

# CONSUMER PRIVACY BEING RAIDED AND INVADED

## *The Negative Side of Mobile Advertising*

Monika Mital

*Jaipuria Institute of Management, Lucknow, India*

**Keywords:** Mobile Human Computer Interaction, Mobile Advertising, Message Characteristics, Device Characteristics, Situation Characteristics.

**Abstract:** There have been growing concerns regarding mobile advertising being extremely intrusive into the personal space of the consumers. The study tries to broadly concretize the reasons as to why mobile ads are found to be intrusive. The analysis reported that three factors namely: situation characteristics, message characteristics and device/network characteristics, played an important role in defining the extent of intrusiveness of mobile advertising and the ad irritation arising out of it.

## 1 INTRODUCTION

In the recent years there has been an exponential growth in the usage of mobile devices. The adoption of mobile devices has been 3.3 billion by the end of 2007 and a penetration rate of 49% which is much higher than the penetration rate of any other technological innovation (Gartner, 2007). In India the annual average growth rate of mobile usage is at 22 percent, with 154 million new subscribers annually. In comparison to the internet there is a significant growth in mobile usage worldwide. The mobile advertising market is expected to rise to \$ 16.2 billion by 2011, which is up from \$2.7 billion in 2008. With these kinds of figures it is expected that mobile advertising is going to be a very effective form of marketing communications in the coming years. In Comparison with traditional advertising, the main advantages of mobile advertising are: personal touch, tailor-made to suit individuals, and hence can be considered cost effective. Mobile advertising can reach the target customers anywhere anytime, with accessibility, frequency and speed of communication being some of the advantages afforded by the medium. The most popular mobile application, referred to as text messaging or Short Message Service (SMS). Studies reveal that mobile advertising campaigns can generate responses that are as high as 40%, compared with a 3% response rate through direct mail and 1% with internet banner ads (Jelassi and Enders, 2004).

Cellular services are individual utilitarian services and the purpose is mainly to fulfill certain communication and information needs of the users (Ng, Russell-Bennett and Dagger, 2007). In Individual services, the consumer can determine start and leave times, duration and timing of use. When the telecommunication device like a cell phone is used for advertising (Mobile advertising) there is no control of the individual on the consumption. As a result, since mobile phone is a very private device, there are perceptions of intrusiveness when the customer has no control over the consumption of the mobile advertising service (Haghirian & Madlberger 2005; Jelassi & Enders 2004). Growing concerns about the protection of the users' privacy have been raised since mobile advertising may become extremely intrusive in an intimate personal space (Cleff 2007, Zwass 1996).

## 2 LITERATURE REVIEW

Mobile consumers are very sensitive toward receiving messages from unknown persons or organizations and are uncomfortable with mobile advertising (Siau & Shen, 2003). Invasion of privacy and general security concerns relating to the mobile medium have been identified as one of the main obstacles to the success of mobile advertising (Gohring, 2002). Mobile users are concerned about unauthorized data access, data manipulation, and unwanted tracking of usage patterns. Godin (2001)

described that a majority of anonymous mass advertising is despised by consumers leading them to reject the messages.

Li et al (2002) discusses how negative reactions like irritation arise through intrusion advertising. Consumer perceptions of intrusiveness or acceptance of a channel influences the consumer's responsiveness to marketing communication (Abernethy 1991). If the consumer considers marketing communication via a channel as disturbing it may negatively affect the attention to and perception of the message. Perceived clutter, hindered search, and disruption were related to less favorable attitudes and greater ad avoidance (Elliot and Speck 1998). Edwards et al. (2002) found ad intrusiveness to be a good predictor of ad irritation and ad avoidance which can both significantly hamper the effectiveness of an ad. Ad avoidance could also mean putting the sender of an intrusive and/or irritating mobile ad on a mobile spam list so that future ads will be blocked or instantly deleted.

