Saimaa University of Applied Sciences
Faculty of Business Administration
International Business Management
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Influence of Adblockers on the Future of Mobile Advertising Industry

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Abstract
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The purpose of this thesis is to analyze the impact adblockers have on mobile advertising industry. The thesis aims at (1) examining mobile marketers' willingness to react in response of adblock expansion, (2) finding ways for mobile market players to avoid negative effect of adblokers, and (3) forecasting the future of mobile advertising industry.

To get deeper understanding of current situation of mobile advertising, several studies on mobile marketing and advertising avoidance were analyzed. Adblock phenomenon, its origins and consequences were analyzed.

In order to reach research objectives quantitative method was used. Author created two separate questionnaires. First was sent to publishers and second to mobile advertisers.

The conclusion of the study is that both publishers and advertisers feel adblockers' presence on their performance and revenue. Nevertheless, marketers are eager to take measures confronting adblock. The future of mobile advertising industry tends to be optimistic. However, marketers will probably choose to fight with adblock users rather have a peace with them.

Keywords: Mobile Advertising, Advertising Avoidance, Adblocker

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1   Introduction

1.1   Background

According to Mobile Marketing association, mobile advertising is a fast-growing sector which provide brands, agencies and marketers, the possibility to connect with targeted audience beyond traditional and digital media directly on their phones (Mobile marketing association 2009). Mobile advertising allows advertisers to deliver personalized advertisement information to the targeted audience in the right place at the right time (Izquierdo, Olarte-Pascual, Reinares-Lara 2015).

Mobile advertising does not have a very long history. The first mobile marketing campaign appeared by means of Short Message Service (SMS) in the year 2000. SMS was sent to a pre-defined mobile audience offering exclusive deals and loyalty programs. The introduction of the first iPhone in 2007 and the possibility of using use mobile browsers and apps for marketing campaigns, resulted on a boost of mobile advertising (Lynn 2016.)

Mobile advertising expanded very fast overpassing in its growth non digital and other digital forms of advertising. Every year revenues from mobile advertising is growing due to a higher spread of mobile phone usage, an increase of mobile advertising coverage and a higher interaction of users with mobile ads. According to forecast of an independent research company, Emarketer (2015), the global mobile advertising market would reach significant milestones in 2016, surpassing $100 billion in spending and accounting for more than 50% of all digital ad expenditure for the first time. The same report forecast that till the year 2019 mobile ad spending will double and reach 70% of the total digital ad spending. According to the study of Hoelzel (2015) over the US market, the trend shows a faster growth of revenue coming from mobile advertising rather than other digital advertising formats.

FORECAST: Digital Advertising Revenue *(US)*

BI INTELLIGENCE

Mobile

Non-Mobile

Billions

$90
$80
$70
$60
$50
$40
$30
$20
$10
$0

2013   2014E   2015E   2016E   2017E   2018E
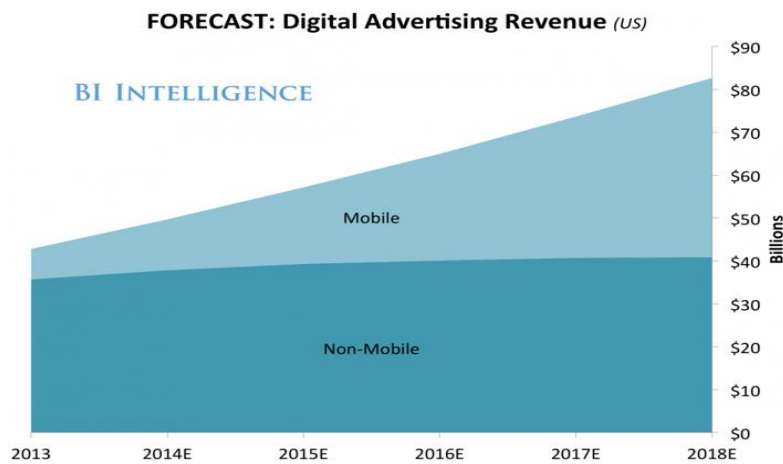
Figure 1 Forecast: Digital Advertising Revenue (Hoelzel 2015)

Mobile advertising revenue grows at a high pace, nevertheless much slower than it should comparing to the growing level of mobile advertising offerings on the publishers' side and increasing time spent on these offerings by mobile users. For example, over half of the visitors at the New York Time's website, come from mobile devices, but it only accounts as 15% of all digital revenue of the company. The so called mobile gap happens due to a steady growing of mobile advertising blindness and advertising avoidance. The more advertisement appears on a mobile device of the users, the more they are likely to ignore, avoid and block it. Moreover, user targeting on mobile device is more difficult to be done than on the web, which decreases the relevance of specific advertisement for users. (Marshall, 2015 b.)

There were several researches done related to the current topic. Most of them were held on the topic of online advertisement, its constant technological perfectionism and intervening in the internet users' personal data. Glass and Callahan (2014) have shown in their study the development of online advertisement from primitive informative ads to advanced data-driven technology, allowing retargeting and data collection. Smith (2014) contributed with his study on the latest advancement of online advertisement, real time bidding technologies, data collection and its privacy effect. Grewal, Bart, Spann and Zubcsek (2016) created mobile advertising effectiveness framework in their study and showed which external and internal factors are necessary to consider while planning any marketing campaign and how to measure the outcome.

Advertising avoidance is one of the biggest threats for online and mobile advertisers. Speck and Elliot (1997) define advertising avoidance as actions taken by media users that significantly reduce their exposure to advertising content. According to Robinson and Toulititsis (2012) online advertisement was proven to be avoided more than the other forms of media. Furthermore, mobile advertisement was considered by 70% of respondents to be more intrusive and as a result it is more avoided than web advertisement (Teads 2015).

Numerous researches were done to investigate the phenomenon of advertisement avoidance ant it is precedents. Already in 1968 Bauer and Greyser (1968) showed that customers have positive feelings towards advertising if messages have high-quality design, informative value and encourage development of better products, but negative feeling about persuading to buy products customers do not need. Researches indicate that the main reason for advertising avoidance is the irritation advertising brings to the audience. Irritation can have several origins: the content itself, duration, volume of commercial and its frequency. Krugman (1983) as well as Edwards, Li and Lee (2002) show that disturbing and interrupting of current tasks by advertisement cause loose of freedom and as a result ad avoidance. Steve Mansfield-Devine (2016) proves that major source of ad avoidance is the privacy issue, caused by the growth of personalized advertisement. The security problem has a rising importance due to recent wide spread of malicious programs and viruses on mobile web. Furthermore, D'Ambrosio, De Pasquale, Iannone, Malandrino, Negro, Patimo, Scarano, Spinelli and Zaccagnino (2017) investigated and proved the importance of mobile users' privacy issues caused by behavioral advertisement and tracking solutions during mobile web browsing. Moreover, researchers found that ad-filtering can decrease energy consumption of mobile phones and increase their working capacity.

Cho and Cheon (2004), in their research proved empirically that people avoid advertising on the Internet because of perceived ad clutter and previous negative experience and authors claim that online advertisers should stop using deceiving techniques and promote users' satisfaction. Tsang, Ho and Liang (2004) showed in their research that generally customers have negative attitude to mobile advertising unless they intentionally agreed on receiving advertising messages.

The increasing level of advertising avoidance on mobile device was a trigger to create a new technology which helps mobile users to avoid the advertising on their phones, the Adblocker.

Adblocker is a technology, which, as the name suggests, blocks ads before they are loaded by the browser (Simple Adblock 2017). In other words, it is a software which prevents advertisements from being displayed on the computer or the screen of mobile phones. There are several types of adblockers. The most common are the browser extensions for Google Chrome and Mozilla Firefox, like Adblock Plus. Other types are dedicated adblocking browsers. (Bilton 2015.)

The first adblock extension was created by Aasted Sorensen in 2002. The technology was available for a decade, but the popularity came only in recent years. (Searls 2015.) Since 2009 adblock usage spread dramatically around the globe. According to Adobe and Pagefair report, nowadays there are 615 million active users of adblockers on web and mobile devices. Moreover, 62% of them are mobile adblock users – 380 million people are blocking ads on mobile which is 22% of world's smartphone users. (Pagefair 2017.)

The reason for adblock's success is that online users are not happy with the amount of advertising which they are offered. Based on the research by Hubspot, 70% of respondents dislike the ads on their mobile phones (Hubspot 2016). Many users find ads too intrusive nowadays. Around 50% of respondents claimed that clicking on an ad was not with a purpose to know the advertising, but it rather was a mistake, or the ad even tricked the user into clicking. With such a growth of dissatisfaction of online experience, adblocks reached their tremendous popularity and keep spreading around online users every day.

Because adblocking growth has certain novelty in mobile advertising industry, there is scarcity of significant researches on this topic. There are several works done (Sandvig, Bajwa & Ross 2011; Singh & Potdar 2009; Palant 2011; Parra-Arnau 2017) on the working principles of adblocks and their technological implementation. Several studies were conducted on the reasons for adblock usage. Ryan (2016) associates adblock usage growth with the lack of trust on the information in the Internet caused by its abundancy. Palant (2011) proved that the

main reason for mobile users to use adblock are distracting animations and sounds. White, Zarhay, Thorbjornsen and Shavitt (2008) show that the major cause of adblock spread is the privacy issue, mobile users feel uncomfortable being constantly watched. Carollo (2015) indicate in their study that mobile advertisement influences a lot the load time of the webpage, which becomes a crucial reason for adblock usage.

1.2 Objective of the research

The topic of the research "Influence of adblocks on the future of mobile advertising industry" was chosen due to high importance of mobile advertising as a marketing tool and the growing mobile advertising avoidance as result of the rising number of adblock usage. Adblocks influence negatively the performance of mobile campaigns, decreasing the viewability of advertisements for mobile users. Therefore, nowadays adblocks have become a strong obstacle for mobile marketing players to keep and grow the revenue from mobile advertisement.

The aim of the research is to study the conflict between mobile advertising market players and adblock users. The main scope of the research is to study the influence of adblockers on mobile industry and forecast possible reaction of the market due to mobile adblocks appearing.

One of the goals of the study is to find regularities on the influence of increasing adblock usage on the mobile marketing industry, such as behavior of visits on mobile advertising products and variation of mobile revenue within the timeframe of adblock spread on mobile. This goal will be achieved by gathering empirical information from mobile market players and analyzing if the drop of mobile traffic quality and quantity and the corresponding advertising revenue are correlated. If the revenue drop happens, these findings will show how mobile market players correlate this drop with adblock usage growth. An impact on several players of the mobile industry, both advertising and publishing side will be analyzed in the research. Another goal of the study is to find some regularities on the response from mobile advertising industry to adblock users in order to improve their adver-

tising revenue. Another outcome of the research will be the findings on the potential mobile marketing industry development under the condition of adblock usage growth.

Moreover, upon results of this thesis project it will be evident if mobile advertising companies can grow at the same pace as before with adblock presence or not. The study will also show if adblockers are a trigger to innovation and allow mobile advertising to step onto a new level. Apart from that, several results on innovative cooperation against adblockers among online mobile market players will be shown, so the trend of willingness to cooperate and share knowledge in order to get common but successful result might be seen.

1.3   Research questions

What is the future of mobile advertising under the increasing presence of adblocks from mobile marketing players' perspective?

This research will gather answers from both sides of mobile advertising market – publishers and advertisers and evaluate their vision on the future of mobile marketing under the continuous growth of mobile adblock usage. The analysis on the responses will show the willingness of online market players to act in response of adblock spread and if not, to allow mobile industry to slow down. Moreover, in case some actions will be taken by mobile advertising players, the vector of these actions will be estimated. It will be analyzed whether publishers are ready to enter the war with adblock users using internal control level, like adaptation of script, blocking the content, request for subscription or external control level, such as using technology which blocks adblocks as well as paying to adblock owner in order to pass through its filter. It would be estimated if industry players take into account main users' complaints which stimulated them in installing adblocks, and if52 publishers and advertisers make actions in order to respect mobile phone users and align their mobile advertising policy with users' needs. Another possible development path is moving advertising from mobile web to the apps and social networks, which will be also estimated in the research.

There are two main sub-research questions in this study.

1)How do adblocks affect different players of mobile advertising industry?

The scope is to find out if the ecosystem feels the adblock presence. The impact of adblocks will be estimated on the quantity and quality of mobile traffic for advertising purpose for several market players. Moreover, it will be investigated if the ecosystem has noticed the drop of earnings since the adblocks appearance. In case the ecosystem notices the drop, it will be estimated how bad the impact was in terms of revenue. From this research, it is going to be seen whereas mobile marketing players feel the potential threat in the future from adblock services. The answers to these questions will enlighten the opinion of both publishers and advertisers.

2) What is a way for mobile marketing players to avoid the negative effect of the wide spread of adblockers among mobile users?

This research will gather answers from mobile market players on actions they take or plan to take in order to fight against adblocks. This study will show the preferences of mobile publishers towards concrete actions in order to eliminate adblock effect. It will be analysed if the ecosystem tends to ignore the will of mobile users in favour of profits and still impose intrusive advertising or, if it collaborates with the users and offers less aggressive advertising solutions, thus losing influence on the mobile users.

The following research will be based on the combination of knowledge over the mobile advertising industry, advertisement avoidance and adblock phenomenon. There were some solitary researches conducted investigating the influence of spread of adblocks on mobile markets players, mainly in web online advertisement. Pitta (2008), Sandvig, Bajwa & Ross (2011) and Biton (2015) proved in their studies that online publisherss are under the risk of losing their revenues from online advertisement due to the spread of adblocks, they might as well lose data of their users which helps them in adaptation and optimization of online campaigns. Other major topic of the researches regarding the relation between online publisher and adblocks – is potential response from the publishers in order to protect their revenue and eliminate the negative effect of adblocks. Starting from blocking content until adblock is enabled and adapting the script (Vratonjic,

Manshaei, Grossklags and Hubaux 2013) till the request of subscription to the service (Ward-Bailey 2016).

The majority of previous researches covered the topic of relation between online market players and adblocks on the web. The novelty of this study is that only mobile advertisement will be the focus of the discussion, so the impact of adblocks on mobile advertising will be analyzed. Apart from that, previous researches gave several separate ideas on how online market players can confront adblock users or how they should sacrifice in order to make users switch off adblock. In this research real mobile publishers will show their preferences towards each option, which will give insights on how the industry might move on. Moreover, in this study, the opinion over the adblock impact from another side of the business – advertisers, will be examined, which is normally omitted in the researches. Furthermore, there is no decent research on the opinion of mobile market players on the potential future of mobile advertising in the reality of continuous adblock growth.

1.4 Structure of the study

This thesis is composed in five sections. The first section is the introduction, which gives an overall knowledge on the background of the research phenomenon, determines the scope of the study and research questions as well as presents the central spectrum of the research. The introduction is followed by the determination of theoretical framework, which consists of four major topics: the mobile advertising phenomenon, the advertising avoidance phenomenon, the adblock phenomenon and the analysis of the conflict between online marketing players and adblocks. In the third section of the thesis, research methodology is covered in detail along with data collection, validity and reliability. The research is followed by the fourth section, where empirical findings are presented. The base of this section will be the data collected for this purpose, using questionnaires and the results will be presented and analyzed. The thesis ends with a conclusion over all the research done, in parallel line with the fundamental achievements that resulted from this research, as well as recommendations for further studies.

2 Literature review of adblocks and their impact on mobile advertising

Theoretical framework will be established, by reviewing scientific literature on mobile advertising, theory of advertising avoidance, and the theory of adblocks.

2.1 Mobile advertising phenomenon

Mobile marketing as well as mobile advertisement is a viral topic these days. It has attracted wide interest of the academic and business researches for several years. Leppäniemi and Kajaluoto in their research in 2005 predicted the rise of mobile advertising which allowed marketers to create one-to-one relationship with mobile device users via mobile channels. The focus on relationship building with end users supposed to bring positive results in driving numerus sales of products and services. (Leppäniemi & Kajaluoto 2005.)

Mobile advertising is defined by Mobile Marketing Association (MMA) as the set of practices that allow companies to communicate and engage with their audience in interactive and appropriate way through mobile devices or network (MMA, 2009a). Scharl, Dickinger& Murphy (2005) define mobile marketing as a use of wireless technology which introduces customers to the time and location sensitive personalized information that promotes products and services. Siau, Ee-Peng& Shen in their study determine mobile commerce as an e-commerce transaction through the mobile device (Siau, Ee-Peng& Shen 2001).

2.1.1 Mobile advertisement development

Online advertisement itself does not have very long history. First steps were taken only in 1994 and since then online advertisement had a very important role as a means of marketing. The first online banner advertising of AT&T was placed on the website Hotwired by Modem Media (Advertising Age 2010). The appearance of advertisement in Internet promised one-to-one communication between advertisers and audience, but the most important immediate and calculated feedback from audience was based on the clicks on the banners which were interesting (Glass&Callahan 2014).

Since its beginning online advertising had a tremendous growth. According to Interpublic, in 2017 worldwide online advertising spending will surpass TV advertising expenditure (The Economist 2016). It is one of the most competitive industries nowadays. According to Interactive Advertising Bureau (2015) for the first half of 2015, revenue from mobile advertising reached $27.5 billion.

Mobile devices became a very important attribute of everyday life for majority of people. It was estimated that by the year 2020 the number of smartphone owners will overpass 6 billion (Lunden 2017). According to the recent survey of Pew Research, more than three quarters of Americans use mobile phones (77%) as well as 7 out of 10 digital minutes come from mobile (Aaron 2017). Google claims that each year more and more searches are taking place in mobile. In 10 countries including the US and Japan percentage of mobile Google searches is higher than web's. (Sterling 2015.) The main reason for such an increase in mobile devices' popularity is their affordability, computational power, multitasking and huge number of value-added services and applications (D'Ambrosio, De Pasquale, Iannone, Malandrino, Negro, Patimo, Scarano, Spinelli & Zaccagnino 2017).

Mobile devices are kept within the arm reach during day and even night. This means that mobile users have ubiquitous access to digital information anytime in any place which gives digital marketers constant reach of the customers. This was the main reason why online advertising which started its path in web, expanded rapidly into mobile. Mobile devices offer vast opportunities for advertiser: mobile users surf the web, use numerous of apps and social network such as Facebook, YouTube, Instagram, all of this facilitates delivery of ad content for the marketers. Advertisers can increase effectiveness of advertising by adapting and serving specific ad within specific location of the user, time frame or even weather. (Grewal, Bart, Spann & Zubcsek 2016.)

The first mobile advertisement appeared in the year 2000 after the Short-Message Service (SMS) was offered to audience. Advertisers incorporated emerging technology in their advertising strategy. Companies were using SMS for exclusive promotions and loyalty offers and such advertising method became very effective. Creating smartphones, especially first iPhone in 2007 was a game

changer in mobile advertising, allowing advertisers use in their strategies mobile browsers and later apps of the users. (Lynn 2016.)

Mobile advertising grew and evolved a lot. In 2016 it hit the milestone and over-passed $100 billion spending for the first time, which is more than half of all digital expenditure and projection says that mobile advertising spending will double by 2019 and will reach 70% of all global digital spending (Emarketer 2015).

Mobile Internet Ad Spending Worldwide, 2013-2019

	2013	2014	2015	2016	2017	2018	2019
Mobile internet ad spending (billions)	$19.20	$42.63	$68.69	$101.37	$133.74	$166.63	$195.55
—% change	117.9%	122.1%	61.1%	47.6%	31.9%	24.6%	17.4%
—% of digital ad spending	16.0%	29.4%	40.2%	51.1%	59.4%	65.9%	70.1%
—% of total media ad spending	3.7%	7.8%	11.9%	16.5%	20.5%	24.1%	26.8%

Note: includes display (banners, video and rich media) and search; excludes SMS, MMS and P2P messaging-based advertising; ad spending on tablets is included
Source: eMarketer, March 2015

186887   www.**eMarketer**.com

Figure 2 Mobile Internet Ad Spending Worldwide (Emarketer 2015)

Moreover, mobile Apps are accounted to be the source of 90% of all mobile content consumption (Morrison & Peterson 2015).

Companies keep on pace with the market trend and increase their investments to online and mobile advertising. According to eMarketer, in 2015 companies spent $20.8 billion to get access to consumers via mobile apps, and only $7.9 billion via mobile browsers. (Morrison & Peterson 2015.) In 2015 Google increased its investment comparing to the previous year by 38% and invested over 4 billion on digital advertising. Facebook investments reached 1 billion dollars with the increase of 56% comparing to previous year. (O'Reilly 2016b.)

2.1.2 Mobile marketing ecosystem

Mobile marketing developed and evolved into an ecosystem with dozens of market players. There are two main players. From one side, there are advertisers who want their product to be noticed and purchased. Purpose of advertising can be different from brand awareness to more common nowadays mobile content

subscriptions, installs and lead generation. They are willing to pay for displaying of their ads on third party online inventory. Advertisers may target their ads to intended audience for their marketing purposes. (Yuan, Abidin, Sloan, Wang & 2012).

From another side, there are publishers, they have web and mobile sites. Their content attracts attention of the users and advertisers are interested in having this audience for their advertisement and are ready to pay for it. Publishers on contrary can monetize free website spots by placing there the advertisement. From each impression/click or conversion generated, advertiser is paying publisher a specific amount. Publishers' inventory can be sold on the flat deal – by the contract with advertiser or in real time through intermediary networks. (Smith 2014.)

This would be a scheme unless online advertising world was not complicated with millions of publishers and advertisers who try to find each other. Middlemen also find place in the arena of online advertisement in order to ease connections and communications between publisher and advertisers. Adnetworks were created when entrepreneurs understood that single publisher's team could not fill all vacant places on the website. Adnetworks had an idea to combine thousands of websites together and sell traffic on their behalf. Using an adnetwork advertisers can reach wider audience of variety of adnetwork sites. Publishers benefit by monetizing unsold inventory of ad space. Next step of industry development was creating of Audience platform which enabled targeting on whom specific ad should be served, so called personalized advertising. (Glass & Callahan 2014; Smith 2014.)

Nowadays ecosystem evolves to the state which allows programmatic buying and selling of advertisement space by the creation of Ad exchangers. Thousands of companies take part in auction, analyze users' data, buy and sell advertisements. Advertisers are bidding in the real time for the spot on the website that user has just clicked on, according to cookies and other trackers of his/her online activity. Auction starts, and the advertisement which wins the auction is delivered to this user within milliseconds. In these ad auctions, publishers get the highest price for

their ad spaces, and advertisers, in their turn, get the higher quality lead and so best return on their investments. (The Economist 2016.)

Not only direct publishers and advertisers take part in the bidding, but also middlemen. An ad impression before reaching final advertisement can change hands 15 times. There are 2 main middlemen involved in the ecosystem. Demand-side platforms (DSP) work on behalf of advertisers in front of Ad exchange and help to set the correct targeting in order to display advertising to appropriate audience. Supply-side platforms (SSP) instead work on behalf of publisher and give them possibility to choose and manage their advertising inventory in order to increase profitability. (Estrada-Jiménez, Parra-Arnau, Rodríguez-Hoyos & Forné 2017.)
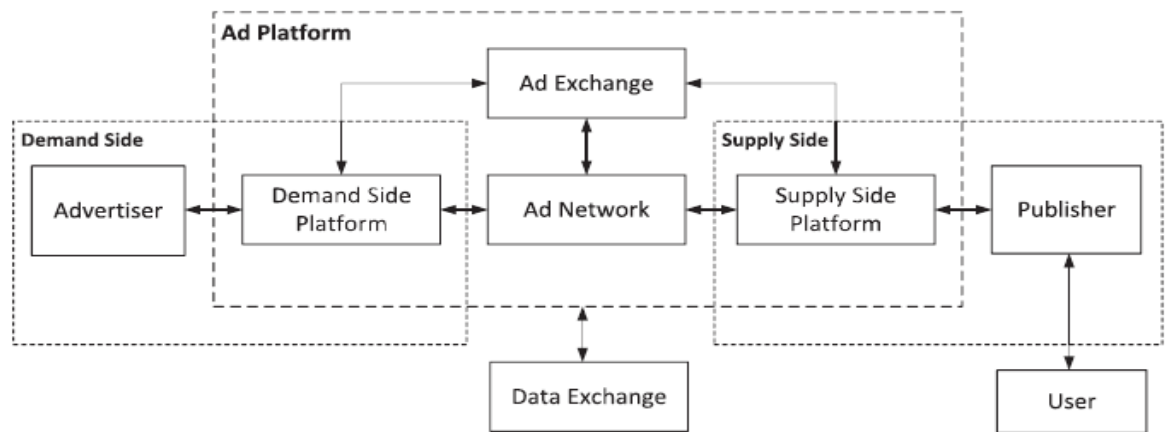

Figure 3 The scheme of advertising ecosystem (Estrada-Jiménez, Parra-Arnau, Rodríguez-Hoyos & Forné 2017)

Websites owners earn money by one of the three following models. Advertisers can be charged per thousand impressions of their advertising which can be banner display or pop-up(Cost per Mile or CPM). Another model is CPC where advertiser pays for clicks on his banners (Cost per Click or CPC). (Sandvig, Bajwa & Ross 2011.) And the last model is normally used in mobile content advertising, which is Cost per action (CPA), where publisher is getting paid by advertiser, in case the user does a specific action - purchases the product, goes to the website and fills in the form, downloads the service (Rzemieniak 2015).

There are several types of user targeting in mobile advertisement. The first and most common one is generic ads where advertisers choose ad space, website or

the group of websites to place advertisement without any specific targeting. Next type is the contextual advertising, where publishers put the advertisement on their web property related to the content to the content of website. Location based ads are shown on publisher inventory based on the information given by the GPS of the users' smartphone or the users IPs. Interest-based advertisement is targeted according to users' web browsing history and preferences. The interests of users after each visit of the webpage are tracked and kept by tracking platforms and ad networks and forming a so called clickstream. This data is used for the more precise advertising targeting of the users in order to show them the most appropriate advertisement corresponding to their tastes. (Smith 2014.)

Apart of adnetworks and adexhanges which mainly work with medium and small size publishers, there are such giants in terms of worldwide web and mobile traffic as Google and Facebook. Facebook is a perfect platform for advertisement, it had 1.39 billion users a month and lots of marketers have chosen Facebook for their advertising campaigns. (Tran 2017.) In 2016 digital advertisement revenue grew by 20%, leading by Facebook with 43% and Google with 60% (IAB 2016).

Facebook, as well as Google, does not use third-party adnetwork, but instead created its own platforms where advertisers can enter an auction and buy advertising space to display their products. This platform has more advanced targeted options apart of location and browsing history. Users themselves share with Facebook and Google personal data like age, gender, interests in life, email and so on. (Yuan, Abidin, Sloan & Wang 2012.) In 2015 Facebook entered a new level of advertisement by teaming with IBM, they created a technology that shows to the user in his Facebook feed the product he was looking for previously in internet, this helps advertising campaigns to be more effective due to such personalization (Tran 2017).

