on the following part of the menu. The free delivery services are highlighted in green and blue colors, depending on a way of delivery. The approximate delivery time is shown as well as the rating. As mentioned before, there are 5 icons such as: Discovery, Restaurants, Stores, Search, Profile.



The Discovery symbol, as shown in Figure 4, showcases various offerings for businesses. These include zero delivery charges, reduced prices for specific months, exclusive discounts ranging from 30% to 40%, rapid delivery within 15 to 20 minutes, a diverse range of culinary genres, favored promotions, options in close proximity to the user's current location, as well as special deals for breakfast, lunch, and dinner, among others.

Figure 7: Discovery icon

Source: Own processing.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, comprehensive.
- Errors – none.
- Notification – many, especially with discounts.

4.1.4 Restaurant options

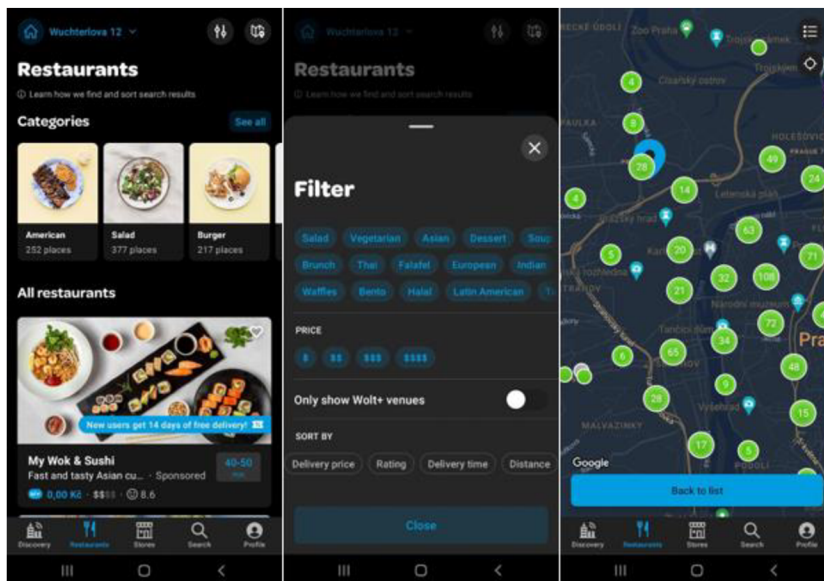


Figure 8: Restaurant icon Source: Own processing.

The restaurant icon, See Figure – 5, displays the various categories of meals available, particularly in Prague. The user can either *scroll - down* the screen and choose a preferable restaurant, *filter - out* the filter-bar in the top corner or easily choose on the *map* near restaurant based on the closest location.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, comprehensive.
- Errors – none.
- Notification – only pops up with discounted offers.

4.1.5 Stores options

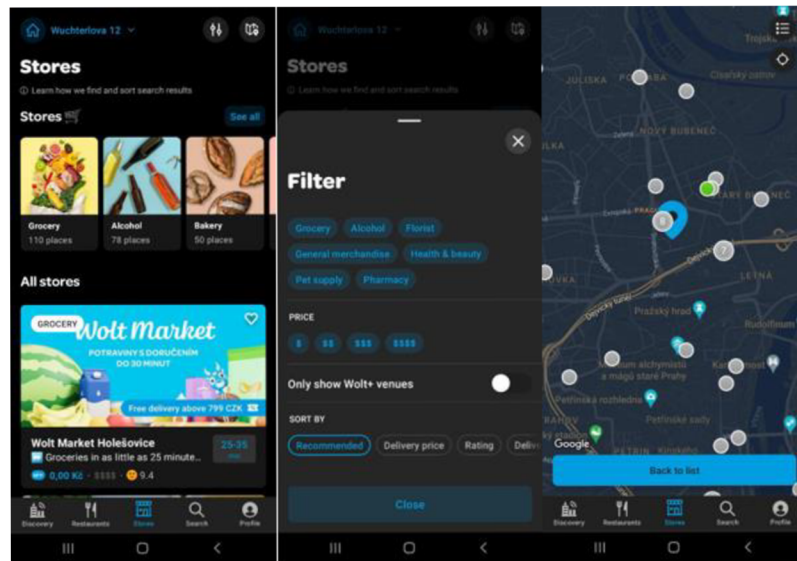


Figure 9: Store icon
Source: Own processing.

Stores options are displayed in the same way as “Restaurants”. There are different categories of stores, such as: Alcohol, Bakery, Sweets, Meat – Fish, Cosmetics, Home – Décor, Toys and Games, Pharmacy and etc.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, comprehensive.
- Errors – none.
- Notification – only pops up with discounted offers.

4.1.6 Search option

The search icon demonstrates various options of what types of products could be found. By clicking the option “*česká*“. It displays the offers with the “0” delivery cost and also shows the awaiting time.

