Effectiveness of Mobile Advertising: The Indian Scenario

Shalini N Tripathi and Masood H Siddiqui

In the current scenario, mobile internet applications enable consumers to access a variety of services: Web information search, SMS (short message service), MMS (multimedia message service), banking, payment, gaming, e-mailing, chat, weather forecast, GPS (global positioning service), and so forth. Collectively, we denominate this wide array of services as “m-commerce.” These digital media are considered to potentially improve the possibilities to reach consumers by allowing personalization of the content and context of the message. Combining customer’s user profile and the context situation, advertising companies can provide the target customers exactly the advertisement information they desire, not just “spam” them with irrelevant advertisements.

Drawing from Nysveen, Pedersen, and Thorbjørnsen’s (2005) grid of mobile internet services classification, this study attempts to critically analyse “person interactive” (goal-oriented) information and “person interactive” (experiential) messaging, targeting both utilitarian and hedonic benefits from the consumers’ perspective. It analyses the effectiveness of mobile advertising in its current format (as prevalent in India). ‘Effectiveness’ for the purpose of this study has been concretized in terms of impact of mobile advertising on the purchase decision of the consumer. However, results of binary logistic regression indicate that mobile advertising in its current format does not have a significant impact on the purchase decision of a consumer, and that there might be other significant factors like a firm’s marketing efforts (marketing mix), a consumers’ socio-cultural environment (family, informal sources, non-commercial sources, social class, culture and sub-culture), and an individual’s psychological field (motivation, perception, learning, personality, and attitudes) that affect his purchase decision. Mobile advertising in its current format is very generic in its approach, as substantiated by factor analysis performed on the data — marketing communication through mobiles primarily lacked in contextualization and perceived usefulness (for the target customers), and were disruptive in nature. Although mobiles are a powerful mode of marketing communication, the important issues at stake here are—what to say, how to say it, to whom, and how often. Communications get more and more difficult, as a large number of companies clamour for getting the consumers’ increasingly divided attention through various means. Hence the challenge lies in customizing the marketing communication to suit individual needs (Customerization), i.e., reaching the right target market with the right message at the right time. Also, variations in consumer responsiveness towards mobile advertising have been examined using Analytic Hierarchy Process (AHP). Finally, some features enhancing the utilitarian and hedonic benefits drawn (or expected) from mobile advertising are prioritized. This enhancement of benefits can be implemented by incorporating Intelligent Software Agents, which make customization of marketing messages a reality—delivering all the desired benefits (utilitarian/ hedonic) to the consumers. Software Agents are programmes which fulfill a task independently on behalf of the user and can be adapted to the individual preferences and parameters of its instructor; software agents operate without intervention of the user at a specific problem definition.
Interactive media’s share of worldwide advertising expenditure is expected to hit 15 per cent in 2009, almost double in four years, and will remain the main source of growth as ad spending in traditional media continues to decline, finds a study, ‘Interaction: Addressable, Searchable, Social and Mobile,’ by WPP’s Group M (2008). Ad spending in interactive media — internet, mobile, and gaming — reached 11 per cent in 2007, sparked mostly by gains recorded in the US and Western Europe as well as by the increased use and availability of improved handsets, inexpensive laptops, faster broadband, and extensive Wi-Fi connections. The survey covers 35 countries and shows the share of total ad investment in digital advertising rising from 6 per cent in 2005 to 15 per cent in 2009 (Table 1):

<table>
<thead>
<tr>
<th>Region</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008f</th>
<th>2009f</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>USA</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.5</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Western Europe</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Denmark</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Sweden</td>
<td>10</td>
<td>13</td>
<td>17</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>UK</td>
<td>10</td>
<td>16</td>
<td>20</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Emerging Europe</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Russia</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>India</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Japan</td>
<td>6</td>
<td>8</td>
<td>13</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>China</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
<td><strong>8</strong></td>
<td><strong>11</strong></td>
<td><strong>13</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Base: 35 countries


The study also found that internet advertising has been the principal source of media investment growth in the Western nations since 2001 as spending in traditional media has leveled off.

The Indian advertisement expenditure has also been doubling every five years, boosted by robust growth in television and print campaigns, says a report by London-based Zenith Optimedia, the media planning and buying arm of advertising group, Publicis. Though different segments of the industry grew at different rates, the highest growth was recorded by the smallest segment in the industry – online advertising. This segment grew by 69 per cent from the previous year, albeit from a low base of Rs 1,600 crore in 2006 to Rs 2,700 crore in 2007. Its share in the overall advertising pie grew to 1.4 per cent in 2007, up from 1.0 per cent in 2006.

The Indian law has provided legal basis for the electronic format — The Information Technology Act, 2000. This act aims to provide for the legal framework so that legal sanctity is accorded to all electronic records and other activities carried out by electronic means (by all network service providers). Then there is also the Broadcasting Bill, 2006, which attempts to regulate certain aspects of carriage and content of broadcasting. No broadcasting service would be possible without obtaining a license in this regard, which can be obtained from a statutory body—Broadcasting Regulatory Authority of India (BRAI). This bill also provides a content code against any obscene or vulgar content.

