

SOFTWARE APPLICATIONS FOR MOBILE AND MOBILE PROTECTION

PhD, Ștefan IOVAN^{1,2}, PhD, Cristian IVĂNUȘ³

¹ The West University of Timișoara, Computer Science Department, ROMANIA

² Railway Informatics SA, Bucharest, ROMANIA, stefan.iovan@infofer.ro

³ CapGemini Software&Services SRL, Bucharest, ROMANIA, cristian.ivanus@neurosoft.ro

Abstract: *One of the most interesting hypothesis launched in the software industries reveals the following: software applications modify intentions, consumer behavior and all related to the motivation. This is extremely obvious in the places where mobile phones take personal computers place, by the enormous applications mobile gadgets offer to the end users. Any company having business grow ambitions must have a formal and well defined mobile strategy. Otherwise they could lose the promised economic growth. Smartphone generation means that the most of the industries businesses must offer mobile services to the clients. In today's world, mobile applications transformed smartphones in e-readers, electronic wallets, and task planning resources or business monitoring tools [1]. The technology became an important part of the day and affects both the way of performing daily tasks and personal life. In this sense, researchers designed few mobile applications that can make couples life more beautiful or can be used to facilitate the communication with life partners or for consolidating the relation between them. This paper, aim to present few software applications for mobiles used in the daily business activities and the personal life. Communication using mobile devices is more and more present in the office activities and in the couple's life. As the number of the mobile communication devices became enormous, the threat of cyber attacks increases in a proportional manner. This is one of the reasons the authors recommend a careful approach in using mobile applications.*

Keywords: mobile devices, mobile applications, smartphone, mobile phishing, mobile security;

1. Introduction

From the social perspective, mobile devices represent an actual trend by the perspective of connectivity with friends, colleagues, relatives, unknown persons without any limitation from the point of view age, geographical position or previous relationship.

According to eMarketer Research Company, in 2015, the number of Internet users using mobile phones was reached 156 million in Unites States of America. Globally, it is expected to reach about 76 billion of smartphone applications download. Another interesting rate related to the percentage of people who owns smartphone and use Google search engine is 95% in USA. 92% out of this percentage are looking for local information while 89% of these, are looking for global information.

1.1. Mobile applications versus accessing web pages on mobile devices

For those who choose the creation of a mobile version of websites and wish to use the execution using dedicated mobile application, they must understand that between these two alternatives there is not always one or another. The choise is possible as well there is a real opportunity to invest in an application.

An recent study related to the importance of mobility using smartphone applications shown that only in the USA, over 60 million employees who use intelligent phones on a daily basis, while the the best software applications that facilitates the work are available on mobile

devices.

The most used applications are those dedicated to email services and for time management PIM (*Personal Information Managers*). Large companies have started to think databases in terms of allowing the integration of internal communications via videoconferences, organization intranet, etc. Certainly, there is no doubt that web pages must be customized for mobile devices. Most of the business representatives have created or have in plan the creation of a mobile application derived from the services provided by the web page [2].

The most important business area that can be capitalized in terms of mobile devices applications we may find eCommerce, automatic payment systems, *Content Management Systems (CMS)*, *IT Service Management*, *Customer Relationship Management (CRM)*, *Resource Planning*, *Business Intelligence (BI)*, *HR Management*.

1.2. Mobile strategies are needed for the business environment

Any company with business growth ambition must have a well defined and formal mobile strategy or can lose, due this aspect, the promised economic recovery. Smartphone generation is sometimes equivalent with the potential of the business to offer mobile services to its clients. The adoption of *bring your own device (BYOD)* programs assume that mobile strategies must cover both internal and clients' activities.

A *Unisys* study, who was questioning 450 CIO at the global level, find the fact that the mobility brings more advantages for the companies with well formal defined mobile strategies, revealing a big gap in the results offered by the mobile business [2, 3]. The study shown that, during the last year, the mobility generated revenues for 75% of the companies with the most comprehensive strategies, compared to 30% of less developed strategies. The success of the mobility includes: the strategy, business applications and official measurement of the results along infrastructure engineering.

A planned and coherent planning of mobility may lead to a true increase factor for the business while an incoherent program creates the risk of having tactical instead strategic value. Approximately 60% of the respondents stated that they have a mobile strategy, but with different maturity levels. Most the mature companies from the perspective of the mobile strategies, known as mobile companies, represent 21% from the total. Other 40% of the companies are engaged in this sense, with strategies and policies, but without pro-active governance.

Meantime, 8% of the companies are "*aware from the mobile perspective*", with mobile initiatives and some policies, but without a global strategy or governance. 11% out of the respondents stated that their organization does not have any established mobile strategy nor policies or governance in this area.