**Situation Characteristics. Lack of Relevancy.** But it has been found time and again that relevant mobile ads are perceived as less intrusive than irrelevant mobile ads. Consumer attitude towards any technology intervention is guided by their perceptions of utility. Lack of relevancy and contextualization has been found to be the key reasons for perceptions of intrusiveness. Lack of features such as location based services, self deletion of ads, and access to more information can reduce the perceived intrusiveness of the mobile as a medium of advertising (Junglas 2007). The key is to use interactive wireless media to provide customers with time- and location- sensitive, personalized information that promotes goods, services and ideas, thereby generating value for all stakeholders (Dickinger, Haghirian, Murphy, & Scharl 2004). The mobile advertising relevance can be influenced by the contextualization of advertising messages (Kenny & Marshall 2000). Barwise & Strong take up the flexibility, and time-based nature but also the fact that the small screens restrict the length of the message (Barwise & Strong 2002). Barnes stresses the interactive nature of mobile advertising and the ability to use contextual information to target the messages to individual receivers, in other words to personalize the message (Barnes 2002). Location-aware advertising messages are creating five to ten times higher click-through rates compared to traditional internet advertising messages (Ververidis & Polyzos 2002). These results underline the importance of precisely embodying mobile marketing messages and campaigns according to

consumer entertainment and information requirements.

Consumers differ in their tolerance for unsolicited commercial communication: consumers rather tolerate communications pertaining to products and services in which they are interested as opposed to products and services in which they have little interest (Petty Ross, 2003).

**Message Characteristics-lack of Proper Content.**

An individual's mobile media purpose is his acknowledgment of the processing goal he is pursuing when attending to his mobile device, which in this case is the medium for mobile advertising. For example, if the customer's main intention is gathering information, the customer will be more interested in advertisements that provide him relevant information on products, services or companies.

On the other hand, if the customer's intention is garnered more toward entertainment, he will enjoy advertisements that are entertaining and provide experiential satisfaction through aesthetic pleasure, emotional stimulation, or social experience (Barwise & Strong, 2002). A consumer may wish to satisfy different kinds of purposes at the same time, and the relative importance of the types may change according to the situation that he is in. Katz et al. (1973) identify the following three categories of needs as being the most important: 1) information; 2) Entertainment; and 3) Communication.

The higher the entertainment/information factor of mobile advertising messages, the higher the perceived advertising value to the consumer (Haghirian et al., 2005). Perceptions of usefulness can have a lasting impact on the acceptance of mobile advertising. The perceived entertainment, informativeness, irritation, and credibility of mobile ads affect the attitude toward mobile advertising (Tsang, Ho, and Liang 2004, Lee and Jun 2005). Consumer have been found to differ in their tolerance of unsolicited commercial communication depending upon their interest in the product or service (Petty Ross 2003). According to Edwards et al. (2002), ads which are more entertaining or informative are perceived as less intrusive.

**Device/Network Characteristics-Privacy Violation.**

Most of the users would be bothered about marketers or other people knowing what they are interested in (Kaasinen,2003). One of the main challenges and opportunities for mobile advertising companies is to understand and respect the personal nature of the usage of mobile phones (Palmer & O'Neill, 2003; Barnes & Scornavacca 2004; Heinonen & Strandvik 2007; Barwise & Strong

2002). The well meaning contextualized and personalized advertisements may in reality be encroachments to the privacy of individuals. And also, it was found that when an offered technology intervention would not meet customer expectations (properly contextualized), it would not create strong positive sentiments among the users (Akçura and Altinkemer 2002).

If the messages are sent to the mobile user at the right time and location and are relevant to the needs of the user, the message intrusiveness can be reduced (Gratton 2002). Although message characteristics and relevancy of the ad has been found to be closely related to reduced perceptions of ad intrusiveness (Wehmeyer 2007), but at the same time using user profile and location data without permission can also lead to privacy invasion (Cranor 1999). Personalization mechanisms gather information about user's interest, navigation paths, purchases, tracking previous behavior and also asking users to fill in questionnaires and forms (Georgiadis, mavridis and manitsaris 2005, Kaasinen 2003). Barkhuus and Dey (2003) investigated user's perceptions about usefulness and concern with location tracking services and found that these generated concerns for privacy.

