United States mobile phone usage is on the rise, and catching up with countries abroad. Overseas, companies have experimented with a new way to deliver mobile content through the use of proximity marketing. Using Bluetooth technology, information can be delivered to mobile device users as they walk in designated physical vicinity. This information is often promotional marketing material for a nearby business. Recently, small US companies have launched pilot campaigns in urban areas such as Los Angeles. The service is still very early in its implementation, but plans to expand to other malls. Understanding user interactions and attitudes towards this technology will allow companies to make the system more useful and relevant to customers. In this study an online survey was sent to Los Angeles area mall patrons.

The survey questions were designed to gauge their familiarity with the technology, understand their preferences and identify areas to improve the usefulness of the service. The results of the survey revealed many insights including users’ preference for large incentives, timely information and high personalization. In addition, it is noted that many technical issues need to be resolved such as compatibility with popular mobile devices.

Headings:

Bluetooth
Proximity Marketing
Mobile Marketing
Wireless
Location Based Services
REACTIONS TO BLUETOOTH PROXIMITY MARKETING IN LOS ANGELES AREA MALLS

by
Eric Azares

A Master's paper submitted to the faculty of the School of Information and Library Science of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Information Science.

Chapel Hill, North Carolina
April, 2009

Approved by:

___________________________
Advisor
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1. Proximity Marketing

What is Mobile Marketing

Mobile advertising is a method for companies to reach their customers through mobile devices. The Mobile Marketing Association (MMA, 2009) defines mobile marketing as the “use of wireless media as an integrated content delivery and response vehicle within a crossmedia marketing program.“ Integrated content can include images, texts messages, movies and other material containing the company’s marketing message.

Companies can connect to customers through their mobile phones in various ways. Mobile marketing methods include voice, text messaging, mobile websites and proximity marketing (Dushinski, 2009). Voice allows customers to chat with a person one-on-one or interact with a voice recording. For example, a company can post a physical sign with a phone number to call for more information about their services. In a text messaging campaign, messages comprised of up to 160 characters are transmitted to a phone through a short message service (SMS). Several variations include voting/polling, alerts, and mobile coupons. A mobile website is a mobile-friendly website that user can access through their phones. A phone’s web-ready micro-browsers can access these websites using their mobile phone’s service plan. And finally, content can be delivered through proximity marketing such as wi-fi or Bluetooth. In this system, local wireless hardware transmits data to the customer when they are within a physical proximity.
All these methods of content delivery share the traits of location-specificity and timely knowledge. Statistics show that 57 percent of mobile web users seek information about the weather. The second most sought topic was sports news/scores, followed by local traffic information (Michael, et al, 2008). Because location relevance is an important factor for mobile users, mobile advertising must take this into account when designing a mobile campaign. Just as users want to receive relevant information that is local to their surroundings, mobile advertisements must also be relevant. In the world of proximity marketing, a user’s physical location will determine the type of advertisements he or she will receive.

**What is Proximity Marketing?**

Proximity marketing is a type of mobile marketing that connecting businesses to their customers in specific locations. The context specificity allows advertisers to send targeted and personalized mobile-advertisements to consumers on the move, hence an alternative term, location based commerce (Turban, 2002).

Mobile devices can be defined as any portable wireless computing device, typically with a display screen and an input device, usually in the form of a keypad. These portable tools are carried by individuals and exist in various forms including personal digital assistants (PDA’s), laptop computers, Global Positioning Systems (GPS’s) and cellular phones.

A proximity marketing system allows a new way for retailers to sell and distribute products and services. Mobile users can request to receive marketing material directly on their devices, including text messages, movies, audio and images. These materials can be
transmitted through cellular carriers such as AT&T, Verizon and Sprint or through a short range wireless network such as wi-fi, infrared or Bluetooth. By understanding the characteristics of proximity marketing campaign, we can better understand why such technology would be used to target mobile phone users.

