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Framework for Personalization of sms advertising of goods and services

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Abstract

The exponential growth of wireless as a communication medium offers exciting new advertising opportunities and demand that wireless becomes a new channel of the marketing communications mix. With it, comes the ever-growing niche for short message service (sms) advertising, creating a need for personalization to enable users quickly get goods and services as well as be able to post own advertisements. Personalization entails targeted advertising based on client profiles in a bid to enhance the experience for mobile owners and brands. Even though several personalization strategies exist, they require the presence of a structured and well-maintained database. However, building such a database for sms campaigns requires that clients must divulge information about their habits, interests, and preferences. Even though data can be obtained explicitly from consumers, instead of existing databases, there is a tendency to resist sharing of personal details because of privacy reasons. This creates an inevitable trade-off between personalization and control granted to the consumer, hence the need for an intervention to leverage on 'anonymous' personalization of sms advertising. In existing personalization strategies, most efforts seem to be directed toward internet-based advertising in which users make explicit or implicit choices, which are collected into a database. This data then become the basis of the user's profile, which allows recommendations to be targeted to the user. This faces the privacy challenges as some users are reluctant to give their personal details. Thus, this research proposes a process to design and create a framework for personalizing sms advertising without user registration or subscription. Our proposed framework anticipates that users will only require their cell phone numbers to advertise or search for information, which will be used in personalization. The proposed model envisions creation of a mobile phone based artifact that uses SMS to promote commercial relationships, and establish a virtual open market that provides an opportunity to all mobile phone users.

Keywords: personalization**,** SMS advertising

1. Introduction

In a couple of years gone by, mobile telephony has become ubiquitous, and it continues to grow relentlessly as technology evolves. Communication media are becoming more fragmented, providing new opportunities to reach the intended target customers, as well as making it more challenging. Singh et al. (2008).

A user-based or personalized system is one in which the central idea is that a user is identified by a username, number, etc. with which to associate given information. This entails understanding the needs of users, the service firms collaborating with them, and recognizing the fact that users have adequate skills and necessary devices and, as such, services develop while in use.

As many people now increasingly rely on sms-based systems and applications in their daily activities, their performance, reliability and quality have become of paramount importance, as the expectations of the great diversity of users place more demands on such systems to meet their varied individual tastes. This advertising does not involve active participation of the user, as they receive information in a predetermined format and are not able to post their adverts directly by themselves. As a result, the design and development of such systems shifts focus to personalized systems.

Though massive amounts of sms based applications development and maintenance continue to take place, most of them are carried out without considering the individual needs of the respective users, hence resulting in

systems too general for everyone's use. Problems such as outdated or irrelevant information, difficulties in using sms-based systems and the difficulty in searching/finding relevant information of interest, slow response, etc. are common. All these problems, arising from the fact that the developers of such systems failed to address user's personalized needs and issues such as content management and scalability of sms applications.

According to Prasad (2003), in order to make an advertisement work, it is crucial to attract the attention of a customer. This, however, has increasingly become difficult since the existing media forms such as TV, radio, print media, e-mails, and online advertisements do not offer an individualized advertising service commensurate with individual needs, an essential component in advertising. Mobile advertising, however, offers the potential for cost-effective personalized advertising. A study of personalized sms advertising would therefore be interesting, as it would help researchers understand the contribution and place of this new form of technology for doing business.

2. Review of related work

Even though in Kenya academic research on personalized sms advertising has been done previously, unlike that on Internet advertising, such studies have been somewhat limited, focusing on niche areas perhaps due to the fact that this medium is somewhat new and there is no certainty with regards to how it will evolve. Consequently, there is a difficulty in obtaining a reliable and valid dataset to examine consumer and firm adoption behaviour with regards to sms advertising, thus the need for an empirical research in this area.