There are pervasive service providers who would deploy a variety of sensors in the user environments to detect or track various contexts like location of people, temperature and activities of people or groups of people with the purpose of sending information or advertisements. There are a variety of ways of sending information to an individual like instant messaging, email, voice-mail, cell-phone, speech, displays (either personal monitors or wall displays), network TV, electronic billboards, etc (Ranganathan & Campbell 2002). Sometimes, just participating in the networked world would hamper the privacy of user, without any deliberate attempts at information disclosure. For example while searching through the internet, sending an SMS to a friend, downloading ring tones or music etc. the users are letting out personal information like personal preferences and use patterns (Palen and Dourish 2003).

Mobile spam, personal identification, location information and wireless security are some of the issues related to privacy. Mobile spam has been found to be great cause for concern with mobile users as they are unsolicited, sent in bulk, repetitive and motivated by financial gain for the sender at the cost of the receiver (Camponovo and Cerrutti 2004). Negative thoughts about tactic inappropriateness

were seen to arise with repetition (Campbell and Keller 2003).

### 3 RESEARCH OBJECTIVES

The primary objective of this research study is to gain an insight into the perception of mobile users towards mobile advertising. The study attempts to explore intrusiveness of mobile advertising. The total variance accounted for by each of the six components explains nearly 71% of the variability in the original 13 variables. So we can reduce the original data set by using these three components with only 29% loss of information.

Looking at the Table 1, the rotated factor matrix, and the study shows three factors (which represent the three perceptual dimensions about mobile advertising) derived from 13 variables (which represent the perception of mobile users towards mobile advertising). The components of each factor are shown highlighted in Table 1.

The factor analysis identified 12 items in three groups, as Factor 1, Factor 2 and Factor 3, and the Cronbach reliability alpha coefficient for the 12-item scale was 0.703. We then investigated further optimization of the instrument by examining the reliability coefficient of each factor independently. We then found that the 3-item Factor 1 had a reliability coefficient of 0.788, 4-item Factor 2 had a reliability coefficient of 0.811, 5-item Factor 3 had a reliability coefficient of 0.834. Kaiser-Meyer-Olkin Measure of Sampling Adequacy statistic of .820 seems to indicate that factor analysis will be useful for the current study.

Looking at **Table 3** we find that the variables; mobile ads being less informative, not suiting personal needs, inappropriate timing, and clutter are loaded to **factor 1** and since all the factors are related to situational lack of relevancy, this factor can be labeled '**Situation Characteristics**'.

**Factor 2** has components; brand related information, sales/promotion related information, and product/services related information. Since all this components are related to content of mobile advertising, this factor can be labeled '**Message Characteristics**' of mobile ads.

**Factor 3** has components related to disturbance caused due to mobile advertising and privacy violation because of the nature of the mobile device and the information capturing network mechanisms; this factor can be labeled '**Device/Network Characteristics**' due mobile ads.

Table 1: Rotated Component Matrix .

Style of Advertising	Component		
	1	2	3
I find mobile ads less informative	.622	-.127	.133
Most of the times the mobile ads do not suite my needs	.808	-.128	.039
Most of the times the mobile ads are relayed at the wrong time	.764	-.050	.171
I am facing the problem of clutter as a result of too many ads	.608	.021	.284
I feel that mobile ads cause disturbance in work	.537	-.094	.463
As soon as I get an ad I junk it without going through it	.295	-.158	.650
I find it time consuming to go through ads	.344	-.101	.695
I find brand related information useful	-.244	.656	-.141
I find information about sale/special promotions very useful	-.113	.694	-.066
I find information about products /services very useful	-.096	.779	-.045
I find ads on the mobile repetitive in nature	-.003	.082	.615
I expect communication on my mobile through very important contacts only so I do not like encroachment on my privacy through ads	.030	.033	.773

An ANOVA analysis was conducted to find out the impact of mobile advertising on the perceptions of intrusiveness. An  $R^2$  value of .434 indicates a strong significant impact of the mobile advertising on the perceptions of intrusiveness. It was found that the impact of situation, message and device/network characteristics had a significant impact on the perceptions of intrusiveness (Table 2).

