APPLICATION OF MANAGEMENT INFORMATION SYSTEMS IN THE BUSINESS OF REAL ESTATE FOR RURAL DEVELOPMENT IN THE SOUTHEAST REGION OF THE REPUBLIC OF MACEDONIA

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Abstract

The promotion process in the electronic world is the most important framework for further development. Through promotion, companies offer their products and services, provide a description of their services or a description of the quality of their products so that consumers can be informed more than just what they see on the web site.

The subject under investigation is supported by appropriate research to identify all real estate develope, identify tourist attractions - business sites, natural and sacred treasures on the territory of the micro region of the municipalities of Strumica, Vasilevo, Bosilovo and Novo Selo. The main goal of the labor is the benefits of society from electronic involvement in modern business processes.

Therefore, will be prepared a web site, as well as a mobile application so that it can not only be a virtually virtual but also realistic.

Special attention is given to the previously conducted researches of all real estate in our micro region, business sites, sacred and natural treasures. Special attention is given to the website of the offered real estate, as well as the implementation of the digital tourist map and mobile application, which locates all important business sites, sacred and natural treasures in the South - East region. About the high percent of unactive population on information society in our country are taken a main goals and it is prepared a National strategy for electronic inclusion on the population and the companies in our country.

Increased electronic development improves and strengthens the economic sphere of social frameworks and increases the quality for better offer of appropriate services by all population in the country.

Specifically, by our region, according to the conducted research and implementation of the obtained results for the application of information technology in the site of real estate, for developing South east region in the Republic of Macedonia.

Key words: management information systems, real estate, digital tourist map, electronic involvement, mobile application.

1. Introduction

We live in times of constant, rapid and meaningful information changes. With the advent of every technological novelty, there are many predictions that encourage people to prepare for the changes in the world.

In a knowledge based economy, innovation is the main driving force (new ideas, new ways of working, new management strategies), so that an individual, an enterprise can survive on the market they should be different of the others. The forces who are most powerful, today are knowledge, that is, a set of business processes developed in the organization to create, store, transmit, and apply knowledge in the organization. Applying appropriate expertise to the development of information systems in a company means in itself application of growth activities and company development within an economy.

These activities need to be properly planned, implemented and controlled, because it is a process of a strategic goal. The strategy implies the process of setting long-term goals of the organization in accordance with the decisions taken to undertake the activities and allocate the resources necessary for the pursuit of the given goal. The contemporary world economy is much more integrated than ever, which is why the peoples are dependent on each other for very important, resources and technology. Most of their capital, people are investing in fast-growing businesses, technology. All this contributes to economic growth and development of society. Modern new methods of electronic sales, new applications for rapid location of subjects contribute to social growth from the economic side.

The main purpose of this research is the benefits of society from electronic involvement in modern business processes. With the application of information technology in most of the enterprises for the promotion of their products and services, the basic goal of every company is realized - maximization of the profit, and hence the municipality benefits for promotion and development of the region.

Through the application of the website for real estate promotion, interested and potential consumers, they can be informed more quickly and easily if the electronic version for sale and promotion is applied. It`s should also emphasized by the promotion of all local businesses from the tourism industry, real estate, such as restaurants, hotels, motels, tourist info centres and other similar services in the direction of development of the south east micro region, municipality Strumica, Vasilevo, Bosilovo and Novo Selo. For this main is set up a digital tourist map, which besides the informative character also has an economic goal. Any interested person or tourist who will visit our micro region, which covers the municipalities of Strumica, Vasilevo, Bosilovo and Novo Selo, can visit the site where all natural, sacred treasures, real estate and business sites are located. Also a mobile application is prepared, where everyone can install it on their mobile device for free and have a mobile map where all objects will be located.

This contributes for economic growth and development of our micro region, higher tourist attendance and increased interest if the same person can be better informed without wasting time and money, when they will be visiting our micro region.

2. Electronic inclusion on Republic of Macedonia in modern business processes

Information systems and the application of modern technologies today are the key role in the development of modern society. They become an essential tool in the daily life of citizens, increasing the significance of these technologies in a fast trend, over time [1].