In order to safeguard consumers’ interest, the Telecom Regulatory Authority of India (TRAI) has made the Telecom Consumers’ Protection and Redressal of Grievances Regulations, 2007, covering all service providers, including BSNL and MTNL. Also, there is the National Do Not Call/ Disturb Registry (www.ndncregistry.com), which ensures that a consumer needs to register with the respective telecom service provider to stop all unsolicited communication. It is illegal for a telemarketer to call anybody who is in the Do Not Call list. TRAI has proposed a ‘Scrubbing Module’ which will filter consumers’ numbers from the telemarketers’ database.

The internet-enabled mobile handset has rapidly achieved worldwide penetration, due to its very personal nature and sophisticated communication technologies. However, unlike e-commerce research, empirical explorations of m-commerce have seen only modest growth, because of the considerable uncertainties involved in mobile research. One major problem in m-commerce research is the lack of standards in terms, concepts, and theories. Current mobile internet applications enable consumers to access a variety of services: Web information search, SMS (short message services), MMS (multimedia message service), banking, payment, gaming, e-mailing, chat, weather forecast, GPS (global positioning service), and so forth. Collectively, we denominate this wide array of services as “m-commerce.” These digital media are considered to potentially improve the possibilities to reach consumers by...
allowing personalization of the content and context of the message (Forrester Report, 2001).

From the perspective of marketing, Nysveen, Pedersen, and Thorbjørnsen (2005) propose a grid of mobile internet services classification that employs four primary axes: person-interactive versus machine-interactive, and goal-oriented versus experiential services.

Exhibit 1 is an adapted version of this classification scheme.

**Exhibit 1: Classification of Mobile Internet Services**

<table>
<thead>
<tr>
<th>Goal-oriented</th>
<th>Experiential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person-interactive</td>
<td>Information</td>
</tr>
<tr>
<td>Machine-interactive</td>
<td>Payment</td>
</tr>
</tbody>
</table>

Adapted from Nysveen, Pedersen, and Thorbjørnsen [2005].

“Person interactivity” occurs between people through a medium, while “machine interactivity” refers to the interaction between people and the medium. In the latter, users can freely modify the content and form of a mediated environment. A goal-oriented process is defined by utilitarian benefits, while an experiential process provides hedonic benefits.

This study majorly attempts to critically analyse “person interactive” (goal-oriented) information and “person interactive” (experiential) messaging targeting both utilitarian and hedonic benefits from the consumers’ perspective.

Mobile advertising, which is an area of mobile commerce, is a form of advertising that targets users of handheld wireless devices such as mobile phones and Personal Digital Assistants (PDAs). In comparison with traditional advertising, the main advantage of mobile advertising is that it can reach the target customers anywhere anytime. In order to promote the selling of products or services, all the activities required to communicate with the customers are transferred through mobile devices. Combining with the customers’ user profile and context situation, advertising companies can provide the target customers exactly the advertisement information they desire, not just “spam” them with advertisements they are not interested in.

Mobile media transcend traditional communication and support one-to-one, many-to-many, and mass communication. Phones and personal digital assistants increase the availability, frequency, and speed of communication. Yet the technology associated with these devices, which let marketers personally communicate with consumers, continues to evolve. The most popular mobile application is referred to as text messaging or Short Message Service (SMS). Studies on this new advertising medium indicate that mobile advertising campaigns can generate responses that are as high as 40 per cent, compared to a 3 per cent response rate through direct mail and 1 per cent through internet banner ads (Jelassi and Enders, 2004).

The high diffusion of SMS facilitates the analysis of usage behaviour and hints at the commercial potential of future communication services. MMS, for example, will build on the success of SMS but allow for a richer content based on similar asynchronous, digital, and interactive communication. Studying interactive mobile services such as SMS and MMS suggests drawing upon theories in marketing, consumer behaviour, and psychology, and their adoption to investigate their organizational and personal use (Hoffman and Novak, 1996; Barwise and Strong, 2002).

Analysing marketing communication from the consumers’ perspective, the issue of media effectiveness becomes challenging. The increased number of media has led to a harder competition for consumers’ attention. Attention and time are increasingly becoming scarce resources for consumers in the information age. It has been argued that the information age empowers consumers and creates immediate 24-hour access, which changes consumers’ behaviour (Seybold, 2001). Many consumers have attitudes, aspirations, and purchasing patterns that are different compared to what companies have been used to. Today’s consumers are claimed to be independent, individualistic, involved, and informed, (Lewis and Bridger, 2000) which makes it harder than ever to conduct interruption-based communication.