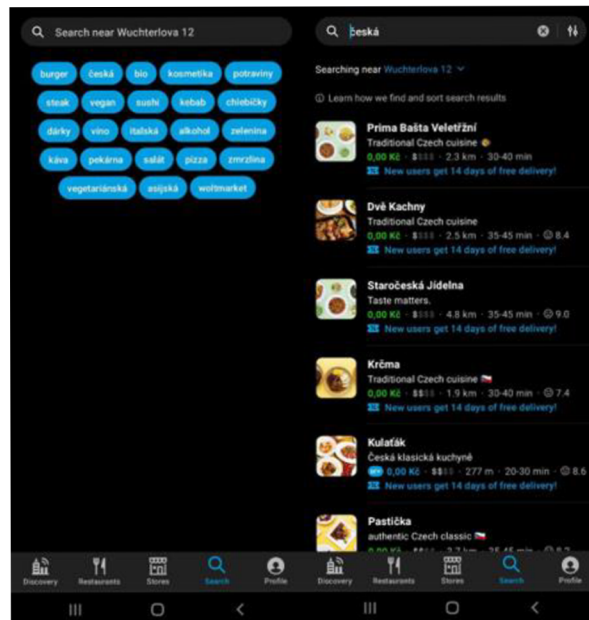


Figure 10: Search options
Source: Own processing.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, navigating.
- Errors – none.
- Notification – none.

The search option gives the chance for users to look for any kind of product they are looking for. If a potential match is found, the user simply clicks on it and receives an information about the potential order, such as:

1. Rating, from 1 – 10.
2. Open hours
3. Delivery time
4. Ordering together

4.2 Dame Jídlo – Foodora

Dame Jídlo was the Czech company which was recently bought by Foodora. That is the second delivery company which specializes on food market.

4.2.1 Log – in

The app has the same options to log – in, as in “Wolt”, See Figure – 8. However, by scrolling – down, there are more offers to come. From the Figure, it is seen that the bars are hidden vertically, so the user gets a chance to see all profitable offers regarding restaurants and grocery stores. The main menu offers an exploration of restaurants around the user’s location, favorite products, new products in stock and etc.

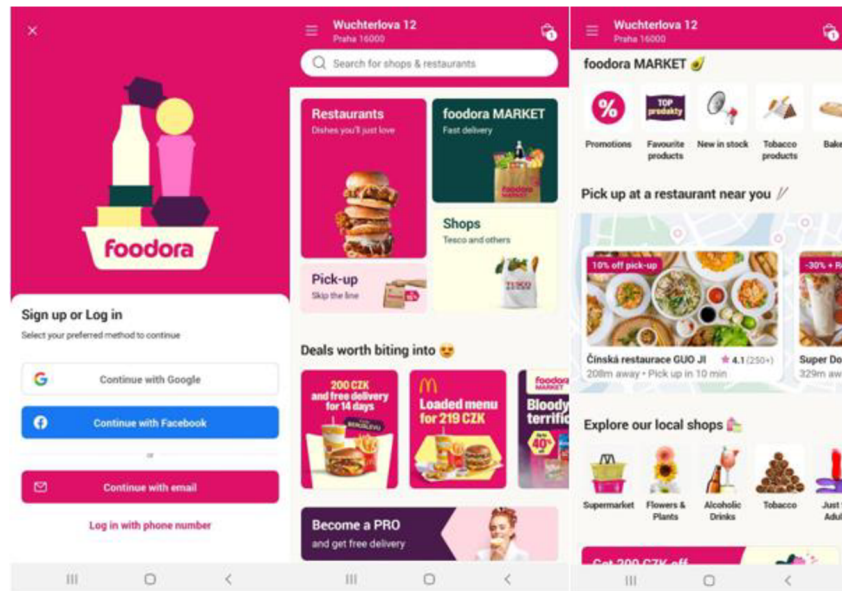


Figure 11: Log – in options of Foodora

Source: Own processing.

Key takeaways:

- Clarity – understandable, slightly overwhelming.
- Orientation – slightly confusing.
- Errors – none.
- Notification – pops – up with discounted offers/free delivery/lower prices.
- Interface – colorful.
- Usability – easy, comprehensive.
- Design – aesthetic and minimal design.

4.2.2 Location settings

The location bar allows the user to set location manually by dragging the pin on the map and also put the actual address into the search – bar, see Figure – 9. In comparison with the “Wolt”, the Foodora’s location settings are not as detailed as in “Wolt”. From the delivery service perspective, it is absolutely different, the courier isn’t ought to bring it to the door. However, regarding the map look, it gives two options “*Satellite*” and “*Layers*” options. While running the test – order, the “Layer” option was easiest to navigate in.

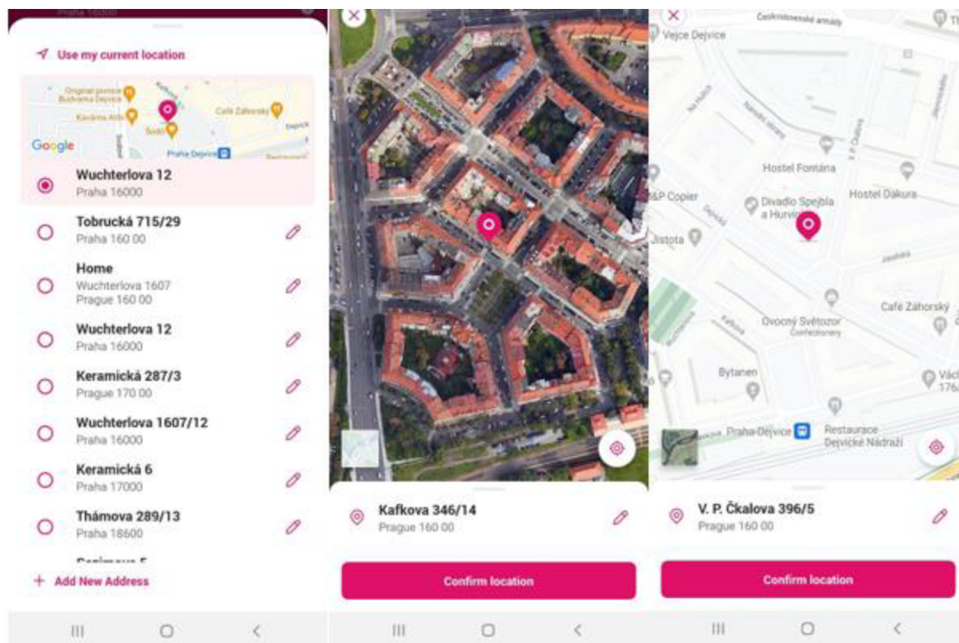


Figure 12: Location setting
Source: Own processing.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, comprehensive.
- Address setting is not detailed as in “Wolt”.
- Errors – none.
- Notification – none.