Electronic inclusion is due to the fact that in the European Union between 30% and 40% of the population is excluded from the advantages of the information society, while in the Republic of Macedonia this figure reaches 50% to 70%. This is a very high percentage of non-involvement in the information sphere. That population most often represents the most

vulnerable segment in society, and this can change, taking into account the power of new technologies to make their lives easier. In fact, people who have the biggest uses of ICTs are people who are more likely to be excluded from the opportunity to use the benefits that new technologies offer [2].
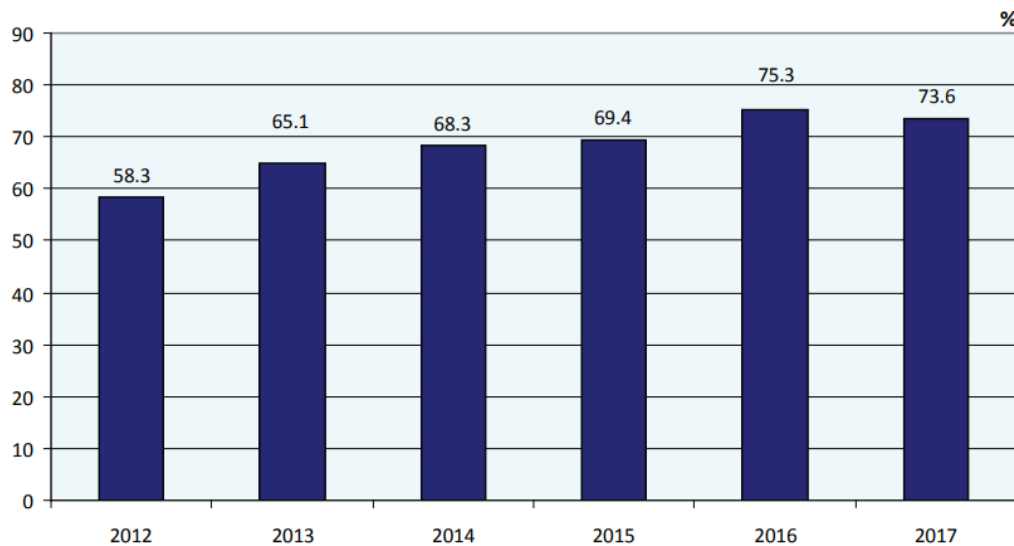
Figure 1. Households with Internet access

Accordingly to that, the National e-Inclusion Strategy 2011-2014 year, represents the overall strategic commitment regarding the inclusion of all citizen groups in the building of the information society and the exploitation of the benefits of information systems and technologies in businesses.

For that, this strategy defines the basic priorities that will focus on the activities and measures for creating an inclusive information society in the future, as well as the goals that need to be achieved within these priorities. The main goal of the strategy is:

"Reducing the digital divide and creating an inclusive information society for all citizens, ensuring increased and better use of ICT in everyday life of citizens, by creating facilitation conditions for access to ICT and increasing the ICT skills of citizens" [3].

This goal will be achieved by focusing of the work of the public, private and non-governmental sectors on achieving the individual priorities and goals outlined in this section on the priorities and goals for e-inclusion in the Republic of Macedonia.

3. Application of information technology in real estate in South – East micro region

Things are no longer happening as usual as to the current functioning of the global economy. A large number of companies have spented a lot of money on the development of information systems in their companies, largely reflected by larger companies about how information systems work and operate. A number of managers intensively use information systems and invest heavily in information technology. This investment affects the application of modern technology in the company, affects the management and the organization, all for the effective and efficient operation of the company, and the main goal of each company is maximizing profits. The promotion process in electronic world is the most important framework for further development. Through promotion, companies offer their products and

services, provide a description of their services or a description of the quality of their products so that consumers can be informed more than just what they see on the web site. Turning the Internet into a complete international communication system has drastically reduced business costs globally. The communication between production plants, between workers, cooperating companies is instantaneous and virtually free. Customers can now buy on the global market, getting accurate information about price and quality. Companies offer goods and services at a remarkably low price, as transport costs are reduced, low-cost suppliers find management of production facilities in other countries.

3.1. Promotion of a web site which includes real estate, house, apartment, villas and weekends cottages for sale and rent in the micro region of Strumica, Vasilevo, Bosilovo and Novo Selo.