A key issue is the responsiveness of the consumer to marketing communication. Responsiveness depicts the consumer’s willingness to receive and respond to marketing communication and can be viewed as a function of the content and the context of the message. Any channel can and should be evaluated according to consumer responsiveness in order to understand communication effects and effectiveness. Consumer responsiveness is
potentially more effective than permission because it assumes consumer attention rather than merely permission.

OBJECTIVES OF THE STUDY

The primary objective of this research paper is to study the effectiveness of mobile advertising in its current format (as prevalent in India). ‘Effectiveness’ for the purpose of this study has been concretized in terms of impact of mobile advertising on the purchase decision of the consumer. Further, an attempt has been made to analyse variations in consumer responsiveness towards mobile advertising using Analytic Hierarchy Process (AHP). Finally, we broadly concretize some features enhancing the utilitarian and hedonic benefits drawn (or expected) from mobile advertising. This enhancement of benefits can be implemented by incorporating Intelligent Software Agents.

LITERATURE REVIEW

Countries such as Japan, New Zealand, Germany, and the UK, which have cost-effective and interoperable wireless structures, a high penetration of mobile phones, and a relatively low cost for SMS, have experienced remarkable success with the SMS application (Barnes and Scornavacca, 2004). Mobile advertising may even step over the line of discretion and invade consumers’ privacy because of the personal nature of the mobile device. Li, Edwards and Lee (2002) discuss how negative reactions like irritation arise through intrusion advertising. The channel influences consumer responsiveness to marketing communication by being perceived as either disturbing or acceptable (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. In contrast, the channel may also enhance the acceptance of the marketing communication if it is perceived as appropriate for the specific marketing communication. Also, some consumers may perceive the channels as neutral, i.e., it is neither disturbing nor accepted.

In a comprehensive survey concerning consumers’ experiences of direct marketing channels in Finland, it was found that consumers perceived direct marketing channels differently compared to each other. (Finnish Direct Marketing Association, 2002). The experiences of mail order, internet, and e-mail experiences were more positive compared to other direct market channels such as telemarketing and door-to-door sales. Eighty per cent of the respondents had positive experiences of mail order, 77 per cent had positive experiences of internet and e-mail as marketing channels, and the corresponding number for SMS and WAP (Wireless Application Protocol) was 65 per cent. For telemarketing and door-to-door sales, the number of positive consumers was down to 30 per cent and 25 per cent respectively. Concerning satisfaction with information received, there seemed to be differences between the channels. The study also indicated that consumers have considerably less experience of SMS messages compared to mail order, internet, and e-mail.

New media in the digital economy has created potentially powerful tools for direct and interactive marketing. Traditional marketing communication strategies have been based on the interruption logic (Godin, 1999) where the consumer is forced to momentarily pay attention. Permission marketing was introduced as a new managerial approach in marketing communication. It has been argued that firms benefit from getting consumers’ permission to be contacted (Marinova, Murphy and Massey, 2002). Permission from the consumer would resolve the difficulties to get access to the consumer. Permission is, however, not necessarily a guarantee that the consumer pays attention to; it is only a door-opener and gives an indication of the consumer’s potential interest areas.

We believe that use of information retrieval and filtering capabilities of mobile agents and location information about the user offer a good opportunity for value-added services to be provided to the end-users. This also brings about a new way for cellular phone service providers to achieve competitive advantage by competing not only on the basis of price and packaging, but also on the basis of the set of value-added services that they provide to their clients. In order to overcome the input/output limitations brought about by mobile devices, the system should be free of user’s intervention. To that end, we propose to use mobile agents for provisioning context-aware advertisements to mobile users. Schilit and Theimer (1994) first introduced the concept of context-awareness in the project, Active Map, in which they took advantage of the location concept to define the context as people, object, and the changes that occur to them. Dey and Abowd (2000) state that a system is context-
aware if it uses context to provide relevant information and/or services to the user, where relevancy depends on user’s task. Location information is an important aspect for a context-aware system. There are two reasons for it. Firstly, after a mobile user sends a request, she may move to another place or turn off her device. When the system gets the results and is ready to send them to the user, the location of the user would have changed and thus his or her interest in the results may no longer be the same. Secondly, some query results may include several items; for example, all restaurants in a city. But if the user just needs localized information, such as restaurant locations within a radius of one mile, the system should know where the user is and provide information relevant to the user. Due to these two reasons, a Context Profile Module in the Entry Server is used to track user’s location in the system. Mahmoud and Yu (2004) designed a system for provisioning context-aware mobile advertisements to mobile users. There are three main parts in this system: clients, entry server, and service server. The entry server is responsible for the interaction between devices and the rest of the system. The service server hosts advertisements, services, and service descriptions, and allows agents that migrate from the entry server to access the service server and select services and advertisements. However, the advertisements and services themselves might be located on a different server.

