

STRATEGY OF CHOOSING A MOBILE APPLICATION FOR SMALL ARCHITECTURE DESIGN

Małgorzata JÓZWIAK^{1*}, Alicja M. KRUPA²

¹ WSB University of Wrocław; mjozwiak@klo.pl, ORCID: 0000-0003-3405-3234

² Wrocław University of Science and Technology; alicja.krupa2021@gmail.com, ORCID: 0000-0002-8796-2549

* Correspondence author

Purpose: The aim of the work is to present the concept of the mobile application strategy choice in the process of architectural design.

Design/methodology/approach: The best solution to the problem would be to develop and design application and implement on mobile platform.

Findings: This system is the most popular system for mobile devices in Poland.

Research limitations/implications: The work focuses on presenting the concept of an application that facilitates establishing contacts between representatives of architecture industries.

Practical implications: This is an important issue for future users as it allows for product improvement.

Originality/value: The application can be a preliminary step to developing a conflict management strategy.

Keywords: information technology, architectural design, strategy, mobile application.

Category of the paper: Research paper.

1. Introduction

Poland is famous for an established there culture of buying houses and flats, especially by young people who organize their family life. In order to meet the expectations of citizens, a number of government programs have appeared in recent years. These programs help young people to meet the needs by providing solutions enabling the purchase of their first own flat or house. The “Mieszkanie dla Młodych” (MDM) program, introduced by the Act of 27 September 2013 on Polish state aid in the purchase of the first apartment by young people (Ustawa..., 2013), was very popular. The aim of this program was to provide financial support to young people who would like to buy their first apartment or house as well as just wish to move to a larger apartment (in case of a large family). In spite of new problems that appeared for the

youth - in particular numerous refusals by banks to grant loans for the purchase of their first house/apartment caused by inability to set aside funds for own contribution, required by banks in an increasingly higher amount - another government program appeared, constituting a response related to the new housing market situation. By the Act of October 1, 2021 on a guaranteed housing loan (Ustawa..., 2021), solutions were introduced that allow the purchase of the first flat or house to own property, provided that certain statutory conditions are met, but without the need for young people to have the money necessary to cover their own contribution. The broad interest of the young people in these programs over several years has resulted in further-reaching consequences, such as the preparation by banks of appropriate products in the form of mortgage loans. These programs were also adapted to statutory requirements they had to meet. The other consequences provoked by the interest of youth in aforementioned programs included active actions by developers, who in order to gain a client, tried to comply with the conditions specified by the legislator (in particular with regard to the area of premises). In view of the numerous amenities provided by housing programs and the positive response from the housing market in the form of banks and developers, young people took steps to meet their housing needs.

There is no doubt that all real estate purchases involve renovation. Renovation is preceded by a project in tact with visualization of the project's effect. It is a necessary part of the operation before the renovation begins. It is often forgotten when planning the necessary action steps. Architects propose to buy a ready-made design, which is an expensive solution. What does the proposal to develop a project look like? One looks for interior design solutions inspiration elements on the Internet. Most often, the solutions are found on web platforms, which means that it is a common way of shaping the vision of decorating your apartment.

An analysis of the existing solutions presented in this paper was carried out. The study was conducted through a thorough analysis of the needs of people looking for competitive solutions on the market. The analysis will enable the selection of essential functionalities and the designation of the amenities desired by the client, which in turn will lead to designing the interior of the apartment in an optimal way.

2. Description of mobile solutions for interior design

This chapter presents an analysis of the user's needs of a mobile application for interior design. The technology available on the market was discussed, and the best solutions for the implementation of the application were indicated. The focus was on the description of the application intended for the mobile platform (Android, 2015). The applications were analyzed according to the following criteria (Borek, Sobczak, 2016):

- a) brief introduction to the application,
- b) list of functionalities,
- c) user-friendliness and interface aesthetics,
- d) a list of advantages and disadvantages of the application,
- e) general evaluation of the application issued by its authors.