**Characteristics of a Proximity Marketing Campaign**

*Personal*

Proximity Marketing has several unique characteristics that separate it from traditional advertising. Marketing content can be transmitted to a person’s personal device. This material is interactive in nature and can be customized based on the conditions of the user’s surrounding environment.

Traditional advertising targets large segmented groups, while mobile advertising targets individuals (Salo, 2005). Mobile phones are carried by individuals throughout the day. These hybrid devices often hold personal information such as information about friends and family, private calendar, and customized features such as ringtones, music and wallpaper. Just as the media features are personalized, the phone’s incoming and outgoing text and voice messages are also private. Due to the private nature of mobile devices, it’s imperative to acknowledge the need for a personalized marketing advertisement.

*Interactive*

Electronic messaging to a mobile device allows interactive engagement. In contrast to other forms of advertising such as print and television, mobile advertising provides rapid
two way communication. When a person sees advertisement on a printed newspaper or billboard, the user can not immediately retrieve additional information or initiate a purchase. When a mobile advertisement is transmitted, the user is immediately alerted and can instantly respond using their device’s keyboard. These activities may include responding to the message, making an instant purchase (if that option is available in that particular campaign) or deleting the message. In all these scenarios, the user is interacting with the marketing material.

The prime function of mobile phone presents yet another opportunity for mobile marketing interactivity. Mobile phone users have the ability to contact individuals in their social network, including friends, families and coworkers. If a person enjoys a particular mobile marketing message, they have the opportunity to instantly share it with others. Depending on the campaign, the information can either be forwarded via text message or sent as a file attachment. In any case, the marketing message reaches a direct communication hub, allowing for user interactivity.

*Context Aware*

A third characteristic of proximity marketing is context awareness. A proximity advertising campaign can intelligently deliver content based on variables including geographic location, time of day and device type. Because mobile-advertising can generate information relevant to a particular place, it is often referred to as proximity. A business can send information to a personal device, based on its built-in Global Positioning System coordinates (GPS), its relation to a cellular tower or wireless access
point, or through personal short range technologies such as Bluetooth or infrared beaming.

Location-specific knowledge is the No. 1 reason that people access the mobile web (Dushinski, 2009). Local information may include nearby businesses, driving directions, points of interests. For example, if a person is in New York City looking for a place to eat, they can use a search engine on their mobile phone to locate a restaurant within several blocks. If a person chooses to disclose their locations a mobile advertising system can deliver content relevant to their geographic location. A person’s location is an important key in proximity marketing which will be discussed in later sections.

Time and date is another factor that can be involved in a mobile-advertising campaign. Different content can be delivered to a person, based on the date and time. For example, a restaurant may choose to send information about their breakfast buffet only during the hours of 7:00am and 11:00am. They may choose this specific time slot because these are the hours when the buffet is available in the restaurant. If the message is sent after these hours, for instance, at 2:00pm, the information would no longer be useful to a person because the event is in the past.

Another example that demonstrates time and date as a variable would involve a store’s limited time promotion. Discount coupons may be transmitted to mobile customers for 5 days leading up to a President’s Day sale. After the date has passed, the coupons may no longer be valid and would therefore not be sent to mobile phones. In both the breakfast buffet and President’s day sale examples, mobile advertising delivers information that is relevant to the user’s context.
Finally, mobile advertising systems are able to determine the type of device receiving the marketing information (Salo, 2005). Devices vary from personal digital assistants, mobile phones, to lap top computers. These portable machines may vary in processor speed, display size and format. If the device must be identified to ensure that the proper file formats are delivered. Below is a listing of the top selling mobile phones and their display features:

1. IPhone- 320 x 480 pixels, 16,777,216 colors
2. Motorola- RAZR V3 176 x 220 pixels, 65,536 colors, TFT
3. Blackberry Curve - 320 x 240 pixels, 65,536 colors, TFT
4. LG Rumor - 176 x 220 pixels 262,144 colors, TFT
5. LG enV2- 320 x 240 pixels, 262,144 colors, TFT


The top five phones all vary in screen size and color support. A 176x220 pixel, 65,536 color advertisement that is designed for a Motorola RAZR may have not be displayed properly (or at all) on an LG Rumor phone, which displays only 176 x 220 pixels and 144 colors. Therefore it is imperative that a mobile advertising system has the ability to recognize a user’s device type and deliver an appropriate format.