Through real estate research in the South-East region, which includes the municipalities of Strumica, Bosilovo, Vasilevo and Novo Selo, we will update, locate and promote the real estate (house, apartment, villas and weekends cottages) for sale and rent in the rural areas and in urban areas. We will carry for research through the creation of a web site, on the previously made surveys, selected information and the location of real estate from the micro - region that are for sale and for rent. By introducing a web site for the real estate location in the micro region, e-commerce is developing.

Such activity can give excellent results in the promotion of the natural-geographical and social attractiveness of the rural areas, which will significantly contribute to the development of rural and eco-tourism. The site that is created for the promotion of real estate for the visitors on this site will help in the selection of real estate, because it seeks to update the new announcements that will appear in the four municipalities for sale or rent in a timely manner[4].
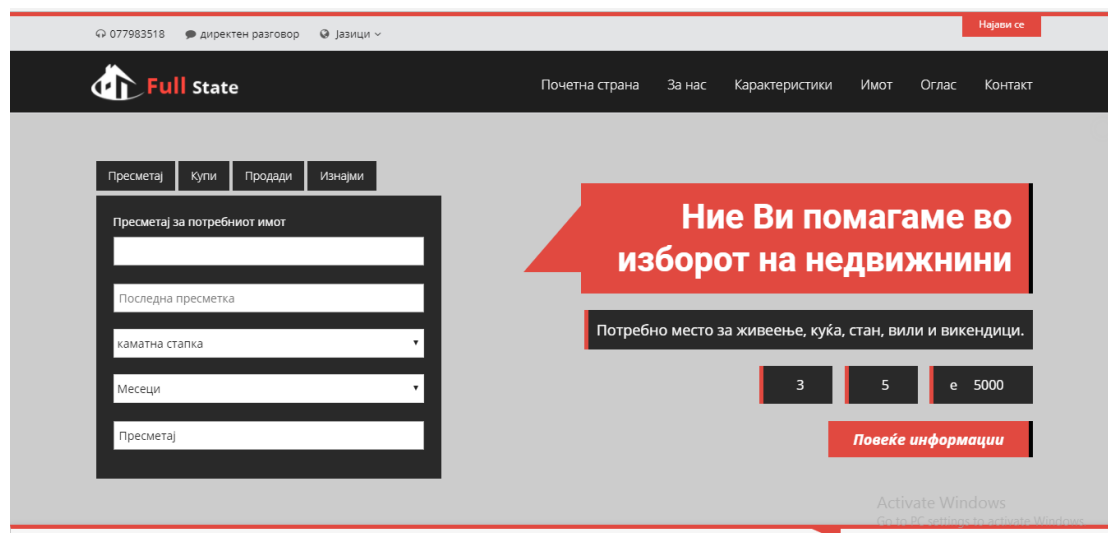

Figure 2: Home page on http://estate.mk/

On the home page have categories for contact, phone number and direct talk with the operator to help the users of the site. If users want their e-mail address to receive regular notifications on all current advertisements that will be advertised on the site, they should log in, enter data that will be requested, and continuously monitor the posts on the page. Through the announcement, if the same users want to publish an ad, they have a duty to fill out the advertising form. On the attached form, the fields are required to activate a given advertisement. On the home page itself are given information for us, personal data. A characteristic is the part explaining the procedure for forming the web site, as well as the reason for its formation. In the part of the property are covered house, apartment, villas and

weekends cottages. These subcategories refer to the selected real estate. If the end users are interested in a house, then they select this subcategory and will only be sent to the house ads.

In the category includes all advertisements posted on the website and of course contact, to establish direct contact with the responsible persons in order to receive a response to any question that the users need.