2.1.3 Mobile advertising formats

Several advertising formats have been born since the beginning of mobile advertisement. Banner was the first online format which was introduced. Banner ads appear on the web/wap page usually on the top, bottom or the side of the page and due to their periphery spots are not considered of being too intrusive.

Banners can be different sizes with static or animated images. When mobile consumer clicks on the banner, he is redirected to the landing page of the advertiser. (Edwards, Li & Lee 2002.) The most important indicator of banners' campaign effectiveness is CTR (Click-through-rate). It shows which percentage of total impressions of banner ended up with users' clicks. (Rzemieniak 2015.) At the beginning of online advertisement CTR of the banners was enormous reaching 78% due to the high interest in the novelty of internet users as well as inability to distinguish site content from advertisement. But such high numbers did not last long as users were becoming more educated, CTR was dropping and nowadays it hovers around 1%. (Glass & Callahan 2014.)

Due to tremendous click-through-rate decrease of standard banner advertising, advertisers moved their interest to the new alternative – rich media which uses new technologies for content creation, such as Java, Macromedia Flash, HTML etc. in order to give significant visual impact. Rich media tries to involve users with an ad by using such elements as audio or video. (Edwards, Li & Lee 2002.)

Pop-up advertising became one of the most popular ways to deliver rich media messages. According to Interactive Advertising Bureau (2017), pop-up initiates a secondary browser in order to deliver advertising above the initial browser which prevents user from content watching. Pop-unders open second browser as well, but behind the initial page of the user. There are other formats, which are intrusive for the user. Redirects send user directly to the advertiser's page, eliminating the publisher content page. Interstitial is the format which pops-up when consumer clicks on the video player to watch the video, the format blocks the screen and imposes advertising before video.

Another new format of advertisement appeared in recent years in order to mitigate intrusiveness of online advertisement – native advertising. Such form of advertisement is almost not disruptive for the user and it is consistent with online user experience. Here advertisement is indistinguishable and blended with surrounded content. (Campbell & Marks 2015.)

2.1.4 Advantage of mobile advertising

Apart from ubiquitous access to mobile phones, their affordability and digital advertisers found very important advantage of mobile advertising compared to the online web ads. Mobile advertising allows to use to use mobile 3G/4G data as a billing channel for the advertising product. Advertisers started creating mobile content products like games, video on demand, antiviruses as well as developing mobile apps. The main advantage of these products is that advertisers could agree with mobile operators to use their billing channel. In case user of mobile phone is interested in the product and wants to purchase it he does one click on the landing page of this product and this click is the confirmation for advertiser that the payment for the service can be charged from mobile phone balance. In some countries operators have stricter rules, they add additional confirmation page before subscription is done. Moreover, they can ask the user to send SMS to short number or instead mention the phone number on the product in order to get pin code and confirm it on the landing page – after these confirmation steps, user is charged from the phone balance. The most complicated billing option is the same as used in web content advertising – credit card billing, where in order to get access to the service, consumer needs to enter his credit card data and will be charged directly from credit card. These services are normally subscription ones which means that for their usage mobile phone user has to pay several times depending on rebilling period – a day/week/month. Nowadays, there is a big share of the market which uses mobile advertising to promote mobile content services. (Rosa 2017.)

2.1.5 Effectiveness of mobile advertising

There were numerous researches done which discussed effectiveness of mobile advertising, its barriers and impulses. Click through rate is one of the most important indicators of ad effectiveness and it can be measured just right after the ad is exposed to the targeted user. But even if click through rate is low, online advertising of product and services can still be effective based on view-through rate and memory based conversions, when customer recalled an ad or advertising brand and visits directly advertiser's web page. Even if customer cognitively

avoids the advertisement, it might still unconsciously edge on the mind and stimulate future purchase. (Chatterjee 2008.) In mobile content advertising no memory based conversion can occur, because in this business majority of conversions are made spontaneously and impulsively by mobile users.

In the fundamental work, Plummer, Rappaport, Hall & Barocci (2007) stated that in order for company to have effective way of online advertisement, it needs to pay attention to the correct user targeting, advertising reach and frequency concepts. Vesanen & Raulas (2006) prove in the era of information technology boom that mass advertising is no longer the first option of marketers. Nowadays marketers should create personalized strategies ranging from mass personalization to one-to one marketing strategies, based on consumer information, such as age, gender, location and lifestyle.

2.1.6 Mobile gap phenomenon

In 2009 expenditures on online display advertising decreased for the first time since 2002. The main reason of it was "ad-blindness" due to big amount of not-relevant advertising shown to users. Glass (2009) in his study suggests 2 important steps to make display advertising more efficient and clear for viewers. First one is to use proper collected and classified data for the quality ad-targeting. Second one, is to enable option for the customer to track advertising path and see why they are being targeted for the specific advertising, as well as allow users to choose their own advertising preferences.

Within last 2 years the time spent by the users on the publishers' mobile offering increased from 42% to 55% of total time spent of their properties. However, the mobile revenue is not keeping pace. At New York Times Co over half of visits to their properties comes from mobile users, but they accounted only for 15% of company's digital revenue. So called "mobile gap" occurs due to lack of advanced targeting in mobile devices. This problem happens mainly with traditional media companies. Facebook, Twitter and Google do not face this issue. Facebook has abundant data on their users (age, gender, interest), it knows if user is on desktop and mobile. Moreover, Facebook login replaces cookies and can track all user activity on desktop and then use it in mobile. Some publishers decided to team

with Facebook who knows more about their mobile users than they do in order to increase their mobile advertising revenue. (Marshall 2015b)

2.2 Advertising avoidance phenomenon

Wong and Tang (2008) indicated in their study typical negative attitude of mobile users towards mobile advertising. Majority of customers are viewing media in order to consume content and they do not pay attention to advertising, which limits conscious processing of advertisement information (MacInnis, Moorman & Jaworski 1991). If advertising is perceived as disturbing by viewers, it can cause negative effects as irritation and avoidance (Krugman 1983). Moreover, the huge number of advertising and its ubiquity leads to physical and cognitive ad avoidance of the viewers (Burke & Srull 1988).

2.2.1 Characteristics of advertising avoidance

Advertising avoidance is one of the biggest threats for advertisers. There have been lots of studies on the topic of advertising avoidance over past years. (Rich, Owens & Ellenbogen 1978; Bellman, Schweda & Varan 2010; Cho & Cheon 2004). Speck and Elliot (1997) in their research define advertising avoidance as actions taken by media users that significantly reduce their exposure to advertising content.

Moreover, the study concluded that print advertising is less likely to be avoided than broadcast one, it is more convincing and less annoying. At the same time online users tend to avoid advertising in internet with the higher extent than on other forms of media. (Robinson & Toulititsis 2012.) Apart from that, more experienced mobile users have higher extent of advertising avoidance and consider advertising messages as "junk" (Izquierdo-Yusta, Olarte-Pascual & Reinares-Lara 2015).

There are no specific profile ad avoiders, but typically advertisement tends to be avoided by the young tech-savvy men with high level of income (Speck & Elliot, 1997). Previous negative experience as well as expectations of negative experience make consumers avoid advertising (Kelly 2008).

Cho and Chen (2004) consider three main components of advertising avoidance: cognitive – consumer belief about the object (ignoring the ad), affective – consumer's feeling or emotional reaction towards the object (hating the ad) and behavioral – consumer's actions to avoid the object (installing of adblocker). According to Robinson and Toulititsis (2012) research, there is another advertising avoidance segmentation, it shows that advertising avoidance can occur in three different ways – physical (leaving the room, putting aside the phone), mechanical (switching channels, closing browser, pressing back-button, installing adblocker) and cognitive (ignoring the advertising).

2.2.2 Antecedents of advertising avoidance

Marketing researches applied numerous theories in order to investigate the antecedents of attitude towards mobile advertising. Edwards, Li and Lee (2002) associate advertising avoidance with reactance theory. This social psychological theory interprets person's behavior in the response to the loss of freedom and explains that when there is a threat to human's freedom – person tries to keep the freedom by showing opposition. The same happens in Internet arena, when a viewer is forced to see commercials interrupting his current tasks, he/she reacts against threat of persuasion. Quick and Stephenson (2007) show that individuals sense pressure from an advertising which seeks to remove their freedom of choice, this is why they react towards advertising in the way to get back their lost freedom. Authors proved in their study that when advertising is too intrusive, it creates irritation and makes viewers avoid advertisements. They found that user might be irritated when the content is truthless or confusing, as well as when there is high ad amount and frequency.

There are numerous of other reasons why online advertising is disliked by the users. Grant (2005) in his research shows noncommercial motivation of Internet usage and negative attitude of young people towards online advertising. Cho and Cheon (2004) also proves that compared to the traditional advertising, the main purpose of using internet in web browsers is to search information rather than relax, so people are more focused on their tasks and get annoyed with advertising

also faster. According to Edwards, Li and Lee (2012) the more people are en-gaged with watching online content, the more annoyed they will be when adver-tisement appears.

Bauer and Greyser (1968) also show in their research that the main reason why people dislike advertising in general, is the irritation it brings to them. This study does not find the reason for advertising criticism in advertising institution itself, but instead in a way and tactics advertising is presented to people. Irritation may occur by different origins: the content itself, duration and volume of commercial and its' frequency. Kim and Sundar (2010) argued that formats and frequency of advertising might influence a lot on users' intrusiveness. Consumers feel uncomfortable if advertising is too big, too loud or too long, as well people are overwhelmed by too frequent advertising.

As alleged by the study of Cho and Cheon (2004), the main reasons of advertising avoidance are interruption of current tasks, distrustful information on the sites and negative previous experience.

There was recent research of Adkeeper conducted on the main reasons consum-ers do not click on the online banner. The main reason was that people do not want to be pulled out of website (61% of respondents). Fifty eight percent of re-spondents noted that online banner advertisement is not relevant to them. Fifty seven percent are afraid to open something they wish they have not (virus, spam, blocking the screen). For 43% of respondents banners do not look interesting or engaging, and 31% are worried that their internet behavior will be tracked. (Ad-keeper 2011.)

According to the survey conducted by mobile company Retale, 60% of mobile clicks are made by accident, because of small screen of mobile device and slip-pering of finger. Sixteen percent click the banner because they like specific com-pany or product and only 13% finds ads interesting. (Retale Survey 2016.) These findings show that in majority of cases users of mobile phone see advertisement by accident, against their true will, which creates bad experience and increases aggravation towards mobile advertising and willingness to avoid it.

According to the survey of Teads research (2015) based on the answers od over 9000 people, majority of respondents consider mobile advertisement being more intrusive than web and try to avoid mobile advertisement. As a result, mobile advertising is seen as a barrier and interruption of mobile content viewing.
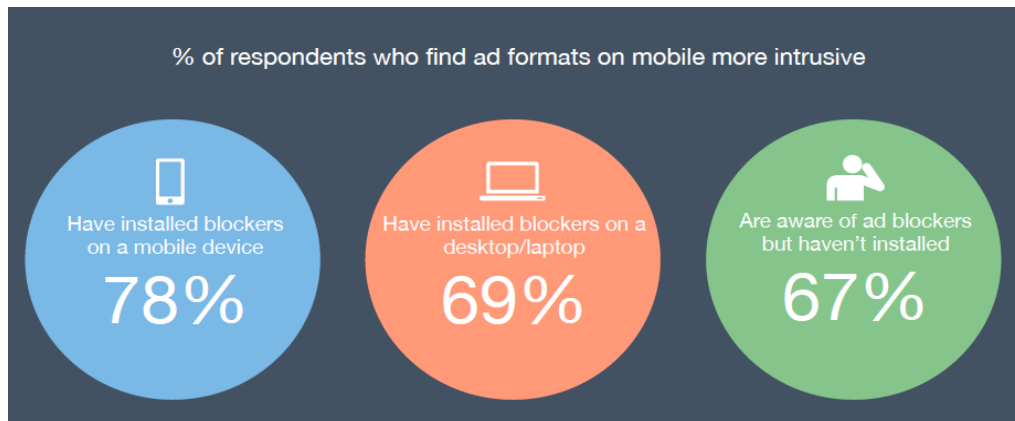

Figure 4 Percentage of respondents who find ad formats on mobile more intrussive (Teads 2015)

Nowadays informational technologies allow marketers to collect personal information and track purchase history of consumers in order to create relevant targeting in their marketing campaigns and increase advertising efficiency (Dolnicar & Jordaan 2007). There are two opposite point of views on personalized advertisement. On the one hand, Baek and Morimoto (2012) proved in their research that the more advertising is personalized, the lower skepticism towards this advertising and hence the lower advertising avoidance. But on the other hand, such privacy invasion is one of the biggest reasons for consumers to avoid advertising. According to Pew Research center around 33% of respondents who expose their personal information online claim that they are worried how much information about them is available for third parties (Madden & Smith 2010). Majority of users have negative attitude towards personalized mobile advertising. They experience psychological reactance because they feel that they are being constantly observed by the companies. (White, Zarhay, Thorbjornsen & Shavitt 2008.)

Behavior advertising grew a lot in recent years since its positive impact on marketing campaigns and revenue of advertisers. According to Beales (2010) tracking of browser interest of the users increases conversion rate twice in comparison

with classical geographical and contextual ads. But such method has raised issues with users' privacy. Advertisers intervene in users' Internet experience and collect behavioral data. This infringes the privacy as being part of tracking ecosystem that knows behavior and preferences of visitors and provides products based on them. (Steve Mansfield-Devine 2016.)

Negative beliefs can be a reason for advertising avoidance. People might believe that advertising is deceptive or misleading, that it affects users' intelligence, makes people buy products they do not want and distorts values or promotes undesirable values. (Shavitt, Lowrey & Haefner 1998.)

But the main concern of the users is not the collection data itself, but final use of it which might be made by third party. Even if this gathered data is anonymous, it can be linked with personal information (name, email, address, phone number etc), sold to a third party and be used for illegal activity like identity thefts, stalking, social engineering attacks. (Malandrino, Scarano, Petta, Serra, Spinelli & Krishnamurthy 2013.)

Moreover, recently there are big issues in online advertising with malicious programs. Visitor might click on the banner on the website or popunder and install on his computer or mobile phone a spyware or ad-fraud trojan. This is how user can get his personal information copied and stolen and even held for ransom. Moreover, on the web it is still possible to check the link user is planning to press on, but in mobile it is almost impossible. In majority of cases publisher cannot control which ad is shown on their website, because criminals use advertising network and show malware only to very narrow and customized targeting, different from what other users of the website see. One of the best countermeasures against is installing of adblock, which lots of online and mobile users are opt for. (Mansfield-Devine 2015.)

2.2.3 Means to control advertising avoidance

Taking into account the reasons for advertising avoidance, researchers conducted studies in order to find measures to control, manage and decrease advertising avoidance. Teixeira (2014) showed in her study that the higher the perceived value of the advertisement, the lower the level of intrusiveness. According

to the research of Ducoffe (1995) for advertising to be valuable to viewers it is essential to contain useful information or have entertainment value. Under these conditions ad intrusiveness and ad avoidance decrease significantly.

Edward, Li and Lee's (2002) research indicates that there are three main issues which advertisers need to consider when they offer pop-up advertising for Internet users. First, when users are focused they perceive interruption with higher extent than they are not focused. Therefore, advertisers should show the popups only during breaks of content or switching between browser tabs. Secondly, another strategy of decreasing popup advertisement intrusiveness is placement of relevant content for the user. Creation of value-added advertising, interesting, important or entertaining content is a final strategy which helps to limit ad intrusiveness and ad avoidance. Choi, Hwang and McMillan (2008) proved in their study that perceived utility of mobile advertising was one of the main triggers of users' purchase intentions. Moreover, perceived entertainment influences a lot consumer's response towards mobile advertisement.

Feng, Fu and Qin (2016) proved in their research that extrinsic and intrinsic motivation significantly impacts customer attitude towards mobile advertising. It was shown that timeliness has severe positive effect on customer's motivation to accept mobile advertising, which means that mobile phone users are ready to receive proper advertising at the right time, for example, sales promotions before holiday season or lunch special deals before lunch hour. The study also shows that personalization and localization of mobile advertisement has positive impact on the customer's motivation to accept the ad. Moreover, as a result of intrinsic motivation, customers tend to be attracted by mobile advertising with innovative and playful features.

Some researchers suggest that mobile advertising should not be shown to mobile users without their prior permission in order to reduce the negativity (Tsang, Ho & Liang 2004).

2.3 Adblock phenomenon

2.3.1 Adblock history and expansion

The need of users to protect their interests stimulated market on creating the means to strive against the mobile advertising. The ironic part is that the threat of online advertising is another digital product. Adblocking is a technology, which blocks ads before they are loaded by the browser (Simple Adblock 2017). Adblockers can be installed in desktop as well as in mobile devices. Highest proposition of ad blocking happens in Chrome browser (67%), followed by Firefox with 38%. (Teads 2015.)

According to Adobe and Pagefair, there are 615 million active users of desktop and mobile adblockers nowadays (Pagefair 2017). Moreover, this number continuously grows every year by 30% (Yang & Nu 2016). Mobile adblock coverage overpassed desktop for the second time, with 62% of adblocks running on mobile devices. Nowadays 380 million mobile users are blocking ads on mobile phones, which is 22% of total world's smartphone users. (Pagefair 2017.) On some online games sites around half of advertising has been blocked (The Economist 2015), on celebrities and fashion sites percentage is lower – around 10% (Smith 2016).
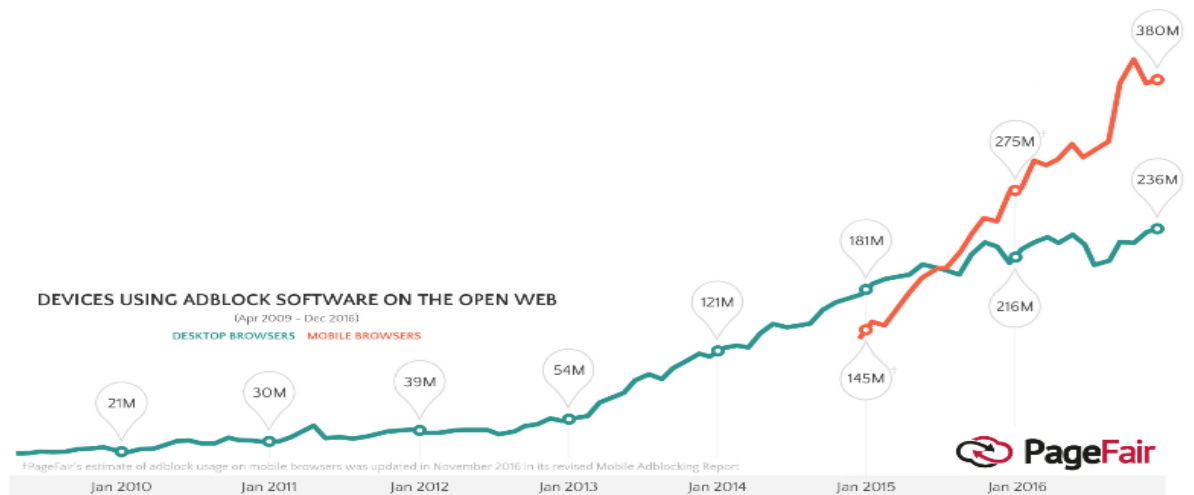
Figure 5 Devices using adblock software on the open web (Pagefair 2017)

In 2015 Apple made the update of its OS, which gave a push to many new ad-blocking entrants. It officially opened doors for adblocking Apps which stimulated significant increase of adblock popularity among Apple devices' mobile users. (Carollo 2015.) During the first week after update, 10 most popular adblocking apps were downloaded for around 600 000 times combined (Marshall 2015a).

For example, usage of adblocks among online users only in the US grew from 8% in 2013 till 15% in 2015 (Ward-Bailey 2015). The practice of adblocking expanded to mobile thanks to the Apples iOS 9 with pre-defined adblock option (Martin 2015). However, out of all adblocks users only 16% are mobile ones. (Cramer 2016). According to Interactive Advertising Bureau the revenue from online advertising reached $ 49.5 billion in 2014 and it was estimated that the loss for publishers only in 2015 was $22 billion (Ward-Bailey 2015; Carollo 2015).

Even in-app advertisement which seems to be the most protected from adblocks is under the risk nowadays. The Israeli company Shine developed technology which can block all mobile advertisement including in-app advertisement on the mobile operator level. One European mobile operator has announced about the implementation of this technology. This fact really contradicts to the principle of network neutrality according to which all traffic should be treated equally. If such actions happen, the war between mobile operators and biggest publishers as Google and Facebook might begin. (The Economist 2015).

According to the Pagefair survey (2017) 37% of adblock users learned about the software from family, friend or colleague and another 27% got informed by internet and other form of media. There is also a demographic profile of the adblock adopter. Men are 34% more likely to use adblock than women, as well as urban internet users are 17% more likely to use adblock than rural internet users.

At the beginning adblockers were only available as an application to install and its audience was limited to technologically educated minority. Nowadays adblocks are available as an extension of the most popular browsers as Chrome and Firefox. Adblockers are usually free to use plug-ins for several browsers or Apps. (Yang & Nu 2016.) New version of Opera browser has a built-in adblock option. When the user opens the browser for the first time, the pop-up appears

which asks permission to block ads and surf internet faster. The browser has an option to show how many ads it has blocked on the page and how much faster the loading time became. (Hackman 2016.)

One of the most popular adblocks Adblock Plus was launched in 2006 as a Mozilla Firework's and later as Google Chrome filter. It is free to install and since it appeared in the market, it was downloaded over 300 million times. And it even got several awards. (Yang & Nu 2016.) It was created by a young programmer Wladimir Palant, who was annoyed with intrusive ads on the web, with the help of volunteers and donations (Maheshwari 2016). Adblock Plus gives possibility for users to set rules which tell an extension which element of the page it needs to block. It blocks different types of advertisements – video, banners, pops, advertisement in Flash games as well as users' tracking. (Corey 2016.)

2.3.2 Working principles of adblock technology

Majority of adblocking solutions has very similar work principles. The loading of the webpage is done by browsers whose task is to request all elements of web site to be displayed, including advertisement. But normally advertising is contained in additional files which are called only after the page with content is received but before it is loaded. Adblockers are checking all elements and block ones which contain advertising. One of the most popular method of ad identification is comparing each request with the updated list of advertisers' server addresses. (Sandvig, Bajwa & Ross 2011.)

Another very common approach is filtering and blocking page elements whose URLs contain specific keywords like ad, click etc. So, there is a loophole for the publishers to stop Adblock from working by simple usage of different and less common words. (Singh & Potdar 2009.) Moreover, Adblock Plus uses an additional mechanism that hides elements which match selector of Cascading Style Sheets (Palant 2011). Adblockers also block trackers with the help of blacklist and trackers' database. These lists filter third party requests which seem to belong to ad trackers (Parra-Arnau 2017).

2.3.3 Reasons for adblock spreading

According to Ryan's loose theory, Internet nowadays offers cheap and abundant amount of information which used to be scarce and expensive. Consumers cannot process majority of information from the internet. Therefore, under the condition of very cheap information the trust to the source of information becomes precious. Ryan shows that when visitors of websites install adblocks they prove that the trust was infringed. (Ryan 2016.)
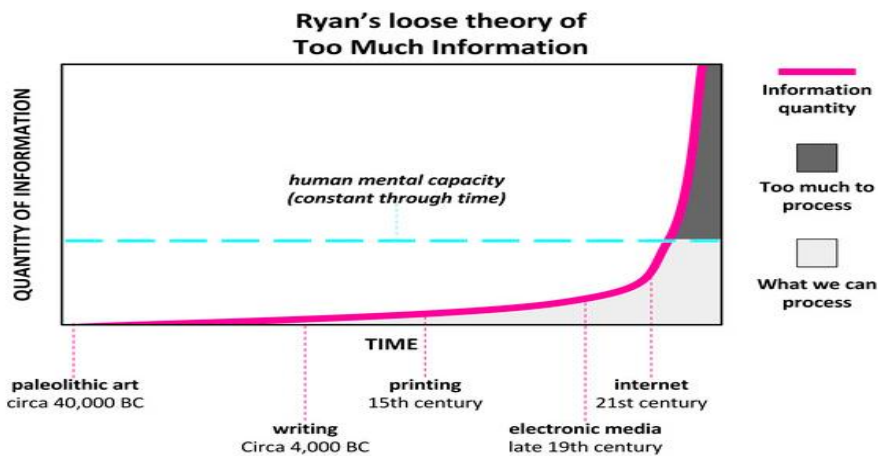

Figure 6 Ryan's loose theory of too much information (Ryan 2016)

One of the biggest adblock tools Adblock Plus conducted survey and received opinion from 1,543 respondents about their main reasons for Adblock Plus usage. The most dominating factors for the users were avoiding distractions and decreasing webpage load time. Nevertheless, security and privacy concerns are one of the major reasons as well. (Palant 2011.)
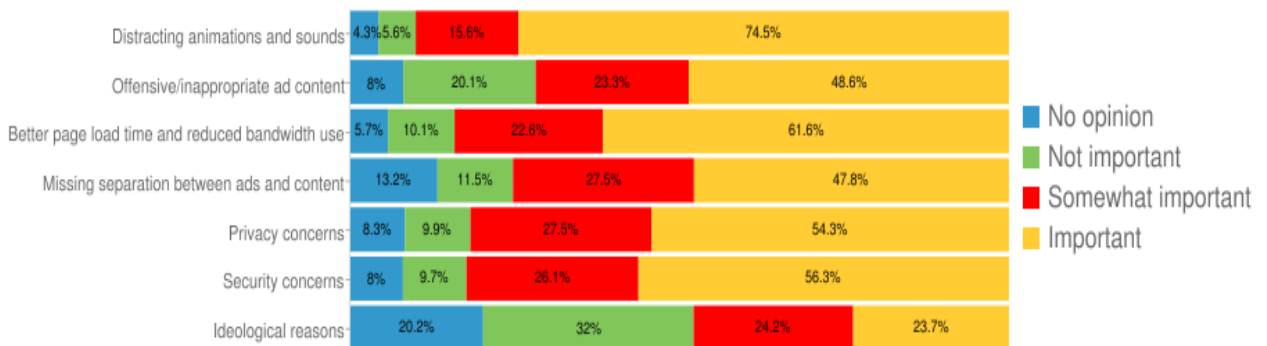
Figure 7 Survey results: Why do consumers use Adblock Plus? (Palant 2011)

Majority of adblock consumers use it to avoid intrusive, aggressive and obscure advertisement. People are annoyed when the content watching is interrupted by pop-ups covering the content, unexpected sounds from advertisement or blinking animated banners. Their main reason for being on this website which is content consumption is disrupted. The solution for this problem is to install an adblock. (Ryan 2016.) According to the Teads Research (2015), pop-ups are the largest drivers of adblock adoption by the opinion of 88% of respondents.