A One-way ANOVA was conducted to find out whether perceptions about mobile advertising varied with age. It was found that there was a significant impact of age on the perceptions of privacy violation ( $p$  value<.05) but respondents of all age groups had the similar perceptions about lack of relevancy and lack of proper content ( $p$  value>.05).

Table 2: ANOVA: Analysis to find out the impact of mobile advertising on perceptions of intrusiveness.

	B	S.E	Beta	Sig.
(Constant)	3.639	.048		.000
<b>Situation Characteristics</b>	.481	.048	.377	.000
<b>Message Characteristics</b>	.227	.048	.178	.000
<b>Device/Network Characteristics</b>	.475	.048	.373	.000

Also a one-way ANOVA was conducted to find out the impact of busy work schedule on perceptions about mobile advertising. The results indicated a significant impact of busy work schedule on the perceptions of lack of proper content. It was found that the respondents who had busy work schedules gave more importance to information richness of ads.

#### 4 DISCUSSION

The results of the study show that there are perceptions of intrusiveness amongst the users. These perceptions arise as a result of three factors: lack of relevancy, lack of proper content and privacy violation. The perceptions of lack of relevancy of mobile ads arise as a result of lack of proper timing of relay of the ads, lack of localization and contextualization of ads. This corroborates with the findings of Junglas (2007), according to whom features such as location based services, self deletion of ads and contextualization can reduce the perceived intrusiveness of the mobile as a medium of advertising. Also, since it was found that there was a moderately significant impact of lack of relevancy on the perceptions of intrusiveness, and Almost 90% of the users felt that mobile advertising was an encroachment into their personal private space we can say that the users felt that their privacy was being invaded. The results of the study indicate that lack of relevancy of ads was found to be a predictor of irritation ( $p$  value<.05) and ad avoidance ( $p$  value<.05) (As soon as I get an ad I junk it without going through it). Ad avoidance could result in putting the sender on the spam list so that all future ads were blocked or instantly deleted (Edwards et al 2002).

The respondents feel that Lack of proper message content leads to feelings of irritation and create perceptions of intrusiveness in the minds of the

users. Previous studies have reported that the utility of advertising messages can lead to a reduced perception of intrusiveness. Advertising messages that give useful information to the users are more acceptable than messages without any utility value. A one way ANOVA conducted to find out the purpose of using mobiles (using mobile as a medium of communication/information/entertainment) and their impact on perceptions of users about mobile ads showed that when the users use mobile as a medium of information access, they found message characteristics as an important factor in determining their attitude towards mobile ads. When the mobile was used as a medium of communication/entertainment, then situation, message, and device/network characteristics played an important role in determining attitude of the users ( $p$  value  $< .05$ ).

It was found that in spite of perceived usefulness of mobile messages, perceptions of intrusiveness resulted from device/network characteristics. The personal nature of the mobile device gave rise to feelings of privacy violation. If the mobile service providers used pervasive sensors to detect location and used user profile data to create personalized messages, even then the users felt an encroachment into their personal space. Users felt that mobile ads caused disturbance during work and as a result most of the times they junk ads without going through them. This seems to corroborate with the findings of Elliot and Speck (1998), according to whom clutter, repetition of ads and disruption caused by ads led to feelings of ad intrusiveness and resulted in ad avoidance.

## 5 CONCLUSIONS

Previous studies have looked at mobile advertising as an effective mode of marketing communications. The studies have discussed the role of contextualization, personalization, and customization in reducing intrusiveness of mobile advertising and also to create a positive attitude amongst the users towards mobile ads. However, little research has emphasized on the darker side of this intrusion of the users privacy through mobile advertising. This study has endeavored to initiate a discussion in this direction. Specific implications of this study for practitioners would be:

- Although mobile advertising effectiveness can be improved through understanding the needs of the users and customization of ads, still, it invades

the privacy of the individuals through push advertising.