According to the categories set, in the home page is a calculator for calculation of the price level for the interested property.
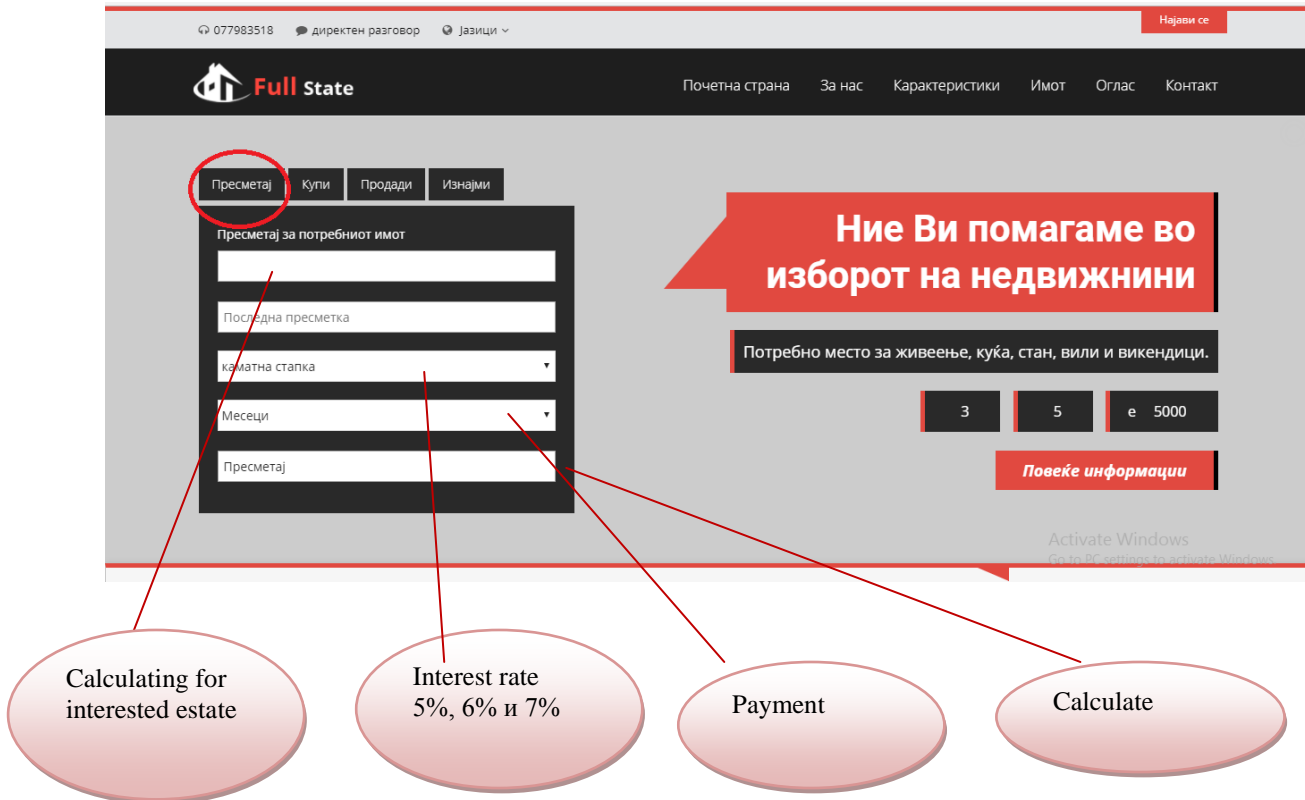

Figure 3: Calculator with automatic calculate the price for the real estate

Here on the site it is automatically set a calculator for calculating the price level for the property. Also, if the payment is made in instalments, the calculator itself is set for calculation with interest rate of 5%, 6% and 7%. These interest rates are taken by the previously observed interest rates in banks for housing loans. There are, of course, other interest rates, but at the moment the calculator is intended for the amount of the three interest rates, as the average values taken from several types of loans. Since the same web site will be replenished and will be followed by novelties on the property market, it will be developed and adapted.

On the side of the home page there is also the subcategory for buy which gives users quick and easy access to all offered advertisements for sale. If the user knows the real estate address it is interested, then in the search field he can write a specific text and the adverts from the search text will be attached.

As a subcategory on the side on the page, there is also the Sell field. This subcategory refers to already logged in users. Once the form has been completed and sent to the site administrator, they will have a sales field when they sign in to their user interface, where they can publish advertisements or the same advertisement will be sent to the posting administrator.