Privacy issue is the major contributor for the usage of adblockers. Privacy concern arises due to tailored advertising, when advertisers collect and use personal information of the viewer, such as demographics, geographic, habits and buyer behaviour for advertising campaign optimization. Consumers do not feel comfortable with their online activity being watched constantly. (White, Zarhay, Thorbjornsen & Shavitt 2008.) Consumers become threatened when advertising become too personal, they feel that their personal data is being abused, therefore they prefer installing ablock (Baek & Morimoto 2012).

Besides privacy online users' security is also threatened. People are aware and afraid that third-party tags can lead to malware on their devices, which can lead to various fraud and scam (The Economist 2016). Moreover, people are afraid that data kept by cookies might be linked to some personal information, then could be sold to a third party and used for illegal activity, like identity theft, online and physical stalking (Malandrino & Scarano 2013). The best way to avoid it is to install the adblock.

However, some mobile users tend to block advertising in order for the web pages to load faster (Mansfield-Devine 2016). Although, some researches, like the one done by Advertising Age, did not prove the dependence of the loading page speed on the advertisement presence on the site. Moreover, they did not find any significant impact of the adblocker to accelerate the load time. (Peterson 2015.) Other researches claim that many sites which have ads are quite slow to load, because it is an additional code that must be loaded, and mover advertising is coming from a lot of different sources. With the use of adblock, load-time is decreased almost by a half. (Carollo 2015; Hackman 2016.)

Ryan (2016) mentions in his research another cause for adblock adoption. Since the file sizes of advertisements are pretty big, they hoove up the bandwidth, and consume users' data plan. Therefore, advertisement might increase the expenses for web and mobile web data plan. Since the adblock removes majority of advertisements, the internet data spending is aligned to the actual consumption.

Some people use adblockers in order to decrease energy consumption. There was a study which showed that 65-75% of consumed energy in the Angry birds gaming app was spent by a third-party advertisement. (Pathak, Hu, Zhang & Bahl 2011.) Furthermore, there was a study made on desktop and mobile energy consumption of the NY Times website with advertising and with blocked advertising. Results show that blocking the ads can save energy up to 21% in mobile device and up to 39% in desktop. (D'Ambrosio, De Pasquale, Ianonne, Malandrino, Negro, Patimo, Scarano & Spimelli 2016.)

2.3.4 Motives for disabling adblocks

Nevertheless, there are conditions under which consumers can reconsider using of adblocks. According to Teads Research, 84% of respondents are ready to reconsider installing adblock in case they have a choice to view advertising or not. (Teads 2015.)

% who agree that being given the choice to view would make them reconsider ad blocking

Country	Percentage
Mexico	89%
Spain	89%
Brazil	87%
Italy	84%
Argentina	84%
Germany	83%
France	81%
United Kingdom	80%
United States	80%
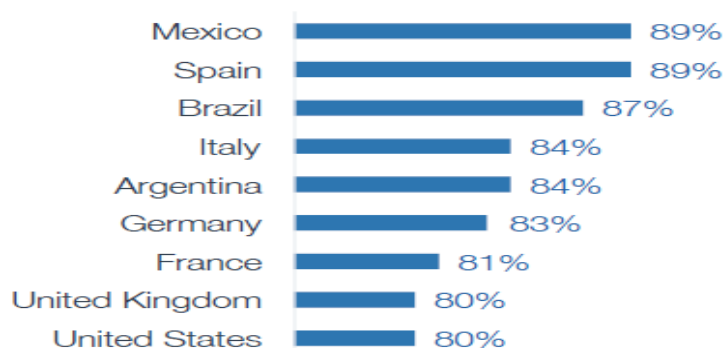
Figure 8 Percentage of respondents who agree that being given the choice to view would make them reconsider adblocking (Teads 2015)

Moreover, only 8% of online users would not reconsider adblock usage, the rest of respondents were ready to stop using adblocks if several advertising features were implemented (Teads 2015).

People who would reconsider installing an ad blocker
(% who agree feature would allow them to reconsider)

Feature	%
Can skip from start	56%
Can close out of ad	53%
Can turn on or off sound	29%
Can skip after 5 seconds	29%
The ad is for a relevant product or service	27%
The ad is within relevant content	23%
Can scroll past ad	23%
Nothing will make me reconsider installing an ad blocker	8%
Other	2%
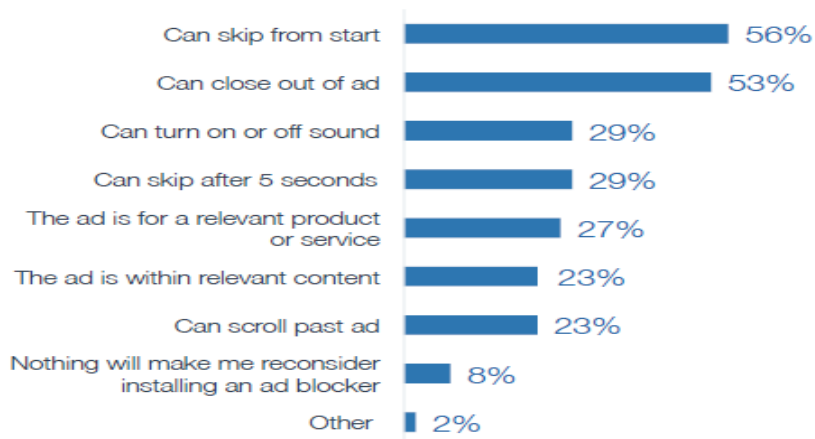
Figure 9 People who would reconsider installing an adblocker (Teads 2015)

2.4 Conflict between online marketing players and adblocks

2.4.1 Adblock impart on mobile advertising market

Online advertising researches predict that such a major Adblock usage growth could be an extreme threat to online advertising business model (Cohen 2007). There are several market players who suffer from adblock growth. The revenue of online publisher is based on several sources, the biggest part of which comes from online in order to support and update free content of the websites, publishers place advertisements on their webpage and allow user to get relevant information without subscription fees. (Ward-Bailey 2015.)

According to Interactive Advertising Bureau, the revenue from online advertising reached $ 49.5 billion in 2014 and it was estimated that the loss of publishers only in 2015 was $22 billion. (Ward-Bailey 2015; Carollo 2015.) Apart from revenue drop, adblock could be a potential reason for job loss and the disappearance of independent online media.

Several researchers agreed that due to the massive expand of adblock usage, lots of publishers are under the risk of losing their revenue from online advertising which supports their content (Pitta 2008; Sandvig, Bajwa & Ross 2011). But main influence of adblocks is on mid-size publishers who have significant amount of traffic to be affected but who do not have enough power and force to fight against adblocking. Apart from losing revenue publishers also lose data of their users. Adblockers also block cookies which normally collect first-party data about users and helps publisher to make conclusions and adapt the product they sell. (Bilton 2015.) However, publishers who suffer the most from Adblockers, are especially ones that target technologically savvy audience (Fisher 2010).

2.4.2 Ethic of adblock

Nowadays market has controversial view on the problem of adblockers. Publishers consider adblockers unethical because they intervene to the third-party activity, have unauthorized control, and prevent publisher from making money on their own property. Others argue that adblockers cannot be called unethical because they prevent unethical advertising behavior of publisher against webpage users. (Bilton 2015.) But here another ethical question arises - can the website make users switch off adblock which protects users in order to make money out of them?

Several publishers are even exploring possibilities to sue adblock companies, because adblockers are interfering with websites' ability to display all pixel which are also part of the website (Morrison & Peterson 2015). The problem here is that anti-unfair competition law is not well determined and not aligned to the new media era. Anti-unfair competition law should evolve with the influence of innovations. But even so, in China and Germany, there were several cases won in court by publishers in a litigation against adblock companies. Courts established illegality of adblock applications because of two main reasons. Firstly, business model of free content plus advertisement, as any other should be defended by law. And in these specific cases adblock applications destroyed existing business model and there was no alternative business model for the publishers. Second defence point was that adblocks took inappropriate advantage of publishers. Since users opt for viewing content with no advertisement, they were inclined to

use adblocking application, this is how users of website would become the users of adblocking browsers, which can be considered as infringe of publishers' database. Although there were several positive precedents against adblockers, it is not the trend yet. (Hou 2017.)

2.4.3 Publishers' strategies of fighting with adblocks

Adblockers influence negatively the revenue of advertisers and ad-networks, but publishers are the ones who feel the most significant revenue cease because their earnings depend on online advertisement. Publishers are losing their revenue because of the massive spread of adblocks and are ready to enter the fight with them. Website owners can easily detect whether page viewer is using adblock or not with the help of Java Script which executes after the page is loaded. (Vratonjic, Manshaei, Grossklags & Hubaux 2013.)

Publishers have a need to take measures in order to stop their visitors from using adblocks. Several common ways exist to get back the advertising space under the control of publishers. There are several approaches of getting around the adblock impact on publishers. Some publishers choose friendly and peaceful methods to face adblockers. (Martin 2015.)

For example, publishers can change the code, but adblocker may follow the path and adapt the code as well. It is not the best approach for brands because it might ruin relationship with loyal audience. (Martin 2015.)

Another option for publishers is the embedding advertising inside the content so it cannot be detected as advertisement and cannot be blocked. The same approach can work other way around, website owner can label their content as advertisement, so adblock would erase the content from the website, which is against the user's will and it might motivate him to disable adblocker. (Pitta 2008.)

One more common way of fighting against adblocks is preventing content viewing or limiting functionality by publisher in case adblock is enabled (Vratonjic, Manshaei, Grossklags & Hubaux 2013). For example, Yahoo faced adblock popularity in a similar way. The company tested the feature to block an access for the Yahoo mail if user has adblock switched on. (Carollo 2015.) There was a

proposal of Xaxis' chairman for top 100 websites to collaborate and at the same time not allow users with adblocker turned on (Morrison & Peterson 2015). Although this method has a side effect for the publishers – users can opt for the competitors' websites and publisher might lose traffic and position in the search engine ranking.

Another way is to ask users politely to disable adblocks on their devices and explain that advertising is a way to support free content. Publishers can educate their users about downsides of adblockers and explain that content cannot be for free. Web site owners can show users proof that adblock negatively influences publishers' revenue and ask them to turn it off. In case publisher still does not accept disabling adblock option, publisher can ask to pay a subscription fee. (Vratonjic, Manshaei, Grossklags & Hubaux 2013.) Guardian even introduced the donation link for the users with adblocks on showing the sentence on their website: "We notice you have got an ad-blocker switched on. Perhaps you would like to support the Guardian another way?" (Ward-Bailey 2016.) This method depends a lot on the quality of publishers' content and the loyalty of audience. According to the PageFair (2017) research across 220 publishers, only 26% of the adblock users disabled adblocks on the sites that asked so and 74% preferred to leave the website. Notably older internet users and men are more likely to leave the webpage than make actions to disable the adblocker. However, when Forbes made this experiment 43.2% of the users disabled adblock, for IDG communications the percentage of the consumer whitelisting the website was 38%. Some publishers even choose to reward their visitors and guarantee ad-light experience if the ad-block is off. (O'Reilly 2016b.)

According to the recent research, 81% of the online news readers accept presence of advertising in exchange of the free content. However, 77% of consumers claims that they would hardly click on online advertising. (Rainie & Purcell 2010.) Moreover, the group of researchers created a model based on the game theory which helps publishers choose appropriate business strategy – subscription model or online advertising model, and serve it according to users' preferences. (Vratonjic, Manshaei, Grossklags & Hubaux 2013.)

Hard work on the sites' content can also be fruitful since users might prefer to pay for high quality content (Martin 2015). Publishers could also choose more carefully the advertisement which they place on their websites and opt for ones which are entertaining and which their consumers like (Smith 2016).

Searls proposed also the idea of more qualified leads advertising where users themselves give the requests on which advertising they are interested in and advertisers will compete to target precise need of each user (Searls 2015). This find is proved in survey done by Teads Research (2015), that 69% out of 9,000 respondents would whitelist advertising on the website they find valuable.

In case users do not want to pay for content but at the same time do not want to see ads there is another way - the usage of native advertisement as a less intrusive and less inconvenient approach for the users. Moreover, advertising would not look so different from the content for adblock filters. (Martin 2015.)

Adblocks work a lot on blocking browsers' ad content, but not a lot of adblocks are able to block advertisements within an App. One of the choices for publishers could be moving their activity to apps and monetizing their traffic in-app. But this option would not last long, since everyday new adblocks appear and soon adblocking inside the app would not be a problem. (Morrison & Peterson 2015.)

Ecommerce can be another way of substituting loss of revenue from advertising. So publisher can offer online purchases of the products mentioned on the website. Apart from that, publisher can track info on users who entered their website with adblocker on and after reaching those users in another way – email them separately, offer highly-relevant content or promotions on the place where ads would have been shown. (Martin 2015.)

These actions alongside with mentioning on how publisher protects users' privacy can motivate user to switch-off adblocker or whitelist this specific publisher (Martin 2015).

Another possible approach in order to prevent adblock usage is creating and implementing new technologies. They will allow advertising to appear even on the devices with adblock switched-on with the help of malicious programs. There are

numerous techniques to do it, such as script obfuscation, using of proxies and fluxing of IPs and domain names in order to avoid being blocked. (Mansfield-Devine 2016.) Several IT companies like Secret Media, are working on the codes together with some publishers in order to go around adblock software and help them deliver video ads (Marshall 2015a.) But in this case publishers should use sustainable approach and employ such technological solutions to serve ads on the blocked websites that help solve speed and privacy issues which were the main reasons for adblock usage. The solution should be executed by publishers under three conditions. First, it should use Do Not Track standard or Second, it should fight "malvertising" and not allow hackers to run malicious JavaScript code on the users browser. And third, it should decrease the file size of the advertisement in for it to load faster. Publishers as well should refuse ad formats which interrupt content viewing. (Ryan 2016.) Pagefair (2017) created a new technology which serves safe and respectful ads on the blocked web.

According to PageFair, there is an open ethical question about the future of online advertising. There are two possible ways of online advertisement evolution. First one is to adapt to the visitor needs and keep valuable trust by moving to more discrete advertising for the blocked web. Second one is to ignore customers' choice and impose intrusive advertising breaking through adblock filters. (Pagefair 2015.)

2.4.4 Acceptable ads

Lots of money can be made on blocking advertisement. Even if some apps are free of charge, others have some costs for installs and some are making money with in-app purchases. Moreover, the owner of one of the most famous adblocks Adblock Plus Eyeo GmbH is charging publishers in order to pass through adblock filter based on the "acceptable ads" policy. (Marshall 2015a.)

There are several criteria for advertising to be acceptable by "Acceptable Ads Platform" like placement within a webpage, distinction from the main content, the maximum size of the banner and their design. Apart from that, many other advertising formats are not allowed, like popups, popunders, overlays, expanding ads, rich media ads and some others. (AdblockPlus 2016.)

There are around 700 publishers which meet criteria of acceptable ads and around 70 are already paying for this service. Lots of publishers, such as Amazon and Microsoft prefer to pay to AdBlock plus in order to be whitelisted in their system. (Cramer 2016.) Eyeo is expecting to get paid publishers with over 10 million unblocked ads impressions by acceptable ads. Eyeo's fee is the percentage of revenue that publishers make with advertising which went through adblocker filters. (Marshall 2015a.)

Moreover, Eyeo GmbH is expanding the "accepting ads" policy to other adblock companies, and offer them fee for certain ads to go through their filters (Marshall 2015a). Eyeo GmbH announced that it has planned to launch an Adexchange which will allow publisher to monetize traffic with Acceptable advertising. Publisher will register in "Acceptable Ads Platform" in order to sell their traffic. Advertiser will pay the Adexchange in order for their advertising product to pass through Adblock filters and be available for advertising within specific ad-formats. There are two main purposes of this initiative. First, is to limit intrusive and disruptive advertising so users have better experience on their mobile phones. And second one is to allow publishers to have access to the big percentage of users who opt for using adblocks. (Marshall 2016.)

Until now, Google has not entered the war with Adblock Plus. Google opt for its advertising to pass as Acceptable Ads, by paying a fortune to Adblock Plus, namely 30% of ad revenue. But next step of Google is cooperation with Procter&Gamble, Unilever and The Washington Post to create a Coalition for Better Ads. The goal of it is to monitor the quality of advertisings, clean them and promote safe ads. When aim will be reached, there will be no need to pay for Acceptable Ads, and Adblock Plus might lose the main source of its financial support. (Slefo 2016.)

Facebook fights with adblockers by making hard to tell ads apart from the content. The attempt to block advertising on Facebook led to erasing some users' content as well. (Slefo 2016.)

3 Research methodology

The research method, data collection, reliability, validity and limitations are covered in this part of the thesis.

3.1 Research method

In this study, quantitative approach is used. The choice of the approach is based on the purpose of the study and existing theoretical knowledge. According to Leedy and Ormrod (2001) quantitative research is unique in its surveying since it is built on existing theories.

In this study research questions are formulated based on the acquired knowledge from latest researches. There are three main theoretical pillars which the author will consider in the research: Mobile online marketing, Advertising avoidance and Adblock knowledge. There are numerous studies on this the topic of online marketing and as a part of it, mobile marketing (Grant 2005; Plummer, Rappaport, Hall & Barocci 2007; Glass & Callahan 2014). There were presented market players of the industry, their roles and interests. Apart from that, it was examined how mobile marketing industry is functioning. Another source for theoretical framework waw studies on advertising avoidance (Speck & Elliot 1997; Cho & Cheon 2004; Malandrino, Scarano, Petta, Serra, Spinelli & Krishnamurthy 2013). These researches helped the author to identify and analyze the reasons for people to avoid the advertisement, which is the main reason for increasing adblock popularity among the mobile users. The last pillar of the theoretical part was recent researches and articles on adblocks. (Ward-Bailey 2015; Carollo & 2015). Moreover, official statistic of advertising authorities and independent research centers was used: MMA, Pagefair, eMarketer. The selected method allows to agglomerate, analyze, and use this theoretical information in order to build theoretical framework around the chosen topic - influence of adblocks on the future of mobile advertising.

Quantitative studies use statistical models in order to provide numerical results. The assumptions of the research require collection of quantitative data. (Tavakol &Sanders 2010.) Three main assumptions were set in this research and will be proven or rejected based on the empirical results.

A1: Adblocks bring significant negative impact on the performance and revenue of mobile advertising market players.

A2: Mobile market players prefer to fight with adblock users employing internal and external tools instead of respecting the users and adapting the advertising policy.

A3: Mobile advertising industry will employ changes in the advertising strategy in the reality of adblock expansion.

Quantitative research has an aim to learn different aspects of human behavior and understand what, when and where people demonstrate specific behavior. Quantitative research requires random selection of respondents and big sample size. When collection of data is finished, it is analyzed and visualized with charts. (Glenn 2010.)

3.2   Data collection

Data collection and definition of the research group is very important in order to conduct a reliable and valid research. Primary data is collected by researcher himself/herself based on the questions created to find the answers and solution of specific research problem. Secondary data is not created by researcher himself/herself and might be acquired from the books, articles and other researches. (Ghauri & Grønhaug 2005.)

Both secondary and primary data was used in this research. Firstly , data from academic sources and from other empirical studies on related areas were collected. Secondary data helped to understand deeper the problem of adblocks in the mobile advertising indusrty.

The aim of empirical study is to explore market players' experience with adblock usage growth among mobile users and their possible reactions and measures against adblocks. Primary data was collected with the help of questionnaires. In this research comparable information from a number of market players was gathered, this is why questionnaire is the most suitable method for this study. The main goal of data collection was collecting relevant and valid empirical data.

In this thesis empirical data was collected with the help of two electronic surveys, one of them with the questions adapted to publishers and another with questions to advertisers. Questionnaire for publishers was spread among the owners of websites who make money with mobile advertising. Second questionnaire was sent to the owners of mobile advertising products and affiliate networks which distribute these advertising products. The purpose of the survey is to analyze the impact of adblocks on the mobile advertising market players. It also examined the potential measures mobile publishers and advertisers are eager to take in order to eliminate the adblock effect on their revenue. Another goal is based on the empirical findings noticing the potential trends on mobile advertisements' future development under the condition of adblock expansion. Surveys were sent to a vast number of respondents in order to receive great number of answer. A random selection of respondents was done within the research group. Results of the research are presented in numerical form with the help of graphs.

For successful data-collection, questions were based on the examined theory and previous researches, corresponding to current mobile advertising situation, they were well thought and well organized according to methodological literature. The author created additional motivational letter to gain the support and encourage market-players to answer the questionnaire.

This research took into consideration opinions of several mobile advertising representatives who work on the different pricing models and verticals of advertising with only one point in common – mobile advertising is their business niche.

Research sample for publishers' survey was formed of owners of middle size websites the primary of which is making money from advertising on the website with the means of content creation and distribution of information. Moreover, representatives of adnetworks were included in this research sample. Second research sample of advertisers was formed of owners of mobile advertising products who distribute their products on the third-party websites. In this research sample were also included affiliate networks.

Questionnaire for publishers was spread among 743 owners of websites, apart from that it was published in the industry forums as well as in the Linkdin page of

the researcher. Ninety-six answers were collected from the fully finished questionnaire. Questionnaire for advertiser was sent to 203 direct mobile advertisers and affiliate networks, as well it was published in industry Telegram channel and in the Linkdin page of the researcher. Sixty-four answers were collected from the fully finished questionnaire.

Survey for publishers consists of 29 questions whereas survey of advertisers consists of 17 questions. Questions of surveys are defined based on the theoretical framework. All questions are closed-ended in order to show general opinion, trends and estimated numbers of adblocks' influence. Although quantitative method of research was chosen in order to see common pattern on the market behavior by analysis of a collected data, some qualitative data was gathered as well with the help of open-ended comment section for some questions which allowed respondents to express their unique opinion about the subject of research.

Main research limitation is unwillingness of sharing confidential financial information by market players. It was overcome by construction of questionnaire where only relative values were asked from respondents which increased the overall response rate.

After survey was concluded and answers acquired, data was inspected, cleaned, analyzed and transformed. As a result, the possible trend of the mobile market behavior as a response to adblock appearing was proposed.

3.3   Reliability and validity

Joppe (2000) defines reliability as accuracy level of research results and their repeatability and replicability. Reliability is very important in quantitative research. The larger sample size, the more reliable the results of the research. Determination of target group, research questions and data analysis influence the reliability level. (Kumar 2002.)

Two surveys for publishers and advertisers were sent for respondents in two languages – Russian and English, the answers were compared and showed similar results which increased reliability of the research. The target of publisher survey

were owners of mid-size websites with technologically savvy audience which according to theoretical framework suffers from adblock presence the most. All responses were collected independently and anonymously, which brought high level of objectivity. Moreover, the number of responses was great (96 answers from publishers and 64 from advertisers), therefore the research can be considered reliable.

Validity is another important research aspect. According to Joppe (2000), validity determines if the research measures what it was supposed to measure and how research results are truthful. Highly validity is achieved when empirical results are in line with theoretical framework.

In order to have high level of validity of current research, theoretical basis was built by reviewing literature on mobile advertising, advertising avoidance, adblocks and its potential influence on the market. Questionnaires were created based on the theoretical framework to ensure that empirical findings correspond and are supported by the theory.

The survey was sent to two publishers in order to gain their opinion about the structure and questions of the survey in order to increase its validity. After receiving feedback, the questionnaire was corrected, adapted and then sent to the targeted sample.

4   Empirical findings

This part of the study discusses the analysis of the questionnaires and results of the empirical research. Both surveys for publishers and advertisers were divided in three parts. In the first part general information about user profile, websites and advertising products were collected. The second part was set in a way to collect information about adblocks and their impact on the performance and revenue of mobile advertising market players. The last part was designed to acquire data on the measures that publishers and advertisers are ready to take in order to eliminate the adblock impact on the mobile advertising industry.

4.1 Influence of adblocks on the future of mobile advertising from publishers' perspective

4.1.1 Publishers' profile

In the first part of publishers' survey, respondents were asked if they are direct publishers, if they have mobile traffic, how they monetize their traffic, what kind of advertising products they use and which formats they prefer, the amount and the percentage of mobile traffic on publishers' websites and if publishers use any users' tracking in order to increase effectiveness of mobile campaigns. The purpose of gathering this information was to show the current trend on the mobile marketing industry as well as to find some regularities on the impact of adblocks and measures that market players take to fight with adblocks depending on the profile of the respondent.
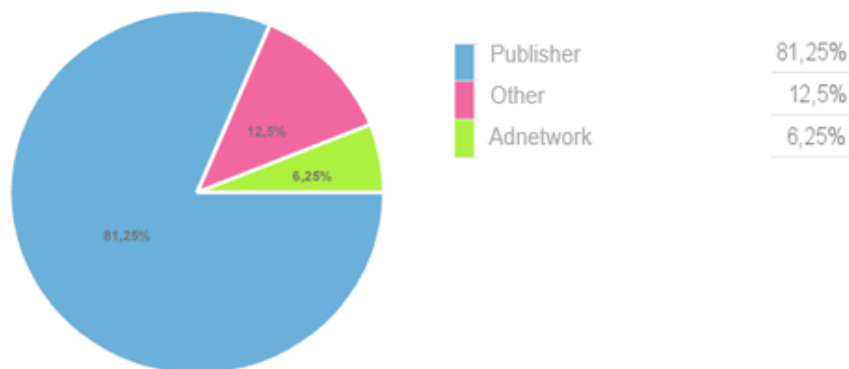
Figure 10 The type of publisher

As figure 10 shows, 81.25% of the respondents who took part in the research, are direct owners of websites, 12.5% were marked as other and in comment it is stated that they are mediabuyers and only 6.25% of respondents were representatives of adnetworks.
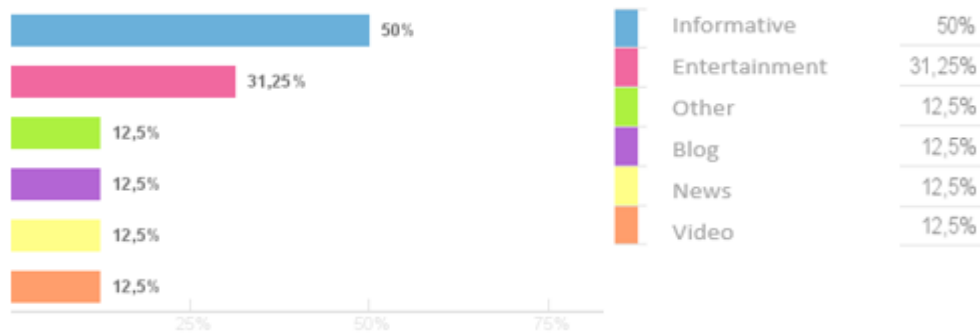
Figure 11 Type of websites

Figure 11 shows the type of websites owned by the publishers. This question allowed to give multiple answers in case publishers have several websites with different themes. Forty-eight respondents have informative sites, where they provide any kind of useful information for their users; on the second place there are entertainment websites – 30 respondents own entertainment websites. Other options were not popular among respondents, only 12 people have other type of websites. In the other option, it was mentioned dating websites and any kind of websites. There was no publisher with e-commerce website.
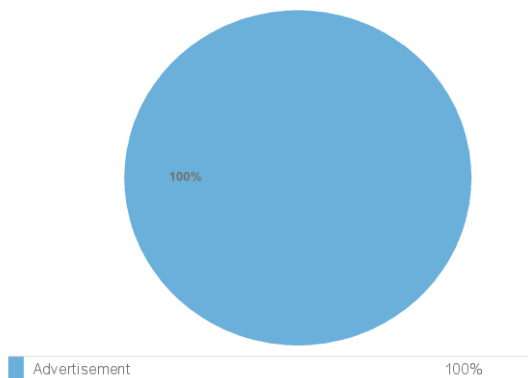
Figure 12 Monetization type

Figure 12 gives information on the way publishers monetize their websites. Unanimously, respondents answered that they use online advertisement in order to earn profit from their website. None of the respondents monetize their website using subscription model.