1.3. Mobile applications usage

According to a new analysis report, mobile application usage increased with 113% in 2013 while the messaging applications had the most significant growth with more than 200%. Each of the followed categories raised in the last year with regard to the usage rate. Utilities and productivity applications increased with 149%, music and entertainment with 78% and games with 66%. Though, the most important jump in usage was performed by messaging and social media that grown much more than the ones have been previously mentioned [3].

Trying to explain the raise of the social media applications, we must provide the examples of *SnapChat*, *Facebook Messenger*, *WhatsApp*, *WeChat*, *KakaoTalk* and *Line*. An example of the power of the social media networks is the chinese mobile phone producer, *Xiaomi*, who

launched a new smartphone dedicated to *WeChat* users, generating in this way, sales of over 150000 smartphones in just 10 minutes.

We can describe the China mobile phone market in a very rapid movement and dominated by chinese applications like *Weibo*, *QQ*, *Alipay* and *WeChat*. For chinese people is very comfortable to have the whole social life shared on an unique platform.

1.4. Mobile data traffic

While it is expected that mobile data traffic to increase with 61% annually by 2020, the supplementary traffic in 2017 is expected to triple the mobile traffic from 2013. Meantime, the number of mobile phone users will reach 5 billion in 2018 (an increase from 4.1 billion in 2013) and over 10 billion mobile-ready devices, including machine-to-machine connections (increased compared to 7 billion in 2013).

Using sophisticated research tools and questioning a large base of wireless providers at the global level, the consultant discovered, as well, the fact that the average speed in the global networks will be almost double, from 1,4 Mbps in 2013 to 2,5 Mbps in 2018. Higher speeds will be present in the USA where LTE offers to its users more than 1Mbps for downloads.

Mobile video will represent 69% from the total of mobile data in 2018, with an increase of 53% compared to 2013. It is expected an wireless impact in 2018 coming from portable devices such as smartwatches and intelligent glasses. Smartphones, laptops and tablets will cover approximately 94% of the mobile traffic, while M2M traffic generated by portable devices and other sources such cars, thermostats and others, will represent 5% in 2018.

The consultant added this year, for the first time, portable devices in the study of mobile traffic. In 2013 at the global level there were 21,7 millions of portable devices and this number will reach 176,9 millions in 2018. The majority of the traffic on the portable devices will continue to be directed through the usage of smartphones as data transmission hubs. The quantity of data transmitted through the smartphones is approximately 99% but will decrease to 87% in 2018.

1.5. Phishing attacks follow the adoption rate offered by mobile devices

The number of phishing attacks on the mobile devices is continuously increasing, taking into consideration the adoption rate of the mobile devices connected to the Internet and the number of the accessed services. The number of phishing sites blocked on *Windows Phone* devices increased twice in the last period.

Microsoft receives information related to the phishing sites and phishing attempts from those users who activate *Phishing Filter* or *SmartScreen Filter* in Internet Explorer browser. For the first time, the report contains data related to the phishing attacks and sites founded with *Windows Phone*.

These data offer valuable perspective on specific ways in which attackers are trying to take the advantage on the rapid increase of online mobile devices. From the historical perspective, phishing attacks had trends to focus on financial institutions and social networks more than any other sites [4].

However, data analysis reveals the fact that the attackers started to watch over the online services, the volume of tentative phishing and sites increasing more than two times in the last years. Regarding the PC's and mobile devices, the number of active phishing web sites that targeted online services increased constantly in the first half of 2016, from 15,4% in January to 33,8% in June. Phishing attack attempts rose proportionally from 8.7 % in January to 20.1% in June.

Mobile data analysis shows that the popularity of social networking activities on mobile platforms is reflected in phishing attempts reported to the devices running on *Windows Phone*. It is shown that phishing sites that targeted social media networks were responsible for more than third of the mobile attacks attempts on the mobiles than in the other phishing sites in the first semester of 2016.

The number of phishing sites that targeted online services accessed by mobile users increased significantly between March and June 2016, no matter what browser, operating system or mobile device is used by the potential victims. Anyone who navigates on web and/or send/receives emails should be aware about phishing attacks [4, 5]. Amongst the standard advices provided by *Microsoft* for avoiding phishing attacks it is enumerated:

- Avoid the accessing of the links attached in the email messages;
- Keyboarding the addressing directly in the browser or bookmarks usage;
- Site security certificate checking prior to inserting personal or financial data;
- Avoid the insert of personal or financial information in pop-up windows;
- Regularly maintain the operating systems software with security update packs.

2. Mobile applications for the office

People from corporations must face on the daily basis tens of tasks, deadlines and big number of meetings at the office. These can create difficulties including the most organized persons that can loose their focus and even forget some things. For this reason, we will provide here a list of mobile applications that helps in increasing efficiency and effectiveness in the office tasks accomplishments.

ColorNote free application helps the people who need a list of tasks and *reminders* for these, the simplicity being the main strenght. For each task or reminder is is possible to set a color, according to the importance and using a specific widget the user can see how many tasks are still on the list.