Another subcategory that has on the home page is Rent. In this subcategory, if the user completes the fields assigned, all the houses, apartments, villas and weekends cottages that

are rented will be attached. All fields are not obligatory for filling in, it will be sufficient to only indicate the location for which the user is interested in renting a real estate, and when asked for a search command, all found real estate ads in this area of rent will be displayed [5].
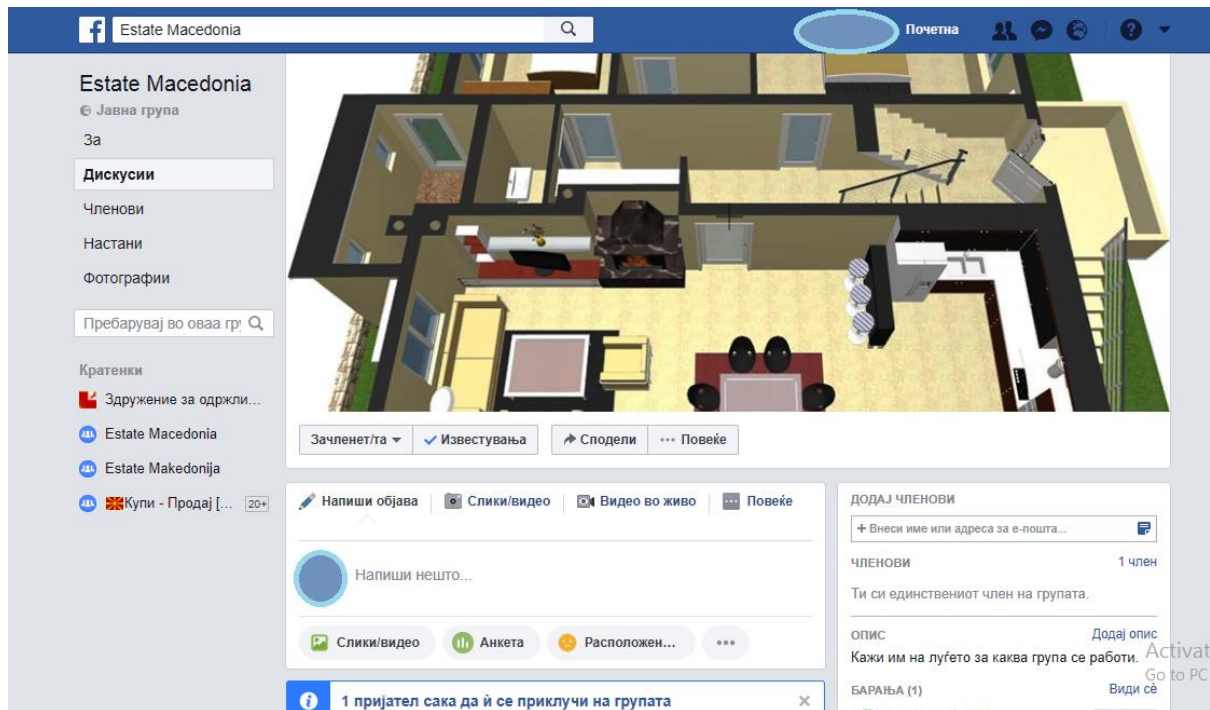

Figure 4: Facebook page by estate Macedonia,
https://www.facebook.com/groups/1772492722972109/

If the social network Facebook, when someone will search for Estate Macedonia, will be shown a public group, where each user can join and can be part of the current announcements and updates of all new published real estate.

Through active engagement for electronic involvement of municipalities in the part of selling and renting real estate, the economic sphere of social frameworks is being improved and strengthened. An electronic sale involves increasing the use of e-commerce, thereby increasing the quality of development and active inclusion in the information technology field.

3.2. Application of information technology in data protection in the field of real estate

For the realization of the electronic commerce, for sale of real estate via the internet, commercialization to the end users will be carried out if they submit personal data and after submitting their personal data they will be contacted and come to the place of issuing or selling the real estate (house, apartment, villa or weekends cottages). They need to submit personal data information as well as to make a money transaction. For that`s main, the protection of user data, in Europe, the protection of privacy personal data is much more rigorous than the United States [6].

On 25 October 1998, the European Commission's Data Protection Directive came into force, extending the protection of privacy in the European Union (EU) nations. The Directive requires companies to inform people when they collect data about them and discover how they will be stored and used.