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 (Barwise and Strong, 2002; Heinonen and Strandvik, 2003; Barnes and Scornavacca, 2004; Jelassi and Enders, 2004). 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, et al., 2004). The mobile advertising relevance can be influenced by the contextualization (Kenny and Marshall, 2000; Yuan and Tsao 2003) of advertising messages. Barwise and Strong (2002) take up the flexibility, and time-based nature of mobile advertisements and also explore that the fact that the small screens restrict the length of the message. Barnes (2002) stresses on the interactive nature of mobile advertising and the ability to use contextual information for targeting the messages to individual receivers, in other words, to personalize the messages. Location-aware advertising messages are creating five to ten times higher click-through rates compared to traditional internet advertising messages (Ververidis and Polyzos, 2002).

THEORETICAL FRAMEWORK

The most recognized model (Exhibit 2) for comparing media is probably the ARF (Advertising Research Foundation) model first published in 1961 (Harvey, 1997). This model was developed as a response to the need in the advertising industry to compare different advertising media (Harvey, 1997). The model contains six stages or hierarchical levels of advertising effects. The original model contained the following levels: vehicle distribution, vehicle exposure, advertising exposure, advertising perception, advertising communication, and sales. The first two levels indicate measures of potential spread of the media among consumers and have been the most used factors in the marketing communication industry. Advertising exposure refers to the number of consumers exposed not to the media as such but to the particular commercial or ad. Advertising perception is the first level to include a consumer reaction, i.e., the number of consumers noticing the advertising. The next level, advertising communication, could measure how many consumers, in fact, receive something of the content besides only noticing the communication. These two levels have been the least studied and understood in the advertising industry, which has focused on the first two levels (i.e., vehicle distribution and vehicle exposure) and the last, sales, that are easier to measure. As the model
is considered to be a hierarchical model, there is some-
thing of a black box in the knowledge of consumer re-
sponse, which is one of the objectives of the current
study. The direct marketer may record a pull or a re-
response rate in sales of, for example, 2 per cent compared
to the response rate of 8 per cent in another marketing
campaign, but has no information about the reason for
the difference. The problem is accentuated, on one hand,
when new media have evolved and, on the other hand,
when customer relationships have come into focus in-
stead of only campaign sales. Harvey (1997) argues that
the advertising communication level needs more atten-
tion. In this model, responsiveness would relate to the
levels (as per the ARF model) of advertising perception
and advertising communication, which have been the
least studied aspects. In a new edition of the model, the
Advertising Research Foundation (ARF) includes new
digital media and creates eight hierarchical levels of
media performance: vehicle distribution, vehicle expo-
sure, advertising exposure, advertising attentiveness,
advertising communication, advertising persuasion, ad-
dvertising response, and sales response (Informed, 2001).
The first three as well as the last level of sales are essen-
tially retained from the original model. In this model,
our responsiveness framework links to advertising at-
tentiveness, communication, and persuasion.

According to the descriptions of the new model (In-
formed, 2001), advertising attentiveness is considered
to be a measure of the degree to which those exposed to
the advertising are focused on it. Advertising commu-
nication refers to information retained by the consumer
after exposure to the message. Advertising persuasion
measures shift in attitudes and/or intentions produced
by the communication and advertising response is other
consumer response than purchasing. This persuasion
may result in the consumer developing a positive atti-
dute towards the brand, consequently leading to respo-
ses like click-through, lead generation, mail response,
and coupon redemption.

In the current study, ‘advertising effectiveness’ (through
mobile communication devices), is analysed in terms of
impact on the purchase decision of the consumer. Our
responsiveness conceptualization closely relates to the
attentiveness level but carries over to the persuasion lev-
els in the sense that we assume that they are closely re-
lated. As a consequence, the study attempts to examine
the relationship between advertising efforts (through
mobiles) and consumers’ responsiveness in terms of
impact on their purchase decisions.

METHODOLOGY

The research design chosen for the study (cross-sectional
descriptive design) is conclusive. A survey instrument
was developed based on previous studies on consumer
perceptions of mobile advertising. Quota sampling
(multi-stage) and shopping mall intercept were em-
ployed with the questionnaires being sent to approxi-
ately 2,000 respondents out of which 1,540 question-
naires were found complete in all respects. The response
rate was thus 77 per cent. An attempt has been made to
keep the sample fairly representative across the demo-
graphic variables by constructing quotas according to
these factors, e.g., age, gender, occupation, and level and
purpose of mobile usage. Almost 54 per cent of the re-
spondents belonged to the age group of 20 to 30 years
and approximately 30 per cent of the respondents be-
longed to the age group of more than 30 years; 30 per
cent of the respondents were students, 27 per cent were
in service, 14 per cent were housewives, and 29 per cent
were in business; 59.7 per cent were males and 40.3 per
cent were females; 75 per cent of the respondents used
their mobiles primarily for personal communication. The
areas of our sampling were various cities like Lucknow,
Delhi, Mumbai, and Kolkata. The time frame of the study
was June 2007 to October 2007. Primary-stage sampling
units were the mobile users while the secondary stage
sampling units were markets, shopping malls, institu-
tions, and residential localities of the above-mentioned
cities. In order to make the sample representative, sam-
ping was performed in various marketplaces, shopping
malls, office complexes, and some residential localities
considering the desired quotas.