4.2.3 Main page

A Figure – 10 displays the main menu, the icons are located vertically, which is set and cannot be changed. The first bar “Become a pro” provides with a subscription which allows the user to have exclusive deals and benefits, such as unlimited free delivery from restaurants, shops and Foodora market. It also provides with the discount of 30 %. It provides

with a premium customer support and extra 5 % off if a customer picks-up the delivery by him/her-self. Upon the subscription, all benefits are automatically applied at the check-out. However, due to the fact that this is a monthly subscription, a customer should choose a plan which further will follow and order to a certain amount money in order to have those exclusive benefits, if the plan hasn't been reached, the deals are off the table.

The next icon **“Voucher”** simply shows how much money have been saved based on user's order and available vouchers that potentially could be applied. There app gives a hint on how to get the a **„Free voucher“** by inviting a friend.

The icon **“My favorites”** shows the favorite restaurants and shops of a user. The icon **“Order and reordering”** shows the past orders that have been made.

The icon **„My profile”** simply shows the user's name. email address, password, mobile phone and social media thru which the account could be connected.

The icon **“My address”** includes the addresses the history of addresses the delivery was made to. The icon **“My payment method”** includes the methods of payment. The icon **“Loyalty program”** shows how many stamps are earned. The stamps could be turned into discounts/free delivery/ or extra meals.

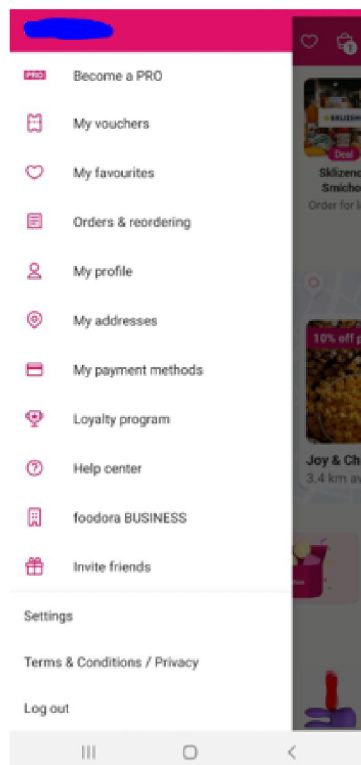


Figure 13: Main menu
Source: Own processing.

Key takeaways:

- Clarity – understandable, clear.
- Orientation – easy, comprehensive.
- Errors – none.
- Notification – many, especially with discounts.

4.2.4 Restaurant/search option

The Figure – 11, displays the search icon, where the user is able to look for a certain restaurant. By clicking on the icon, it immediately provides with the popular searches as for restaurants and also for shops. In comparison with the “Wolt” search option is more detailed, than Foodora’s. Basically, Foodora does only have one search option for all. It is very simple but at the same time questionable. The issue will be discussed in the “Discussion” chapter.

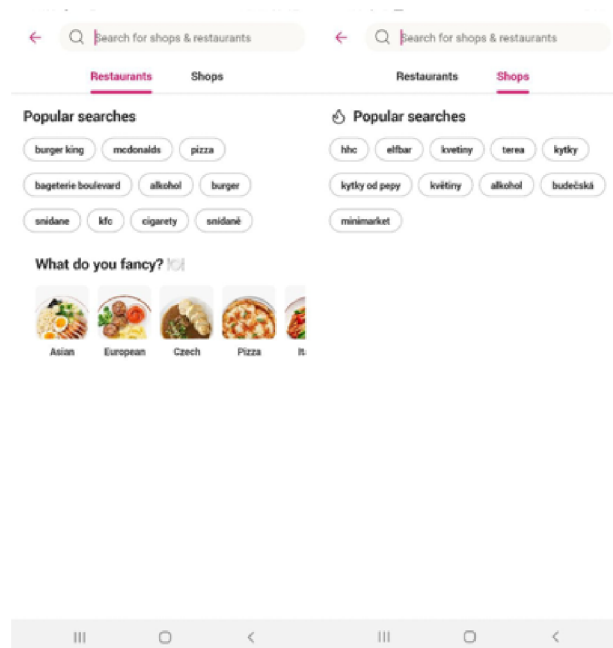


Figure 14: Search option.
Source: Own processing.

Key takeaways:

- Clarity – understandable, clear.
- Errors – none.
- Notification – none.
- Very simple.

4.2.5 Customer support

Foodora's application is more customer oriented, See **Figure – 12**. Foodora is more focused on its customer support. Since the subscription is available in Foodora, the user is able to solve issues with orders, payment issues, inability to place an order, messages with the courier, voucher activation and discounts. The customer support already has a pre-solved issues by including common questions from users that are already answered.