Customers must provide their informed consent before any company can legally use data about them, and they have the right to access that information, to correct them, and to require that they not collect other data. Information consent can be defined as consent given

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the knowledge of all the facts needed to make a rational decision. For the protection of individual privacy, information sent through this spatial network of networks can go through various computer systems before they reach the final destination. Each of these systems is capable of monitoring, storing and selecting the communication that passes through them.

4. A digital tourist map covering all real estate, business sites, natural and sacred treasures in the South East micro region

A digital tourist map of the South East Micro region in Republic of Macedonia will give an overview of all tourist attractions and sights on the territory of the four municipalities of Novo Selo, Bosilovo, Strumica and Vasilevo. Unlike the classic maps, this tourist map can contain several layers, it will have a thematic division and will contain information in Macedonian and English for natural, cultural, sacral (gastronomic) and gastronomic treasures from the entire territory of the Southeast - micro region, but also information about local businesses from the tourism industry such as apartments for sale, rent, houses, restaurants, hotels, motels, transportation means, travel agencies, tourist info centers and other similar services in the direction of tourism development.

Special attention is given to the previously conducted researches of all real estate in our micro region, business sites, sacred and natural treasures. Because without prior research, the Digital Tourist Map wouldn`t have been complete and had the appearance and functionality [7].
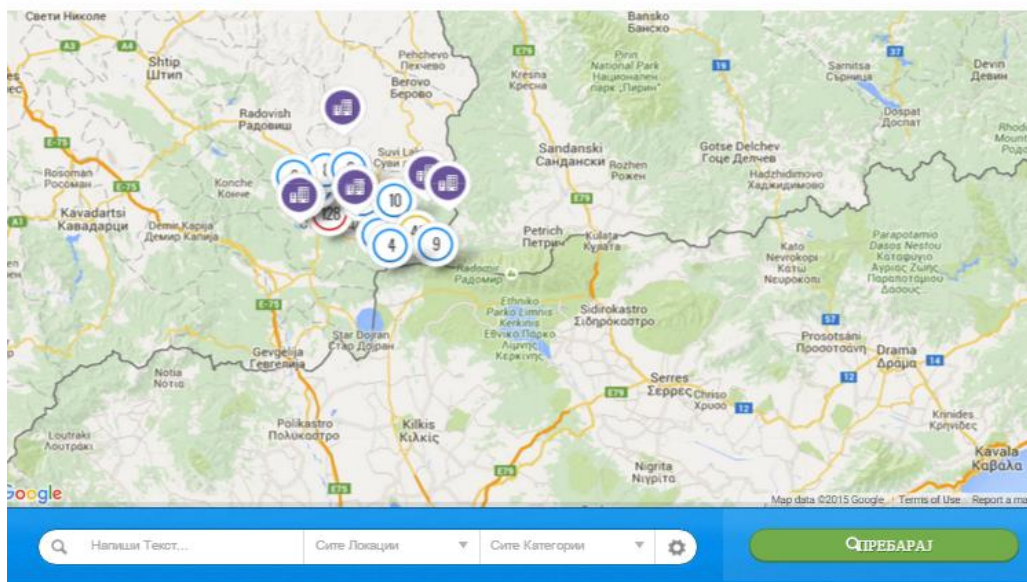

Figure 5: User interface of the page by digital tourist map

The digital tourist map includes identification of all tourist attractions and traditions on the territory of the municipalities of Strumica, Vasilevo, Bosilovo and Novo Selo. Besides the Macedonian support, the map is backed up with English support. So that every tourist who will visit our region, if there is no availability in Macedonian language, then the same map can be used in English. The map is made in WordPress framework and is adapted for Android and iOS platforms.

The user interface presents us the layout, that is, the framework of the Digital Tourist Map. This section presents the initial and basic things when logging on to the web page or to the mobile application on the map.

Therefore, the Digital Tourist Map is created on the free Google Maps service, where locally searchable sites are located and the browser locates it and locates the road, from where you are, to the place where you need to go.

An example of the way how Digital Tourist Map functioning, if you know the municipality on the site write a text, the name of the municipality (Strumica, Vasilevo, Bosilovo or Novo Selo) and below you will find general data for the municipality and subordinate all localities which have been identified for this municipality.