A similar application is *Any.Do* that has an extra voice recognition function; users do not need to key-in the tasks in the daily agenda. For teams, *Wunderlist* allows the connection with colleagues for sharing the tasks using this application. For large size files sharing applications like *Dropbox* or *Orange Cloud*, offer users the feature to store data, photo, video files, documents or any other file from the mobile phone memory in an online account for permanent access. More than that it si possible to setup the application for automatic synchronization whenever something new is saved in the phone memory.

For scanning purposes, there are available mobile applications that can transform the phone into a scanner. An example of such application is *CamScanner*, that scan documents using photo camera and then transforms them in .pdf files that can be processed online using a private account.

Inevitable, all these applications can reduce the mobile phone performances, but applications like *Super Booster* or *Speed Booster* increase the processor speed, free up RAM memory and settle the mobile phone for the best possible performance. Likewise, the application *Clean Master (Cleaner)* cleans cache memory of the mobile phone, erases temporary files, freeing RAM memory and storage space and increasing in this way the device performance.

Sometimes we need external motivation and for this reason, the application *Simply the Best Motivation* emanates optimism and pozitivity and can help us to accomplish the tasks rapidly and efficiently. Motivation should not only come from motivational messages listening and a simple phone wallpaper, offered by the application called *Motivational Wallpapers* can give us the inspiration we need to work efficiently.

Before starting to look for a new job, we must take care about CV and the application *How to write a CV* help us with advices related to the CV format aswell the means for creating a letter of intent. For those who are not sure they will manage at the interview, the application *Job Interview Q&A* prepares the candidate for the possible questions that might be addressed by the potential employer.

3. Mobile applications for the life of couples

The technology became an important part of our day to day life and affects not only the way in which we are carry out on a daily basis, but also the couple relationship. In this direction, researchers propose some mobile applications that can make life in couple more beautiful.

One of the most known applications for chat and content sharing is *Facebook* available for the mobile devices. *WhatsApp* is another application with large impact on the community since allows to send messages, written or voice, using a traditional Internet connection being an viable alternative to sms's.

Another application dedicate to the couples is *Couple*, that facilitates photo uploading, posting comments, planning aniversaries or trips, creation of task lists, making calls or even sending messages while the only persons who have access to this information exchange are only the partners. A surprisingly feature of the *Couple* is so called *ThumbKiss™*, that reacts when the users are touching the screen in the same time.

A similar application for the couples is *Between* that facilitates the sharing of special moments with the partner and sending short voice messages. To avoid controversial discussions related to aniversaries or other important events in the couple, partners can choose to install the application *Any.Do* and in this way they will be sure that they will not forget anything.

Any.Do allows to the users to add tasks and organizing them by importance and if the user is called and cannot answer, it is possible to set a reminder for calling the partner in a specific time frame. A similar application is *Life Reminder* that allows creation of alerts for any kind of activity.

Couples that have already choose to marry can use the application *Appy Couple*, an elegant way to present and share information related to the wedding event, like the date and location, dress code or the date at which the guests can confirm their presence.

For couples that live together and share expenses, the application *Pocket Budget* allow partners to record any kind of expense, to introduce an initial budget and to set objectives related to savings.

The application *Better Haves* is the first from this category that was created for couples by offering them the possibility to monitor revenues and expenses using specific categories. Even for the applications addressed to the couples, the users must not forget to install an antivirus program for protecting mobile phones from malware programs.

4. Conclusions

The process of digitization has become a phenomenon that is no longer part of the trend line dictated by the next technological age, but which has become part of an undivided normality. And because, in this sense, there are a lot of elements that complete the phenomenon and at the same time confirms its importance and existence on a large scale, informing the active users is now targeting the dynamics of the changes and the aspects they will inevitably test in the environment virtual. The state of the e-commerce industry for Central and Eastern Europe (trends, strategies, traps) as well as the cyber security sphere from both the technological ally and the major concerns of any company with significant capital in

the online environment is topicality [6, 7].

Surely, the purchasing flow is dynamic, changing and adapting as new sales channels are emerging or reinforced, and as the consumer matures or educates expectations, but the basic principles remain the same in terms of price, dedicated services, accessibility to e-commerce platforms.

In Romania, 1.5 million consumers bought online products or services in one year, which means only 8.3% of Internet users. The percentage is extremely small, not only for our country, but also for the European average (in the UK we are talking about an average of 77%). Not far from all these figures that build the universe of shopping and online payments, ensuring database security and communications is essential. We highlight some of the most important figures for cyber security incidents.

Thus, in 2013, we have faced over 43 million such attacks, for a number of unique affected IPs by over 2 million. 78% of alerts were *botnet drone*, compromised computer networks, remote controlled by people other than their owners.

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