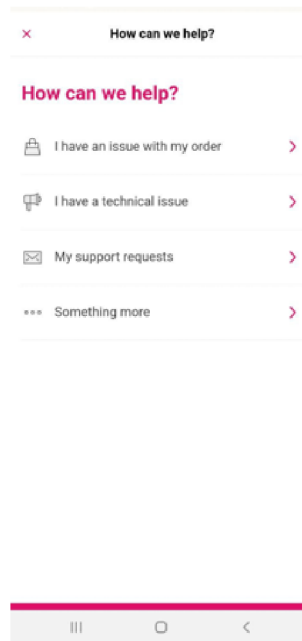


Figure 13: Customer support
Source: Own processing.

Key takeaways:

- Great customer support.
- Usability
- Saving user's time by already answered questions/issues.

4.3 Bolt – Food

Bolt introduced its Bolt Food platform in 2019, which allows users to place orders for food online and have it delivered. Food and other items may be delivered to customers by messengers who use vehicles, scooters, bicycles, or even just their feet. As of the year 2023, Bolt Food is functioning in over 80 cities located across 19 different nations.

4.3.1 Log – in option

There is only one log – in option in Bolt. Users from The Czech Republic can only use it, by having a phone with the Czech mobile operator. There are no other options such as: Google log-in, email login, or staying as a Guest, See Figure – 13.

When a user log – in, the app automatically asks for a permission to share the user’s location.

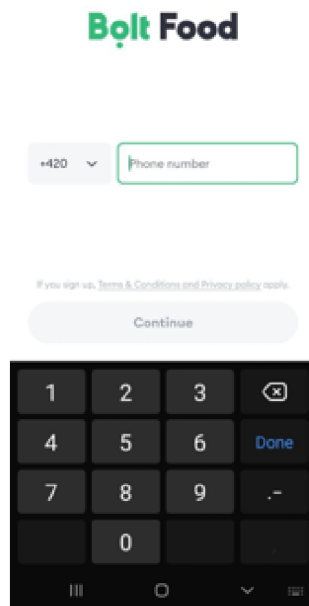


Figure 15: Log – in option
Source: Own processing.

Key takeaways:

- Simplicity.
- Only one way to log – in.

4.3.2 Location settings

When setting the location, if the geolocation is shared to app, the application automatically sets the user’s current location. However, it is possible to set it manually by typing a street address, See Figure – 14.

Based on the set location, the application instantly shows the closest offers around the user’s location.

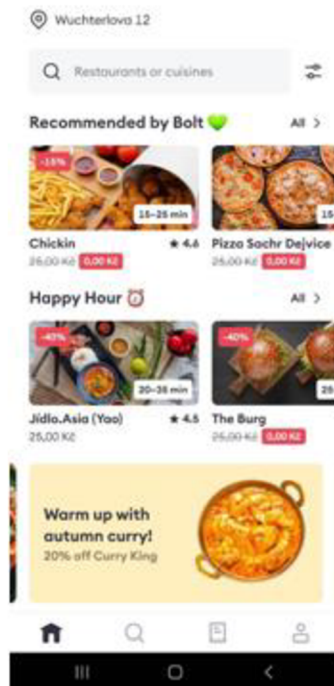


Figure 16: Location setting
Source: Own processing.

Key takeaways:

- Comprehensive.
- Automatically sets location.
- Simple.

4.3.3 Main page

The main page has got 4 main icons. The “Bolt” only focuses on the delivery of already prepared meals. It doesn’t deliver food market goods nor other types of goods. By scrolling down, a user might pick any restaurant which is preferable. Most of the restaurants show how the final meal looks, how much time the delivery takes and the cost.

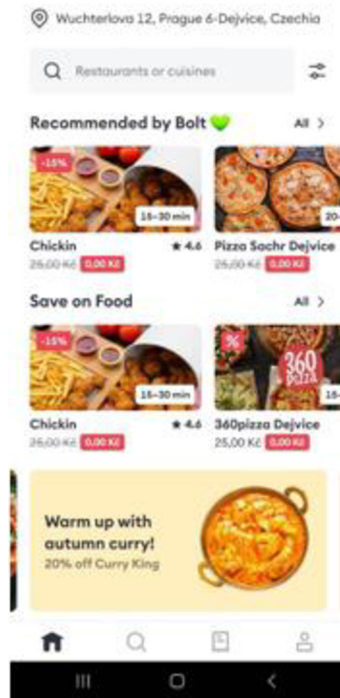


Figure 17: Main page
Source: Own processing.

Key takeaways:

- Simplicity.
- Comprehensive.
- All in one place.

4.3.4 The search options

The next icon is the “search bar”, See Figure – 16, displays the most popular offers among users and additionally, there is a filter button, which allows a user to sort – out a preferable deal with a menu discount, special offers, delivery discount, based on a rating, delivery time and etc.

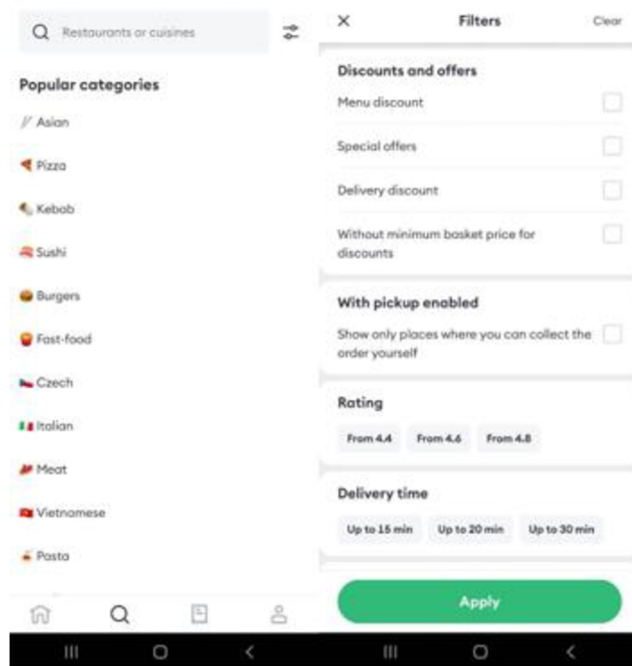


Figure 18: Search icon
Source: Own processing.