What kind of advertisement services do you place in your website?

Not branded products (Nutra)	43,75%
I don't know what is rotated on my website because I sell traffic to adnetworks on CPM/CPC/revshare basis	43,75%
Mobile subscriptions	31,25%
Installs	25%
Other	18,75%
Branded products	18,75%

Figure 13 Type of advertisement

Based on the figure 13, some important regularities might be found. Publishers could also give multiple answers on this question. Majority of webmasters (42 respondents) tend to promote on their website non branded products, like pills for loosing weight or hair loss, which do not have proven effect and are not supported by any guarantee from the producer. Publisher might not even know, but by promoting this kind of products they deceive their users and create negative experience, which influences the willingness of adblock installation. Another very important finding is that another big part of respondents (42 webmasters) sell traffic to adnetworks in bulk and adnetworks sell this traffic to individuals who can place on the publisher spot any kind of advertisement. This finding shows that webmasters are not in control of what advertising is rotating on their websites and cannot control satisfaction of the users with advertising products and advertising materials. Mobile subscription products which are one of the users' motivation for adblock install is on the third place of webmaster preferences with 31.25% of respondents using it. The most honest and cleanest advertising products - branded products and contextual Google advertisement got the interest of only 18.75% of respondents.

What is the percentage of mobile traffic on your website?

30-50%	37,5%
Over 70%	31,25%
50-70%	25%
20%-30%	6,25%
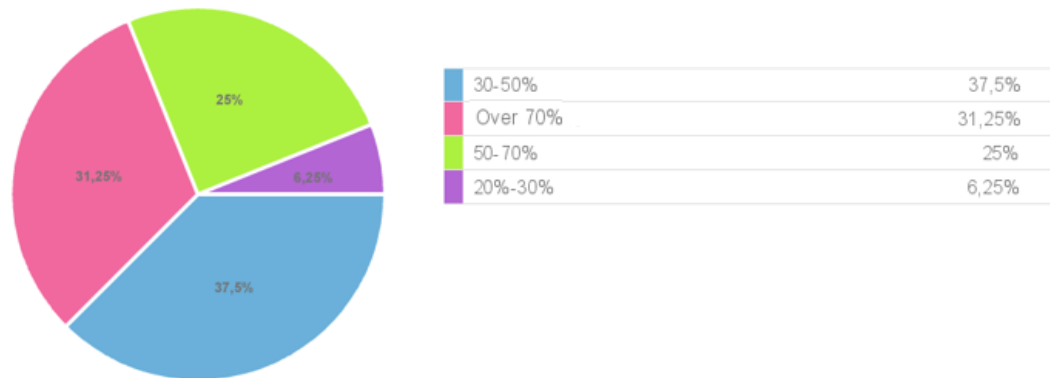
Figure 14 The structure of traffic

Figure 14 represents the stucture of publishers' traffic. Fifty-four respondents answered that they have over 50% of mobile traffic on their websites. Thirty-six respondents claimed that the proportion of the mobile traffic in their website is 30%-50%. None of respondents has less than 20% of mobile traffic. This finding proves the importance of mobile traffic nowadays due to its volume overcoming the volume of web traffic.

How many daily mobile ad impressions do you have on your website/network?

0 -10 000	37,5%
100 000- 500 000	18,75%
5 000 000 - 100 000 000	12,5%
500 000- 5 000 000	12,5%
10 000 - 100 000	12,5%
over 100 000000	6,25%
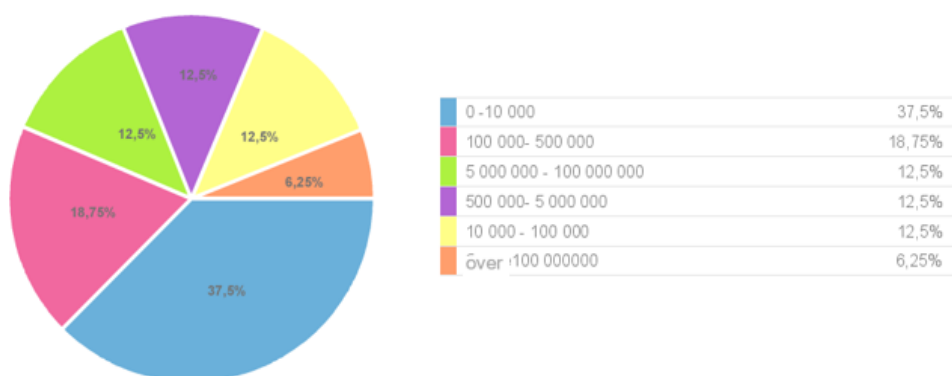
Figure 15 Amount of mobile traffic

Based on figure 15 it is possible to see the estimated amount of mobile impressons. This finding shows that publishers for this research were selected

randomly, but majority of them are small and mid-size publishers which are the focus of the current research. Seventy-eight webmasters, which represents 81.25% of respondents, have less than 5,000,000 mobile impressions a day, which respresents mid size publishers who are more sensible for the influence of adblocks.
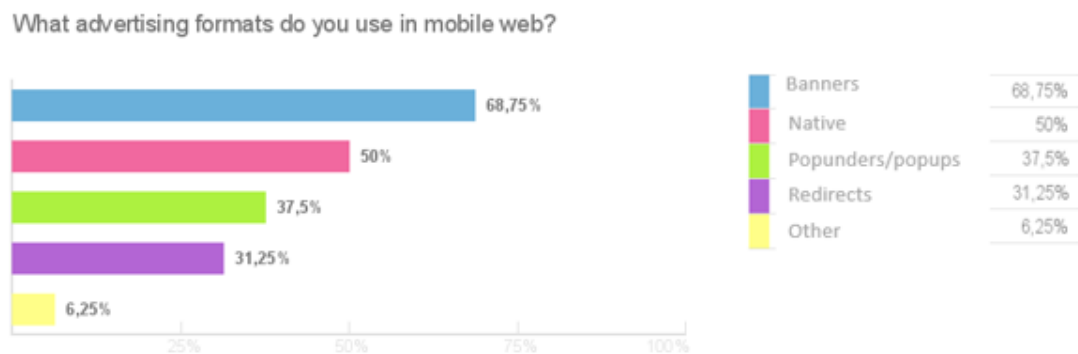
Figure 16 Mobile advertising formats

Figure 16 shows what formats of advertising are preferred by the respondents. Majority of webmasters opt for using less intrusive advertising formats like banners and native advertising (68.75% and 50% respectively). However, a big percentage of publishers are still using advertising formats which are the main source of adblock spread – popunders (37.5%) and redirects (31.35%).
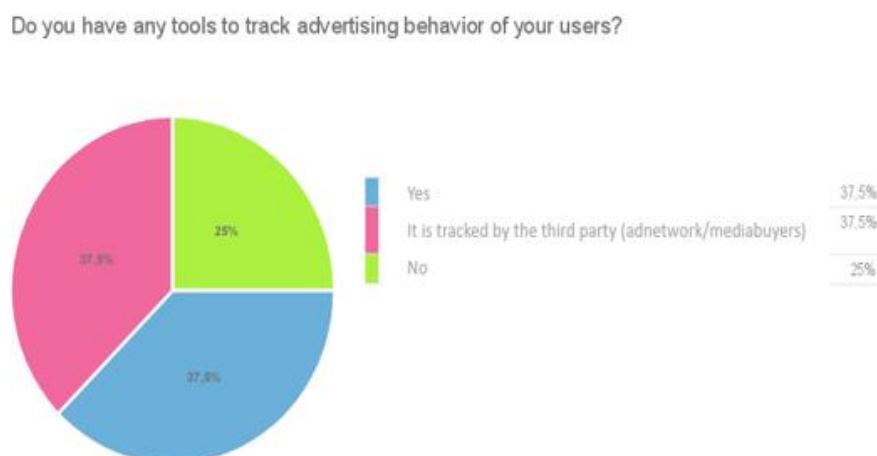
Figure 17 Tracking on the website
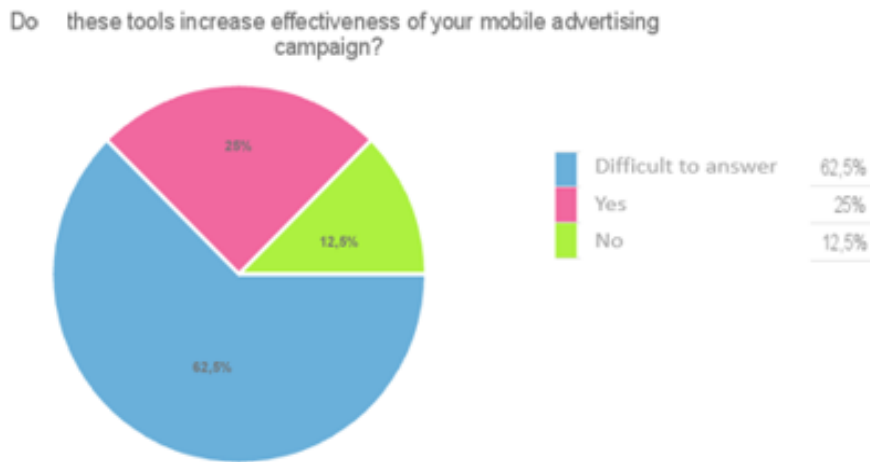
Figure 18 Effectiveness of tracking on the website

Figure 17 represents the current situation with tracking of users advertising behaviour. Seventy-five percent of the respondents noted that advertising behavior is tracked on their website either by webmasters themselves or by a third party. And only 25% of the respondents prefer not to track user behavior at all. However, an interesting finding is shown in figure 18. Even if majority of webmasters tracks user behavior, they are not sure that user tracking influences positively their advertising campaigns. Sixty-two and a half percent had difficulty to answer the question and 12.5% answered negatively. Tracking user behavior is one of the most important reasons for users to install adblock. So if publishers use tracking, but are not sure about its benefit, they can consider removing tracker in order to stimulate users to disable adblock.

4.1.2 The impact of adblocks on the mobile advertisement. Publishers' perspective

In this part of empirical study is discussed the presence of adblock phenomenon in publishers' mobile advertising activities. The awareness of adblock itself is estimated as well as the correlated problem of its expansion. This part of the research shows volatility of publishers' mobile advertising performance and revenue and links it with the adblock effect.
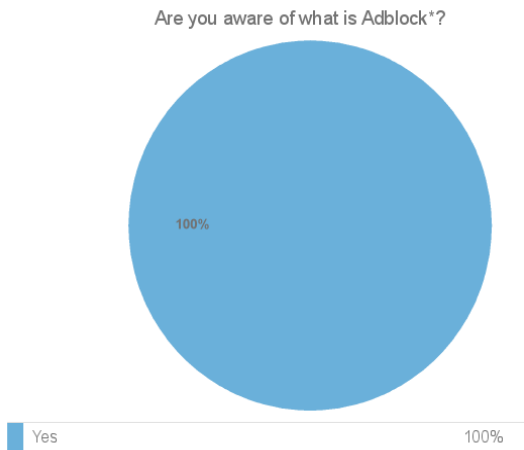
Figure 19 Awareness of adblock phenomenon

Figure 19 shows that all of the respondents know about such phenomenon as adblock, both in publisher and advertiser survey.
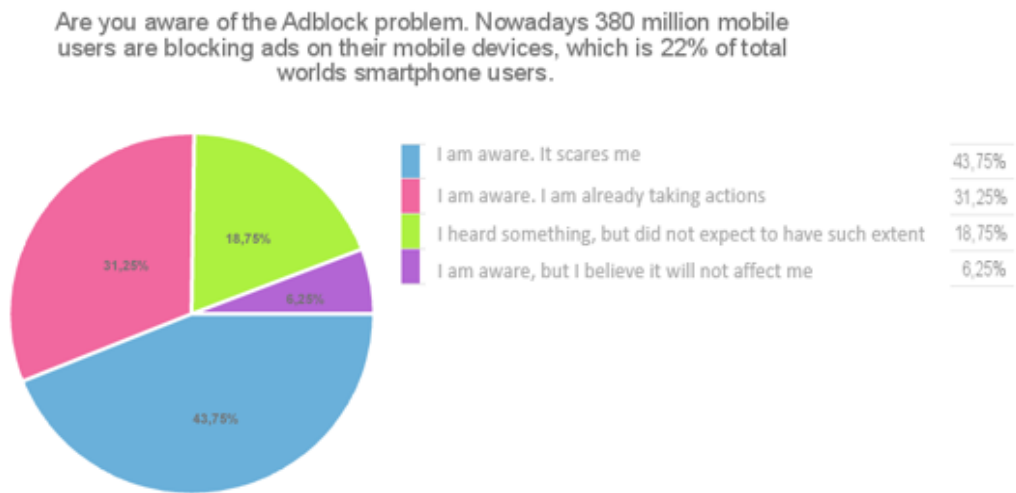
Figure 20 Awareness of adblock problem

Figure 20 represents the awareness of the adblock problem by respondents. All webmasters claim that they are aware of the increasing influence of adblocks on the mobile advertising industry and only 18.75% have never paid attention to the seriousness of the situation and, in those cases, this research has played an educational role. The majority of the respondents (43.75%) is in an unbalanced position since they are scared of the phenomenon but still they do not take any actions in order to fight back. Quite a big part of respondents (31.25%) are not ready to give their revenues away and are already taking actions in order to stop

adblock invasion. And only 6.25% of publishers believe that the adblock phenom-enon will pass by and will not influence on the performance of mobile campaigns.

The next set of questions was created in order to see the regularities on mobile traffic and revenue behaviour during the period of adblock expansion.

Did you notice that average CTR on your banners drop on your website in last 2 years (under the condition on the stable amount of traffic)?

■	Yes, on less than 5%	56,25%
■	No	12,5%
■	Yes, on 20-30%	12,5%
■	Yes, on 10-20%	12,5%
■	Yes, on 30-50%	6,25%
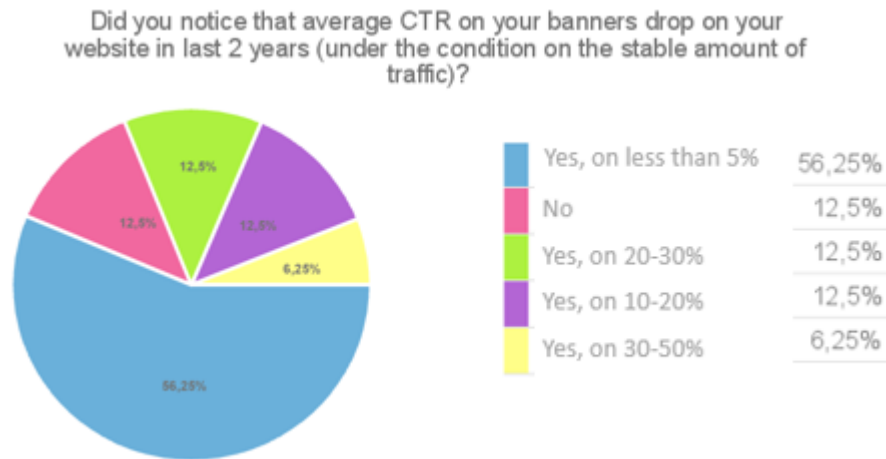
Figure 21 CTR drop within 2 years

To which extent you can relate this phenomenon to increasing advertising avoidance and growing number of adblock installs, which simply don't show advertisement to your users?

■	Relate in significant extent	50%
■	Relate in small extent	25%
■	Completely relate	18,75%
■	Don't relate at all	6,25%
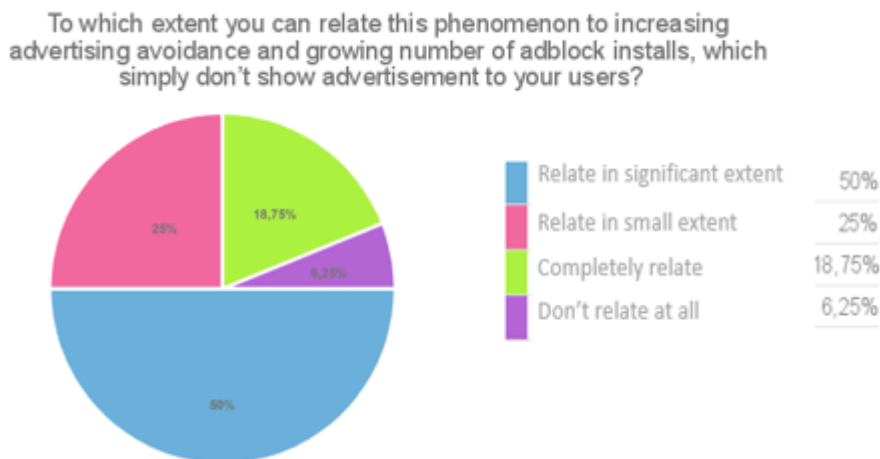
Figure 22 Correlation between CTR drop and adblock presence

Figure 21 shows if mobile publishers noticed any drop in the performance of mobile campaigns, namely a CTR decrease. It was proved that the biggest part of website owners felt the drop on CTR and only 12.5% mentioned that there was no visible drop within the last 2 years. The majority of publishers (56.25%) claim that the decrease is only less than 5%, while 31.5% see the CTR falling up to

53

50%. In the next figure, figure 22, is presented the opinion of the publishers about the correlation between CTR drop and adblock appearance. Half of the respondents related in a significant extent, the decrease in the performance of mobile campaigns, to the growth of adblocks among their users, which means that publishers see adblock expansion as the main reason for performance decrease, but there are some minor reasons which influence negatively the performance as well. One quarter of the respondents don't consider adblock presence as the main cause of performance stagnation, seeing other reasons behind it. Eighteen and seventy-five percent of the publishers completely correlate adblock phenomenon with CTR drop and only 6.25% of respondents do not see any relation at all.

Which percentage of advertising revenue comes from mobile traffic?

Over 70%	31,25%
50-70%	25%
30-50%	25%
20%-30%	12,5%
0-20%	6,25%
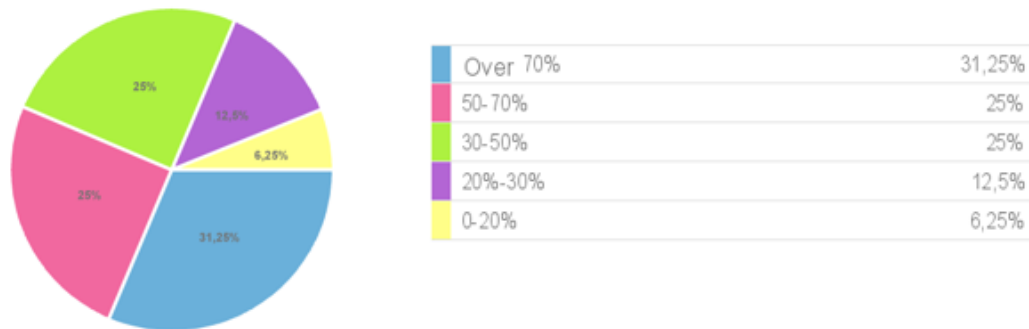
Figure 23 Proportion of mobile traffic revenue

Figure 23 shows what proportion of total revenue comes from mobile traffic. This finding indicates how adblock's influence on mobile traffic can impact the total revenue of a webmaster. Thirty-two and twenty five percent of the respondents almost totally depend on the revenue from mobile traffic and any limitation of mobile traffic can reduce the revenue of the publisher very critically, even over 70%. Another 50% of webmasters depends on revenue from mobile traffic of 30-70% and only 18.75% of respondent don't depend critically on the revenue coming from mobile traffic so any kind of impact on mobile revenue cannot shatter financial stability of the publisher.

Can you notice decrease in your earnings from mobile advertisement on your website in last 2 years? If yes, what is the percentage of decrease.

■	Yes, Slight decrease of 0-5%	43,75%
■	Total loose on revenue of over 70%	18,75%
■	Yes, significant decrease of 30-50%	18,75%
■	Yes, moderate decrease of 5-15%	6,25%
■	No	6,25%
■	Yes, considerable decrease of 15-30%	6,25%
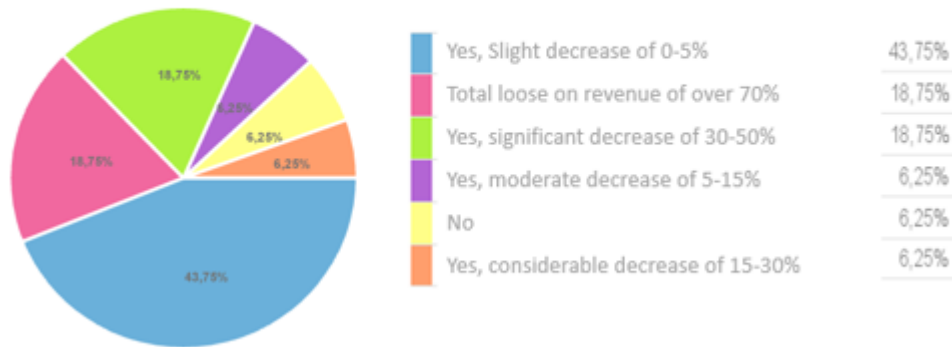
Figure 24 Mobile revenue drop within last 2 years

In case you notice decrease, can you relate it on the increasing number of adblockers of mobile web.

■	Completely relates	37,5%
■	Does not relate at all	25%
■	Relates to significant extent	18,75%
	the main reason is in adblocks but there are other reasons as well	
■	Relates to a small extent, the main reason is not adblock,	12,5%
	but adblock has some minor effect	
■	I can not notice decrease in revenue from mobile advertisement	6,25%
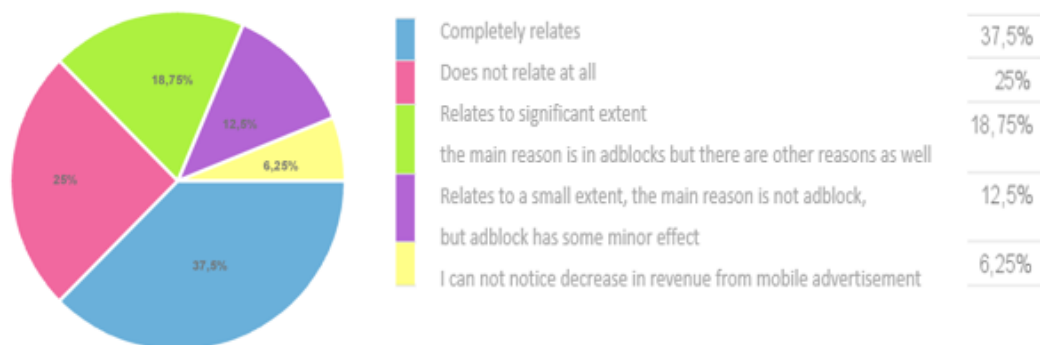
Figure 25 Correlation between mobile revenue drop and adblock growth

Figure 24 and 25 represent the drop on mobile advertising revenue and correlation of such phenomenon with adblock appearance. Accoding to figure 25, only 6.25% of the respondents did not experience any drop from mobile revenue within last two years. The majority of the respondents have noticed a slight decrese on less than 5%. Some of the publishers (18.75%) lost almost all mobile advertising revenue, mentioning a drop of over 70%. The main conclusion of these results is that revenues from mobile advertising were not stable during last 2 years, drops of different extent were noticed by webmasters. The correlation betwen these drops and adblock usage growth is shown in Figure 25. This graph shows controversial opinions – on the one hand 37.5% of the respondents are sure that the drop in mobile revenue is caused by the adblock appearance, while

another 25% of the respondents see different reasons for mobile revenue dropping, but not the adblock phenomenon itself. But overall, over half of the respondents (56.25%) believe in a significant correlation between mobile revenue drop and adblock presence.
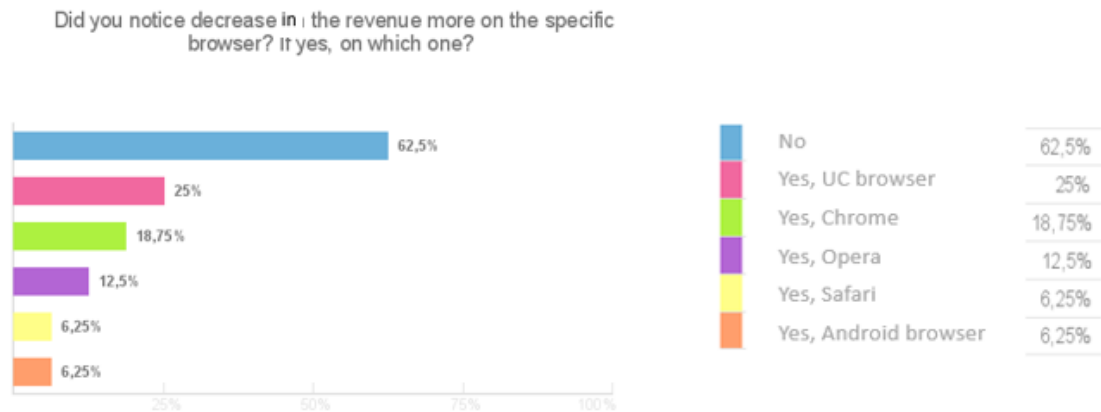
Figure 26 Revenue drop by browser

Figure 26 has the aim to check if in some browser the effect of adblock is more visible. The majority of the respondents did not see any visible impact on the revenue from a specific browser. But 25% mentioned that the revenue from UC browser dropped, which created a predefined adblock option. Fifteen percent noticed a drop in Chrome browser which has one of the highest adblock installs percentage, from Google Play.