We examined the reliability of the data to check whether
random error causing inconsistency and in turn lower
reliability was at a manageable level or not, by running
reliability test. For various sets of important associated
factors used in the questionnaire, values of coefficient
alpha (Cronbach’s alpha) were obtained. Amongst the
reliability tests that were run, the minimum value of
coefficient alpha (Cronbach’s alpha) obtained was 0.732
(Tables 2-2.4) (which is substantially higher than 0.6)
which showed that data had satisfactory internal consis-
tency reliability.
Table 2: Case Processing Summary

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid</td>
<td>660</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded (a)</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>660</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

Table 2.1: Reliability Statistics (Purchase Decision and Brand Decision)

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.785</td>
<td>2</td>
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</tbody>
</table>

Table 2.2: Reliability Statistics (Perception towards Mobile Advertising)

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.732</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 2.3: Reliability Statistics (Positive Reactions towards Mobile Advertising)

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.788</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 2.4: Reliability Statistics (Desired Attributes of Mobile Advertising)

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.757</td>
<td>7</td>
</tr>
</tbody>
</table>

FINDINGS AND DISCUSSIONS

Consumer Perception about Mobile Advertising

In order to gain an insight into consumer perception towards mobile advertising, we first ran factor analysis. These factors were based on the selection of the most indicative attributes interpreted from focus group discussions and in-depth interviews with mobile users. In addition, secondary information material (prior consumer researches related to mobile advertising) was studied. This secondary material was crossed with the results of the qualitative research, namely, the results of the in-depth interviews. Finally, a list of 13 factors, adequately explaining perception of mobile users towards mobile advertising was finalized. The factor analyses results are shown in Tables 3, 3.1, and 3.2. The variance explained by the initial solution, extracted components, and the rotated components are displayed in Table 3. The total variance shown in this Table accounted for by all of the three components explains nearly 71 per cent of the variability in the original 13 variables. So, we can reduce the original dataset by using these three components (Eigen values greater than 1 as shown in Table 3) with only 29 per cent loss of information.

Factor Analyses

Table 3: Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Rotation Sum of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>2.572</td>
</tr>
<tr>
<td>2</td>
<td>2.429</td>
</tr>
<tr>
<td>3</td>
<td>1.891</td>
</tr>
</tbody>
</table>

Table 3.1: KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.820 |
| Bartlett's Test of Sphericity | 1575.073 |
| Df     | 78 |
| Sig.   | 0.000 |

Table 3.2: Rotated Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less informative</td>
<td>0.622</td>
<td>-0.127</td>
<td>0.133</td>
</tr>
<tr>
<td>Does not suit* personal needs</td>
<td>0.808</td>
<td>-0.128</td>
<td>0.039</td>
</tr>
<tr>
<td>Relayed at the wrong time</td>
<td>0.764</td>
<td>-0.050</td>
<td>0.171</td>
</tr>
<tr>
<td>Clutter as a result of too many ads</td>
<td>0.608</td>
<td>0.021</td>
<td>0.284</td>
</tr>
<tr>
<td>Cause disturbance at work</td>
<td>0.537</td>
<td>-0.094</td>
<td>0.463</td>
</tr>
<tr>
<td>Junk ads without going through it</td>
<td>0.295</td>
<td>-0.158</td>
<td>0.650</td>
</tr>
<tr>
<td>Time-consuming** to go through ads</td>
<td>0.344</td>
<td>-0.101</td>
<td>0.695</td>
</tr>
<tr>
<td>Recall of brands advertised</td>
<td>-0.244</td>
<td>0.656</td>
<td>-0.141</td>
</tr>
<tr>
<td>Recall of sale/special promotions</td>
<td>-0.113</td>
<td>0.694</td>
<td>-0.066</td>
</tr>
<tr>
<td>Recall of products/services advertised</td>
<td>-0.096</td>
<td>0.779</td>
<td>-0.045</td>
</tr>
<tr>
<td>Ad positioning</td>
<td>-0.003</td>
<td>0.615</td>
<td>0.082</td>
</tr>
<tr>
<td>Positive impact of mobile ads</td>
<td>0.045</td>
<td>0.672</td>
<td>-0.107</td>
</tr>
<tr>
<td>Loss of privacy</td>
<td>0.030</td>
<td>0.033</td>
<td>0.773</td>
</tr>
</tbody>
</table>

* Do not satisfy information needs of the consumers
** Consumers perceive mobile ads which are of no interest to them, to be a wastage of time.

The Rotated Component Matrix reveals three factors (which represent the three broad perceptual dimensions about mobile advertising) derived from 13 variables (which represent the perception of mobile users towards mobile advertising). The components of each factor have been highlighted in Table 3.2.

