

Measuring Wireless Advertising Effectiveness

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Abstract. *A growing need for measurement metrics on wireless data service quality, traffic measurement, mobile commerce, and advertising offers the opportunity for advertisers and advertising agencies. In order to sell their wireless media services, agencies have to present the results of advertising effectiveness. Strategic considerations we have to address when developing advertising measurement should include: target marketing, comparability, isolated vs. coordinated ad placement, depth vs. breadth, and viability of the advertising model. CPM and flat fee models count only the number of visitors exposed to a particular ad. We present and assess the development of different models based on interactivity metrics, as the degree to which the visitor interacts with the target and presents the value and effectiveness of an ad. Marketers are interested to measure the revenue spent from a purchase as the ultimate outcome.*

Keywords. mobile advertising, measurement effectiveness, wireless communication, target marketing

1 Introduction

Advertising and marketing communication were always considered in general as sales-generating functions. But in a service context it is relevant to change the perspective and look at communication as an important part of the service. Services are in the service literature seen as processes co-generated together with the consumer, and all contact-points between the consumer and the service company are moments-of-truth [5]. ‘Everything communicates something about a firm and its goods and services – regardless of whether the marketer accepts this and acts upon it or not’ [5]. These contact points in other

words form and influence the consumer perceived value of the service.

Communication effectiveness is evaluated in terms of conversion of consumer attention to purchase action [6] [16].

Heinonen and Strandvik [7] argue that it might be very relevant to consider three different overall attitudes towards communication: the communication of a product or service can either add value, decrease value or it does not influence value. High content relevance and/or media acceptance adds value, whereas low content relevance and/or media acceptance decreases value. So, she believes that her study contributes to service marketing research by introducing the communication value conceptualization. In other words, it includes value-decreasing elements of communication in addition to value-increasing elements. Communication value might be important not only for services but for products too.

At the moment mobile advertising is a mix of regular promotions, brand-building ads and location-sensitive ads delivered via SMS (Short Messaging System) to cell phones or PDAs (Personal Digital Assistants). In spite of all this market activity, little research to date has addressed key issues in mobile advertising. Interestingly, most of market research studies to date are conducted or sponsored by advertising agencies and mobile equipment producers with the aim of projecting an overall consumer acceptance of mobile ads for obvious reasons. These studies do not highlight key parameters required to obtain desired ad effectiveness and thus, do not provide enough insights required to design successful mobile ad campaigns [4].

In this paper we present and assess the development of different models based on interactivity metrics, as the degree to which the visitor interacts with the target and presents the value and effectiveness of an ad.

2 Literature review

Increased spending in mobile marketing and advertising will happen when consumers will accept new media. Bringing additional marketing euros into the mobile category is critical for growth for all industry players. Today, budget for mobile marketing spend controlled by brand marketers might be characterized as 'test and learn'. Before allocating a more significant budget to mobile, brands require a deep understanding of [12]:

- the role the medium plays in the overall mix,
- consumer acceptance of brand messaging,
- consistent guidelines and best practices to ensure rapid deployment across brands and geographies,
- evidence of effectiveness and value.

Customer Managed Interactions (CMI) is an emerging concept; in fact there appears to be no commercial CMI Marketing Systems available as of early 2008. Watson et al. [19] defines CMI as 'a customer directed interaction with a firm in which the customer manages the content, mode, and timing of data exchange in order to meet the customer's goals'. In this definition singular terms refer to [2]:

- Content are the information shared between customer and marketer, including a customer's personal identifiable information (PII), non-personally identifiable information (Non-PII), behavioral data and interests, etc. (hereafter referred to as "customer information") and marketer commercial information.
- Mode is the method of interaction, such as email, telephone, text messaging, multimedia messaging, Internet, mobile Internet, etc.
- Timing is both the time and location the interaction takes place.
- Data Exchange is the process by which the customer information and marketer commercial information are shared between marketer and customer.
- Goals are the value the customer expects to obtain in return for engaging in the interaction and for sharing customer information to trigger this action.

For certain, measurement and analysis is a central piece of any advertising plan, and it is something clients demand to see. High click response rates are fantastic weathervanes, but tracking ROI on cell phones for most products is a challenge. Can Unilever actually prove that display advertising with Fabio on a phone sold more butter? The industry is making leaps and bounds through development of brand measurements using Internet standards. By attaching mobile ad effectiveness studies to campaigns, advertisers are proving that mobile not only cuts

through the clutter and get noticed, the ads also increase purchase intent [14].

In addition to convincing their clients that mobile advertising is effective, the advertisers must accept new responsibility as well. A call for protocol and standards is being heeded by the MMA, who published Mobile Advertising Guidelines in June 2007 for public review. The MMA has not only worked tirelessly with ad agencies to ensure the delivery of advertisements that are highly relevant and deliberately unobtrusive, but also with the carriers, for whom the consumer is king and who are advocates of a positive subscriber experience. The MMA and ad agencies are working to ensure mobile advertisements do not hinder or interfere negatively with the customer's third screen experience. So far, this has been achieved, due in large part to a collaborative ecosystem [14].