4.1.3 Publishers' methods of confronting adblocks

In the last part of publishers' research, is discussed the general attitude of publishers towards adblock and the ability to track users with enabled adblocks on their own websites. Moreover, publishers share the actions they are ready to take in order to fight adblock as well as compromises they might accept to motivate users disable adblocks. Additionally it is covered the willingness of publishers to cooperate with other market players or even to pay third-party solution in order to mitigate the adblock effect. The last question of the study presents the publishers' view on the future of mobile advertising.

The next set of questions was established in order to understand if publishers in the current state are aware of what users are viewing on their webpage.
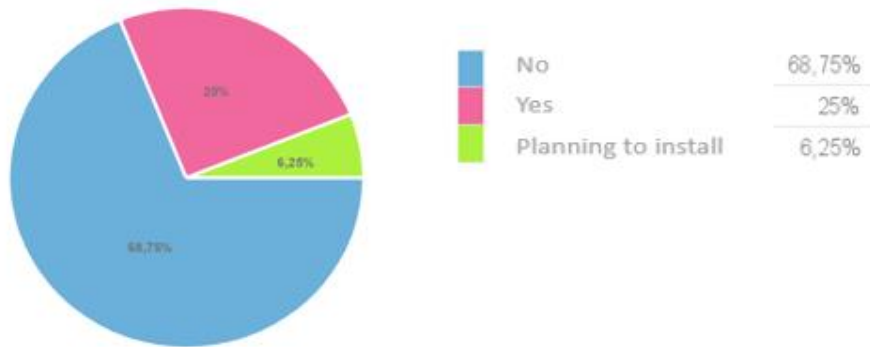
Figure 27. Adblock tracking on the website
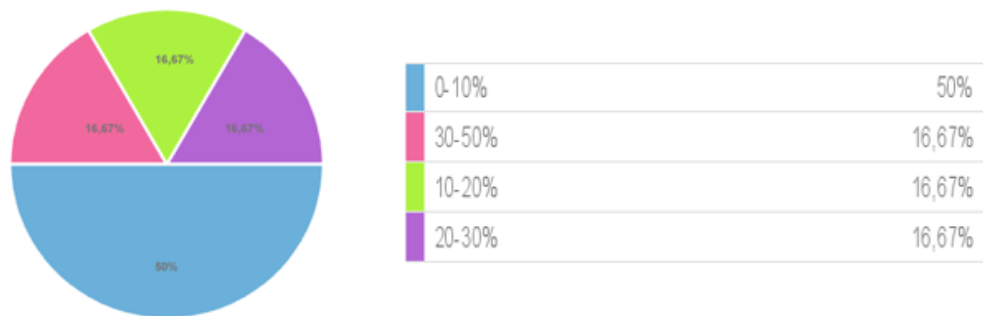
Figure 28 The percentage of blocked traffic

Figure 27 shows the awareness of webmasters about current users who are blocking advertisement on their website. The results are very representative. Seventy five percent of the respondents do not have any software on their website property which tracks the presence of an adblock script. Therefore, publishers do not know how much of their advertising impressions is blocked by the users and how much revenue they are losing on a daily basis. However, a quarter of respondents are taking steps to have total control over their online property and know which customers access content with enabled adblock. Figure 28 represents the percentage of visits to the website which is done with enabled adblock, by the experience of 25% of webmasters who use track blocked advertising on their website. Twelve respondents claim that traffic with blocked ads is not

significant and does not overpass 10% of total traffic. But another half claims that blocked property varies from 10% till 50% of total traffic on publishers' websites which, at the end, influences on the final financial result.
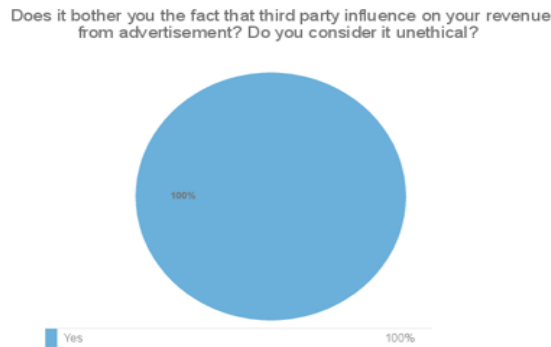
Figure 29 The attitude of webmasters towards adblocks

Figure 29 shows the unanimous negative attitude of publishers towards the adblock phenomenon.

Last set of questions was created to see the willingness of webmasters to fight against the adblocks and specific measures they are ready to take in order to eliminate adblocks' negative impact.
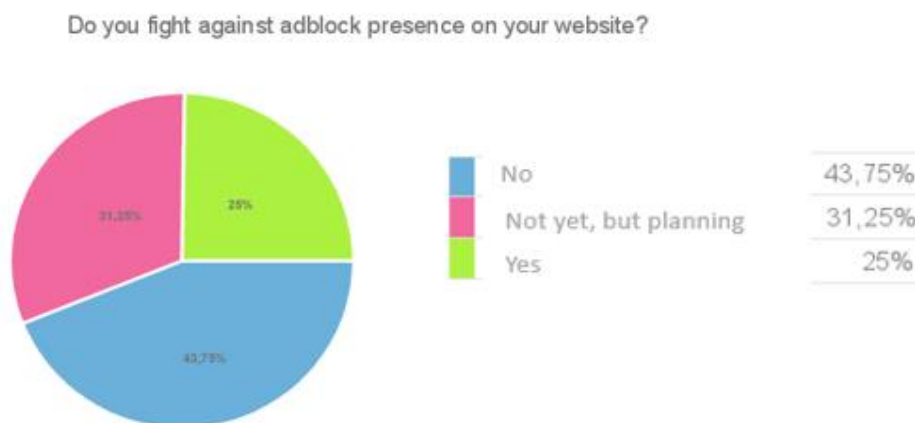
Figure 30 Proportion of webmasters who fight against adblocks

Figure 30 represents the proportion of publishers who take any kind of actions in order to confront adblock users. Seventy five percent of the respondents do not take any actions at the moment, while 31.25% of them are already thinking of

possible options and plan to be involved. A quarter of the respondents are already actively taking measures and standing up against adblock phenomenon.

Last part of the questionnaire has the aim to study the preferences of the respondents towards actions or possible actions of webmasters which might reduce the influence of adblocks on their earnings.

Please measure what actions ___ you take/would consider taking in order to fight an adblocker?
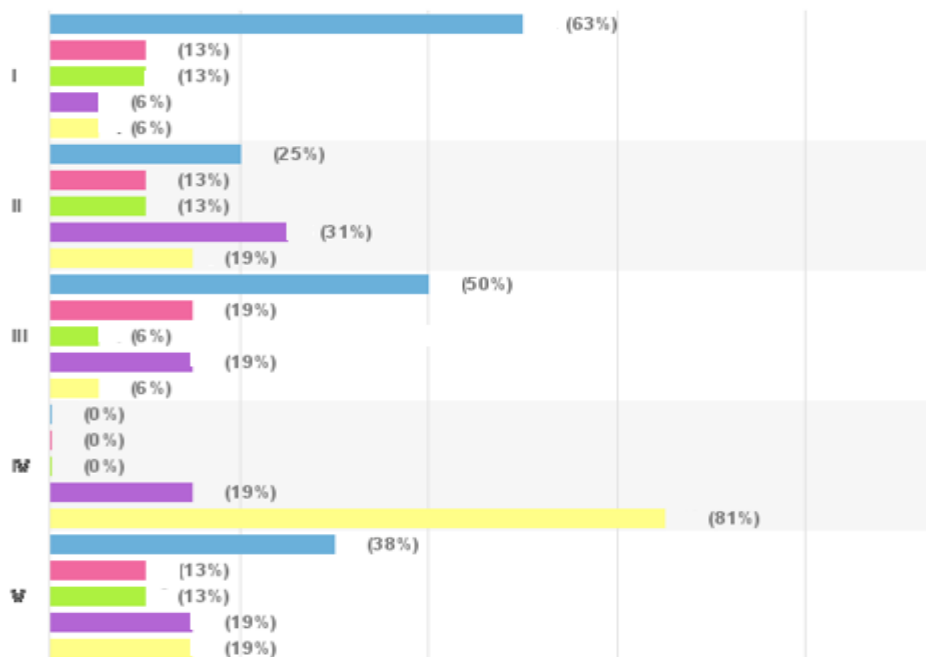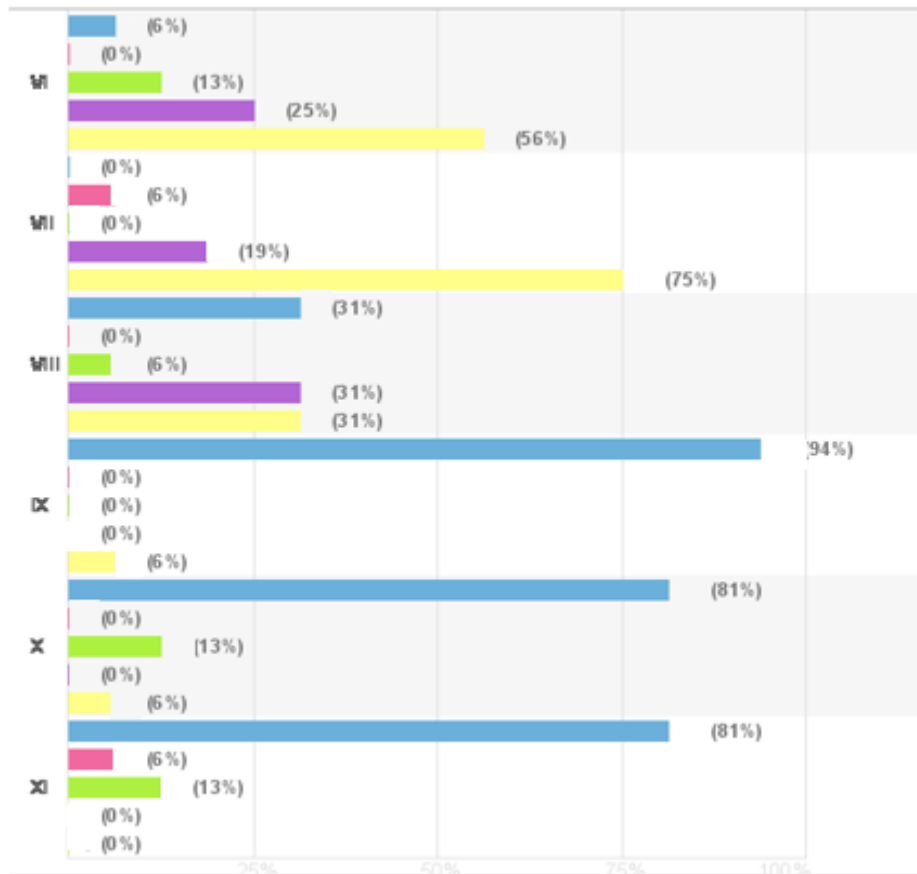
VI
- (6%)
- (0%)
- (13%)
- (25%)
- (56%)

VII
- (0%)
- (6%)
- (0%)
- (19%)
- (75%)

VIII
- (31%)
- (0%)
- (6%)
- (31%)
- (31%)

IX
- 94%)
- (0%)
- (0%)
- (0%)
- (6%)

X
- (81%)
- (0%)
- (13%)
- (0%)
- (6%)

XI
- (81%)
- (6%)
- (13%)
- (0%)
- (0%)

■ Would not choose for sure   ■ Probably would not choose
■ Difficult to say, but there is probability   ■ Probably would choose
■ Would choose for sure

I — Block content of your websiteor its part until user disable an
adblock   II — Askusernicely to switch-off adblock, explaining that
mobile advertising is main source of revenue for webmaster
III — Ask user to pay some subscription fee in order to reach the
content in case he uses adblock   IV — Change script of the
website and hide advertisement elements from adblock filters by
embedding it to the content, so advertisement would be fully shown to
the mobile users.   V — Change script of the website in a way for
adblock to cut the part of the content while blocking the
advertisement   VI — Use native advertisement   VII — Use
technology to block adblocker   VIII — Adapt advertisement in
order to pass through acceptable ads policy of adblock   IX — Sue
adblock technology   X — Would not do any action   XI — Other
(please comment)

Figure 31 Actions against adblocks

Figure 31 represents the answers about possible actions from publishers' side to
confront adblocks. The first option of blocking the content or part of it, until the
user disables adblock, was rejected by the majority of the webmasters (63%) and

13% claimed that there is a big probability they would not choose this option, while only 12% of respondents answered positively. It can be explained by the fact that in this reasearch mainly small and mid-size publishers are under consideration, they normally do not have a unique or very exclusive content. Mobile users usually do not enter their websites on purpose but they land there, based on the search engine results, so users do not care which website they visit in case it offers the information they searched for. Therefore, webmasters are afraid to loose all their audience, due to the fact that their users can easily switch to another website with similar content which does not require disabling adblock.

Another possible action of webmasters is to speak with their users and explain them that advertisment is the source of revenue which supports free content of the website. This option got controversial opinions. Bigger part of respondents (50%) answered that they would opt for this option and try to speak with users and encourage them for disabling the adblock, but majority of them (31%) still had hesitation about this option. 38% of webmasters did not consider this option as a possible solution, while a bigger part of them (25%) was absolutely sure that they would not choose the dialogue with their users. Such result shows that webmasters do not believe that this option will be really effective because users might just ignore the request or move to other websites with similar content, but still publishers are ready to try this option since applying it does not have significant drawbacks.

The next option which was offered for webmasters, was asking the user to pay the subscription fee in case they do not want to disable adblock. The answers were very similar to the fist option of content blocking. Sixty-nice percent of respondents would not do or probably even consider requesting to pay subscription fee from a user who is trying to reach the content of the website with enabled adblock. The reason for that is the uncertainty that every single webmaster would do the same, so user could not switch to another website with similar content but which does not request to subscribe. Moreover, webmasters admit the poor quality of their content, which a user would not have an organic will to subscribe for.

The most popular action among respondents was changing the website script in order to hide advertising from adblock filters. Eighty-one percent of respondents was sure that they would choose this option and another 19% considered this option to be the most likely to happen. This result can be explained by the willigness of webmasters to have a control over their propery and protect it with specific actions which will bring immediate results.

An inverse action of changing the website script in a way that when adblock filter blocks advertising, it will also block part of the content, was not popular among webmasters. Fifty-one percent of respondents rejected to apply this practice, due to a fear of losing their audience for whom it would be easier to change website than to disable adblock. However, 38% of webmasters believe that by using this approach they can motivate users to disable adblock since it prevents the normal work of the website and content locking.

Native advertising was one of the most popular choice among webmasters, 81% of respondents fully and partly agreed on changing their advertising formats for less intrusive for user and at the same time less visible for the adblock filters. Only 6% of respondets totally disagreed with this format, due to specific characteristics of the website and willingness for their advertising to be noticed.

The second most popular action which publishers are ready to take in order to fight with adblock, is the usage of external technology. Ninety-four percent of respondents would install some sofware on their side which would detect users with enabled adblock, switch adblock off and show intended advertisement for all users. The explanation of this phenomenon is that mid size publishers want to get rid of adblocks fast and in the harshest possible way.

Another option got the support of 64% of the publishers. They are ready to adapt mobile advertising campaigns and formats in order to pass through adblock filters. This positive trend can mean two different scenarios, either publishers want to respect users' opinion and adapt mobile advertising according to the users' complaints or they do not understand, at the moment, how strict acceptable ads are and how much they would have to change to pass through. However, 31% of respondents strongly disagreed to change any mobile marketing policy

on their websites, because they believe that no third party has right to request any change from the owner of the website.

The option of sueing the adblock company was the least favorite among the publishers, 94% strongly disagreed with this action. The reason for it is that webmasters do not believe in their stength as individuals to go to the court against big companies who own adblock, apart from that it requires lots of financial investment. Moreover, there is no clear legislation which regulates online and mobile business.

An interesting finding in this study is that publishers want to make active actions and fight against adblocks. Eighty-one percent of respondents answered negatively on the statement that no actions are needed to be done, which means that webmasters are ready either for war or dialogue.

Are you ready to compromise yourself and use less intrusive advertising strategies, so adblock users would reconsider using adblock on your website?

VI
- (25%)
- (6%)
- (19%)
- (13%)
- (38%)

VII
- (6%)
- (13%)
- (19%)
- (13%)
- (50%)

VIII
- (13%)
- (6%)
- (13%)
- (25%)
- (44%)

IX
- (25%)
- (0%)
- (13%)
- (25%)
- (38%)

X
- (13%)
- (31%)
- (25%)
- (25%)
- (6%)

XI
- (50%)
- (19%)
- (6%)
- (13%)
- (13%)

XII
- (81%)
- (0%)
- (13%)
- (6%)
- (0%)
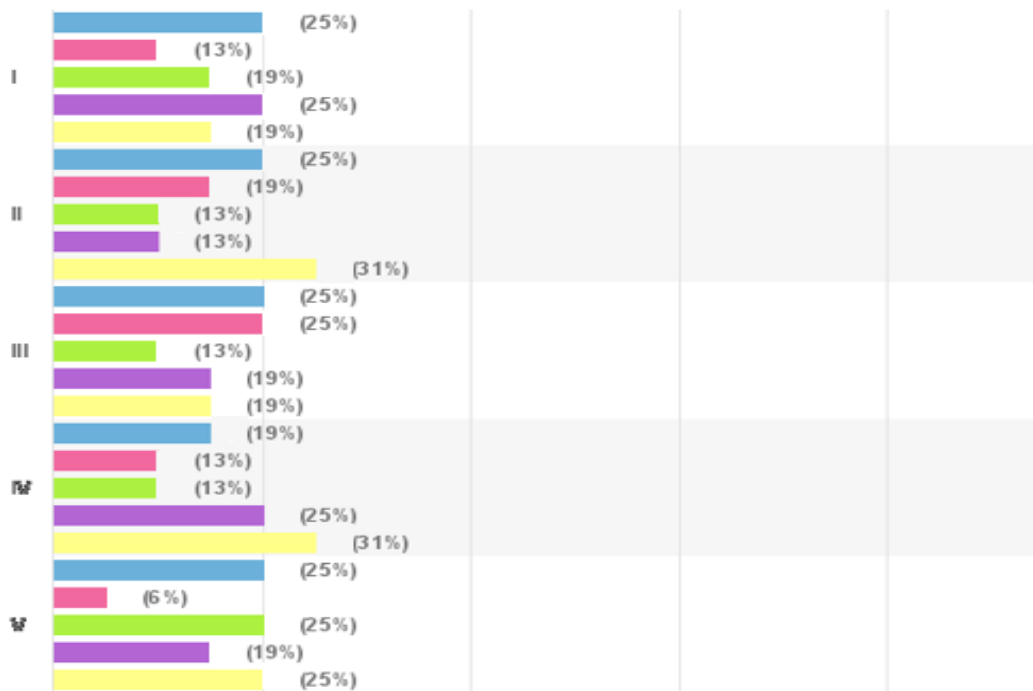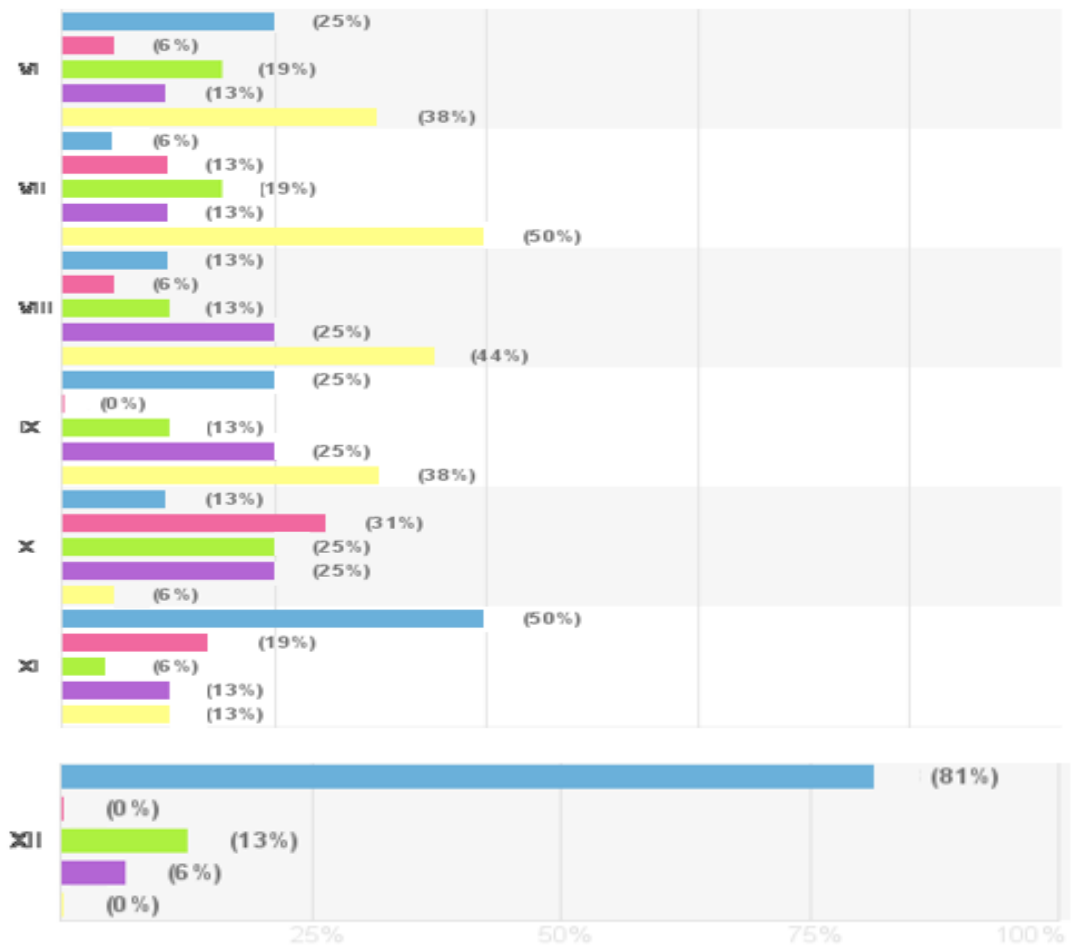
Legend:
■ Definitely not ■ Probably not ■ Difficult to say, but there is probabi
■ Probably yes ■ Definitely yes

I — No compromises   II — Stop using redirect in order not send user from website   III — Stop using popup/interstitials in order not to cover viewing content.   IV — Stop using music/sound format of advertisement which distracts users   V — Stop using blinking banners which distract mobile users   VI — Stop promoting easy-to-subscribe offers in order to avoid accident subscriptions VII — Fight against autosubscribtion/iframe/ content-locking techniques   VIII — Control of advertisment quality, to avoid installation of malware and viruses by users   IX — Control of banners/prelanders which scares users thatthey need to install something in order to remove virus.   X — Limit the duration/frequency of advertisement.   XI — Stop using technologies which track mobile behavior of users.   XII — Other (please comment)

Figure 32 Possible compromises of publishers

Figure 32 shows what compromises publishers prefer to take, for users to have better advertising experience and whitelist publishers' website in adblock filter.

According to the findings of this study, publishers react in a controversial way on the question if they are ready to make any compromise. The answers split almost by half. Forty-four percent of the respondents are ready to speak with mobile users and understand what they want and how publishers should adapt their advertising policy. On the other hand, 38% are against any compromises and believe that users are already getting too much information almost for free. An interesting finding that can be noticed, states that website owners who use redirects and pop mobile advertising formats, are more aggressive in their adblock fighting strategy and they are the ones who do not want to have any compromises with mobile users. On the other hand, publishers whose main marketing material is native advertising are milder in their strategy and open to compromises.

Several options of compromise were offered to the publishers regarding mobile advertising formats. An interesting result was reached – almost all options got negative and positive answers, which means that inside the group was a conflict of interests. On the question if webmasters would stop using redirects as a compromise with users, publishers whose main advertising format is redirects, answered negatively, but others who do not use this format, were ready to ban it. The same happened with popunder format and blinking banners, where publishers who do not use these formats voted positively.

The most terrifying for publishers who use native advertisement and banners was the option of removing user behavior tracking. The compromise which webmasters who are using redirects and popunders would never take, is the refusal of mobile subscription services and removal of behavior tracking.

Fifty-six percent of the respondents are ready to refuse using music and sound formats of advertising, while 32% are in favor since they believe webmasters can place on their websites any kind of advertising product they wish.

Mobile subscriptions are easy to be subscribed to by mistake and they bring a lot of revenue for webmasters, but 51% of respondents are ready to leave this revenue source due to respect for the user. However, other 31% of publishers would not compromise their earnings from mobile subscription services because they are the main source of revenue for them.

The options of compromises which were chosen almost unanimously by publishers were – protection from mal-advertising techniques like iframing, autosubscription and content locking as well as control of advertising quality and viruses. Sixty-three and sixty-nine percent of the respondents respectively have chosen these options as a main solution for mobile users' motivation to disable adblocks. Moreover, 63% of publishers are willing to control banners and prelanders which are shown on their websites and ban those which tend to scare mobile users. It indicates that webmasters are ready to use their skills and experience to make the industry generally cleaner and better.

The option which got the least positive responses was the tracking of users' advertising behavior. Sixty-nine percent of webmasters were not ready to compromise with tracking tools, this finding looks even more interesting under the condition that 62.5% of respondents had difficulty to say if tracking of users increases effectiveness of their mobile advertising campaign. This phenomenon can occur due to webmasters not wanting to compromise with something that they do not know how it can affect their performance. They do not understand fully the impact of a tracking solution, but they are afraid to lose revenues in case they remove it. So they prefer to keep it as it is.

Another question was made to publishers in order to study the actions they are ready to take, to get users back to their websites, with disabled adblocks.

What actions are you ready to take in order to make users return to your website and switch off adblock.