Factor 1 incorporates the variables—mobile ads are less informative (in the current format), do not satisfy personal needs, inappropriate timing, and clutter. Since all these variables are related to lack of contextualization
and personalization, this factor can be labeled as ‘lack of contextualization.’

**Factor 2** incorporates the variables—brand recall, recall of sales/promotion information, recall of product/services, ad positioning and repetitive nature of mobile ads, and positive impact of mobile ads. Since all these components are related to perceived usefulness of mobile advertising, this factor can be labeled as ‘perceived usefulness’ of mobile ads.

**Factor 3** incorporates the variables—causing disturbance at work, busy work schedule, wastage of time, and loss of privacy. Since all these components are related to disturbance caused due to mobile advertising, this factor can be labeled as ‘disruptive nature’ of mobile ads.

Thereafter, to gain further insight into the perception of mobile users (towards mobile advertising), we used a qualitative analysis tool—Analytic Hierarchy Process (AHP) (Saaty, 1990, 2001), designed for situations in which ideas, feelings, and emotions are to be quantified and decision alternatives based on them are prioritized. AHP is a multi-criteria decision-making procedure. Here the decision maker provides weighted preferences for the criteria, which are used to determine the preferences for the decision alternatives. AHP is used due to its suitability for undertaking quantitative as well as qualitative analysis. This approach differs from other multi-criteria methods as subjective judgments are readily included and inconsistencies are dealt with appropriately.

Analysing the generic perception (of their mobile phones) of the respondents (Figure 1), AHP revealed a prioritization which clearly indicated that respondents primarily perceived their mobiles as a tool of communication followed by source of information and lastly as a source of advertising; hence, they would reject any overtures of mobile advertising in a defined manner. Thus, unless and until the information being transmitted on their mobile carries any utility value for them, it will be regarded as spam or junk.

**Figure 1: Prioritization of Perception of Mobile**

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Overall Inconsistency Index 0.35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Advertisement</td>
<td>0.22</td>
</tr>
<tr>
<td>Tool of Communication</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Thereafter, when the consequential reactions towards mobile advertising (of respondents) were prioritized (Figure 2), it was found that irritation, followed by indifference and then confusion, were the three most important reactions. Hence, we can safely assume that respondents (having a paucity of time) reacted with irritation and indifference towards mobile advertising. Also, the respondents apparently got confused, on being bombarded with a plethora of advertisements from various sources. It can thus be inferred that mobile advertising in its current format is unacceptable to customers and requires inclusion of certain attributes so that the relevance and utility value of such marketing messages, increases their overall acceptance by consumers.

**Figure 2: Prioritization of Reactions towards Mobile Advertisements**

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Overall Inconsistency Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>0.14</td>
</tr>
<tr>
<td>Confusion</td>
<td>0.17</td>
</tr>
<tr>
<td>Awareness</td>
<td>0.16</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.13</td>
</tr>
<tr>
<td>Indifference</td>
<td>0.18</td>
</tr>
<tr>
<td>Irritation</td>
<td>0.22</td>
</tr>
</tbody>
</table>

**Impact of Mobile Advertising on Purchase Decisions of Mobile Users**

In order to empirically analyse the effectiveness of mobile advertising (in terms of impact on purchase decision) in its current format, binary-logistic regression was used to predict purchase decision on values of a set of predictor variables. The Hosmer and Lemeshow goodness-of-fit test (Table 4) examines whether our proposed binary logistic regression model adequately fits the data or not. A significance value of 0.350 reflects that the proposed model adequately fits the data. As seen in Table 4, the $R^2$ values (Cox and Snell $R^2=0.180$ and Nagelkerke $R^2=0.248$) reflect that only a small portion of the variation of the dependent variable (i.e., purchase decision) is explained by the considered predictors. The results indicate that mobile advertising in its current format does not have a significant impact on the purchase decision of a consumer, and there might be other significant factors like a firm’s marketing efforts (marketing mix), a consumers’ socio-cultural environment (family, informal

EFFECTIVENESS OF MOBILE ADVERTISING: THE INDIAN SCENARIO
sources, non-commercial sources, social class, culture and sub-culture), and an individual’s psychological field (motivation, perception, learning, personality and attitudes) that affect his purchase decision. Mobile advertising in its current format is very generic in its approach, as revealed by factor analyses performed on the data. Marketing communication through mobiles primarily lacked in contextualization and perceived usefulness (for the target customers) and were disruptive in nature. Although mobiles are a powerful mode of marketing communication, the important issues at stake here are—what to say, how to say it, to whom, and how often. But communications get more and more difficult, as a large number of companies clamour to get the consumers’ increasingly divided attention through various means. Hence, the challenge lies in customizing the marketing communication to suit individual needs, i.e., reaching the right target market with the right message at the right time.