- Clarity – understandable, slightly overwhelming.
- Orientation – simple and easy.
- Errors – none.
- Notification – none.
- Interface – colorful, user friendly.
- Usability – easy, comprehensive.
- Design – aesthetic and minimal design.

4.3.5 Orders and profile

The following two icons are described and put together. The first icon simply shows all orders that have been made by a user and the next icon shows a profile information, with the inclusion of payment methods, promo codes, profile information such as: Name and Surname, email and phone number. In settings, there is an option to change the language of the app on your own (Czech, English, Azerbaijanian and etc.)

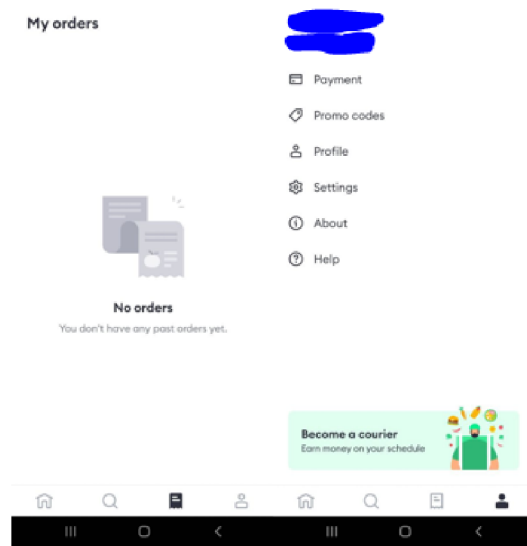


Figure 19: Orders and profile information.

Source: Own processing.

- Clarity – easy.
- Simplicity of an app, logical.
- Comfortable, could be switched to native language.
- Promotes job offers.

4.4 Competitive analysis

To sum – up the visual analysis, the author created a list of criteria with the help of “Box – ticketing features”.

Feature	Wolt	Foodora	Bolt	Comment
Push notification	+	+	+	All applications apply push – up notification with hot deals.
Cash back option	+	-	-	Only available in Wolt.
Loyalty programs/subscription	-	+	-	Foodora is focused on such programs and offers exclusive support and features.
Real-life time GPS tracking	+	+	+	All.
Cash on delivery option	-	+	-	Only available in Foodora.
Social media integration	+	+	-	Applicable in Wolt and Foodora. Could be connected with the social account such as: Facebook, Gmail.
Order schedule and pick-up	+	+	+	Available in all applications.

Geofencing	-	+	-	Only available in Foodora.
Search filters	+	+	+	All.
Order history	+	+	+	All.
Customer service support	+	+	+	Foodora is the best in this feature.
Several log-in options	+	+	-	Bolt requires the mobile phone number to log-in.
Diverse delivery focus, meal/market food/pharmacy	+	+	-	Wolt and Foodora focus on the market food/pharmacy and etc. Bolt lags behind.
Looking for a shop/meal offer on available map in the app.	+	-	-	Only available in Bolt.
Shows estimated time delivery.	+	+	+	All.
Job promotion	+	+	+	All.

Table 1: Feature analysis
Source: Own processing.

4.4.1 Ordering scenarios

This chapter focuses on the practical process of placing orders and evaluates the punctuality, customer support responsiveness, and overall performance of three delivery companies. Subsequently, the testers assign a rating to each delivery service based on their individual experiences. The author has opted for a Likert scale approach, which ranges from 1 to 5 for the ratings. The score rating could be seen below, in Table – 2.

Score	Rating
4.20 – 5.00	Very high, excellent.
3.40 – 4.19	High, descent.
2.60 – 3.39	Moderate, good.
1.80 – 2.59	Low.
1.00 – 1.79	Very low.

Table 2: Rating score
Source: Quan (2017).

4.4.1.1 Bolt delivery

The tester has ordered food home and rated the following criteria based on experience, See Table – 2.

Factor	Rating	Comment
Payment	5	Easy to proceed
Delivery to door	5	Was delivered directly to door.
Menu selection	5	Diverse.
Cash on delivery	1	None.
Customer support	5	Wasn't needed.
Delivered on time	2	Was late for 15 minutes
Quality of food	4	Descent, was still hot.
Discount/Bonus provided	1	Nope.
Average rating	28/8=3.5	High, descent service.

Table 3: Bolt rating
Source: Own processing.

4.4.1.2 Foodora delivery

Factor	Rating	Comment
Payment	5	Easy to proceed
Delivery to door	1	The customer had to go downstairs and pick – up the food.
Menu selection	5	Diverse.
Cash on delivery	5	Yes
Customer support	5	Wasn't needed.
Delivered on time	5	Yes, even faster than was estimated.
Quality of food	2	Food however wasn't hot at all.
Discount/Bonus provided	4	Free delivery next order.
Average rating	32/8=4	High, descent service.