BenMoussa (2003), as cited in Motiwalla (2007) notes that several benefits can be derived from mobile connectivity, such as mobile applications generally allow the user to control or filter the information flow and communication through the wireless/handheld device; namely, these devices are usually personalized or individualized. Second, mobile connectivity improves collaboration via real-time or instant interactivity, regardless of time and location, leading to better decision-making. Finally, mobile connectivity enhances customer orientation as users have better access to their service providers and do a better job of balancing their work life through a productive use of time. These benefits can prove equally useful for improving the learning environment.

Ho & Kwok (2003) argue in support of a personalization concept. They state that with personalization, the amount of messages sent to the customers will be reduced, and the users will no longer receive numerous irrelevant messages. They further investigate the factors motivating or inhibiting the tendency for mobile phone users to change to a new service provider with personalized services.

Kavassalis et al. (2003) suggest that the mobile channel offers companies novel opportunities to get such permission and develop interactive relationships with their customers. Several studies provide evidence in support of user-based marketing in a mobile context. Reyck & Degraeve (2003) noted that mobile advertising works only if it is user based. Another study by Windwire (as cited in Yunos et al., 2003) (2000) proposed that delivering permission-based alerts to mobile phones captures consumers' attention, drives response actions and builds brand awareness.

Enpocket (2002) notes that the degree of acceptance for SMS marketing is significantly influenced by the level of exposure and the knowledge that marketer messages were being controlled by a known and trusted service provider such as user-based advertisers. Finally, Barwise & Strong (2002) found that 82% of the respondents mentioned that receiving three permission-based advertising texts per day was "about right", with younger customers being more receptive to more frequent advertisements, and the mobile channel has the potential to benefit both advertisers and consumers.

Oracle (2011) noted that personalization begins with the primary best practice of defining the rules by which you interact with your customers. The key to creating effective personalization rules is leveraging what you know about your clients based on past and current interactions and using profile management to store key customer attributes. These attributes combine to create customer segments or personas that enable you to drive relevant interactions. Personas offer a way of enhancing your traditional customer segments with subjective information that personifies that segment.

3. Emergent issues from the review

Study of related works has revealed that indeed personalizing the message increases its impact and that a structured and well-maintained database is crucial for targeting customers effectively. Barwise & Strong (2002)

established that building such a database for SMS campaigns requires that clients must disclose personal information. While obtaining explicit data from consumers, rather than leveraging existing databases, increases the message's relevance, it has been shown that many clients resist sharing personal details, hence creating an inevitable trade-off between personalization and control granted to the consumer hence the need to find a mechanism to fill this gap: allow for personalization of sms without infringing on personal information.

While several personalization strategies exist, it can also be observed that a common thread among existing personalization strategies is that users require first to register to be able to use the service. These strategies do not allow one to request for particular information by sms without having to subscribe. Further, from the literature, there is no record of design and testing of a mobile-based artefact geared towards tackling difficulties in personalized sms advertising, particularly on 'anonymous personalization' of sms advertising, hence the study will fill this gap. Also, while efforts have been undertaken towards personalization of sms advertising while encompassing various aspects of advertising, little effort has been done towards classified sms advertising- a form of advertising in which the user takes the leading role of posting their adverts on their own as well as having the ability to search for information from a remote database via sms, without having to wait for sms messages from advertisers.

To ensure efficiency, there is need to need for balance against increased user benefit. Given that tracking users' buying habits will require collecting user's sensitive information, there is a need for an intervention that allows personalization without need for sensitive user details.