I
- (50%)
- (6%)
- (31%)
- (6%)
- (6%)

II
- (0%)
- (6%)
- (25%)
- (25%)
- (44%)

III
- (0%)
- (19%)
- (6%)
- (44%)
- (31%)

IV
- (0%)
- (19%)
- (25%)
- (38%)
- (19%)

V
- (0%)
- (6%)
- (6%)
- (50%)
- (38%)

VI
- (19%)
- (19%)
- (25%)
- (13%)
- (25%)

VII
- (0%)
- (0%)
- (6%)
- (25%)
- (69%)

VIII
- (6%)
- (6%)
- (25%)
- (38%)
- (25%)

IX
- (0%)
- (13%)
- (13%)
- (31%)
- (44%)

X
- (38%)
- (31%)
- (0%)
- (19%)
- (13%)

XI
- (88%)
- (0%)
- (6%)
- (0%)
- (6%)

25%   50%   75%   100%

67
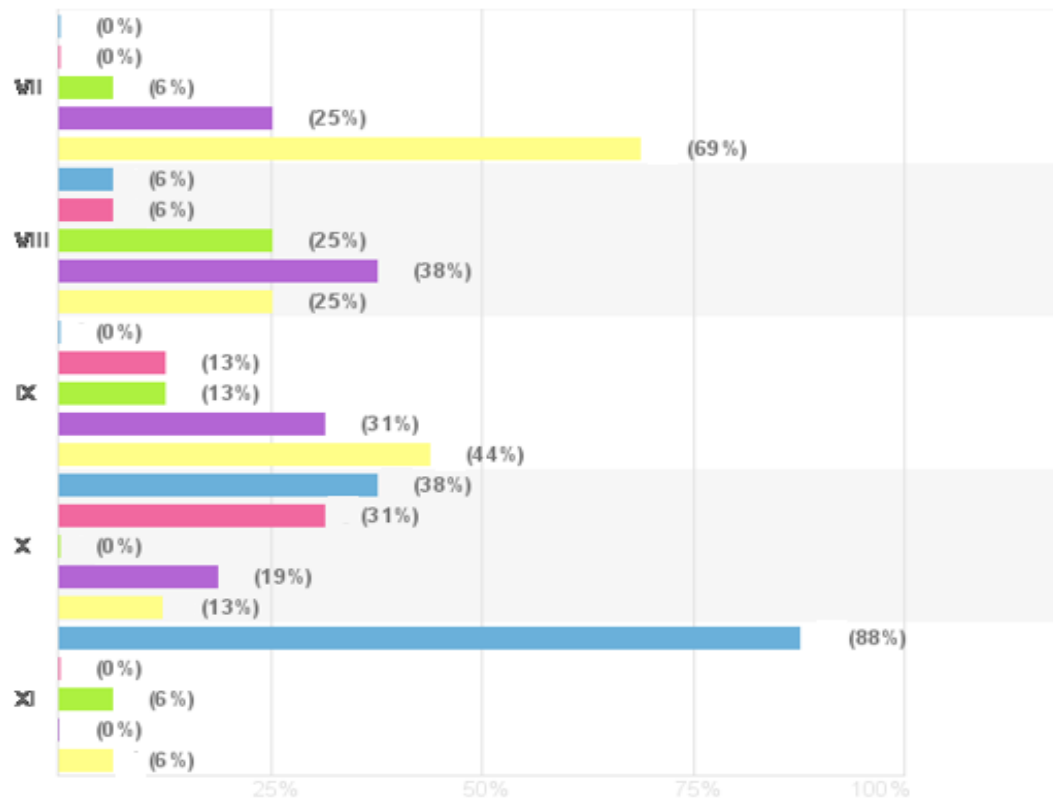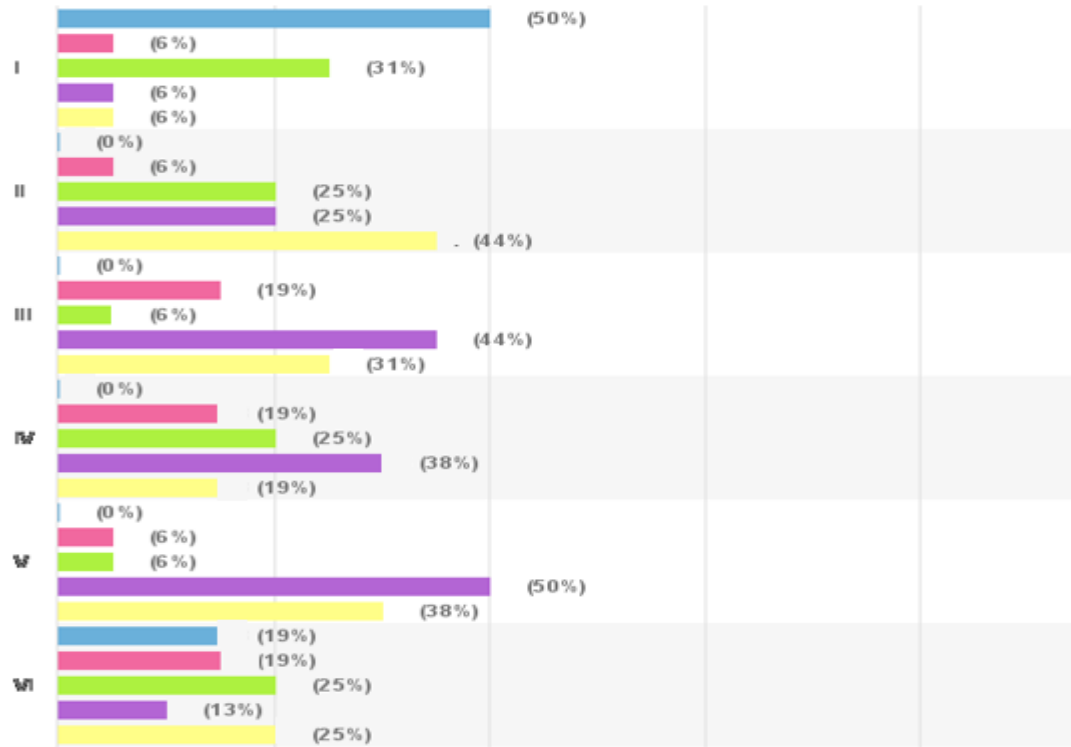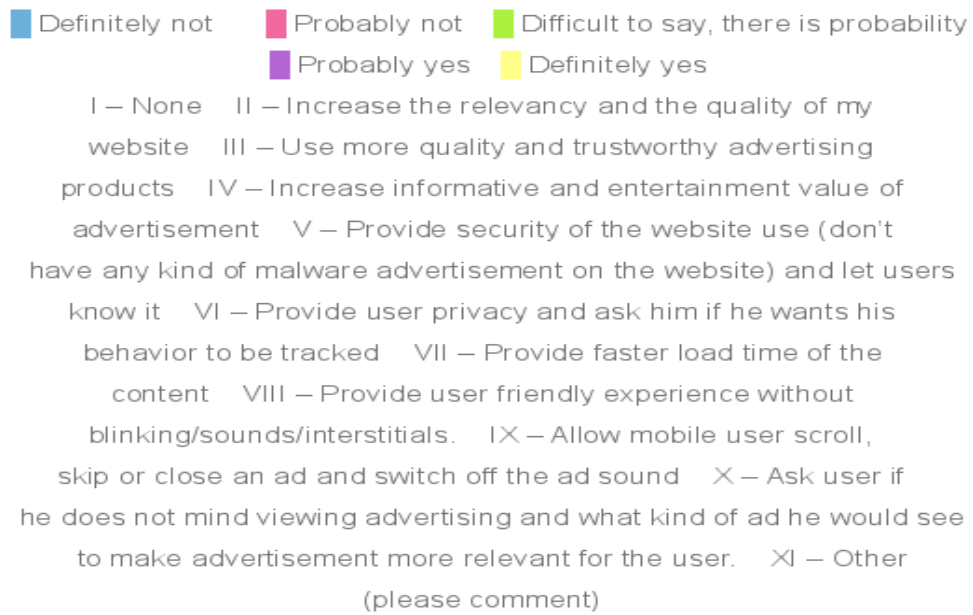
Figure 33 Actions which motivate mobile users to return

In the figure 33, it is seen that webmasters have an active position and would prefer to make actions to help in this situation rather than do nothing. Fifty-six percent of respondents answered positively on the question which was asked if they are ready to intervene and change something in order to get back their users on the webpage. Other 31% abstained from the answer.

Based on the answers to this question, it was noticed that webmasters are willing to take a lot of steps to meet users' needs and expectations on the mobile experience, in order to have them back on the website with disabled adblock.

Sixty-nine percent of the webmasters would work on relevance, uniqueness of content and quality of websites which would increase interest of the users in their website and make users return in order to acquire new content. However, 25% of publishers hesitated whether they opt for this change or not. Seventy-five percent of the respondents think the solution relies in the quality control and trustworthiness of advertising products they place on their website, so users would see relevance for them, an advertisement which, at the same time, does not annoy them. However, 44% of these accordant are not very secure of this option, probably because it is not easy to implement and requires hard work to choose and then control everything that is shown on the website. On the one hand, 19%

do not see control of advertising as an option, probably because these webmasters do not place advertisement by themselves and sell advertising slots on the website to a third party and third party chooses what advertisement to place on those slots. Answers spread more or less in the same way for the proposal of increasing informative value and entertainment of advertising. Only 19% of publishers were fully assured that it is a good lure for users to come back for their website. However, 44% were either negative towards this idea or in the state of hesitation. It can be explained by the difficulty of control over advertising products on the website which requires tight cooperation with the advertising companies, a lot of money and time invested, which is practically impossible for mid-size webmasters. On the question whether webmasters are ready to provide user friendly experience, only 12% answered negatively, on opposition to 63% of respondents, who believe that by adapting advertising formats they can motivate mobile users to come back to their websites.

On one of the most popular answers which had a support of 88%, respondents agreed to work on the security of the website in order to prevent and control any kind of malware, viruses and spyware products as well as unfair monetization like iframing and autosubscription. Publishers are ready to invest and be involved in the fight with this black side of the business for mobile users to have a clean mobile experience and return to the website. Moreover, they want to display the message that these websites are secure.

The proposal of providing the user with privacy during the mobile session got one of the highest rejection and hesitation levels. Thirty-eight percent of respondents were against the idea of asking user whether they agree to be tracked or not. This shows the general attitude towards importance of the users' tracking for publishers, moreover, webmasters do not want to give users too much power over their website. However, 25% of the respondents agreed to give the right for user to choose either to be tracked or not.

The most popular option to get returning mobile users on the website with disabled adblocks, was increasing the load time of the content. Ninety-four percent of the respondents fully or partly agreed that they can mitigate the impact of advertising on the load time which is one of the reasons mobile users install adblocks.

Webmasters showed almost unanimous intention on boosting speed on the website, while only 6% were hesitating about this idea.

Another proposal which intended to give the user the right to shut, skip or scroll down the advertisement, was supported by 78% of the respondents, which means that generally webmasters are ready to give some control over the website, in order to show users that their opinion matters. However, publishers are ready to give only part of control on advertising, but not the total, it was proven by next proposal. It was offered for publishers to ask their users, whether they mind seeing the advertisement on the website or not, and in case the answer is yes, what type of advertisement. Majority of the respondents (69%) answered negatively to this proposal, since they believe that only they have the power to decide what and how much advertising will be shown on their websites.
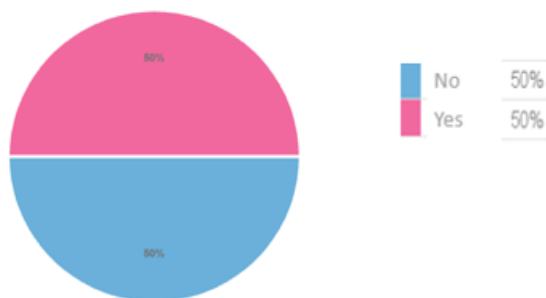
Figure 34 Readiness to pay for external agencies to pass through adblock

Figure 34 shows the intention of webmasters to pay for a technology that blocks adblocks. According to a previous question, 94% of respondents are willing to use external software which would show advertising to users against their will, with enabled adblock. However, an interesting fact is that only 50% of webmasters are ready to pay for such service. The explanation of this can be in the added value of the service. In case payment for the service surpasses the advertising income deficiency caused by adblock, there is no sense in using this service. Moreover, it shows that webmasters would opt for free of charge software available in the market.

The intention in the next question was to study if there is a difference for publisher to pay an external agency to pass through adblock filter or adblock itself. Answers to this question spread in the same way as in the previous one. Publishers do not see a difference, 50% would pay for their advertisement to pass through and 50% would not. Determinative factor for this choice is the amount of money publishers

Are you ready to pay for your ads to pass through adblock filters in case this external agency would be the owner of adblock itself, which blocked advertisment on your website and wants "ransom" from you in orser to unblock it?

Don't agree	50%
Agree	43,75%
Agree under some condition	6,25%
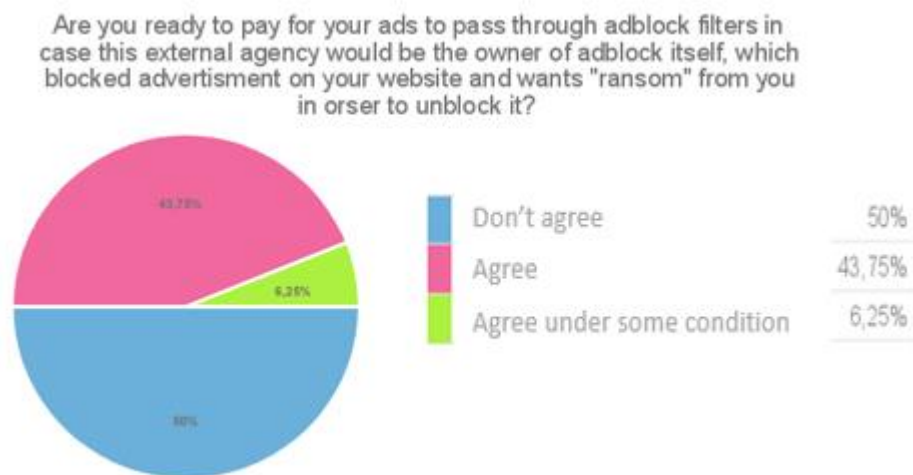
Figure 35 Readiness to pay for adblock to pass through their filter

Are you ready to collaborate with other publishers/adnetworks in order to find the most effective strategy to fight against adblockers?

Yes	75%
No	25%

Figure 36 Readiness to collaborate with other publishers

According to the figure 36, the majority of the webmasters (75%) showed their willingness to collaborate with other publishers in order to find a common way and effective strategy to fight against ablock companies. The biggest part of webmasters want to gather, share knowledge and experience in order to follow one direction in confronting adblock companies and adblock users.

Do you think it is possible to increase ad revenue from your website/adnetwork by aligning your advertisement strategy with the reality of increasing adblock usage in the nearest future?

| | Yes | 81,25% |
| | No | 18,75% |
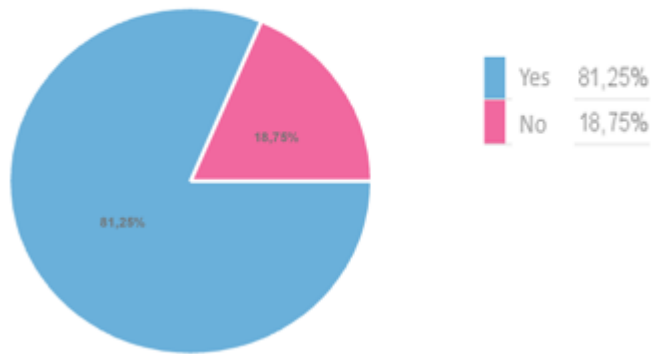
Figure 37 Future revenue increase

Figure 37 shows the positive attitude of publishers towards the future of mobile advertising. Eighty-one and twenty-five percent of respondents are sure that it is possible to make some steps to align their strategy with adblock reality and it can influence positively on their future mobile revenue. These results are optimistic and give a hope that the mobile advertising industry will keep evolving at the same pace as before. But the main condition for this is that webmasters, along with advertisers, adapt to the current situation with adblock presence.

In the last question, represented by figure 38, publishers were asked to evaluate the possible scenario of the mobile advertising future.

Please measure, how do you see the future of mobile advertising
under the increasing presence of adblocks?
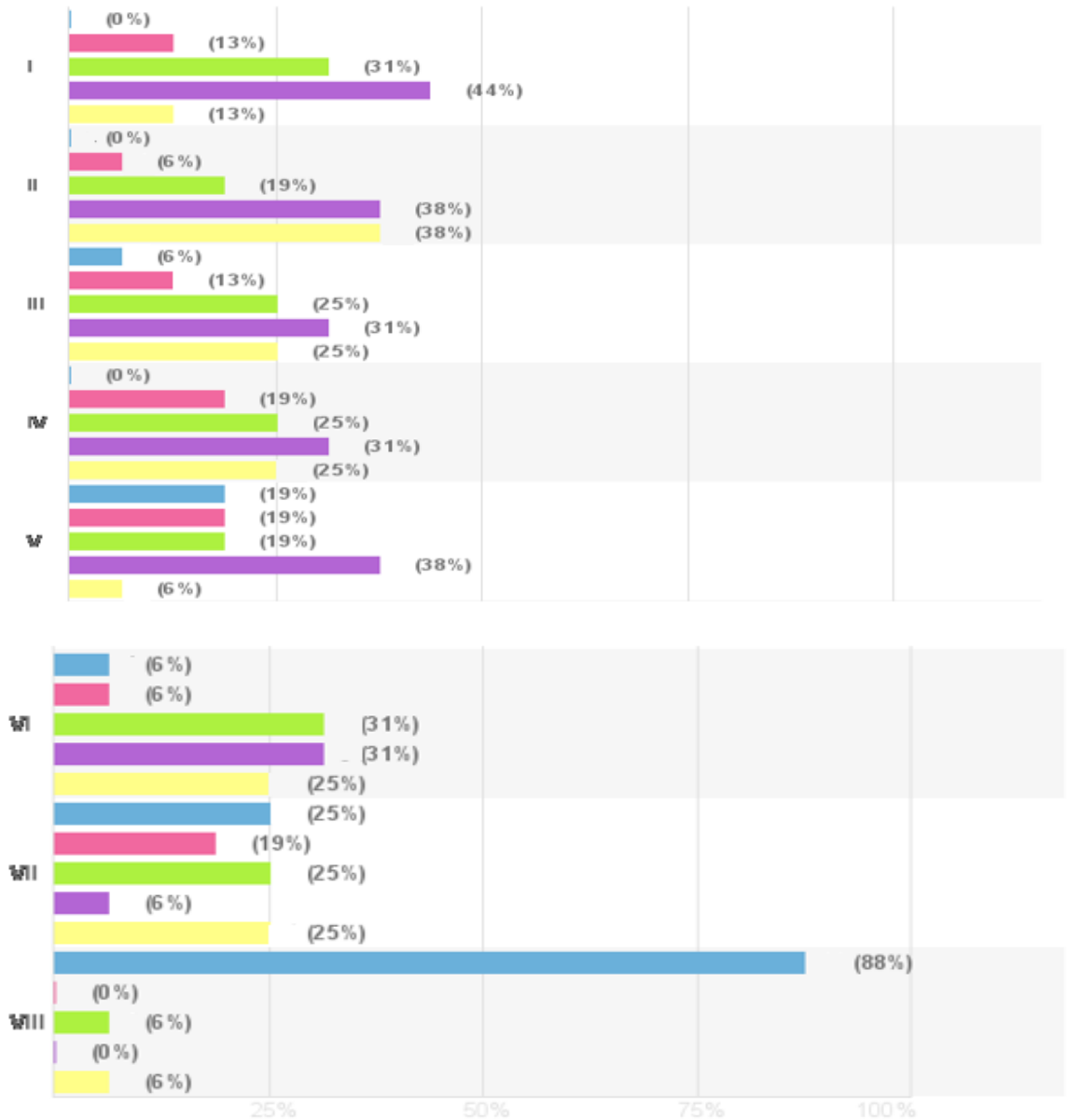
I — Continuous fight between publishers and mobile adblock users
(blocking content, changing scripts etc)   II — Continuous fight
of technologies (adblock vs blocking of adblocker)   III — Respect
for the user, changing of advertising formats and creating better ads
IV — Increase of mobile content quality so users are willing to
consume it under the presence of mobile advertisement.   V — No
action — mobile advertisement revenue goes   VI — Collaboration
with companies like Google, FB which are whitelisted in lots of
ablocks   VII — Ban of adblocks by legislation   VIII — Other (please comment)

Figure 38 The future of mobile advertising

One of the most probable scenarios is the continuous fight between publishers and adblock users. In this scenario publishers would block the content or part of it, would ask to subscribe to the website or change internal script. Only 13% of the respondents fully agreed that it represents the future of the industry, however 44% of webmasters believe in the stong probability of this scenario. There was no webmaster who denied this option. The conclusion is that the probability of this option is quite high, but not all webmasters are fully sure, which means that they want more a universal and a more radical solution in the long term perspective.

The scenario which got the highest support of publishers was the continuous fight of technology. Seventy-six percent of respondents are sure that the future of mobile industry would be the rivalry between adblocks and technology which block adblocks. When a blocker of an adblock creates a solution on how to by-pass adblocks, adblocks will immediately change their script taking this into consideration and fix this gap, after that, adblock blockers will start searching for a new option to bypass and so on. Webmasters believe that this radical scenario will happen in the long-term future.

Comparing the first two options, the possible future which involves growing respect for the users has got 6% of fully and 13% of partly dissenters. This phenomenon can be explained by the fact that some webmasters use more aggressive advertising policies, especially ones using redirects and popups and are unwilling to change it, which causes disrespect of user's needs. However, 56% see the future of mobile advertising in a cleaner and more honest cooperation with the users. An interesting fact is that this option got more answers from the webmasters who are running native advertisement already.

Fifty-six percent of the respondents thought that the possible future of mobile advertising will be improving the content quality which is offered to mobile users. Webmasters believe that an overall increase of content relevancy and informational value will create user's trust in these websites and they will refuse to use adblock.

One negative scenario was offered, where mobile advertising industry will stagnate under the presence of adblocks due to the lack of actions taken by mobile market players. Thirty-eight percent of the respondents do not see this option a real scenario, as they are sure that the market will evolve and find a way of reducing the adblock influence. Only 6% of webmasters forecast the death of mobile advertising industry, however 38% of publishers do not exclude this possibility. The reason for this is the current uncertainty about which specific actions shouldto be taken.

Cooperation with Facebook and other whitelisted websites as a main trend for the future was chosen by 55% of respondents as a possible scenario. However, 33% were hesitating about this option and 12% answered negatively. Such findings mean that webmasters do not see their place clearly, and Facebook and other big whitelisted publishers would win traffic over mid-size webmasters and oppress them. Mid-size publishers do not see the strength in themselves to create unique and exclusive content which might be placed in Facebook.

Next possible scenario was denied by the majority of the participants in this study. Sixty-nine percent of respondents answered negatively or had no particular opinion on the scenario that international online legislation will ban adblock as a phenomenon. The reason for that is the skepticism that individual webmasters can influence on already big and powerful adblock companies to leave market arena.

4.2 Influence of adblocks on the future of mobile advertising. Advertisers' perspective

4.2.1 Advertisers' profile

In the first part of advertisers' survey, participants were asked if they are direct advertisers, what type of products they own, if they are using any tracking solution to gather information about users' behavior in order to increase effectiveness of mobile campaigns, and what type of targeting they perform, while advertising their products.

Figure 39 The type of advertiser

Figure 39 shows that out of 64 participants of the advertiser survey, 50% of the respondents are direct advertisers and owners of mobile products and services, while 37.5 % are affiliate networks which have an overview of many advertising products.
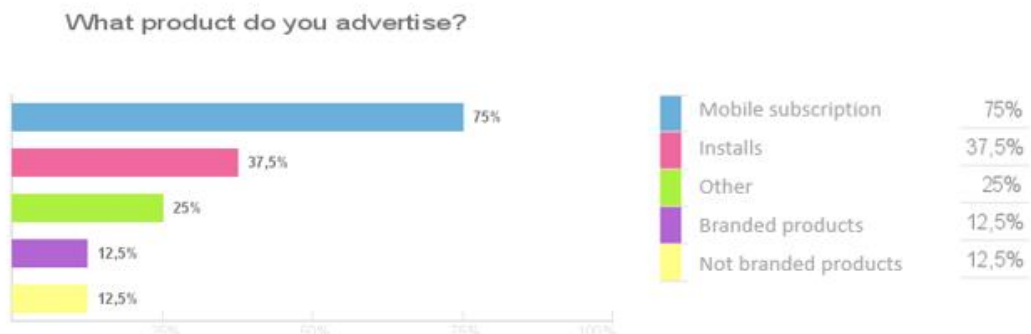
Figure 40 Type of advertising product

Figure 40 shows what mobile products participants of the survey own. This question allowed multiple answers. The majority of the respondents (75%) own mobile subscription services, while the next most popular mobile products are installs (37.5%). There were some advertisers who create educational, finance and investment services with a pay per lead billing model (25% of respondents).

Another set of questions considered tracking behavior and its imporance for advertisers.
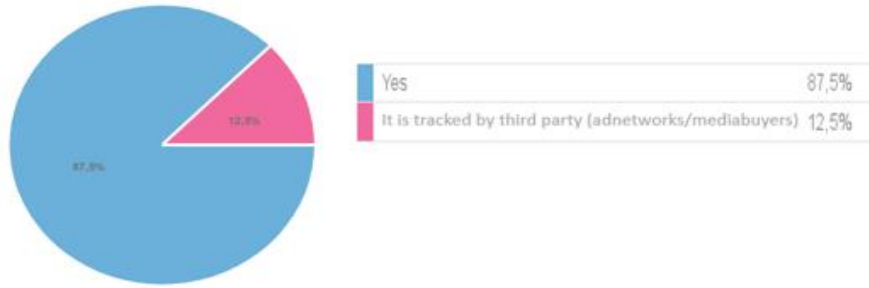
Figure 41 Tracking of user behavior.
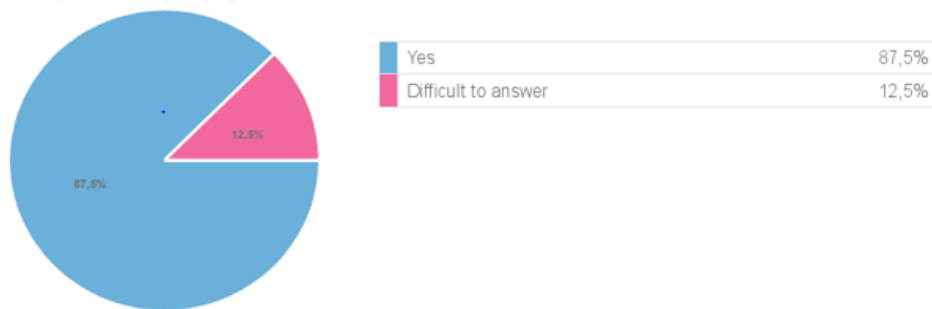
Figure 42 Effectiveness of users' tracking

Figure 41 represents the proportion of advertisers who use technical solutions to track mobile advertising behaviour. Eighty-seven and a half percent of the respondents use trackers in order to get infromation about users visiting their advertising products. And according to figure 42, the tracking of users' behavior influences positively on the effectiveness of mobile campaigns, as 87.5% of respondents agreed with it.
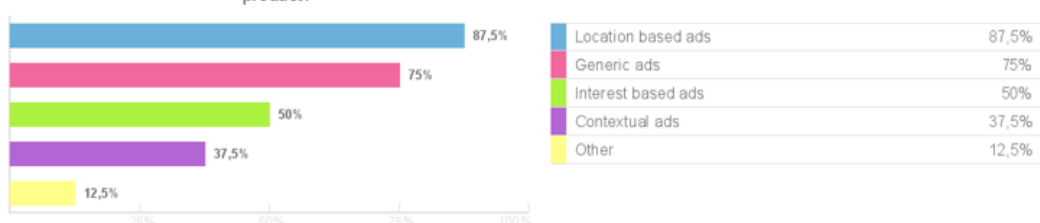
Figure 43 Users' targeting

In the next question (figure 43), was asked what targeting advertisers do to optimize mobile campaigns. It was done to show that users can be tracked by

different parameters, starting with websites visited (75% of respondents), geolocation, interests and 20 other parameters.