Figure 20: Foodora rating
Source: Own processing.

Despite the delivery arriving sooner than anticipated, the food was disappointingly not hot. This issue likely arises from the restaurant itself rather than Foodora's delivery service.

4.4.1.3 Wolt delivery

Factor	Rating	Comment
Payment	5	Easy to proceed
Delivery to door	5	Was delivered directly to door.
Menu selection	5	Diverse.
Cash on delivery	1	None.
Customer support	2	Wasn't needed.
Delivered on time	5	On time.
Quality of food	5	Excellent.
Discount/Bonus provided	1	Nope.
Average rating	29/8=3.625	High, descent service.

Figure 21: Wolt rating

Source: Own processing.

4.5 Prototype version of application

Based on the evaluation of three major apps in The Czech Republic, the author has created a prototype with the help of Adobe UX and Proto - Pie applications to test the application on the screen of any mobile phone, especially Android and Apple. The app is called “*Deliver’s*”. The theme is mostly pinkish, white and red. The theme was taken from the original application “*Dame Jidlo*“, whose design was mostly red and white, with pinkish tints. Based on the evaluation of “Wolt”, “Bolt”, and “Foodora”, each of them has certain types of log – in, See Table – 1, and yet at the same time, none of them have common. Thus, the “Deliver’s” incorporates all options of log – in, with Google, Facebook, by phone number and continue as a guest.

4.5.1 Deliver’s log – in

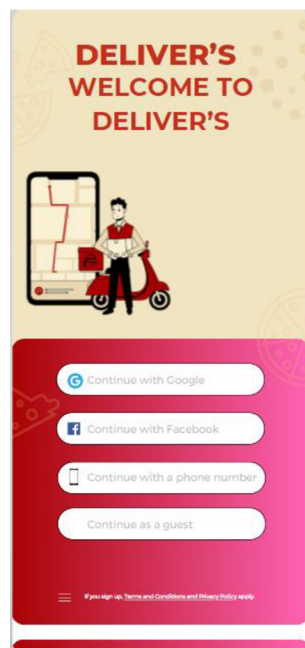


Figure 22: Deliver's log - in option

Source: Own processing, adopted from Proto - Pie.

Continue as a guest was added from the “Wolt” application. It basically allows the user to just order one – time meal and avoid further subscriptions and receive offers on a weekly basis. However, the prices for such log – in would be slightly higher. Additionally on the front page, there is a “Terms and Conditions and Privacy Policy that will immediately apply when the user log – ins. Such notification is put in order to avoid any misunderstandings between the provider and a customer.

4.5.2 Choosing a country

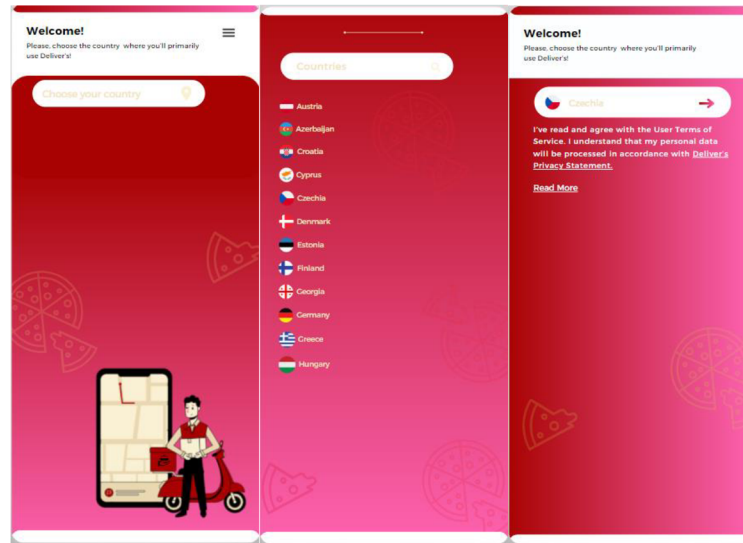


Figure 23: Welcoming, choosing a country

Source: Own processing, adopted from Proto - Pie.

When the user is logged – in, he/she is offered to continue with choosing a country where the “Deliver’s”, will be used. As soon as the user clicks on the “Search – bar”, there is a triggered “List of countries” to choose. There were added 12 countries for the test. Eventually the author picks Chechia (The Czech Republic).

4.5.3 Locating setting

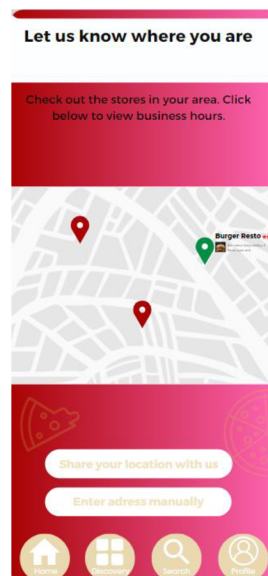


Figure 24: Location setting.

Source: Own processing, adopted from Proto - Pie.

The user is given two options to set – up the location. Manually and by GPS or A-GPS. The author was inspired mostly by „Foodora’s“ setting due to Geofencing which is applied. The „Deliver’s“ app include two map options, such as „Satellite“ and „Layer“. Those two were only noticed in „Wolt“. So, the combination of those two features is strong and profitable. Eventually, a user would be able to see the opened restaurants in his/her close proximity with the rating system of (1 – 5 stars). There are 4 key icons in the main menu. Home, discovery, search and profile.