Five mobile applications were selected to compare the solutions available on the market. The selection criterion is their availability free of charge in the AppStore (AppStore, 2022). This store is installed on all iOS devices (Hegarty, 2015). These applications are:

1. The "HOMEBOOK" application (Homebook, 2016).
2. The "DECOROOM" application (Decoroom, 2022).
3. The " We are decorating the house and apartment" application (Title in Polish: "Urządzamy dom i mieszkanie " application (Urządzamy dom i mieszkanie, 2016, 2022).
4. The "Pinterest" application (Pinterest help, 2021).
5. The "HomeStyle" application (Borek, Sobczak, 2016).

Ad. 1. You can download the Homebook application from the AppStore (AppStore, 2022). The creator of this application is the former company Domodi Sp. z o. o. It is the transfer of functionality from the homebook.pl web platform to the iOS application (Hegarty, 2016). The Homebook application is a tool for finding the selected interior design. It is not a social application. Although the application has a forum, there is no interaction between users when analyzing the number of responses.

The functionalities of the Homebook application are as follows (Borek and Sobczak, 2016):

- a) it is possible to view photos of the interior,
- b) it is possible to redirect the user to the stores where the selected products are available,
- c) the application has a tab with articles that have been designed by homebook.pl (homebook.pl, 2016), as well as by other companies, for example Generit, Castorama, VAKU-DSGN, etc.,
- d) it is possible to conduct discussions on the forum, but this functionality is not used by users.

After turning on the application, a photo appears as well as menu on the bottom bar with buttons: start, Products, Inspirations, Articles, More. There is a search engine in the middle of the top bar. Browsing for inspiration is nice, but saving a photo is not intuitive.

The advantages of the Homebook mobile application are (AppStore, 2022):

- application transparency,
- the ability to save selected interiors,
- having a list of articles,
- the possibility of shopping.

The disadvantages of this application are (AppStore, 2022):

- no possibility to quickly save a photo,
- poor interaction between users.

It is reasonable to note that the Homebook is a well-developed, user-friendly application and the photos that can be seen there are of a good quality.

Ad. 2. The Decoroom application is a solution dedicated to the iOS mobile platform (Decoroom, 2022). It is in English language. The user selects a standard package or a premium package. An interesting fact is that browsing the application is in the form of translating newspaper pages. These cards display the proposed interior fittings. It is interesting that the user has the opportunity to view photos of ready-made interiors, as well as fragments of interior fittings, fragments of the floor and fragments of interior doors. The way of presenting the interior as an electronic newspaper in the form of tiny elements is not a convenient way to view products that interest you. The elements are small and you can't see the details, and screen magnification is a problem as you are not continuously magnifying the image. This is, we can say, a disadvantage of the application. The advantage of this application, however, is the high quality of viewing photos and well-known brands of companies used to view an interior design.

Ad. 3. The "Urządzamy dom i mieszkanie" application is also a solution intended for the iOS mobile platform ("Urządzamy dom i mieszkanie", 2016). It contains the electronic version of the magazine (journal) of the Murator publishing house under the title: "Urządzamy dom i mieszkanie" - Polish Journal on We are decorating the house and apartment (Urządzamy dom i mieszkanie, 2022). The advantage of this application is that one screen takes up one page of the magazine. The elements are enlarged continuously. The user can continuously reduce or enlarge them. This enables user-friendly reading of the text, item descriptions and comments. Clicking on a product contained in the electronic warehouse may take the user to the manufacturer's website. This is a great convenience for the users of the magazine. The paper version of the newspaper was transferred here to the mobile application. This application contains brands of well-known companies.

Ad. 4. The Pinterest mobile application (Why is Pinteriset, 2021) is an American social networking site that allows users to share visual materials, i.e. videos, pictures, photos, GIFs. The name PINTEREST is a combination of two English words: "pin" and "interest". The elements visible on the platform are called PINA, which the user can add to his board or attach a pin that was posted by another user. The Pinterest application is used to save content for inspiration or to motivate to act on interior design. The user can easily and quickly develop a collection, called a table, in which he sorts the given thematic content in order to remember it or use it in the future. In the Pinterest application, you can be inspired by, among others, interior design proposals. However, this has the disadvantage that after selecting a given picture with an exemplary interior design, the website sends more pictures with similar solutions. The advantage of the Pinterest application is the ability to send content by e-mail to different people who are not users of the portal, as well as creating group boards with other users that

allow you to collaborate on a specific board. The Pinterest application also serves as a platform to promote your services and products.