Whenever a new advertising medium emerges, the advertisers have to employ appropriate measures to evaluate effectiveness in order to estimate the returns on advertising investment by the retailers. The effectiveness of advertising is a much-debated concept. Should it be *increase in sales* or *increase in awareness* of the product? Different media have diverse measures for estimating advertising effectiveness [4].

Verkasalo [18] study found out that mobile service life-cycle can be empirically measured, and the characteristics of different services can be identified with various data points available with the handset-based service research platform. Most importantly, the paper identified three most important kinds of quantitative measures reflecting the mobile service's usage profile. First, penetration reflects the extent of service diffusion by projecting the number of people using it. Second, service concentration indices reflect the accumulation of service usage to a certain small number of users. Third, service diversity indices reflect the differences between the most active and most passive actual service users. By demonstrating these measures the paper illustrated how mature services such as voice experience wide adoption and steady usage concentration, whereas some new services such as multimedia playback or internet browsing catch a smaller number of users, have significant concentration of usage and lots of differences between 'explorer' and 'sustainable' user groups. Multimedia services (imaging and multimedia playback) have potentially benefited quite a lot from the better capabilities of smartphone devices, and they have therefore experienced increasing usage.

Tjan [17] proposed two dimensions in evaluation of internet initiatives, when measuring whether a technology is properly used. One is fit and the other is viability. Fit should measure the extent to which new network applications are consistent with the core competence, structure, value and culture of organization, while viability measures the extent to the value-added potential of new network

applications, requirements of human resource, capital needs etc. These two dimensions form a simple matrix putting fit as the horizontal axis and viability as the vertical axis.

With a modification of Tjan's strategic matrix to the mobile applications, Liang and Wei [11] provided a fit-viability (FVM) framework that combines the theory of task/technology fit with the general notion of organizational impact of IT. In their framework, viability measures the extent to which the organizational environment is ready for the application, such as economic costs and benefits, users' readiness to use, and the maturity of organizational infrastructure to support mobile technology. Since the key features of mobile technology are mobility and reachability, fit measures the extent to which the capabilities of mobile technology meet the requirement of task, such as location-sensitivity and time-critical needs of a particular service.

In Liang et al. [10] paper, a framework is presented for assessing the successful use of mobile technology in organizations. Based on the seminal work of Liang and Wei [11] that extended the task-technology fit (TTF) model to become the FVM, they refined the FVM to become a useful tool. They defined the criteria for measuring fit and viability. Fit is measured by the match between task requirements and technology capabilities. Viability is measured by the economic feasibility, maturity of the IT infrastructure, and organizational support of an organization. They were further decomposed to include more detailed items for measurement. The presented instrument provides useful guidelines for assessing the possible outcome of adopting a technology. A multi-case analysis was then performed to explore the application of the FVM model in mobile technology applications. Seven applications in four companies were investigated through interviews and case analysis; results proved empirical support of such a model in assessing system use. Their findings lead to the development of four propositions: a) The fitness between the nature of mobile technology and task characteristic is a critical factor for an organization to adopt mobile technology; b) Organizational viability plays a key role in mobile system performance; c) The maturity of IT infrastructure, as measured by the readiness software and hardware platform, data management, and competence of IS staff, is critical to a mobile system to perform; d) Organizational support, as measured by impact on business process, user competence, and top management support, has a significant impact on the performance of a mobile system.

Aalto et al. [1] acknowledged that advertising on mobile devices has large potential due to the very personal and intimate nature of the devices and high targeting possibilities. They introduced a novel B-MAD system for delivering permission-based location-aware mobile advertisements to mobile

phones using Bluetooth positioning and Wireless Application Protocol (WAP) Push. The system was thoroughly evaluated in a laboratory environment and qualitatively evaluated in form of a field trial in the real environment of use. Experimental results showed that the system provides a viable solution for realizing permission-based mobile advertising.

Leppänen and Karjalainen [9] presented a study with aim was to build a conceptual model of consumers' willingness to accept mobile advertising. The study investigated factors that influence the acceptance of mobile advertising from both industry's and consumers' point of view and based on a review of previous studies in the field, the authors proposed a conceptual model of consumers' willingness to accept mobile advertising. The model indicates that consumers' willingness to receive mobile advertisements to handsets is mainly driven by four factors: role of mobile medium in marketing mix; development of technology; one-to-one marketing medium; regulatory.

Drossos and Giaglis [3] agree that mobile advertising is one of the most popular applications of mobile commerce, particularly in the form of SMS advertising and argue that very little is known regarding the effectiveness of such campaigns and the factors contributing to their success. In the study they aimed at identifying factors that influence the effectiveness of a mobile messaging advertising campaign. They drew on established knowledge from traditional advertising, which was adjusted to the principles of the mobile medium and combined with a number of mobile channel-specific attributes. A survey amongst advertising experts (N=90) was then used to investigate the significance of each variable. Through exploratory factor analysis, they postulated four categories of mobile messaging advertising effectiveness factors: campaign strategy, source, targeting, and creative development. Each factor consisted of a number of variables, which were collectively hypothesized to impact the effectiveness of a mobile messaging advertising campaign.