4.5.4 Home icon

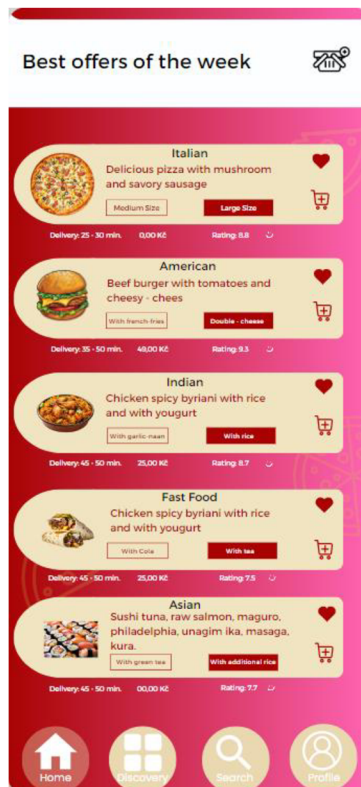


Figure 25: Home icon

Source: Own processing, adopted from Proto - Pie.

The home page displays all the hot deals with detailed information, such as the delivery and its length, how much the delivery costs and rating of a certain kitchen. However, that supposed to be a prepaid marketing. There is an option to instantly add the meal in user's favorite or in purchasing basket. Additionally, the user is offered to instantly order either large or small pizza, burger with French – fries or doubled cheese.

The basket in the right – top corner is an icon that helps to understand whether the it's full or empty. In the following pictures the icon is going to change as items would be added.

4.5.5 Discovery icon/ Search icon



Figure 26: The Discovery page.

Source: Own processing, adopted from Proto - Pie.

Figure 22 showcases the "Discovery" icon, a focal point of the menu bar. Within this section, a treasure trove of discounts, vouchers, and enticing job promotions offered by "Deliver's" await the user's attention. These promotions, ranging from the enticing allure of Free Delivery to the tantalizing $1 + 1 = 3$ deal, are strategically deployed to elevate the application's popularity and user engagement. The user can now effortlessly explore a plethora of enticing offers without the hassle of navigating through various menus. To further enhance user experience, each promotion is accompanied by a timeframe, indicating the window of opportunity within which the offer remains available. This time-sensitive element adds a sense of urgency, encouraging prompt action and ensuring that users can take full advantage of it.



Figure 27: Search icon.

Source: Own processing, adopted from Proto - Pie.

The search icon, reminiscent of "Wolt's" design, embodies a striking simplicity that resonates with the author's vision. Its clean lines and intuitive layout lend an air of elegance to the interface. This deliberate choice was made with the user's experience in mind, aiming to provide a seamless and visually appealing platform. Users are granted a range of options, allowing them to swiftly narrow down their preferences. They can enter specific keywords, seek out a particular restaurant, or peruse options based on the type of meal or cuisine they desire. Alternatively, the curated icons beneath the search bar offer a quick gateway to popular choices, streamlining the selection process.

This thoughtful design not only enhances the aesthetic appeal but also optimizes functionality. It empowers users to effortlessly navigate the platform, expediting the ordering process and ensuring a satisfying experience, all while saving valuable time. With this user-friendly interface, the platform becomes an intuitive and efficient tool for making orders with ease and speed.

4.5.6 Profile icon

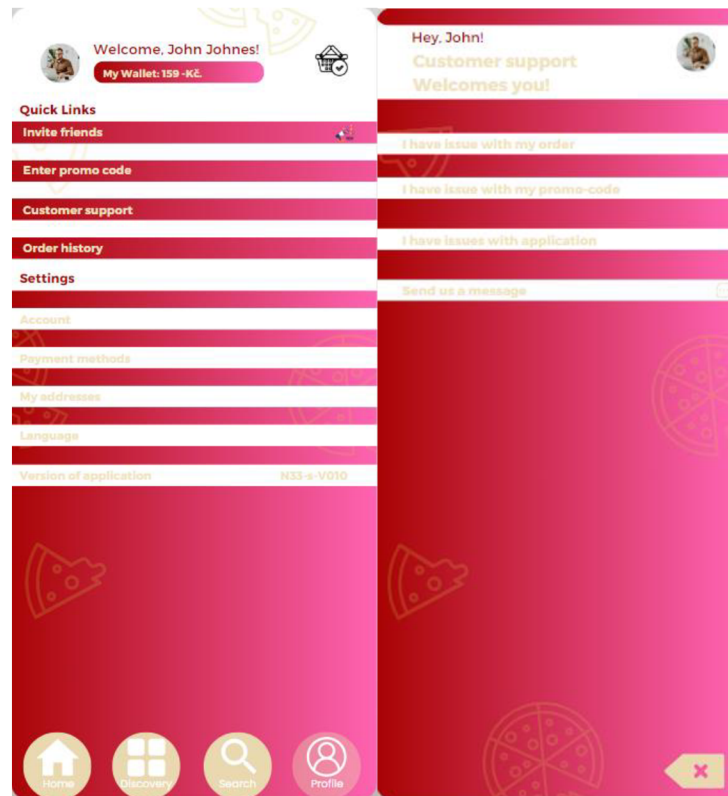


Figure 28: Profile icon

Source: Own processing, adopted from Proto - Pie.

The last icon “Profile” includes the information about the user, his previous orders, his/her balance, gives a chance to invite friends and share links, promo code entrance, customer support. The other icon “Settings” provides user with account log – out, changing/adding payment methods, address update, language set-up and see whether the application is updated up to the latest version. The “Customer service” was similarly created as “Foodora’s”, because such customer service is helpful, reactive and constantly online to support. Additionally, it gives a user several prepared issues.

