Factors Affecting Use of Mobile Advertising: A Quantitative Study

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Abstract

The heightened interest towards mobile-advertising recently observed amongst the academic and industry circles has led to the need for the formulation of a simple yet comprehensive conceptual framework to ascertain the key factors effecting the use and potency of current as well as future endeavors in the realm of mobile advertising. A number of attempts have been made by the academia as well as industry practitioners to lay out an intuitive conceptual model to analyze this exciting and innovative field of technology based marketing. The underlying paper delineates the results of an empirical study conducted to evaluate a conceptual model and strength of the hypotheses around the model. The results of the survey have proven the conceptual model in the respective areas of Consumer, Message, and Media at a statistically significant level. We believe that this proposed Conceptual Model/Framework can serve as a solid base for the evaluation of the critical success factors for a market-worthy mobile advertising strategy.

1. Introduction

Devices and systems based on mobile technologies have become a common place in our everyday lives [1], increasing the accessibility, frequency and speed of communication. As a result, mobile technologies have the potential to create new markets, change the competitive landscape of business, create new opportunities, and change existing community and market structures [2]. Today's development in information technology helps marketers to keep track of customers and provide new communication venues for reaching smaller customer segments more cost effectively and with more personalized messages.

There are a couple of reasons why many experts consider mobile advertising as an encouraging branch of mobile business [3]: high penetration rate of mobile terminals, mobile terminals as personal communication devices, individually addressable, multimedia capabilities and interactivity. However there are also some serious challenges when talking about mobile advertising, such as spam, limited user interface, privacy concerns, and the expense of mobile data communication. The mentioned features and challenges of mobile advertising show an area of divergence: personalized advertising requires sensitive information about the end user, his fields of interest, latest activities or his current location. On the other side there are privacy concerns when providing this information for a mobile advertising application.

Despite all the attention paid to advertising, only few academic researchers have evaluated critical factors determining its success. The underlying paper is the continuation of previous research work [4] by the author which investigated the factors that influence mobile advertising eco-system based on a literature survey, and then the authors proposed a set of hypothesis and a conceptual model. In order to validate that model and set of hypotheses, which were built based on the empirical insights with ex-ant literature, we conducted a survey of Industry and academia experts in the field of mobile advertising. This research study capitalizes on the respond of of 115 experts from the field of mobile advertising to explore and identify the most important factors affecting the current and future adoption of mobile advertising. The paper covers quantitative analysis of the conceptual model of the factors effecting mobile advertising. and the next logical extension of our research is to conduct a similar survey with the end-consumer audience.

2. Conceptual Model

In this section we go shortly through the conceptual model which was proposed in priviuse research work [4]. Mobile marketing adoption and acceptance is on the rise [5], but without a clear understanding of the elements affecting mobile advertising value for consumer, marketers will have little ability to constantly generate positive returns from their programs. Bauer et al., identified the influential variables affecting consumer behavior. Based on our review [4], the main factors that are affecting consumer behavior are 1) Privacy; the degree to which personal information is not known by others,
2) Purpose; the type of purpose the receiver is trying to satisfy by using a mobile device, and 3) Performance; respond and attitude towards mobile advertising.

According to Kotler [6], formulating the message is critical in mobile advertising and will require solving four problems: what to say (message content), how to say it logically (message structure), how to say it symbolically (message format), and who should say it (message source). Based on the review, the following factors are critical regarding messaging in mobile advertising; 1) Content; ‘relevant content is king’ in mobile advertising, content being informative and entertaining, 2) Credibility; consumer’s perception of the truthfulness and believability of advertising in general, 3) Customization; mapping and satisfying of customer’s goal in specific context with a business’s goal in its respective context.

Mobile handsets are seen as very powerful communication devices by advertisers, due to the personal, immediate, and interactive nature of them [7]. The mobile device may be an attention getter, but an attention getting device that is unrelated to the message will not attract consumers interested in the message or the product [8]. The device should have the following characteristics to maximize user experience in mobile advertising: 1) Interface; a good and suitable user interface maximizes user experience, 2) Interactivity; enable interactive solution for communication between mobile marketer and consumer, 3) Intelligent; include latest telecommunications platforms and also location based technologies.

For maximizing mobile advertising effect, business models that can capture the synergy of two existing industries, advertising and telecommunications, must be conceived. In any future sustainable business model, all players will have to reach a consensus on the structure of the system and on the importance of each player in that system [9].