In the user interface field - All categories, there are all identified attractions and attractions from the four municipalities divided by categories.

As an integral part of the successful development of the interactive digital tourist map, an application will be developed that will run offline.

Through the mobile application, it is actually possible for all interested people to use the Google Play Store to download the free application, and when it visiting the Southeastern region, you can activate the same application and help them to visit the desired places.
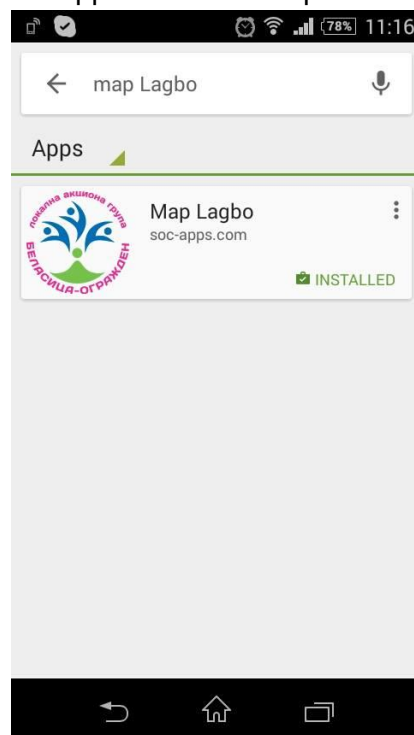

Figure 17: Free application on Google Play Store

The application is customized to the Android operating system as well as to iPhone users.

5. Conclusion

The global environments are searching for creative leaders who manage knowledge and information that provide an entrepreneurial atmosphere and create team-based organizations. With the analysis of the competitive forces that determine the competitive functioning of the organization, it is emphasized that effective management should be critical and realistic in order to achieve lasting competitive advantage, that is, by applying an appropriate strategy and application of information systems in the current operation to be unique in its working. As a sublimate of all selected data, from the conducted researches, we can conclude that the involvement of the Macedonian society in the information systems and the application of technology are a very low level. To this end, efforts are being made to reduce the digital divide and create an inclusive information society for all citizens, providing increased and better use of ICT in everyday life of citizens, by creating facilitation conditions for access to ICTs and increasing the ICT skills of citizens. By applying the priorities and achieving the goal of applying the electronic inclusion of our society, the awareness and the need of the population from the application of the information systems as well as from the continuous application of the Internet for electronic inclusion is increasing.

For this purpose, the implementation of the web site for real estate in our micro region is being implemented in order for the citizens and local self-governments to see the benefits of electronic flickering, the financial benefits, as well as the benefits in the saved time from electronic inclusion. Benefits from electronic inclusion, from the website for promotion of real estate for our southeastern micro region are: a) all relevant stakeholders from the society are interested in electronic inclusion and monitoring, for better acquaintance and their active involvement in electronic promotion, b) timely updating of the information for all current real estate for sale or issuance of real estate, c) accessible and direct access to all relevant information, description and characteristics that will be of interest to interested citizens for buying or renting real estate, d) greater electronic involvement of the citizens, development in the field of information technology and development of a modern approach for electronic inclusion.

The map also has a mobile application available for everyone. On the map, all localities, natural and sacred treasures are located in the same municipalities. The main benefit would be: a) networking of all involved entities (local self-governments, business entities and citizens) that will contribute to the creation, as well as use and monitoring of the digital tourist map and mobile application, b) exchange of accurate, precise information for identifying all objects from natural, sacred wealth and business sites, c) promoting all real estate properties in our micro region, and the municipalities and their characteristics by visiting a tourist and locating a particular object, d) promotion of all available resources in the Southeast region Micro and its continuous development through electronic promotion and application of technology that is e-Inclusion. Through the involvement of all real estate, natural, sacred treasures, business sites, you will be brought to knowledge and will contribute to the active participation and monitoring of all new facilities that will be opened. Therefore, the feedback about the promotion of the website for real estate, the digital tourist map and the mobile application contributes to the economic growth and development of all identified objects in the municipalities. All this contributes to the strengthening of the development capacities of the municipalities.

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