As Gopal and Tripathi [4] stated, a good measure of ad effectiveness is one key to determine the payment structure for ad delivery, which forms the basis for the contract between the merchants and the WASF. Since mobile advertising allows individual targeting or 'narrow casting,' as opposed to 'broadcasting' in other media, it helps to measure the ad effectiveness at the individual level. In broadcast media the rate cards are set by time of the day and shows, giving the merchant a good sense of CPM (cost per thousand impressions) for an ad campaign. In wireless advertising, the actual response as a measure of effectiveness is one possible approach. In this approach, a coupon may be sent on the cell phone, and can be tracked when redeemed at one of the merchant's locations. Currently, a few mobile marketers such as SkyGo and CellAct, facilitate response tracking of mobile ads. A few advertising

firms, such as Advertising.com also offer performance pricing, *i.e.*, they charge only for ad deliveries that produce a response. Number of ads delivered by time and location could be another possible approach. This may lead to a less complex payment structure but it does not ensure the fulfilment of the merchants' objective of targeting high-preference consumers close to retail locations at the appropriate time. To make this work, merchants may come up with a payment structure to meet their objective of targeting highly desired consumers at the right time and location while keeping the volume of ads under check.

There are three distinctive levels of analysis for wireless advertising measurement [13]: campaign level, page level and ad level. Main objective should be linking the various measures to consumer outcomes, in order to quantify the value of a visit. For every level of analysis, exposure data and interactivity data are needed. Exposure data are based on the one-to-many communication model underlying traditional media, and indicate that a visitor has been exposed to a wireless site, a wireless page or an advertisement.

3 Discussion

As Komulainen et al. [8] pointed out, commercial effectiveness refers to the number of customers who see the m-ad, acknowledge the retailer, enter the shop and make a purchase as a result. For the retailers, mobile advertising is a means to communicate with their potential customers, to provide information for the customers, and to increase revenue; they measure effectiveness through contact prices, number of contacts.

A French member club with 3,8 million members in France is offering books, music, DVDs etc. using six catalogues every year, websites and 200 shops. To stimulate the group of 35-55 year olds in reading books, they held a communication campaign which involved three media: postcards, e-mail and SMS messages. The latter had the best opening and reading rates (90%) which proves that mobile marketing is not only effective medium for youngsters but also for older audience [20].

Another issue that greatly influences the commercial effectiveness of any mobile service is the penetration of mobile devices that are able to receive mobile advertisements. In addition, the commercial effectiveness of mobile advertising is influenced by the consumers' attitudes towards it. If consumers regard mobile advertising as being equal to spamming, although only permission-based mobile advertising is legal in the EU area, it has a direct negative impact on mobile advertising and its effectiveness. Mobile device penetration and the possibility of spamming as delimiting factors for commercial effectiveness are illustrated in the following quotations [8]: This will become effective

when at least every second person has that kind of device in their pocket and uses it. The effectiveness is created through possibility for contacts (Restaurant); What if this becomes one type of junk mail [from the viewpoint of the consumers] and we have once again destroyed an advertising medium (Clothing store).

The two outcome-level benefits of the m-advertising service discussed above, namely pioneering and commercial effectiveness, are expected to be realized after service use. The following three value sub-elements: technical functionality, service support, and communication relate to the process level.

Mobile advertising facilitates ad targeting to the finest possible level, targeting individual consumers anywhere any time, based on their preferences and history of past purchases. Wireless network technologies can even track responses and nonresponses to the ads and promotions sent via SMS, and thus, allow more effective and up-to-date ad targeting, one which is unheard of in any other media. However, such a precise targeting does not come free. Ad-targeting individual or smaller segments requires massive data analysis [4].

There are many ways one could model a mobile ad-targeting problem in wireless networks. A few possible dimensions of such models are: Modelling mobility; Duration of time horizon; Learning over time; Measure of effectiveness as Response/nonresponse or Number of ads; Capacity modelling Location, Time or Both; Capacity purchase; Location data availability; Solution methodology static or dynamic. The effectiveness of ad delivery depends significantly on all these concerns.

Strategic considerations that have to be addressed when developing advertising measurement include [13]: Target marketing; Comparability; Isolated vs. coordinated ad placement; Depth vs. breadth; Viability of the advertising sponsorship model.

And we mustn't forget, when adopting mobile advertising techniques, a lot of legal and moral implications have to be taken into account. The Mobile Marketing Association (MMA) is the key institute regulating the mobile industry. Basic guidelines of the MMA code of conduct can be summarised [15]: Consumers must have given explicit consent to receive messages prior to any communication begins; Every communication must clearly indicate who the message is from; Every communication must have clear opt-out options.

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