**Legal Issues in Mobile Marketing**

From a strategic marketing point of view, having an ‘opt-in’ choice can appeal to consumers. Due to the personal nature of transmitting information to an individual’s handheld device, consumers may prefer to choose whether they want to receive material. Although proximity marketing aims to provide relevant and useful information to a
specific audience, the end user is ultimately in control. If such a feature were not in place, an end user can potentially be bombarded with material. This constant and unsolicited messaging may breed ill-feelings among the audience and have a negative influence on the campaign. For these reasons, it is paramount that proximity marketing systems are user permission-based.

Most importantly, an ‘opt-in’ feature is mandatory for proximity marketing systems in the United States. The CAN-SPAM Act of 2003 (15 U.S.C. 7701, et seq., Public Law No. 108-187, was S.877 of the 108th United States Congress) established standards for electronic messaging. This law was intended to protect privacy and control the number of unsolicited and deceptive messages. The law’s main provisions include:

*Ban of false or misleading header information*- Sender and routing information such as “from” and “to” fields in an email or text message must be accurate.

*Deceptive subject lines*- The subject line cannot mislead the recipient about the content of that is found in the main body of the message.

*Outward identification as an advertisement*- The message must clearly identify itself as an advertisement or a solicitation

*Recipients have an ‘opt-out’ method*- A return address must be provided and an opt-out response mechanism must be in place to allow recipients to discontinue communication.

It is important to note that this law is applicable to various aspects of a Bluetooth marketing message. When a system first contacts a person who is roaming within a
Bluetooth vicinity, the message must identify its source, its nature as an advertisement, and provide a way for the recipient to prevent future messages.
2. What is Bluetooth?

Bluetooth is a technology that began in 1994 when Sony Ericsson began to research alternatives to using wires and cables to link mobile phones to their accessories. This study explored the use of radio signals because of their omni-directional capabilities. This technology has mobility advantages over infra-red links, which require a direct line of sight. The Ericsson Mobile research gave birth to Bluetooth wireless technology, named after Harald Blatand, a tenth-century Danish King. Just as he controlled and united Norway and Denmark, researchers hoped that Bluetooth will unite telecommunications and computing (Held, 2001).

In 1998, the Bluetooth Special Interest Group (SIG) was formed to establish and promote Bluetooth specifications across the industry. This group included Ericsson Mobile Communications, Intel, IBM, Toshiba and Nokia Mobile Phones. By 1999, SIG membership expanded and included other major technology companies, including Microsoft, Lucent, 3Com and Motorola. Those who participated had the opportunity to put their products through the Bluetooth qualification process. By adhering to the established guidelines they are granted a free license to build products using Bluetooth. This license is the key to attaining the patents required to incorporate Bluetooth technology into a new product. This cooperation among companies is important because it ensures that all Bluetooth devices will properly connect, regardless of the manufacturer. So, rather than keeping Bluetooth usage restricted and proprietary, many companies have the opportunity to adopt this technology and build a rich network of Bluetooth enabled devices. The ability to work with a lot of different manufacturers is a
key feature in Bluetooth's design.

The Bluetooth SIG established technical specifications to ensure that Bluetooth is widely available, inexpensive, convenient, easy to use, reliable, small and low power. All Bluetooth operates in the 2.4 GHz ISM (industrial, scientific and medical) band, which is licensed exempted. In addition to defining this radio system, the Bluetooth specification also defines the protocol stack. This allows Bluetooth devices to communicate with each other. The low-cost transceiver microchips provide a relatively cheap and short range method of communication. These vary in power consumption and physical range and are organized by three classes:

<table>
<thead>
<tr>
<th>Class</th>
<th>Maximum Permitted Power mW (dBm)</th>
<th>Range (approximate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>100 mW (20 dBm)</td>
<td>~100 meters</td>
</tr>
<tr>
<td>Class 2</td>
<td>2.5 mW (4 dBm)</td>
<td>~10 meters</td>
</tr>
<tr>
<td>Class 3</td>
<td>1 mW (0 dBm)</td>
<td>~1 meter</td>
</tr>
</tbody>
</table>

Bluetooth uses a 'fast frequency hopping' radio technique, which means it can
change its operating frequency 1600 times a second. This means that even in areas of high interference, it will find a way to continue working with other devices (Smyth, 2004).