Ad. 5. The mobile HomeStyle application developed by two authors, Adam Borek and Daniel Sobczak at Wrocław University of Technology (Borek, Sobczak, 2016), is the highlight of the application for interior design. It has its own graphic identification, shown by a lamp on a red background. The lamp is, you could say, the basic element of interior design. As the authors of the project noted, the HomeStyle application designed to reduce the time that the user would have to spend on finding out how he could arrange his apartment or house. Therefore, it also saves the user's time.

The authors of the HomeStyle application (Borek and Sobczak, 2016) list a set of tasks that application users will be able to perform using the HomeStyle application:

1. An unregistered or logged-in user can log in to the application using an e-mail address and password.
2. Users who are not logged in can try the application by browsing the list of interior design proposals, the so-called lists of inspiration.
3. Logged in user can search for inspiration by tags.
4. A logged in user can view inspiration.
5. A logged in user has the opportunity to like inspiration.
6. A logged in user has the option of not liking the inspiration.
7. The logged in user can view the list of liked inspirations.
8. A logged in user can add his inspiration to the system.
9. A logged in user can go to the product page to purchase it.
10. A logged in user can view the list of products shown in the photo.
11. A logged in user has the option of reporting offensive or illegal texts.
12. A user may use the application in Polish.

Considering the above list of tasks that the user of the application can perform using the HomeStyle application, it is worth indicating the most important requirements from the user's point of view. These are:

- the option which makes it possible to view the inspiration of the apartments' interior design,
- the option to view the list of inspirations liked by the user.

The set of non-functional requirements provided by the above-mentioned authors of the HomeStyle application to be met by this mobile application is also interesting:

1. The application will be available for download by users in the Apple AppStore.
2. The mobile application will run on devices with iOS version at least 9.0 (Hegarty, 2016; Nahavandipoor, 2011).

These guidelines are standard requirements for the user to ensure the stability and reliability of the application. Since it is a social application, designing your own interior will be very easy.

3. Comparative analysis of the application for interior design

The mobile applications for interior design presented in chapter 2 have their advantages and disadvantages. “The Homebook”, “Decoroom” and “Urządzamy Dom i mieszkanie” applications are examples of those applications that are designed to transfer physical catalogs with furniture to the memory of a mobile phone in the form of a pdf file viewer (Borek, Sobczak, 2016). Such an approach to the issues of designing the interior design for apartment or house is not sufficient and not convenient to use. The first three applications related to interior design, mentioned in chapter 2, do not use the social aspect for mobile platforms.

This criterion is met by the HomeStyle application, which is a solution for the iPhone mobile platform. It helps you to find inspiration about the interior design of your home or apartment. It is a social application content of which populates stores such as Ikea and Black Red White – it’s also going to be populated by users who implement the application itself. It’s essential to emphasize that the software allows you to view inspiration with the save function in order to recreate selected interiors at any time using a mobile device with Internet access. Additionally, users can check the parameters and prices of selected interior fittings. This application is intended for every user who creates an apartment project and who would like to look for inspiration to develop your own interior design for a flat or house. It should be noted that the implemented platform consists of a mobile application and a server side that secures access to the necessary data and multimedia necessary to be displayed on the screen of the mobile phone as well as provides access to documentation that facilitates the operation of the application. To use the application, it is required to have an Internet access due to the constant synchronization with the database managed by the server side (Borek, Sobczak, 2016). The data is stored on a server with the history of users browsing the data.