The factors affecting the mobile advertising media are: 1) Price; instant and recognizable benefits such as discounts or special offers convince people to consider mobile advertisements, 2) Process; relationship and cross media working in mobile advertising value chain, 3) Policies; legislation and regulation which place sets of rules for the collection and procession of location-based data. To summarize, the above mentioned information lead to the development of a set of hypothesis and also a hypothetical model of factors effecting the use of mobile advertising for consumer, Figure 1. In this paper, we define “the use of mobile advertising” as the inclination/propensity of advertisers to use the mobile communication medium for getting their advertising messages across to the mass consumer market. We also define the “acceptance of mobile advertising” as how proactively advertisers adopt it for broadcasting their advertised content as well as the the extent to which consumers respond favorably to this medium for receiving advertisements.

![Figure 1: A hypothetical model of factors affecting mobile advertising](image)

3. Research Methodology

In the following section the quantitative investigation is described. The main objective of this article is to explore mobile advertising’s challenges and future directions by evaluating a conceptual model and factors that influences mobile advertising. Based on existing literature, we propose a set of hypotheses that lay the foundation for our conceptual model of factors affecting mobile advertising. In this study, the model is tested by evaluating the hypotheses against a five point Likert scale (1 strongly agree to 5 strongly disagree).

At first a survey invitation was sent to around 50 selected, well-known individual who had practical or academic contribution in the field, and they were requested to recommend some more industry/academia peers for the mobile advertising community. Overall, 245 participants belonging to different segments of the mobile marketing/ advertising industry and academia were contacted for the survey, leading to 115 completes across 19 different countries in North America, Europe and Asia. Some other pertinent demographic details are shared in Table 1, for reference.

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<th>Table 1: Demographic detail of the survey study</th>
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4. Study Results

A macro-level analysis of the basic statistical metrics of the survey data (Table 2) reveals that our panel of mobile advertising experts agrees with the twelve important factors proposed in our previous paper and the only factor which demands a closer look and some debate is Device Intelligence. A review of the mean rating values for the different factors in the conceptual model reveals that mobile advertising experts have ranked the different factors in the following order: Consumer Purpose, Consumer Performance, Device Interface, Message Content, Media Price, Message Customization, Media Policy, Consumer Privacy, Device Interactivity, Message Credibility, Media Process and Device Intelligence. A closer look at the top-5 rated ‘sub-factors’ reveals that all the four core tenants/factors of our model are seen as critical to the success of mobile advertising. The range of mean rating values is not very wide [3.38-4.17] and most of the ratings fall fairly close to each other, with Device Intelligence being the only outlier.

However, certain factors like Consumer Privacy, which was expected to feature in the top-5 of the ratings was placed at 8 by the survey participants which we believe suggests that if mobile advertisers figure out and solve the other factors involved effectively, the consumers’ fear of privacy invasion can be overcome. Like advertising on other media, if advertisers are fulfilling the consumer’s purpose by gratifying their needs for information, knowledge and social acceptance through mobile advertising they are more likely to react to it enthusiastically.

The second rated factor ‘Consumer Preference’ implies that overcoming the issue of advertising being seen as distracting, confusing, overwhelming, irritating or intrusive is going to be of pivotal importance for advertising to pick up on the mobile handset medium. Context sensitivity and relevance to the user’s need are going to propel the viral adoption of mobile advertising. The third rated factor, Device Interface directly translates into the ease of use and quality of user experience which consumers get from mobile advertising and an engaging and efficient user interfaces are bound to improve the degree and rate of adoption of mobile advertising.

<table>
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<th>Table 2: Summary of statistical analyze</th>
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<td>Metrics on Grouped Data</td>
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<td><strong>MESSAGE</strong></td>
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Interaction with the mobile device interface is more time-consuming and entails more effort and concentration than reading from a desktop computer [10] due to space limitations and constrained user interfaces. Hence content of the message needs to be
crisp and relevant to engage the consumer in a meaningful interaction.

The pervasive presence of advertising-backed free services and products on the Internet have given birth to an expectation in the consumer’s mind that they can gain other incentives in return for their attention on the media. Today’s every-busy and time conscious consumers believe that advertisers need to make it ‘worth their while’ for them to agree to accept advertising. Some initial experiments in this regard by some European mobile operators have led to win-win experiences on parts of mobile advertisers as well as the consumers.

In the plot below, we have plotted the average scores for the factor on the X-axis and the Standard Deviation on the Y axis. This plot can be seen as a simple representation of what factors are more important than others and to what degree the respondents agreed with each other in their responses. It is evident from this graph that the strongest consensus was found on the ‘Message Content’ factor of our model which had the lowest Standard Deviation and a 4+ average rating.