Before a network connection can be established, the Bluetooth compatible device must be turned on. When this occurs, the device will be in a stand-by mode, 'listening' to a set of 32 hop frequencies. If another Bluetooth device is present, communication will commence through the exchange of data packets. When a master discovers a new device in the network such as a cellphone, an inquiry packet is sent to that device. The phone replies with a Frequency Hop Synchronization (FHS) packet, containing device information. (Bray, 2001) Bluetooth devices operate in two modes—either master or slave. The master device sets the frequency for the hopping sequence, while the slave synchronizes.

Collections of masters and slave devices exchanging data create various types of networks. A collection of Slave devices operating together with one single Master is called a piconet. Networks with multiple Masters communicating with multiple Slaves are known as scatternets (Held, 2001).
3. What is Bluetooth Marketing?

Bluetooth wireless technology can be used to facilitate proximity mobile marketing. When a company decides to launch a mobile advertising campaign, they must decide on the most appropriate technology to deliver their material. Bluetooth marketing may be a good choice for low-cost localized mobile campaigns. There are several characteristics that of Bluetooth that compliment the objectives of a proximity marketing campaign.

*Omni Directional and Close Range*

A master Bluetooth device transmits radio waves in multiple directions, typically up to 150 feet. This creates a ‘zone’ where other Bluetooth devices, such as mobile phones, can be detected. In proximity marketing, companies transmit advertisements in close range to the actual business or product. A Bluetooth campaign’s short range signal makes it a probable choice for communicating with local potential customers.

*Simultaneous Communication with Multiple Devices*

A network of Bluetooth devices is able to create a piconet and scatternets. This allows a master Bluetooth device to transmit data to several devices at once. For example, a Bluetooth unit containing promotional coupons can sit in an area with high foot traffic and transmit the same advertisement to multiple people as they walk by. The ability to network with several Bluetooth devices allows marketers to reach many people at once.

*Zero Cost to Receiver*

Bluetooth’s transmission technique and manufacturing standards allow messages to be sent to nearby patrons without cost. Traditional text messaging campaigns involve
sending alerts through mobile phone carriers, costing the receiver through their text messaging plan. A Bluetooth message is sent directly from a Bluetooth device to the mobile phone, without the use of mobile carriers such as AT&T or T-Mobile. This is an important characteristic that is a driver for Bluetooth proximity marketing. Both the business and the end user benefit from direct communication. The Bluetooth marketing option will appeal to a business because they will not have to pay mobile carriers to deliver data. Paying to receive a text message may deter a potential customer from looking at the advertisement and cause ill feelings towards the company. However, with Bluetooth advertising, the recipient incurs no cost.

*Can Identify Receiving Device and Support Various Media Formats*

Bluetooth can support multiple media formats such as graphics, ringtones, music and movies. These characteristics make Bluetooth an appropriate choice for highly localized marketing campaigns where users may be using phones with varying multimedia capabilities. Another advantage of using this technology is availability. A high percentage of phones are equipped with Bluetooth capabilities.

*Most Major Mobile Devices Have Bluetooth*

In early 2008, more than 250 million of the 303 million residents in the United States have a cell phone (Dushinski, 2008). This statistic indicates an opportunity for business to reach customers through this wireless medium. However it is important to note that cell phones vary in degree of functionality. Although there are 250 million
cellular phone users, not all may have Bluetooth capabilities and therefore may not receive content in Bluetooth zones.