### Logistic Regression

#### Table 4: Hosmer and Lemeshow Test

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.910</td>
<td>8</td>
<td>0.350</td>
</tr>
</tbody>
</table>

#### Table 4.1: Model Summary

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log Likelihood</th>
<th>Cox &amp; Snell $R^2$</th>
<th>Nagelkerke $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>540.584(a)</td>
<td>0.180</td>
<td>0.248</td>
</tr>
</tbody>
</table>

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than 0.001.

### Analysis of Desired Attributes (in Mobile Advertising)

AHP was also used to gauge the problem areas in the current format of mobile advertising (Figure 3). A hierarchical ranking of unwanted attributes in mobile advertising (according to the perception of the respondents), revealed that lack of useful information, followed by inappropriate timing, generic nature of advertisements, and repetition, were the main problem areas. It can hence be inferred that incorporating attributes like contextualization and relevant utility value (with reference to the target customers), would increase the overall acceptance of mobile advertising. Hence, customization on an individual basis seems to be the need of the hour, as far as increasing acceptance of mobile advertising is concerned.

**Figure 3:** Hierarchical Ranking of Unwanted Attributes in Mobile Advertisements

<table>
<thead>
<tr>
<th>Overall Inconsistency Index</th>
<th>0.08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Advertisement</td>
<td>0.23</td>
</tr>
<tr>
<td>Lack of Useful Information</td>
<td>0.31</td>
</tr>
<tr>
<td>Repetition</td>
<td>0.2</td>
</tr>
<tr>
<td>Timing</td>
<td>0.26</td>
</tr>
</tbody>
</table>

This assumption can be further corroborated by prioritization of desired attributes in mobile advertisements (as per the respondents’ perception). This study also attempts to concretize some features or attributes, which will enhance the overall acceptance and utility of mobile advertising (Figure 4). AHP revealed that respondents would primarily prefer personalization/customization of advertisements according to their preferences and interest areas, followed by permission-based advertising, location-specific messages, appropriate timing, and then session-based ads (displayed only for a limited time period) or self-deleting ads which would get self-deleted after a given period of time, thus saving the mobile users the hassle of clearing the clutter of advertising messages in their inbox and occupying unnecessary memory space.

**Figure 4:** Prioritization of Desired Attributes in Mobile Advertisements

<table>
<thead>
<tr>
<th>Overall Inconsistency Index</th>
<th>0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-deleting Advertisements</td>
<td>0.15</td>
</tr>
<tr>
<td>Permission Advertising</td>
<td>0.21</td>
</tr>
<tr>
<td>Personalization/Customization</td>
<td>0.28</td>
</tr>
<tr>
<td>Locational Recognition</td>
<td>0.19</td>
</tr>
<tr>
<td>Timing</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Hence the mobile users are apparently seeking customization of mobile marketing messages as per their individual requirements, tastes, and preferences. Thus the marketing firms need to combine Mass Customization and Customized Marketing, i.e., Customization. Customization combines operationally-driven mass customiza-
tion with customized marketing in a way that the company is able to respond to individual customers by customizing its products, services, and messages on a one-to-one basis.

PROPOSED STRATEGIC INITIATIVE

Summarizing the major findings of the study, we can infer that the relationship that we have sought to examine between mobile advertising efforts and consumers’ responsiveness in terms of impact on the purchase decision, exists. However, mobile marketing efforts do not have a substantial impact on the purchase decision of the consumer. The study further indicates that the crux of the problem lies not in relaying mobile advertising messages to mobile users, but in the mass marketing approach being adopted by the companies. Mobile users have apparently developed an aversion to the mobile marketing messages, to which they are being subjected. Also, the study revealed distinct preferences expressed by customers regarding the desirable content of such messages. Customers are looking for customization of mobile marketing messages as per their individual requirements, tastes, and preferences. Hence the need of the hour appears to be Customerization.

The potential for the efficient and effective organization of market processes by using interactive media is hardly used. Intelligent Software Agents represent one of the most interesting and innovative technologies under economical criteria. Software Agents are programmes, which fulfill a task independently on behalf of the user. This definition encompasses the term, ‘agent’ as a person or thing, who is able and authorized to act on behalf of a third party, and the term, ‘software.’ The software can be adapted to the individual preferences and parameters of its instructor and operates without intervention of the user at a specific problem definition.

Agents can be used by both customers (Demanders, software agents attempting to access some information) as well as mobile marketing firms (Suppliers). Mobile marketing firms can deploy these agents to customize products as well as advertisements. Today, suppliers use software agents to personalize products and advertisements, e.g., www.firefly.net. In the age of mass customization and one-to-one marketing (i.e., customerization), individualizing the marketing communications is even more strongly in the focus of the strategic considerations of the firms. Software agents represent a marketing tool par excellence for this individualization. Mobile users can use agents in order to execute complex search and filter functions.