![Plot of average scores for the factor on the X-axis and the Standard Deviation on the Y axis.](image)

### 4.1. Consumer

An overwhelming majority of our panel of mobile advertising experts believe that respecting the consumer’s privacy is pivotal for mobile advertising to be acknowledged positively by the consumer audience. Only customers who choose to ‘Opt-in’ to targeted mobile advertising would find it most useful and hence increase its likelihood of success. With the consumer’s current skepticism towards mass advertising, advertisers would need to regain their confidence gradually by making targeted, self-selected and relevant advertising pitches to the technology early-adopters. Once they have experienced and benefited from mobile advertising, they can facilitate further proliferation through viral marketing.

The Mobile Marketing Association’s(MMA) rule have been termed as a good starting point for advertisers and mobile operators to chalk out the terms and conditions of usage and privacy rules for mobile marketing. It is imperative for consumers to have control over the messages that they are receiving. The worst thing that could happen to mobile advertising is that it turns into spam. When every message costs money, consumers will quickly lose faith in marketer's ability to be responsible and the backlash will result in negative implications for all marketers.

Ascertaining the consumers’ purpose and need so that mobile advertising can be targeted according to their purpose/need is extremely important for the advertisers but it presents us with a dilemma where getting a thorough understanding of the consumers’ behavior might require us to conduct surveys or behavioral analyses which could irritate the average consumer and ‘behind the scene’ analytics of their search trends, location preferences etc. could potentially be seen as an intrusion into their privacy. Hence advertisers need to take a balanced approach in this regard where they do not irritate their customers by following their behavior too closely and educate them effectively about the benefits they can receive by allowing the mobile operators/ mobile advertisers to follow their usage behavior and patterns.

One of incentivizing consumers’ is to give them of opting-in on discounts on their monthly phone bills for allowing advertisers to utilize information from their profiles on social networking sites to serve them relevant and useful advertisements. Another representative scenario could be where large retailers get involved in mobile advertising, sending special Discount Coupons on mobile devices of their loyal customers who opt-in to such special services. These retailers already have plenty of spending data on the consumer and if mobile advertisers team up with such retailers, it could create win-win scenarios for all the participants in the mobile advertising experience (advertiser, retailer and consumer).

As the consumers’ needs change over time and also depend on context/location, advertisers cannot rely heavily on past data and have to continuously update
their understanding of the end user’s situation. One of the possible solutions to this could be an On-Device Portal Profile system that the consumer can opt into to receive the information and promotions that they find relevant and useful. Furthermore, understanding what needs end-users have in terms of impulse buying, special needs when they are traveling etc. could also improve the mobile advertising value proposition. In a nutshell, generating ‘opt-in’ user interest profiles based on data mining techniques which give specific advertising based on location and time can help advertisers fulfill the consumers’ needs.

4.2. Message

The key takeaway from the customization perspective was to give the consumer full control and flexibility in terms of what advertising content get through to them on their devices and what needs and usage behavior they exhibit. A combination of consumer contributed information and contextual targeting from mobile usage data as well as the frequency of ad placement are important factors to be taken into account. Factors like the consumers’ Location, financial capability, device type, address book, calling patterns etc are inherently private features that need to be managed carefully when data-mining for customizing the advertisements. Consumers should be allowed to ‘pre-select’ the types and categories of ads that they would be interested in.

Presenting content and advertising within the context of a consumer's online interactions can ensure that this is relevant to their needs. Allowing people the flexibility to use the internet (on the mobile device or on their PCs) to opt-in to mobile campaigns and truly providing some value to the consumer will result in impactful advertisements. Nevertheless, such customized, targeted and relevant mobile advertising will require cross-domain collaboration among various domain experts like lawyers, marketers, advertisers, usability experts, technologists, sociologists and anthropologists.

Relevance is complex function of ascertaining the end-users location, context and user consumption patterns in a timely manner. e.g. Sending a shoe advertisement to a person who a month ago for 3 days was in-and-out of shoe stores will most likely not be effective because he would have already bought his shoes. Customized messages would need to be as well-represented as possible and should fully exploit current mobile media technology like images, video, sound and maps etc.