However, Bluetooth is becoming a standard feature for many new mobile devices. According to research conducted by the NPD group (http://www.npd.com/press/releases/press_081110.html) the top selling mobile phones in the third quarter of 2008 were:

1. Apple iPhone 3G
2. Motorola RAZR
3. RIM Blackberry Curve (all models)
4. LG Rumor
5. LG enV2

The Motorola, Blackberry and LG models all come equipped with Bluetooth connectivity capabilities. The current Apple iPhone and Blackberries have Bluetooth capabilities that are limited to pairing with wireless headset devices and synchronization with designated products.

In hubs around the world such as Hong Kong, Taiwan, Singapore, Italy and Israel, cell phone usage has climbed to more than 100 percent, because many residents have more than one phone. This number is significantly different from the United States, suggesting that the US may be behind the global curve. However, this may be seen as an opportunity for Bluetooth technology to grow as cellphone use becomes more pervasive in the United States.
Opt-In

It is important to note that Bluetooth marketing requires the users to take initiative and choose to receive marketing material. To receive a marketing content the user must perform to acts: activate their Bluetooth device and accept messages. The first act requires the user to be aware of their Bluetooth device’s on/off status. If the Bluetooth option on their mobile device is not turned on, the proximity marketing system will not detect the device. If the Bluetooth option is activated, the device will be detected and the user will be prompted with a choice to receive promotional material. If ‘yes’ is selected, then the proximity marketing system will transmit data to the device. If ‘no’ is selected, the system will no longer solicit the user. Again, each mobile device has its own unique identifier which is recorded by the master Bluetooth device. This simply means that the ‘no’ preference is recorded and the device is not solicited again.
4. Examples of Proximity Marketing Campaigns

Around the world, many nations have already begun experimenting with Bluetooth proximity marketing systems. Variations of Bluetooth marketing campaigns can be found in countries across Europe, Africa, and Southeast Asia. For example, in August 2005 a Bluetooth enabled billboard in the United Kingdom allowed fans to download marketing media for the music group Coldplay’s upcoming album release (http://www.textually.org/ringtonia/archives/2005/08/009398.htm). Materials included ringtones, wallpapers and audio samples. For this limited time campaign, a Bluetooth station located in a large billboard sign transmitted material to mobile users within close proximity.

Bluetooth Mobile marketing has been implemented in highly concentrated places and events. In India several Bluetooth marketing campaigns have been centered around a special event (http://mobile2mobility.com/successful-bluetooth-marketing-campaigns-case-studies-from-india/). For example, in India Telecom 2007, the entire convention center was converted into a Bluetooth zone, providing guests with information such as event schedules and product information. Here in the United States, Madison Square Garden tested a Bluetooth campaign system in December of 2008 (http://www.mobilemarketingwatch.com/the-garden-goes-mobile/). In these examples, the Bluetooth marketing campaigns cater to a concentrated area of people, all with a similar interests.

Other recent examples of the Bluetooth Marketing in the United States include implementations in New York City and San Francisco. The Spectacolor HD monitor is a giant multimedia billboard that provides streaming video content, Wi-Fi and mobile
phone interactivity (http://spectacolorhd.com/). Mobile phone users can listen to audio broadcasts, download videos and games by pointing their devices towards this display.

In 2008 San a company known as Intera launched two promotion campaigns in San Francisco. A five day promotional campaign transmitted $5 discounts for the Rocketboat, a nearby water attraction. The second campaign was a 15% promotion for the Hard Rock Café restaurant which was also sent via Bluetooth. Promotional signs were strategically placed in high traffic areas, prompting individuals to enable their Bluetooth devices Appendix A.
5. Proximity Marketing in LA Malls

Intera’s System

Intera is a California-based mobile marketing company that specializes in proximity marketing solutions. As of February 2009, they have rebranded their goods and services as AzureMayan. Intera utilizes several hardware and software components in their proximity marketing solutions. A small hardware unit, referred to as an AzurePoint, is the main wireless transmission device, capable of communicating with both Bluetooth (up to 150 feet) and WiFi (up to 300 feet). This master Bluetooth device is capable of identifying and connecting up to 20 customer devices at a given point in time (Intera, 2009).