4. Summary

The paper presents the most important Internet applications that are used to design architectural interior design of an apartment or house. The issues of self-designing interior design are described. The presented applications were analyzed and the most user-friendly solution was identified. Apple presented on its website the criterion of what should be a graphical interface in iOS (Nahavandipoor, 2012; Sadun, 2013). This criterion is that the user's screen of the mobile application is to be legible and user-friendly. These user interfaces were analyzed for their intuitiveness and aesthetics. This screen, as mentioned, should be clear and aesthetic.

The article shows that the social platform of the interior design application is based on two aspects: the mobile application and the server side. They are the most important elements of the implemented solutions in the architectural design of the interior design of apartments or houses. Architectural patterns and the presentation of source code fragments were taken into account. These elements influenced the legibility of the existing solution and its quality.

When designing very complex software, its basic element is comprehensive testing of the most important functionalities of the application. Using this approach will allow you to find gaps in the application for architectural design of the interior design of a house or apartment.

References

1. Android. *Statystyki popularności mobilnych systemów operacyjnych*. Retrieved from: <https://www.tabletowo.pl/2015/11/20/gdzie-najpopularniejszy-jest-ios-a-gdzie-android>, 2.11.2021.
2. AppStore. *Aplikacja mobilna na platformę iOS*. Available online <https://itunes.apple.com/pl/app/homebook-dom-i-wnetrze/id1051675816?mt=8>, 10.08.2022.
3. Borek, A., Sobczak, D. (2016). *Social interior design mobile application*. Eng. Thesis. Wrocław: Wrocław University of Technology, Faculty of Computer Science and Management.
4. Decoroom (2022). *Aplikacja mobilna na platformę iOS „Decoroom“*. Available online <https://itunes.apple.com/pl/app/homebook-dom-i-wnetrze/id1051675816?mt=8>, 11.08.2022.
5. Hegarty, P. (2016). *Developing iOS 9 Apps with Swift*. Stanford University. Retrieved from: <https://itunes.apple.com/us/course/developing-ios-9-apps-swift/id1104579961>, 30.06.2016.
6. Homebook (2016). Available online <http://homebook.pl>, 30.06.2016.
7. Nahavandipoor, V. (2011). *Concurrent Programming in Mac OSX and iOS*. Retrieved from: https://helion.pl/ksiazki/concurrent-programming-in-mac-os-x-and-ios-unleash-multicore-performance-with-grand-central-dispatc-vandad-nahavandipoor,e_2ga2.htm#format/e, 12.11.2022.
8. Nahavandipoor, V. (2012). *iOS 5. Programowanie. Receptury*. Gliwice: Helion.
9. Pinterest help (2021). Available online <https://help.pinterest.com/pl/guide/all-about-pinterest>, 9.01.2021.
10. Sadun, E. (2013). *iOS 5. Podręcznik programisty*. Gliwice: Helion.
11. Urządzamy dom i mieszkanie (2016). *Aplikacja mobilna na platformę iOS „Urządzamy dom i mieszkanie“*. Polish Journal on We are decorating the house and apartment. Retrieved

from: <https://itunes.apple.com/pl/app/urządzamy-dom-i-mieszkanie/id9542511461?mt=8>, 30.06.2016.

12. Urządzamy dom i mieszkanie (2022). *Urządzamy dom i mieszkanie*. Polish Journal on We are decorating the house and apartment. Retrieved from: <https://www.google.com/search?client=firefox-b-d&q=czasopismo+urz%C4%85dzamy+dom+mieszkanie+wroc%C5%82aw>, 12.11.2022.
13. Ustawa z dnia 1 października 2021 roku o *Gwarantowanym kredycie mieszkaniowym*. Dz. U. 2022, poz. 2008 z późn. zm. (in Polish).
14. Ustawa z dnia 27 września 2013 roku o *Pomocy państwa polskiego w nabyciu pierwszego mieszkania przez młodych ludzi*. Dz.U. 2019, poz. 1116 z późn. zm.
15. Why is Pinterest called Pinterest (2021). Rewind and Capture. Available online <https://Rewindandcapture.com/why-is-pinterest-called-pinterest>, 25.01.2021.