4.2.2 The impact of adblocks on the mobile advertisement. Advertisers' perspective

The aim of this part of the reasearch was to study awareness of adblock itself and problems which they bring to advertisers. Here is presented the data on the advertisers' performance and revenue volatility and it links with adblock phenomenon.

Do you know what is Adblock?

Figure 44 Awareness of adblocks

The question about the awareness of adblock phenomenon was asked both from publishers and advertisers. The advertisers also answered unanimously. One hundred percent knew that adblock technology exists (figure 44).
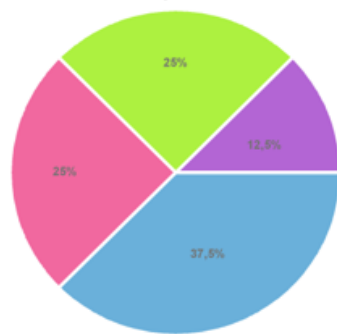
Figure 45 Awareness of adblock problem

The question regarding awareness of adblock problem was also asked to advertisers. Comparing to publishers' responses advertisers seem to be more relaxed about the increasing number of adblocks which prevent the promotion of their products. According to figure 45, only 12.5% of the respondents are scared of the fast adblock growth, on contrary to 37.5% of participants who are already taking actions in order to eliminate adblock impact. However, there are more advertisers who underestimated the adblock effect on mobile advertising industry generally and on their business specifically (25% of respondents). Moreover, a big percentage (25%) do not believe that adblock phenomenon will influence somehow on their business.

The next set of questions was created in order to study the performance and the revenue volatility within the last two years and see its correlation to adblock spreading.

Did you notice that amount of visits on a landing page of your ad offers decreased within last 2 years, especially from loyal publishers?

Yes, by 10-20%		37,5%
No		25%
Yes, by 20-30%		25%
Yes, by 5-10%		12,5%
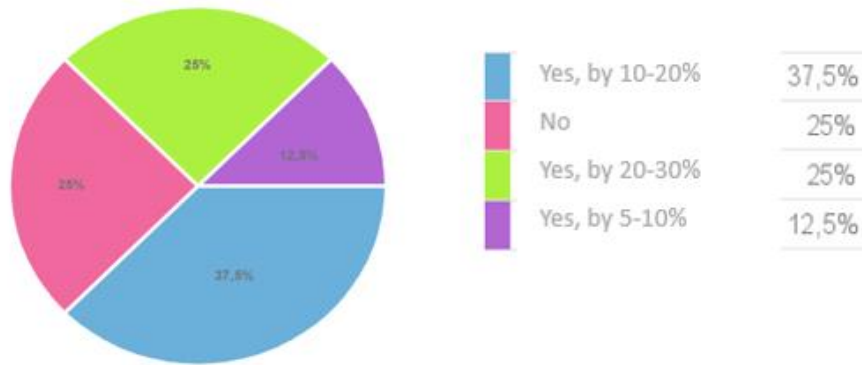
Figure 46 Volatility of advertisers' performance

To which extent can you relate this phenomenon to increasing advertising avoidance and growing number of adblock installs, which simply do not show advertisement to your users?

Relates to significant extent		50%
Almost does not relate		37,5%
Completely relates		12,5%
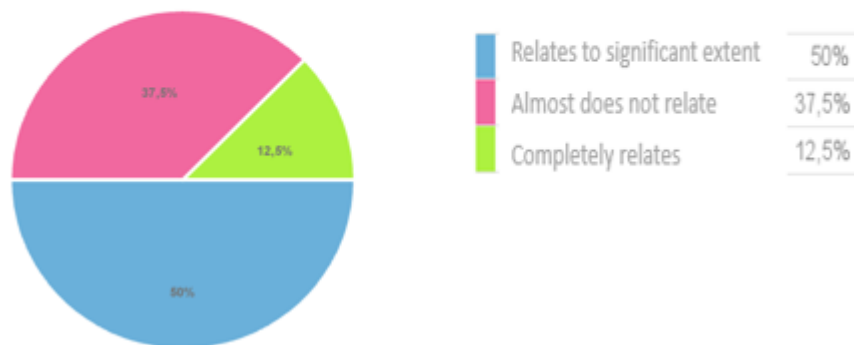
Figure 47 Correlation between performance drop and adblock growth

In figure 46 is shown the answers of advertisers about the performance of their mobile advertising campaigns in terms of visits on the landing pages that contain the products. The majority of the respondents (37.5%) noticed a significant drop of 10%-20% of visits on their advertising products even from the most loyal and consistent publishers. Twenty-five percent of the survey participants noticed even a more severe decrease of between 20%-30%. However, another 25% of advertisers did not notice any decrease on the visits. This result can be explained if their advertising materials are placed in Facebook and other whitelisted platforms

in adblock publishers list. In figure 47 is seen how advertisers relate mobile per-
formance behavior with adblock appearance. Sixty-two and a half of the partici-
pants agreed that adblock is one of the main reasons of the drop in their perfor-
mance. However, 37.5% cannot name adblock growth as a main cause of de-
crease in visits on their products, seeing other reasons behind it.
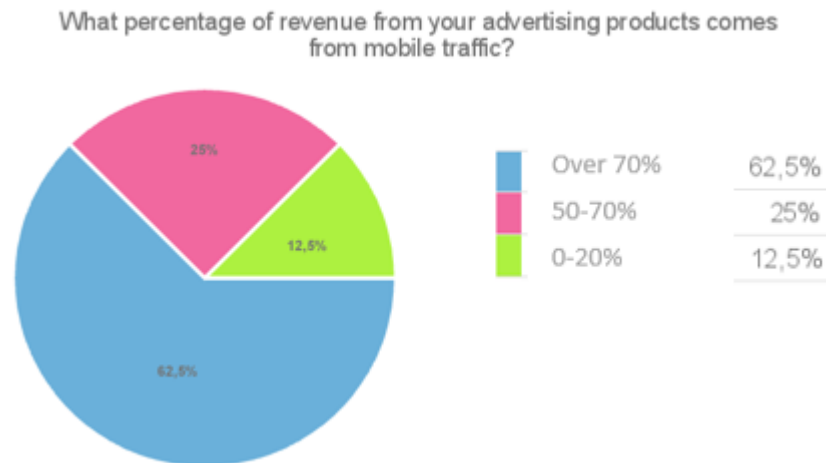
Figure 48 The proportion of revenue which comes from mobile traffic

The next question intended to understand the dependency of respondents on the
mobile traffic. Figure 48 indicates the percentage of advertisers' revenue which
comes from mobile traffic. Sixty-two and a half of the respondents claimed that
over 70% of their advertising revenue comes from mobile users. Another 25% of
the advertisers get 50%-70% of revenue from mobile promotions. And only 12.5%
do not depend on mobile revenue. These results show that nowadays advertisers
invest a lot in mobile products, promote their offers on mobile websites and ex-
pect good return on investment.

These questions have the aim to study the volatility of mobile advertising revenue
during the last 2 years and check its dependency on the adblock phenomenon.
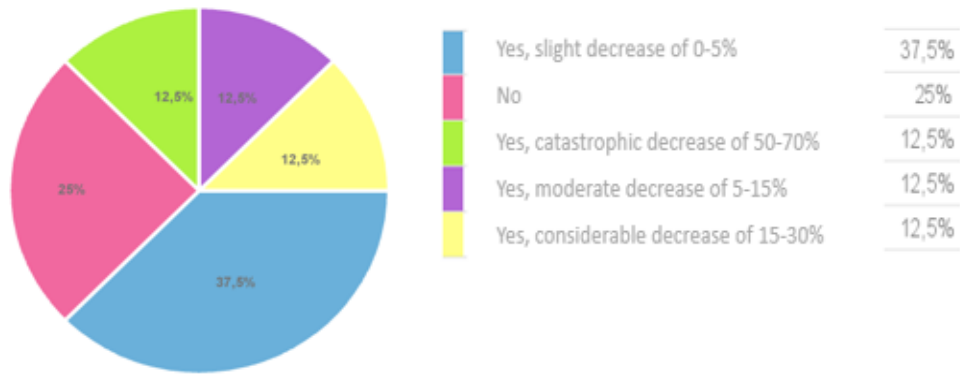
Figure 49 Volatility of advertisers' mobile revenue within 2 years
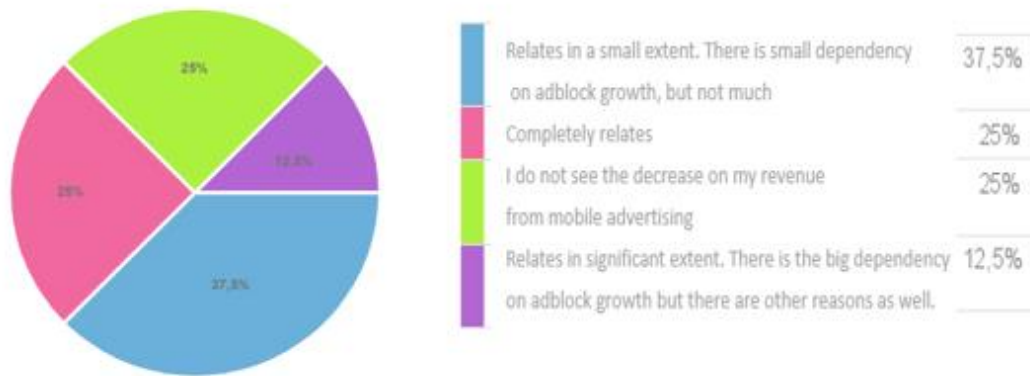
Figure 50 Correlation between mobile revenue drop and adblock growth

Figure 49 demonstrates the drop of mobile advertising revenue within the last 2 years, estimated by advertisers. Majority of advertisers (37.5%), showed the same trend as publishers and noticed a slight decrease of 0%-5% on their revenue. Other 25% of the advertisers observed an even stronger trend of revenue falling by about 5%-30%. A small number of advertisers (12.5%) experienced a catastrophic fall of their earnings by 50%-70%. However, 25% of the respondents did not see any drop, which can be explained by the promotion of their products on Facebook and other whitelisted platforms by adblock websites. In figure 50 is demonstrated the correlation between the mobile revenue drop and adblock appearance. Thirty-seven and a half percent of the respondents relate the drop in

earnings with adblock usage growth, either completely or to significant extent. However, other 37.5% see different reasons for revenue drop, but still agree that to small extent, adblock phenomenon can be one of the influential factors.

4.2.3 Advertisers' methods of confronting adblocks

In this part of the research was covered the attitude of advertisers towards adblocks and their willingness to confront such industry phenomenon. Advertisers showed the actions they are ready to take in order to fight adblocks. Moreover, they shared their opinion in the future of mobile advertising under the growing presence of adblocks.
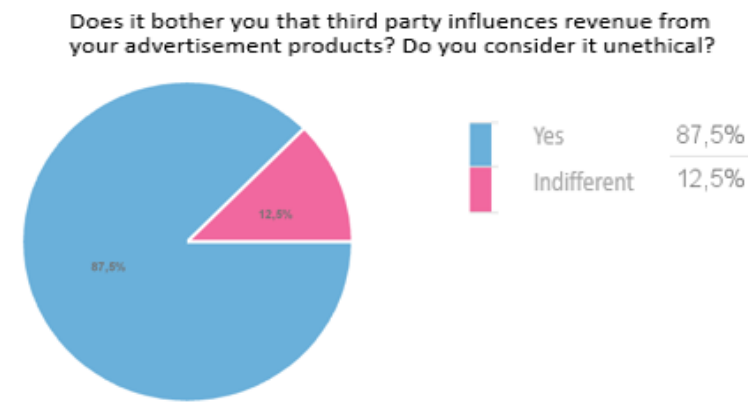
Figure 51 Attitude towards adblock

The next question was asked in order to prove that adblock is an irritating phenomenon not only for publishers but also for advertisers. In figure 51 it is shown that 87.5% of the respondents confirmed that they are annoyed that a third party can influence easily on the revenue of their products. Other 12.5% of advertisers have indifferent attitude towards adblock, the reason for this is that they do not have noticeable impact of adblock usage on their performance.

The next question was asked in order to understand if advertisers are doing any steps to mitigate the negative influence of adblocks on their performance.

Do you take any measures to mitigate influence of adblock presence
on your mobile advertising revenue?

Yes	50%
Not yet, but planning	37,5%
No	12,5%
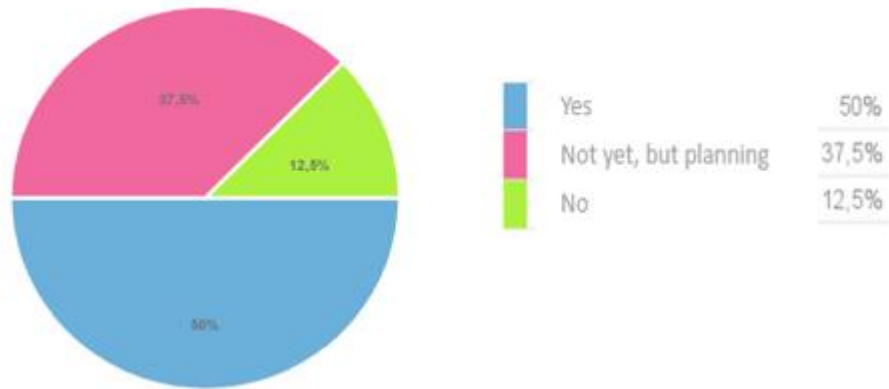
Figure 52 Willingness to take the actions to fight the adblock

Figure 52 demonstrates the proportion of publishers who take any actions to fight against adblocks. Fifty percent of the respondents answered that they are already taking actions to eliminate adblock effect. The second biggest half does not do any actions but plan to, in the nearest future. And only 12.5% did not even plan to fight back.
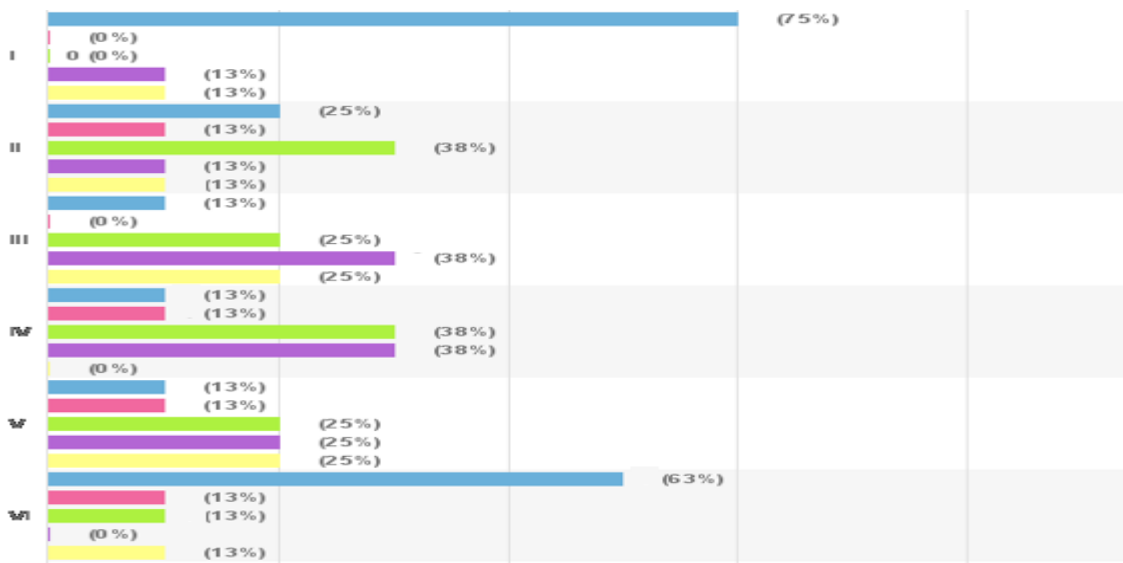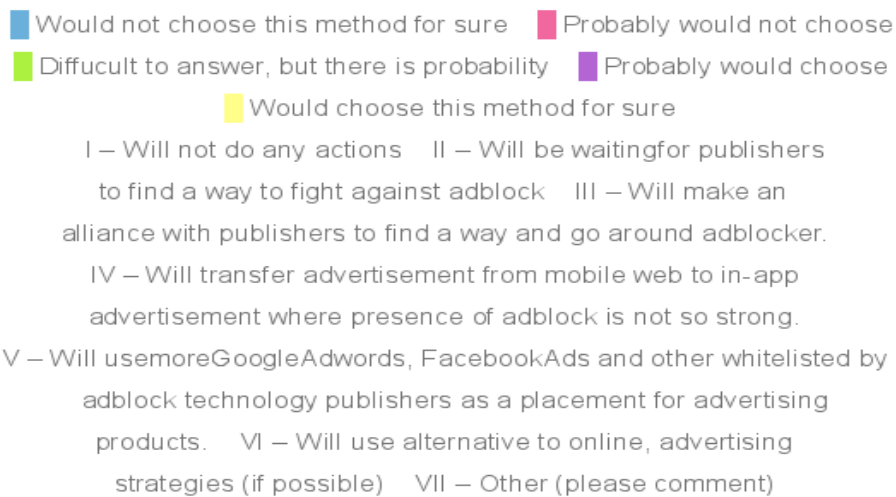
Figure 53 Actions of advertisers in confronting adblocks

Since advertisers cannot influence directly the users with adblocks on, like pub-lishers can, they were offered milder indirect scenarios of actions to take in order to avoid negative impact of adblockers. The first conclusion which can be noticed in figure 53 is that advertisers have a strong will to do some actions in order to mitigate adblock effect. Seventy-five percent of respondents answered negatively on the invitation to do zero action. The second option, which offered to wait until publishers solve the situation, got the support of only 26% of the respondents, while 38% showed disagreement and willingness to be involved in the process. However, a very big percentage of the respondents (38%) were still hesitating.

One of the most popular options among advertisers was the cooperation with some publishers in order to find a solution of bypassing adblockers together. Sixty-three percent of the respondents supported this approach. Alliance with publishers can help incorporating advertising in the publisher site in a way that script of the advertisement would not look different from the script of the site itself. Only 13% of the respondents strongly disagreed with this option.

The proposal of moving advertisement from mobile web to in-app traffic elicited response from advertisers. Thirty-eight percent of the respondents would choose this option. However, there was a big part of hesitating advertisers (38%) and disagreeing ones (26%), due to the high complexity of this move and a need to adapt advertising products.

The second most popular option among advertisers was an increasing usage of Google and Facebook advertising spaces as well as publishers who pay to pass through adblock filters. Fifty percent of advertisers agreed with this option. Nevertheless, 26% of the respondents did not agree and 25% could not state their opinion. It is explained by the fact that their products cannot be promoted in Google or Facebook in a clear way, because these publishers have very strict rules on advertisement and for example, do not allow the promotion of mobile subscription services.

The proposal to use an alternative to online advertising strategy got the highest critics from the side of advertisers. Seventy-six percent of participants answered negatively to this question, because they do not want to change their industry because of an obstacle like adblocks.

Do you think it is possible to increase ad revenue from your mobile ad products by aligning yours and publisher's advertisement strategy with the reality of increasing adblock usage in the nearest future?

Yes	87,5%
No	12,5%
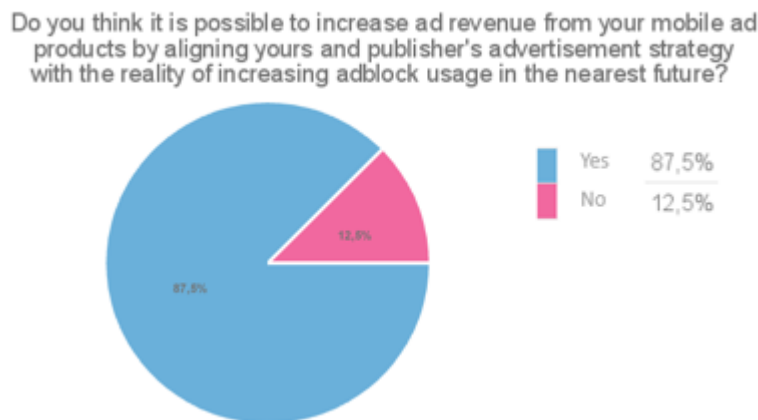
Figure 54 Advertisers' opinion about future of mobile advertisement

According to figure 54, advertisers are very optimistic about the future of mobile advertising. Eighty-seven and a half percent of the respondents believe that in the nearest future it will be possible to mitigate the influence of adblock with well-thought actions and increse revenue from mobile advertising products.
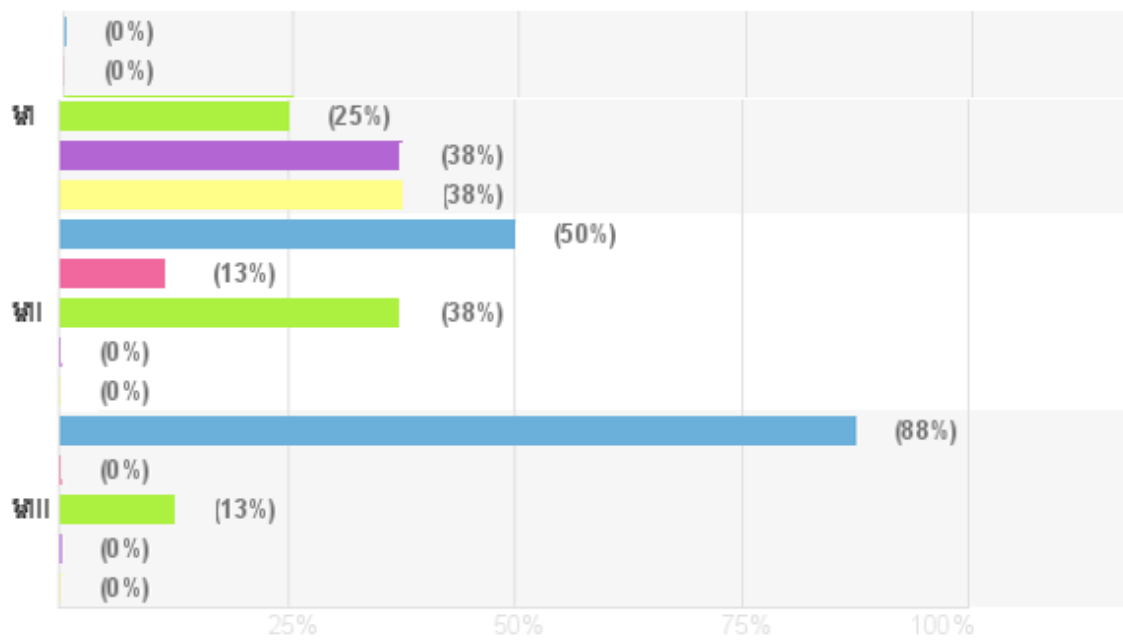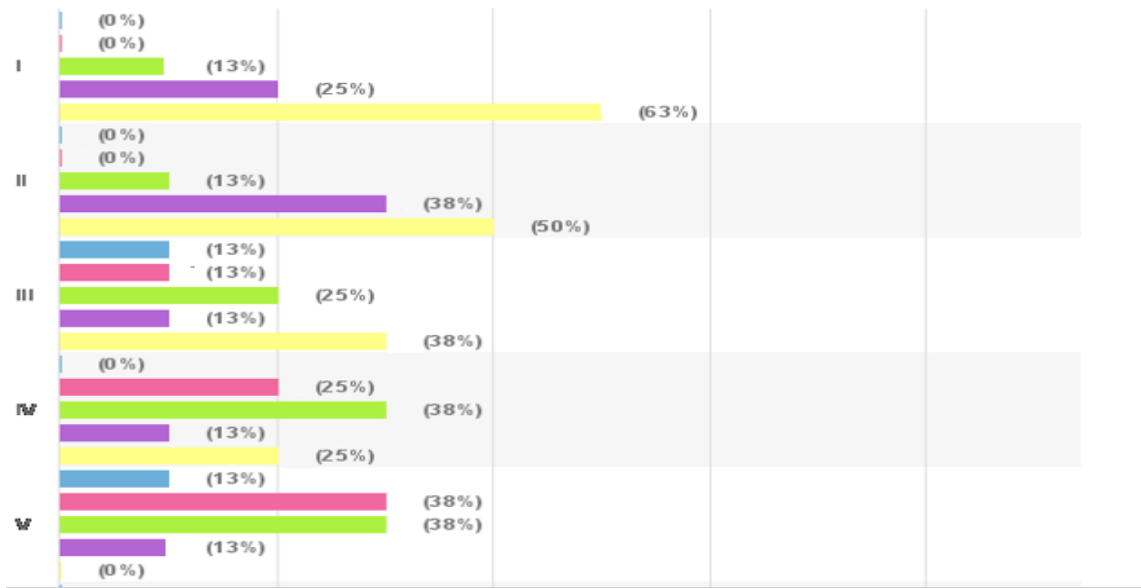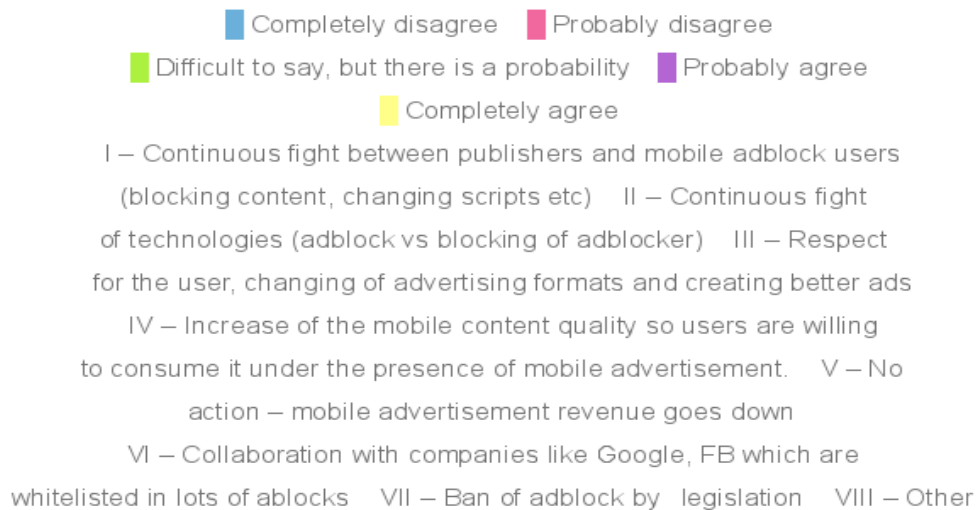
Figure 55 Future of mobile advertising in the opinion of advertisers.