- Many factors, like demographic characteristics and psychological characteristics affect an individual's attitude towards a technology intervention. The results of this study indicate that there are significant differences in the perceptions of intrusiveness based on demographic characteristics like age, busy work schedules, purpose of using mobiles.
- If the mobile service providers used pervasive sensors to detect location and used user profile data to create personalized messages, even then the users felt an encroachment into their personal space. Advertising should be user driven rather than service provider driven. If certain mechanisms like search ad agents are developed, the users would access advertising based on their needs. Once the user makes a query to the ad engine then the information about his location should be detected at request.
- Gathering information for contextualization and customization of messages raises privacy concerns and the regulatory and corporate policies should address such concerns, so that users of mobile services do not feel that their privacy is being raided and invaded.

The study has also attempted to identify some areas for future research, despite its limited scope in reference to the participant pool, the sample size and location convenience.

## REFERENCES

- "Gartner Says Worldwide Relational Database Market Increased 14 Percent in 2006," 18 June 2007, Press Releases.
- Abernethy, A.M. (1991) "Physical and mechanical avoidance of television commercials: an exploratory study of zipping, zapping and leaving," in Holman, R. (Ed.): Proceedings of the American Academy of Advertising, American Academy of Advertising, New York, pp.223-231.
- Akçura M.T., Altinkemer K. (2002), "Diffusion Models for B2B, B2C, and P2P Exchanges and E-Speak," *Journal of Organizational Computing and Electronic Commerce*, Vol. 12, No. 3, pp.243-261.
- Barkhuus, L. and Dey, A., "Location-Based Services for Mobile Telephony: a study of users' privacy concerns," *Proc. of Interact '03, Zurich, 2003*, pp.709-712.
- Barnes, S.J. & Scornavacca, E. (2004), "Mobile marketing: the role of permission and acceptance."