A software agent indicates the following characteristics:

- A software agent has an instructor, who instructs him, to operate certain functions independently. The instructor can be a person or a superior software agent.
- A software agent needs interfaces, in order to be able to communicate. On one hand, interfaces are necessary for input of data and parameters for specification of the function which should be executed. On the other hand, they are needed in order to transfer the results of an executed job to the instructor.
- A software agent has to be autonomous, i.e., it must be able to execute its job without direct intervention of the instructor. This means that the agent must be authorized to act.
- The software agent must be able to notice events in its environment.
- For the interpretation of the events assumed by the software agent, it must have intelligence. Hence the term, intelligent software agents. The methods used for agents usually rise from the area of artificial intelligence (AI) and have thereby only an indirect reference to the “human” or natural intelligence.

Each agent is unique in its mode of operation and its software programme. Nevertheless software agents can be generally explained by using a model derived from Caglayan and Harrison (1998) (Figure 5). Intelligence of the software agents can be attributed to three dimensions—knowledge, thinking, and learning. The knowl-

![Figure 5: Mode of Operation of Software Agents](image-url)
edge of an agent consists of information and rules, i.e., data such as user preferences or product data. Thus an agent has both foreknowledge—information and rules given to an agent in the context of its programme structure and learned knowledge—acquired by interaction with the environment. The agent machinery provides it the ability to think and execute responses to queries. The intelligence of the agent increases by the enlargement of its knowledge base, with constant interaction with the environment.

With reference to mobile marketing, software agents have multifarious applications:

**Web search agents** are the well-known search machines, e.g., Alta Vista (www.altavista.com) or Excite (www.excite.de), which facilitate search on the internet for a user. In this case, not the search query but the Web search agent (Crawler), which registers the addresses and contents of the internet (Caglayan and Harrison, 1998), is the application of the agent technology. The efficiency of the agents has influence on the relevance of the found addresses during the input of a search word.

**Filter agents** extract a small subset relevant for the user from a large quantity of data after its individual preferences. They filter relevant information and edit it. Filter agents are suitable for individualizing supplies (product or promotional messages). The entry of the preferences (those determining the filter) can take place either directly over the input of preferences by the user (e.g., with Cool Linxx and Hot Linxx; www.linxx.de) or indirectly, e.g., with Letizia (Lieberman, 1995). The indirect entry of the preferences are based on the behaviour-oriented agents (Nicosia, 1996). Letizia tries to derive the user’s preference through his past behaviour as clicked links, entered search words, or assistance requests. By successfully deploying intelligent software agents, the marketing firms can incorporate the following attributes in their mobile marketing communications:

**Personalization:** Marketers can personalize text messages based on the consumers’ local time, location, and preferences, e.g., directions to the nearest vegetarian restaurant open at the time of request.

**Time:** Less intrusive than phone calls, recipients can read text messages at their leisure and choose when to respond, if at all. Still, organizations must consider the best time and message frequency for the target group and topic. For instance, in case of students, messages should not be sent before noon, because around that time, students can either not be reached efficiently or might get into trouble receiving messages during their classes.

**Location:** Mobile phones amplify two key arguments for electronic commerce, location independence, and ubiquity. Consumers increasingly expect tailored and location-based services, thereby underlining the importance of personalized mobile marketing. Properly applied, location-based services can create or reinforce virtual communities. The Swedish company, Telia, for example, one of Europe’s biggest and most innovative telecommunication companies, launched a real-time SMS game using mobile positioning to let users play against others in their vicinity (www.botfighters.com).

**Preferences:** Personalizing messages increases their impact. Similar to traditional media, a personalized SMS campaign relies upon databases with enough active and potential clients to reach the target group profitably. Such databases regularly contain personal information such as leisure activities, holidays, music and media interests, type of internet access, occupation, marital status, car ownership, and income.

**Consumer control, permission, and privacy:** There is a trade-off between personalization and consumer control. Gathering data required for tailoring messages raises privacy concerns. Corporate policies must consider legalities such as electronic signatures, electronic contracts, and conditions for sending SMS messages. Marketing experts who had used SMS campaigns welcomed European government and industry initiatives to restrict unsolicited SMS. They argued that sending unsolicited messages hurts the mobile advertising industry. According to all the experts, advertisers should have permission and convince consumers (of the utility of the messages) to ‘opt-in’ before sending advertisements. A simple registration ensures sending relevant messages to an interested audience. Unsolicited messages, commonly known as spam, stifle user acceptance – particularly as mobile phones cannot distinguish between spam and genuine communication automatically. Unwanted messages are illegal in some countries and annoy consumers regardless of the medium (e.g., fax, telephone, electronic mail, or mobile devices). Spam may work as the strongest negative influence on consumer attitudes towards SMS advertising.
Acknowledging the complementarities of the world wide web and mobile networks, this paper has attempted to propose a technology intervention (namely, Intelligent Software Agents) in the mobile marketing messaging service, with the objective of increasing its overall acceptance, utility value, and impact (in terms of positively affecting purchase decisions) on the perception of mobile users or target customers.

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Good advertising does not just circulate information. It penetrates the public mind with desires and belief.

— Leo Burnett