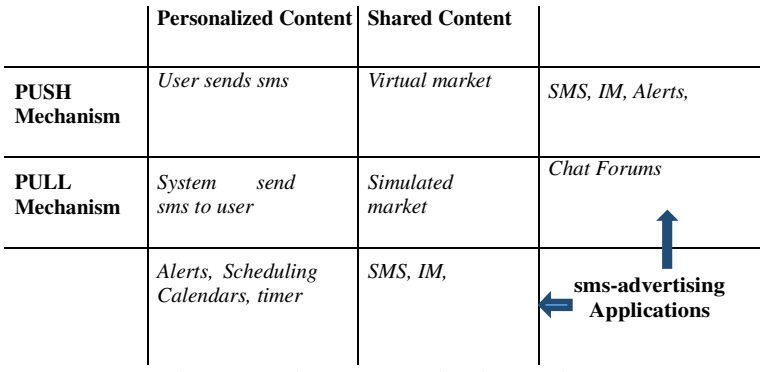
This brings about these challenges: (i) How do we achieve personalization in sms advertising yet sms lacks the 'universality' aspect, i.e., sms covers specific regions due to network limitations. (ii) Can we, therefore, have a platform to allow for sms advertising without limitation by a service provider? (iii) How do we ensure personalization in sms advertising without the need for user registration? Is it possible to create a platform that can allow this, based only on user cell phone numbers?

4. Proposed Framework/Model for sms advertising

This paper, therefore, proposes that using an algorithm, sms advertising can be personalized to present a potential technology for realizing mobile sms advertising requirements.

As such, we propose a framework for personalizing sms advertising. The framework integrates ideas from mobile connectivity e-advertising into application requirements for personalized sms advertisement. According to Carat Interactive (2002), push advertising is categorized as messages that are proactively delivered out to customers. Companies can use databases with existing customer profile, which can be bought externally to reach targeted groups. On the other hand, pull occurs when consumers make a request for information or use some service on a one-time basis, in the process getting exposed to commercial messages.

Given that this framework intents to put the sms user in charge of searching and posting adverts, pull mechanism will be used to make posting of adverts and searching for information more effective. As such, based on this framework, users will be searching for advertisement as well as being able to post their adverts directly rather than just receiving sms adverts information seeking them (pushing).



Proposed framework for personalized sms advertising

Taking cognisance of the benefits accruing from push and pull technology, the framework will help create a platform on which a successful sms advertising environment can be built. This, owing to the fact that mobile

advertising has become more individualized, user-centered, and ubiquitous. These corresponding progresses offer the possibility for sms advertising, as there will be more useful tools to help address the current problems. This approach will be useful for designing applications that incorporate salient advertising and conversation theories into a mobile advertising environment.

The proposed model envisions creation of a mobile phone based artifact that uses SMS to promote commercial relationships, and establish a virtual open market that provides an opportunity to all mobile phone users. Service users will be able to utilize it by means of sms and making payment via mobile banking payment systems. Upon receipt of this money transfer and depending on customer needs (whether to advertise or search for information), the system will either run the advert on the virtual market or furnish the customer with the search contact(s) they need. Transactions for advertising and searching will be logged in a form of strings. A string being a sequence of numbers similar to a path describing the content or nature of a business transaction and containing the values related to a particular client, stemming from the main menu and branching off into specific areas of need. Once the string is developed, it will be archived in the database where it can be referenced, based on a particular set of key values used as a search base.

The framework can be represented using the following algorithm:

1. Database gathers data on user transactions based on the string developed.
2. Engine sifts through this data, classifying items or categories advertised or viewed in groups.
3. When mobile user purchases or views an item, engine will recommend item grouped with chosen item in the past.

The framework will provide mechanism for an interactive forum for mobile phone users to post advertisements as well as allow them to search for information via sms.

5. Conclusion

This paper observes that personalization is a core function of sms advertising if useful results are to be obtained. A framework for personalization of sms advertising is proposed. Based on this, a mobile artifact can be created to allow mobile phone users to place advertisements from their mobile handsets. The difference with other forms of personalization is that, in existing personalization strategies users make explicit or implicit choices, which are collected into a database. This data then become the basis of the user's profile, which allows recommendations to be targeted to the user. This faces the privacy challenges as some users are reluctant to give their personal details. Our proposed framework anticipates that users will only require their cell phone numbers to advertise or search for information; hence only their number will be used in personalization.

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