Viral marketing is the most effective way for the advertisers to proliferate mobile advertising. A user base that promotes and evangelizes your services can drive adoption and success much more effectively than any amount of cross-media advertising. The ‘Net Promoter Score’ is a marketing metric that has gained traction in the marketing industry for its simplicity and relevance to the success of a product in the market place. Satisfied and trusting customers of a service like mobile advertising can definitely help other customers gain trust and confidence in the relevance and usefulness of these services. Information needs to be presented on the consumer's terms and not on the advertiser's as trust is gained over time and not overnight. Incentives can definitely spur trial but adoption will depend strongly on message credibility.

Challenges faced by mobile advertisers are fairly similar to the ones experienced by advertisers on other media. Advertisements need to be legal, decent, honest and truthful to gain traction in the market and fulfillment of advertised promises is absolutely essential for this medium to gain the consumer's trust. ‘Foot in the door’ approach where you ask for consumer’s permission to share advertisements first and then deliver advertisements is expected to be the most viable approach. There is a possibility that people will start associating the advertisements with the brand of the phone or phone carrier or start off with. To avoid such confusion, getting market leading brands like Nike, Sony, McDonalds etc to use your medium could be very effective. Trust and Brand are seen as synonymous by some experts who believe that mobile advertising would be taken as seriously by the consumer audiences as the brands involved.

4.3. Device

There was strong consensus among our panel of experts around the importance of the Device User Interface for the success of mobile advertising and simplicity, high quality/high resolution display was thought to be very important in this regard. Some experts highlighted the need of understanding the behavior and preferences of users living in different countries as well. To expect a large portion of end users across the world to have advanced interface features on their mobile device is not realistic. Unlike in Japan where the average mobile consumer changes phones at least twice per year, opting for more technologically advanced phones each time.

In the US, consumers do not change their phones very frequently. So in order to develop suitable marketing, general ads should be developed to play on
all phones by adopting the strategy of working to the
lowest common denominator, which will help get
penetration into as broad a target market as possible.
On the flip side, if one was to focus only on users with
advanced phones, then this niche is a community that
could also be well-served as they are expected to be
early adopter and tech-savvy users. In our opinion, the
mobile advertisers should focus on breadth rather than
‘depth’ when trying to spur adoption of mobile
advertising in the market place. Again we believe
simplicity is key for quick adoption by users and
complicated and time-consuming, graphics heavy
features can be added on later, when user has seen the
value of mobile advertising and is fully engaged.

Interactivity will assist advertisers in their ‘call to
action’ and it will be a necessary part of a successful
mobile advertising promotion. Most experts see device
interactivity and intelligence technologies as playing
the ‘complimentary’ enablers role rather than forming
the core of the mobile advertising experience to begin
with. Speech input, predictable text input, offline
content review and consolidation of messages/advertising offers are some of the areas in
which further technological advancement can help
simplify the mobile advertising value proposition for
the end-users. Similarly the development of a bar-code
like mobile coupons which work seamlessly at retail
stores and are widely compatible on all mobile devices
is also an aspect of mobile device software intelligence
which proves useful for mobile advertisers.

However, pure technology will never provide a
better and comprehensively pleasant user experience.
Advertisers will have to focus more on the user
experience rather than getting carried away with usage
of the latest technology. We believe that a well
executed and valuable text messaging campaign will
win over a more complex and technological solution if
the user experience is complex or non-intuitive.
Having said that, larger screen-size on mobile devices,
Voice-response capabilities to advertising messages
and fast carrier networks (3G or 4G) and better WAP
interfaces etc. will definitely improve mobile
advertising’s appeal to the consumers’ imagination
once this advertising medium has gain some traction.

4.4. Media

Standards and regulatory measures are going to
play an important role in facilitating the adoption of
mobile advertising. It is very important to get industry
to work together to get market acceptance by
overcoming the key consumer concerns around privacy
and security. We believe that currently mobile phone
users trust their mobile operators more than any third-
party content providers and the mobile operators will
have to guarantee a spam-free environment (as well as
the ability to report spam easily if there is any) to give
consumers’ the confidence to experiment with mobile
advertising. On a regulatory level the regulatory
organizations like the EU and governments are also
building core frameworks around mobile advertising
these days with concerns around spam, managing and
abstracting subscriber information, strict privacy
protection and age controls being the core focus areas.
Some envision mobile advertising to propagate better if
the mobile operators orient their networks on Open and
non-proprietary lines, like the Internet (as opposed to
the current closed cell phone network models adopted
by some of the American and European operators).