- International Journal of Mobile Communications, 2(2), pp. 128–139.
- Barnes, S.J. 2002b. "Wireless digital advertising: nature and implications." *International Journal of Advertising*, Vol. 21, 399-419
- Barwise P. & Strong, P. (2002), "Permission-based mobile advertising," *Journal of Interactive Marketing*, Vol. 16, No. 1, 14-24.
- C. Georgiadis, I. Mavridis, and A. Manitsaris(2005), Context-Based Humanized and Authorized Personalization in Mobile Commerce Applications, *International Journal of Computing & Information Sciences*, vol. 3(2), August 2005, pp. 1-9.
- Campbell, M.C. and Keller, K.L (2003), "Brand Familiarity and Advertising Repetition Effects," *JOURNAL OF CONSUMER RESEARCH*, Vol. 30, No. 2, pp. 292-304
- Cleff, E.B. (2007), "Privacy Issues in Mobile Advertising," *International Review of Law, Computers & Technology*, Vol. 21, No. 3, pp. 225 – 236.
- Cranor L. F. (1999), "Internet privacy," *Communication of ACM*, vol. 42, no. 2, pp. 29-31.
- Dickinger, A., Haghirian, P., Murphy, J. & Scharl, A. (2004), "An investigation and conceptual model of SMS marketing," *Proceedings of the 37th Hawaii International Conference on System Sciences*, Big Island, Hawaii, January.
- Edwards, S.M., Li, H., Lee, J.H. (2002), "Forced Exposure and Psychological Reactance: Antecedents and Consequences of the Perceived Intrusiveness of Pop-Up Ads," *Journal of Advertising*, Vol. 31, No. 3, pp. 83-95.
- Elliot, M.T., and Speck, P.S(1998), Consumer perception of advertising clutter and its impact across various media, *Journal of Advertising Research*, 38, 1, pp. 29–41.
- G. Camponovo and D. Cerutti, "The Spam Issue in Mobile Business: a Comparative Regulatory Overview", presented at the Third International Conference on Mobile Business, New York, 2004.
- Godin, S. (2001) 'Permission Marketing: Turning strangers into friends, and friends into customers', Simon and Schuster Publishing Company, New York, NY.
- Gohring, N.(2002), "And now a word from our sponsors....," *America's Network*, Vol. 106, No. 3, pp. 17.
- Gratton, E. (2002), "M-Commerce: The Notion of Consumer Consent in Receiving Location Based Advertising. *Canadian Journal of Law and Technology*, Vol. 1, No. 3, pp. 59-77.
- Haghirian, P., Madlberger, M., and Tanuskova, A. (2005), Increasing Advertising Value of Mobile Marketing: An Empirical Study of Antecedents, *Proceedings of the 38th Hawaii International Conference on System Sciences*.
- Heinonen, K. & Strandvik, T. (2007): Consumer responsiveness to mobile marketing, *International Journal of Mobile Communications*, 5 (6), pp.603-617.
- Jelassi, T. & Enders, A. (2004) "Leveraging wireless technology for mobile advertising," *Proceedings of the 12th European Conference on Information Systems*, Turku, Finland, 14–16 June .
- Junglas, I. 2007. On the usefulness and ease of use of location-based services: insights into the information system innovator's dilemma. *Int. J. Mob. Commun.* 5, 4 (Mar. 2007), 389-408
- Kaasinen E. (2003). User needs for location-aware mobile services. *Personal and Ubiquitous Computing*, vol. 7, no. 1, pp. 70-79.
- Katz, E., Gurevitch, M., & Haas, H.(1973), "On the Use of Mass Media for Important Things," *American Sociological Review*.
- Kenny, D. and Marshall, J.F. (2000) "Contextual marketing: the real business of the internet," *Harvard Business Review*, Nov–Dec Vol. 78, No. 6, pp. 119–125.
- Lee, ThaeMin & Jun JongKun (2005), Contextual Perceived Usefulness? Toward an Understanding of Mobile Commerce Acceptance, *International Conference on Mobile Business (ICMB'05)* pp. 255-261.
- Li, Hairong, Steven M. Edwards and Joo-Hyun Lee (2002), "Measuring the Intrusiveness of Advertisements: Scale Development and Validation. *Journal of Advertising*," Vol. 31, No.2, 37-47.
- Ng, S. ;Russell-Bennett, R. and Dagger, T. (2007), "A typology of mass services: the role of service delivery and consumption purpose in classifying service experiences," *Journal of Services Marketing*, Vol. 21, No. 7, pp. 471-480.
- Palen L, Dourish P (2003), "Unpacking "Privacy" for a networked world," In: *Proceedings of the conference on human factors in computing systems (CHI 2003)*, Fort Lauderdale, Florida, pp. 129–136
- Palmer, A. and O'Neill, M.(2003), "The effects of perceptual processes on the measurement of service quality", *Journal of Services Marketing*, Vol. 17 (3), pp 252-274.
- Petty Ross, D. (2003): Wireless advertising messaging: Legal analysis and public policy issues. *Journal of Public Policy & Marketing*, 22(1), 71-82.
- Ranganathan, A. & Campbell, R. (2002), "Advertising in a Pervasive Computing Environment. *International Conference on Mobile Computing and Networking*," 2nd International Workshop on Mobile Commerce, 10–14.
- Siau, K. & Shen, Z. (2003), "Mobile communications and mobile services", *International Journal of Mobile Communication*, Vol. 1, No. 2.
- Tsang, M.M; Ho, Shu-Chun and Liang, Ting-Peng (2004), Consumer Attitudes Toward Mobile Advertising: An Empirical Study, *International Journal of Electronic Commerce*, Vol. 8, No. 3, pp. 65–78.
- Ververidis, C. & Polyzos, G. (2002), "Mobile marketing using location based services," *Proceedings of the First International Conference on Mobile Business*, Athens, Greece.

Wehmeyer K.(2007), Mobile ad intrusiveness – The effects of message type and situation, 20th Bled eConference eMergence: Merging and Emerging Technologies, Processes, and Institutions,Bled, Slovenia

Zwass, V. (1996), “Ethical issues in information systems”, In: Encyclopedia of Library and Information Science (A. Kent, ed.), Volume 57, Supplement 20, pp. 175-195.



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