The last question for advertisers was the same as for publishers. The respondents were asked to share their opinion about the future of mobile advertising. The result can be checked in figure 55. The two most probable scenarios, in the opinion of advertisers, are the continuous fight between publishers and the rivalry between new technology. Both of these options got 88% of advertisers' votes. Respect of the users and creation of a better ads policy, elicited response from 51% of the participants, however 26% of the advertisers did not believe that advertising policy will change in a positive way.

Advertisers had a great difficulty (38%) to answer about the possible scenario which involves actions from the publishers' side on adapting and creating more valuable content. Nevertheless, 38% of the respondents see this option as the future of mobile advertising.

Advertisers reacted in the same way as publishers towards the assumption that no action can be applied, and that mobile industry will encounter its end soon. Fifty-one percent did not forecast this destiny for mobile advertising business and believe that actions towards adblocks can still be taken.

Very big part of respondents believes that the future of mobile advertisement in the presence of adblocks is the cooperation with big companies like Google and Facebook, which are aligned with acceptable ads policies and have advertisement bypass in majority of adblocks.

Finally, 63% of the respondents do not believe that law can influence the presence of adblock on mobile marketing arena, so they do not see this option as a future scenario.

5 Conclusion

The present thesis has investigated the influence of the adblock phenomenon on the future of mobile advertisement. The research dealt with analysis of publishers and advertisers' opinions about the adblock impact on their performance and revenue. Moreover, it was studied whether publishers and advertisers are willing to confront adblockers and which actions they prefer to take in order to fight against adblocks. The findings and results are presented in the summary and discussion chapter. Afterwards, recommendations for further researches are discussed.

5.1 Summary and discussion

This chapter focus on summarizing and evaluating results from quantitative research. The main goal is to provide answers for thesis' research and sub-research questions.

5.1.1 How do adblocks affect different players of mobile advertising industry?

The research concludes that both publishers and advertisers feel the presence of adblock in their activity and impact on their business.

Small and mid-size publishers with an amount of traffic less than 500,000 impressions a day are the focus group of this study. All respondents from the publishers' side claim that their main source of revenue is advertisement on their website. This statement is in line with Ward-Bailey's (2015) theory of publishers' dependency on online advertisement, which aims to support the free content. According to the current study for majority of publishers mobile traffic is accounted for over 50% of the total traffic, so the drop in mobile visits might influence tremendously the publishers' business.

According to Rzemieniak (2015) CTR is one of the most important indicators of marketing campaigns effectiveness. In order to evaluate the volatility of performance, publishers were asked to provide information about their CTR. The results of the survey show that almost 90% of the respondents felt a decrease of CTR within the last two years and around 70% of the respondents related this drop with the adblock effect.

For majority of the publishers, over 50% of the revenue comes from mobile traffic which is aligned with Emarketer's (2015) research, which estimated that 59.4% of total digital spending worldwide in 2017 would come from mobile traffic. This means that the drop of revenue can impact a lot the total publishers' revenue. This research proves that almost all publishers under consideration felt some kind of mobile revenue decrease within last two years and around 60% of respondents strongly relate this revenue stagnation with the continuous growth of adblocks.

Sixty-two and a half percent of advertisers under consideration claim that over 70% of their revenue come from mobile traffic. Seventy five percent of the respondents noticed a drop on the visits on the landing pages of their products and mobile revenue. Sixty-two and a half percent of them claim that this phenomenon is due to adblocks preventing showing their products to the users.

Based on this statistic, it becomes noticeable that both publishers and advertisers consider adblocks as an obstacle for their mobile industry performance and revenue and the main reason for their business instability. This finding proves Cohen's (2007) statement that adblock usage growth can be an extreme threat to online advertising business model.

According to the survey, publishers are scared of adblock, much more than advertisers. On the contrary, more advertisers state that they are already taking preventive measures or even believe that adblock phenomenon will not affect their future. It can be explained with the fact that advertisers might easily switch their business to other direction and promote their product through whitelisted Facebook and Google or via mobile apps and so, avoiding adblock influence. Publishers, on the other hand, will always stay with their websites and will depend either on the revenue from mobile advertising or from subscription.

The assumption 1 has been tested in this part of the thesis. The statement: Ad-blocks bring significant negative impact on the performance and revenue of mobile advertising market players, has been proved to be correct.

5.1.2 What is a way for mobile marketing players to avoid the negative effect of the wide spread of adblockers among mobile users?

All publishers and advertisers in this research have negative attitude towards the adblocks. Both market players show strong intention to take actions in order to mitigate adblock effect on their business. According to the study, only 25% of the publishers are already taking some actions against the adblock users. The reason for it has technical origin. Seventy-five percent of the publishers do not have a technical solution which detects users with enabled adblock and only 6.25% of the webmasters are planning to install it. This finding demonstrates that the majority of the webmasters are not aware of the amount of traffic from their website that skips mobile advertisement. Therefore, publishers cannot plan any actions to take in the nearest future.

However, in the long-term perspective, publishers showed the intention to fight adblocks. Publishers were offered ten possible actions they can do in order to confront adblock users.

The most popular option was the one proposed by Martin (2015), the changing of the website script in order to hide advertisement from adblock filter. It can be explained by the fact the publishers want immediate result over their action. Moreover, webmasters want to have a total control over their property and they understand which actions bring result.

The second most popular option for publishers was using external technology which was discussed in Mansfield-Devine's (2016) work. The majority of the respondents would install a sofware on their site, which would detect users with enabled adblock, then switch it off and show intended advertisement for all users. The explanation for this phenomenon is that mid size publishers want to get rid of adblocks as fast as they can and in the harshest possible way.

The third most popular way to eliminate adblock impact is the usage of native advertisement, which is discussed in the research of Martin (2015). The reason why this option got such a high support can be the easiness of its implementation and almost no risk for the publisher.

The next option, by popularity, was adapting mobile advertising and its formats in order to pass through filters of acceptable advertising. This positive trend can mean two different scenarios, either publishers want to respect users' opinion and adapt mobile advertising according to the users' complaints or they do not understand, at the moment, how strictly acceptable ads are; and how much they would have to change to pass through.

There were controversial points of view in the option supported by the theory of Vratonjic, Manshaei, Grossklags and Hubaux (2013) – to speak with publishers' users, explain that mobile advertisement is the payment for free content and ask them to switch off adblock. Fifty percent of the respondents were ready to enter the dialog with users, whereas another 50% hesitated if this dialogue will bring any positive result instead.

Several options like preventing content viewing, requesting to subscribe for users with enabled adblock and changing the script that would cut part of content with adblock, were rejected by the majority of the publishers. The explanation for this phenomenon is that small and mid-size publishers do not have a very unique and relevant content. In case one of them closes part of content for a user, then the user would not stick to that website and would move to the competitor, who allows the user to watch the content, with the adblock enabled. If mid-size publishers opt for such option, they risk losing their users.

The least popular option was to sue adblock company. Almost all publishers dis-agreed taking this action. The reason for it is that webmasters do not believe in their stength as individuals to go on to court against big companies who own adblock, apart from that, it requires a lot of financial investment. Moreover, there is no clear legislation which regulates online and mobile business.

According to the results of the survey, almost half of the publishers are ready to listen to the needs of users and make compromises with their marketing

campaigns. However, half of the respondents do not want any compromise because they believe that users already get too much information for free. An interesting finding can be noticed as the website owners who use redirects and pop mobile advertising formats are more aggressive in their adblock fighting strategy, and they are the ones who do not want to have any compromises with mobile users. On the other hand, publishers whose main marketing material is native advertising are milder in their strategy and open to compromises.

The only compromise which got almost unanimous support of all advertisers was taking measures to protect mobile users from mal-advertising. Moreover, a big part of the publishers are also ready to control banners and prelanders which are shown on their websites and ban those which tend to scare the mobile users. It indicates that webmasters are ready to use their skills and experience to make industry generally cleaner and better.

An interesting finding is that publishers do not want to make compromises on the mobile formats they are currently using. Publishers who have redirect traffic do not want to cease it, in order to motivate users from adblock disabling, but they vote in favor of removing blinking banners. The same happens with webmasters who have banner traffic, but the other way around. The reason behind it is that publishers do not want to take cardinal measure and refuse from the format which currently brings money. The same logic works for the type of mobile advertising product. Publishers who do not work with mobile subscriptions are ready to sacrifice it, on contrary it is the main advertising product publishers place on their site – no compromise can be made here.

The option which got the least positive responses was the tracking of users' advertising behavior. This finding looks even more interesting under condition of 62.5% of respondents who had difficulty to say if tracking of users increases effectiveness of their mobile advertising campaign. This phenomenon can occur due to webmasters don not want to compromise with something that they do not know how affect their performance.

According to this study, it can be noticed that publishers prefer to start the war with adblock users rather than enter in peace. Publishers show their intention to

use different methods in order to disable adblocks by force, using internal and external tools. Moreover, their unwillingness to make important compromises with mobile users, indicates that the main publishers' focus is making money in every possible way and not the respect for the users.

The assumption 2 has been tested in this part of the thesis. The statement: Mobile market players prefer to fight with adblock users employing internal and external tools instead of respecting the users and adapting the advertising policy, has been proved to be correct.

Another interesting finding of this thesis is that publishers are ready to cooperate with other publishers to find effective ways of bypassing adblock filters. Moreover, majority of advertisers would start cooperation with some publishers in order to find a solution for bypassing adblockers together. Alliance with publishers can help incorporating advertising in the publisher site in a way that the script of the advertisement would not look different from the script of the site itself.

5.1.3 What is the future of mobile advertising under the increasing presence of adblocks from mobile marketing players' perspective?

Both publishers and advertisers have optimistic forecast about the future of mobile advertising. Marketers believe that is it possible to increase mobile advertising revenue, taking into account the adblock presence and making actions to eliminate adblock impact.

Publishers and advertisers were offered to answer the same question about the future of mobile advertising and both of them had a very similar point of view.

A negative scenario was offered as a first option. Half of the respondents do not believe that mobile advertising industry will stagnate under the presence of adblocks and no action will be taken by the mobile market players. The survey participants do not see this option as a real scenario, because they are sure that the market will evolve and find a way to reduce adblock influence. However, another half of the marketers do not exclude this possibility. The reason for it is the current uncertainty about specific actions which are needed to be taken.

The scenario which got the highest support from the marketers was the continuous fight of technologies. Majority of the respondents are sure that the future of mobile industry would be the rivalry between adblocks and technology which block adblock. When the blocker of adblock creates a solution to bypass adblocks, adblocks will immediately change their script taking this into consideration and fix this gap, and after that, adblock blockers will start searching for a new option to bypass, and so on. Marketers believe that this radical scenario will happen in the long-term future.

Another most probable scenario is the continuous fight between publishers and adblock users. In this scenario, publishers would block the content or part of it, and would ask to subscribe to the website or change internal script.

Comparing to the first two options, the possible future which involves growing respect for the users has a 19% dissent. This phenomenon can be explained by the fact that some webmasters use more aggressive advertising policy, especially ones using redirects and popups and their unwillingness to change it, which causes disrespect for the users' needs. However, half of the respondents see the future of mobile advertising in a cleaner and honest cooperation with the users. An interesting fact is that this option got more answers from the webmasters who are running native advertisement already.

Half of the respondents think that a possible future for mobile advertising will be improving the content quality which is offered to mobile users. Webmasters believe that overall increase of content relevancy and informational value will create users' trust in these websites and they will refuse from adblock usage.

The next possible scenario was denied by most of the participants of the study. The majority of the respondents answered negatively or had no particular opinion on the scenario that international online legislation will ban adblock as a phenomenon. The reason for that is that the skepticism that an individual webmaster could influence an already big and powerful adblock company to leave market arena.

The assumption 3 has been tested in this part of the thesis. The statement:

Mobile advertising industry will employ changes in the advertising strategy in the reality of adblock expansion, has been proved to be correct.

The conclusion of this study is that mobile market players see the optimistic future in mobile advertising. However, marketers prefer to start a war with adblock users rather than adapt the strategy and be in peace with them. Marketers see the most probable future of mobile advertising in the continuous technology rivalry.

There are some recommendations for further studies. One of the suggestions for further studies can be deeper research in the reasons behind certain mobile marketers' behavior in response to adblock effect. Other recommendation for future researchers is to narrow publishers by their mobile formats and study deeper the difference of attitude towards adblock and confronting actions.

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Appendix 1

Influence of adblocks on the industry of mobile advertising (questionnaire for publishers)

1. Are you direct publisher or adnetwork? *

○ Publisher

○ Adnetwork

○ Other [   ]

2. What type of website do you have? *

☐ Entertainment

☐ Video

☐ Informative

☐ News

☐ E-commerce

☐ Blog

☐ Other [   ]

3. What is your main source of revenue? *

○ Advertisement

○ Subscription for your website

○ Other [   ]

4. What kind of advertisement services do you place in your website? *

☐ branded products/service

☐ not branded products (nutra)

☐ mobile subscription products

☐ installs

☐ I don't know what is rotated on my website, I sell traffic to adnetworks on CPM/CPC/revshare model

☐ Other [   ]

5. What is the percentage of mobile traffic on your website? *

- ○ 0-20%
- ○ 20%-30%
- ○ 30-50%
- ○ 50-70%
- ○ Over 70%

6. How many daily mobile ad impressions do you have on your website/network? *

- ○ 0 -10 000
- ○ 10 000 - 100 000
- ○ 100 000- 500 000
- ○ 500 000- 5 000 000
- ○ 5 000 000 - 100 000 000
- ○ over 100 000 000

7. What advertising formats do you use in mobile web? *

- ☐ Banners
- ☐ Popunders/pop-ups
- ☐ Redirects
- ☐ Rich-media
- ☐ Native
- ☐ Other [   ]

8. Do you have any tools to track advertising behavior of your users? *

- ○ Yes
- ○ No
- ○ It is tracked by third party (adnetworks/mediabuyers)

9. Does these tools increase effectiveness of your mobile advertising campaign? *

- ○ Yes
- ○ No
- ○ Difficult to answer

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10. Are you aware of what is Adblock*? *

*Adblock is a technology, which blocks ads before they are loaded by the browser

○ Yes

○ No

11. Are you aware of the Adblock problem. Nowadays 380 million mobile users are blocking ads on their mobile devices, which is 22% of total worlds smartphone users. *

○ I am aware. It scares me

○ I am aware. I am already taking actions

○ I am aware, but I believe it does not affect me

○ I heard something, but did not expect it to have such extent

○ I was not aware.

12. Did you notice that average CTR on your banners drop on your website in last 2 years (under the condition on the stable amount of traffic)? *

○ No.

○ Yes. On less than 5%

○ Yes. On 5-10%

○ Yes. On 10-20%

○ Yes. On 20-30%

○ Yes. On 30-50%

○ Yes. On 50-70%

○ Yes. On over 70%

Комментарий

13. To which extent you can relate this phenomenon to increasing advertising avoidance and growing number of adblock installs, which simply don't show advertisement to your users? *

○ Don't relate

○ Relate in the small extent

○ Relate in significant extent

○ Completely relate

Комментарий

14. Which percentage of advertising revenue comes from mobile traffic? *

○ 0-20%

○ 20%-30%

○ 30-50%

○ 50-70%

○ Over 70%

15. Can you notice decrease on your earnings from mobile advertisement on your website in last 2 years? If yes, what is the percentage of decrease. *

○ No

○ Yes. Slight decrease on 0-5%

○ Yes. Moderate decrease on 5-15%

○ Yes. Considerable decrease on 15-30%

○ Yes. Significant decrease on 30-50%

○ Yes.Catastrophic decrease on 50-70%

○ Yes. Total loose of revenue on over 70%

16. In case you notice decrease, can you relate it on the increasing number of adblockers of mobile web. *

○ Don't relate

○ Relate in the small extent. The main reason is not adblock, but adblock has minor effect as well

○ Relate in significant extent. The main reason is in adblocks, but there are also minor reasons

○ Completely relate

○ I can not notice decrease in revenue from mobile advertisment

Комментарий

17. Did you notice decrease on the revenue more on the specific browser? If yes, on which one? *

☐ Yes. Chrome

☐ Yes. Firefox

☐ Yes. Android browser

☐ Yes. Safari

☐ Yes. Opera

☐ Yes. UC browser

18. Do you use a software or the script to detect if mobile consumers are using adblock on your website and enjoying the content without viewing the advertisement? *

○ Yes

○ No

○ Planning to install

19. In case you have this software, what is percentage of your mobile users who are blocking ads? *

○ I don't have software

○ 0-10%

○ 10%-20%

○ 20%-30%

○ 30%-50%

○ 50%-70%

○ Over 70%

[Комментарий]

20. Does it bother you the fact that third party influence on your revenue from advertisement? Do you consider it unethical? *

○ Yes

○ Indifferent

○ No

○ Other [ ]

21. Do you fight against adblock presence on your website? *

○ Yes

○ No

○ Not yet, but planning

22. Please measure what actions do you take/would consider taking in order to fight an adblocker? *

	Would not choose for sure	Probably would not choose	Difficult to say, but there is probability	Probably would choose	Would choose for sure
Block content of your website or its part until user disable an adblock	O	O	O	O	O
Ask user nicely to switch-off adblock, explaining that mobile advertising is main source of revenue for webmaster	O	O	O	O	O
Ask user to pay some subscription fee in order to reach the content in case he uses adblock	O	O	O	O	O
Change script of the website and hide advertisement elements from adblock filters by embedding it to the content, so advertisement would be fully shown to the mobile users.	O	O	O	O	O
Change script of the website in a way for adblock to cut the part of the content while blocking the advertisement	O	O	O	O	O
Use native advertisement	O	O	O	O	O
Use technology to block adblocker	O	O	O	O	O

Adapt advertisement in order to pass through acceptable ads policy of adblock	○	○	○	○	○
Sue adblock technology	○	○	○	○	○
Would not do any action	○	○	○	○	○
Other (please comment)	○	○	○	○	○

Комментарий

23. Are you ready to compromise yourself and use less intrusive advertising strategies, so adblock users would reconsider using adblock on your website? *

	Definitely not	Probably not	Difficult to say, but there is probability	Probably yes	Definitely yes
No compromises	○	○	○	○	○
Stop using redirect in order not send user from website	○	○	○	○	○
Stop using popup/interstitials in order not to cover viewing content.	○	○	○	○	○
Stop using music/sound format of advertisement which distracts users	○	○	○	○	○
Stop using blinking banners which distract mobile users	○	○	○	○	○
Stop promoting easy-to subscribe offers in order to avoid accident subscriptions	○	○	○	○	○
Fight against autosubscribtion/iframe/ content-locking techniques	○	○	○	○	○

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Control of advertisment quality, to avoid installation of malware and viruses by users	○	○	○	○	○
Control of banners/prelanders which scares users that they need to install something in order to remove virus.	○	○	○	○	○
Limit the duration/frequency of advertisement.	○	○	○	○	○
Stop using technologies which track mobile behavior of users.	○	○	○	○	○
Other (please comment)	○	○	○	○	○

Комментарий

24. What actions are you ready to take in order to make users return to your website and switch off adblock. *

	Definitely not	Probably not	Difficult to say, there is probability	Probably yes	Definitely yes
None	○	○	○	○	○
Increase the relevancy and the quality of my website	○	○	○	○	○
Use more quality and trustworthy advertising products	○	○	○	○	○
Increase informative and entertainment value of advertisement	○	○	○	○	○
Provide security of the website use (don't have any kind of malware advertisement on the website) and let users know it	○	○	○	○	○

Provide user privacy and ask him if he wants his behavior to be tracked	○	○	○	○	○
Provide faster load time of the content	○	○	○	○	○
Provide user friendly experience without blinking/sounds/interstitials.	○	○	○	○	○
Allow mobile user scroll, skip or close an ad and switch off the ad sound	○	○	○	○	○
Ask user if he does not mind viewing advertising and what kind of ad he would see to make advertisement more relevant for the user.	○	○	○	○	○
Other (please comment)	○	○	○	○	○

25. Are you ready to pay external agencies for your mobile advertisement to pass through adblockers and be fully shown to all of your users (even those with enabled adblocker)? *

○ Don't agree

○ Agree

○ Agree under some conditions [ ]

26. Are you ready to pay for your ads to pass through adblock filters in case this external agency would be the owner of adblock itself, which blocked advertisment on your website and wants "ransom" from you in orser to unblock it? *

○ Don't agree

○ Agree

○ Agree under some condition [ ]

27. Are you ready to collaborate with other publishers/adnetworks in order to find the most effective strategy to fight against adblockers? *

○ Don't agree

○ Agree

○ Agree under some condition [ ]

28. Do you think it is possible to increase ad revenue from your website/adnetwork by aligning your advertisement strategy with the reality of increasing adblock usage in the nearest future? *

○ Yes

○ No

○ Yes, under some condition [   ]

29. Please measure, how do you see the future of mobile advertising under the increasing presence of adblocks? *

	Completely disagree	Probably disagree	Difficult to say, but there is probability	Probably agree	Completely agree
Continuous fight between publishers and mobile adblock users (blocking content, changing scripts etc)	○	○	○	○	○
Continuous fight of technologies (adblock vs blocking of adblocker)	○	○	○	○	○
Respect for the user, changing of advertising formats and creating better ads	○	○	○	○	○
Increase of mobile content quality so users are willing to consume it under the presence of mobile advertisement.	○	○	○	○	○
No action – mobile advertisement revenue goes	○	○	○	○	○
Collaboration with companies like Google, FB which are whitelisted in lots of ablocks	○	○	○	○	○
Ban of adblocks by legislation	○	○	○	○	○
Other (please comment)	○	○	○	○	○

[Комментарий]

[Отправить]

Appendix 2

Influence of adblocks on the industry of mobile advertising (questionnaire for advertisers)

1. Are you and advertiser or affiliate network? *

○ Advertiser

○ Affiliate network

○ Other [   ]

2. What product do you advertise? *

☐ Branded products

☐ Not branded products

☐ Mobile subscription

☐ Installs

☐ Other [   ]

3. Do you have any tools to track advertising behavior of your users? *

○ Yes

○ No

○ It is tracked by third party (adnetworks/mediabuyers)

4. Do you think that such tracking technology increases effectiveness of your advertising campaign? *

○ Yes

○ No

○ Difficult to answer

○ I don't use tracking technology in my marketing campaigns

5. What type of user targeting do you usually do to promote your product? *

☐ Generic ads

☐ Contextual ads

☐ Location based ads

☐ Interest based ads

☐ Other [   ]

6. Do you know what is Adblock? *

*Adblock is a technology, which blocks ads before they are loaded by the browser

○ Yes

○ No

7. Are you aware of the Adblock problem. Nowadays 380 million mobile users are blocking ads on their mobile devices, which is 22% of total worlds smartphone users. *

○ I am aware. It scares me

○ I am aware. I am already taking actions

○ I am aware, but I believe it does not affect me

○ I heard something, but did not expect it to have such extent

○ I was not aware.

8. Did you notice that amount of visits on a landing page of your ad offers decreased within last 2 years, especially from loyal publishers? *

○ No.

○ Yes. On less than 5%

○ Yes. On 5-10%

○ Yes. On 10-20%

○ Yes. On 20-30%

○ Yes. On 30-50%

○ Yes. On 50-70%

○ Yes. On over 70%

9. To which extent you can relate this phenomenon to increasing advertising avoidance and growing number of adblock installs, which simply don't show advertisement to your users? *

○ Don't relate at all

○ Relate in the small extent

○ Relate in significant extent

○ Completely relate

Комментарий

10. What percentage of revenue from your advertising products comes from mobile traffic? *

○ 0-20%

○ 20%-30%

○ 30-50%

○ 50-70%

○ Over 70%

11. Can you notice decrease on your earnings from your mobile advertisement products in last 2 years? If yes, what is the percentage of decrease. *

○ No

○ Yes. Slight decrease on 0-5%

○ Yes. Moderate decrease on 5-15%

○ Yes. Considerable decrease on 15-30%

○ Yes. Significant decrease on 30-50%

○ Yes. Catastrophic decrease on 50-70%

○ Yes. Total loose of revenue on over 70%

12. In case you notice decrease, can you relate it on the increasing number of adblockers on mobile web. *

○ Don't relate

○ Relate in the small extent. There is small dependency on adblock growth, but not much

○ Relate in significant extent. The is big dependency on adblock growth, but there are other reasons as well

○ Completely relate

○ I dont see decrease on my revenue from mobile advertising

[Комментарий]

13. Does it bother you the fact that third party influence on revenue from your advertisement products? Do you consider it unethical? *

○ Yes

○ Indifferent

○ No

○ Other [   ]

14. Do you take any measures to mitigate influence of adblock presence on your mobile advertising revenue? *

○ Yes

○ No

○ Not yet, but planning

15. Can you please evaluate what actions do you take/would consider taking to fight adblock influence on the revenue of your business? *

	Would not choose this method for sure	Probably would not choose	Diffucult to answer, but there is probability	Probably would choose	Would choose this method for sure
Will not do any actions	○	○	○	○	○
Will be waiting for publishers to find a way to fight against adblock	○	○	○	○	○
Will make an alliance with publishers to find a way and go around adblocker.	○	○	○	○	○
Will transfer advertisement from mobile web to in-app advertisement where presence of adblock is not so strong.	○	○	○	○	○
Will use more GoogleAdwords, FacebookAds and other whitelisted by adblock technology publishers as a placement for advertising products.	○	○	○	○	○
Will use alternative to online, advertising strategies (if possible)	○	○	○	○	○
Other (please comment)	○	○	○	○	○

Комментарий

16. Do you think it is possible to increase ad revenue from your mobile ad products by aligning yours and publisher's advertisement strategy with the reality of increasing adblock usage in the nearest future? *

○ Yes

○ No

○ Yes under some conditions [＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿]

17. Please evaluate how do you see the future of mobile advertising under the increasing presence of adblocks? *

	Completely disagree	Probably disagree	Difficult to say, but there is a probability	Probably agree	Completely agree
Continuous fight between publishers and mobile adblock users (blocking content, changing scripts etc)	○	○	○	○	○
Continuous fight of technologies (adblock vs blocking of adblocker)	○	○	○	○	○
Respect for the user, changing of advertising formats and creating better ads	○	○	○	○	○
Increase of the mobile content quality so users are willing to consume it under the presence of mobile advertisement.	○	○	○	○	○
No action – mobile advertisement revenue goes down	○	○	○	○	○
Collaboration with companies like Google, FB which are whitelisted in lots of ablocks	○	○	○	○	○
Ban of adblock by legislation	○	○	○	○	○
Other	○	○	○	○	○

[Комментарий＿＿＿＿＿＿＿＿＿＿＿]

[Отправить]