5. Results and Discussion

Based on the analysis of all three application, the author managed to analyze the feature of each delivery application and compare them among each other with the help of “Check box” and selections of certain features. Further, the author with a random user run an ordering scenario from each application and further rates it with the Likert – scale method based on 8 different criteria.

Further, the author has created the prototype of a food delivery application by using two applications Adobe UX and Proto Pie, where Adobe UX helped to draw the design of “Deliver’s” and the Proto Pie helped to allocate the design on actual screen of mobile phones (iPhone, Samsung). In the prototype application, the author has combined several log – in functions with the help of Google, Facebook, phone number and continue as a guest. That gives a user several options instead of two or three. Additionally, the main page in the application has 4 main icons which are located horizontally. The application only serves as for delivering of already prepared meals. It is simplified to the point where a user is able to order the food just by clicking on the “red basket”, See Figure – 21 (Home icon), where a meal is offered with the additional offers such as: drinks, sizes and etc.

Also, the “DELIVER’S” would include the following features that could boost the usage of application among people.

- Geofencing
- Several Log – in functions
- Satellite map for better orientation
- Cash on delivery
- Cash – back options (if more orders, return the money)
- Real – Time order tracking - Provide a live tracking feature that allows users to track their food delivery in real-time, with updates on the preparation, dispatch, and delivery stages. Consider integrating GPS technology for accurate tracking.
- Group ordering and split bills - Introduce feature that facilitate group orders, allowing multiple users to add items to a shared cart and split the bill seamlessly. This is particularly useful for social gatherings or office lunches.

- Voice – chatbot assistance - Integrate voice recognition and chatbot functionalities to assist users in placing orders, tracking deliveries, and addressing common queries, enhancing the overall user experience.
- Integration with smart home devices - Explore integration with smart home devices, allowing users to place orders or reorder favorite dishes through voice commands or device interfaces like smart speakers.

5.1 Limitation of work

Due to the prototype version, it would be possible to test the application in real life and test its efficiency and functionality. However, despite this fact, there are certain points that the author has thought thru and improved from the design perspective and feature perspective. Another limitation of the work is a user – testing constrains. The application was only tested by the author and there were limited number of functions in the app. Integration limitation is another limitation that the prototype application lacks. There was no integration with any other existing systems, databases, externa APIs that might present further challenges.

6. Conclusion

In conclusion, this study embarked on a comprehensive exploration of three major food delivery applications—Bolt, Wolt, and Foodora. Through meticulous analysis using a "Check box" and feature selections, the author scrutinized and compared the functionalities of each application. To enhance the evaluation, real-world ordering scenarios were conducted with a random user, employing the Likert-scale method across eight distinct criteria.

Building upon these insights, the author successfully developed a prototype for a food delivery application named "DELIVER'S" using Adobe UX and Proto Pie. The prototype innovatively integrates various log-in functions, providing users with diverse options such as Google, Facebook, phone number, and guest login. The streamlined design features a main page with four horizontal icons, simplifying the user experience for efficient meal ordering. The "DELIVER'S" prototype is tailored exclusively for the delivery of prepared meals. Its simplicity allows users to place orders effortlessly by clicking on the "red basket" icon. The application boasts features aimed at enhancing user engagement, including geofencing, multiple log-in functions, a satellite map for better orientation, cash on delivery, cash-back options, real-time order tracking, group ordering with split bills, and voice-chatbot assistance. Furthermore, potential integration with smart home devices is explored to facilitate voice-activated orders or reorders.

Despite the innovative strides made in the prototype, certain limitations exist. The inability to conduct real-life testing and assess the application's efficiency and functionality is a notable constraint. User-testing constraints were acknowledged, with the application primarily tested by the author, limiting the diversity of feedback. Integration challenges were recognized, as the prototype lacks interaction with existing systems, databases, and external APIs, potentially posing future hurdles. In essence, this study not only critically evaluated existing food delivery applications but also contributed a forward-thinking prototype, anticipating future advancements in the industry. The limitations acknowledged serve as pathways for future research, testing, and refinement, ensuring the continued evolution of user-centric and technologically innovative food delivery solutions.

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8. List of pictures, tables, graphs

9.1 List of tables

Table 1: Feature analysis.....	41
Table 2: Rating score	41
Table 3: Bolt rating	42

9.2 List of graphs

Figure 1: UX attributes	18
Figure 2: Combination of colors	23
Figure 3: Log-in options.	26
Figure 4: Log-in options.	26
Figure 5: Location set-up	27
Figure 6: Location set-up	27
Figure 7: Discovery icon.....	28
Figure 8: Restaurant icon Source:	28
Figure 9: Store icon.....	29
Figure 10: Search options	30
Figure 11: Log – in options of Foodora	31
Figure 12: Location setting	32
Figure 13: Main menu.....	33
Figure 14: Search option.	34
Figure 15: Log – in option	36
Figure 17: Location setting	37
Figure 18: Main page	38
Figure 19: Search icon	39
Figure 20: Orders and profile information.....	40
Figure 21: Foodora rating	42
Figure 22: Wolt rating	43
Figure 23: Deliver's log - in option	44
Figure 24: Welcoming, choosing a country	45
Figure 25: Location setting.	45
Figure 26: Home icon	47
Figure 27: The Discovery page.....	48
Figure 28: Search icon.	49
Figure 29: Profile icon	50