Keeping tight and practical limits on the usage of
Location Based Services is also important. Recent
research in 2006, in which a research firm surveyed
2000 European mobile users to get their perspective on
mobile advertising, the overall response showed a great
resistance to the idea of LBS-linked advertising
because consumers are still fearful of exposing real-
time information about the location on a round the
clock basis. No one wants a device in their pocket that
tells advertisers where they are at all times. Regulation
and tight consumer control around such LBS data
might help build the consumers confidence to a certain
extent but advertisers will need to act responsibly in
this regard.

Telecommunications and marketing regulators
need to come up with fool-proof policies to ensure that
consumers are protected from unscrupulous marketers
and advertisers. Consumer privacy and absolute control
of their information and ability to be reached by
marketers must be protected at all cost. The basic
concerns of the consumers are quite simple .e.g. who
will get my data, how can I eliminate spam, etc. As
long as consumers know that policies are in place, and
working, they will feel safe and will open up to
advertisements.

5. Conclusion

Mobile marketing adoption and acceptance is on
the rise [5], but without a clear understanding of the
elements effecting mobile advertising, marketers will
have little ability to constantly generate positive returns
from their programs. Previous studies [11] identified
the influential variables affecting consumer behavior.
Based on author’s review the main factors which are
affecting consumer behavior are 1) Privacy; the degree
to which personal information is not known by others, 2) Purpose; what type of purpose the receiver is trying to satisfy by using a mobile device, and 3) Performance; respond and attitude towards mobile advertising. According to Kotler [6], formulating the message is critical in mobile advertising and will require solving four problems: what to say (message content), how to say it logically (message structure), how to say it symbolically (message format), and who should say it (message source). Based on the review, the following factors are critical regarding messaging in mobile advertising; 1) Content; ‘relevant content is king’ in mobile advertising, content being informative and entertaining, 2) Credibility; consumer’s perception of the truthfulness and believability of advertising in general, 3) Customization; mapping and satisfying of customer’s goal in specific context with a business’s goal in its respective context.

Mobile handsets are seen as very powerful communication devices by advertisers, due to the personal, immediate, and interactive nature of them [12]. The mobile device may be an attention getter, but an attention getting device that is unrelated to the message will not attract consumers interested in the message or the product [13]. The device should have the following characteristics to maximize user experience in mobile advertising: 1) Interface; a good and suitable user interface maximizes user experience, 2) Interactivity; enable interactive solution for communication between mobile marketer and consumer, 3) Intelligent; include latest telecommunications platforms and also location based technologies. For mobile advertising to succeed, business models that can capture the synergy of two existing industries, advertising and telecommunications, must be conceived. In any future sustainable business model, all players will have to reach a consensus on the structure of the system and on the importance of each player in that system [9]. The factors affecting the mobile advertising media are: 1) Players; key players and their roles, 2) Process; relationship and cross media working in mobile advertising value chain, 3) Policies; legislation and regulation which place sets of rules for the collection and procession of location-based data.

This paper delineates the results of an empirical study conducted to evaluate the strength of set of hypotheses around selected conceptual model. A five point Likert-Scale survey of a convenience sample of 115 Mobile marketing experts was conducted to help evaluate the hypotheses and statistical hypothesis testing techniques have been employed at 95% confidence level to evaluate the results. The paper also documents some valuable suggestions received from the mobile marketing expert community.

The results of the survey have proven the conceptual model in the respective areas of Consumer (Privacy, Purpose & Performance), Message (Content, Credibility and Customization) and Media (Price, Process & Policy) at a statistically significant level. We believe that this proposed Conceptual Model/Framework can serve as a solid base for the evaluation of the critical success factors for a market-worthy mobile advertising strategy.

The main objective of this article was to explore mobile advertising’s challenges and future directions by evaluating factors that seem to influence mobile advertising. The theoretical contribution of this article lies in outlining the key factors of mobile advertising. Author hopes that this article opens new dialogues on multiple unexamined issues concerning mobile advertising industry. The paper has addressed an important and topical subject, as there has not been sufficient empirical evidence to date to substantiate any of the theoretical models that have been proposed regarding the factors that influence the success of mobile advertising. This paper its conclusions will be a valuable contribution to the debates in academia

A potential extension of our research is to field this same set of survey questions, (which was fielded to mobile advertising experts for the sake of this paper) to be fielded to mobile phone consumers across different demographics in different countries to assess how the consumers’ perceptions stack-rank against the experts opinions. The authors hopes that this article opens new dialogues on multiple unexamined issues concerning mobile advertising industry.

6. References