The Bluetooth unit can also record activity of devices within the Bluetooth area or AzureZone, as dubbed by AzureMayan. Devices types are recorded while physical movement and duration in the area is recorded. This information allows marketers to understand what types of phones are popular in a certain location. The tracking of physical movement and time spent in the zone will provide insights to the physical habits of patrons within that zone. For example, the company may choose to relocate the AzurePoint if customers spend minimal time in a certain area. If increased foot traffic occurs in an AzureZone, retailers may consider hiring more staff members to support those areas.

The AzurePoint is the delivery mechanism for content that is hosted and managed through AzureMayan’s own network of machines, known as the AzureNetwork. This hardware is located off site and sends data to an AzurePoint through a secure network.
The AzureNetwork provides all the material that is transmitted during a Bluetooth campaign. The software in the AzureNetwork is responsible for managing campaigns, monitoring network devices and provide analytics.

**Bluetooth Campaign in Los Angeles Malls**

In January 2009, Macerich, a retail property developer in the United States, announced they would team up with Intera (LA Times, 2009). Their plan was to setup Bluetooth proximity marketing hotspots in several of Macerich’s malls in the Los Angeles, California area. These shopping centers include Westside Pavilion in West Los Angeles, The Oaks in Thousand Oaks, Los Cerritos Center in Cerritos, Lakewood Center in Lakewood and Stonewood Center in Downey (Macerich, 2009).

These five malls are located in different cities with distinct characteristics and demographics. The Oaks a fully enclosed shopping center located in Thousand Oaks, which is northwest of Los Angeles. This suburban community is known for its affluent consumer base. The next mall is the Westside Pavilion, situated in the Westside of the city of Los Angeles. This three story indoor mall holds is adjacent to several highly affluent communities such as Beverly Hills and Pacific Palisades. The size and clientele of both the Westside Pavilion and The Oaks differ from the Stonewood Center in Downey. This one story mall is linear in its layout and serves a primarily young family market. The Lakewood Center in Lakewood also provides one floor of stores and second floor its food court. This suburban mall is positioned to serve a more broad-based audience. And finally, just five miles east is the Los Cerritos Center, serving both diverse
and affluent shoppers. This diverse set of shopping centers provides a broad a base of patrons who may interact with the proximity marketing system.

**Sizes of Macerich Malls in Los Angeles**

<table>
<thead>
<tr>
<th>Mall</th>
<th>City</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Cerritos Center</td>
<td>Cerritos, CA</td>
<td>1,290,420 square feet</td>
</tr>
<tr>
<td>Lakewood Center</td>
<td>Lakewood, CA</td>
<td>2,088,228 square feet</td>
</tr>
<tr>
<td>Stonewood Center</td>
<td>Downey, CA</td>
<td>930,655 square feet</td>
</tr>
<tr>
<td>Westside Pavilion</td>
<td>West Los Angeles, CA</td>
<td>739,746 square foot</td>
</tr>
<tr>
<td>The Oaks</td>
<td>Thousand Oaks, CA</td>
<td>1,047,095 square feet</td>
</tr>
</tbody>
</table>

Source:  http://www.macerich.com, 2009

Intera’s proximity marketing hardware is installed in all five malls. Specifically, they chose to place the units in the food court and outside the movie theatres because of the high foot traffic and average duration spent in each location. Patrons are more likely to spend an extended amount of time in a food court area while they dine. Patrons near
movie theatres may be waiting outside of a show to begin. Additionally, movie theatres ask patrons to deactivate their phones or place them in silent mode before the movie begins. During this process, the patrons will interact with their phones are likely to see a marketing message when it is sent.

Intera’s implementation in Los Angeles malls is still relatively new and has launched several small campaigns. In December 2008, they promoted the release of the movie “The Strange Case of Benjamin Button” by offering downloadable movie trailers. Shoppers carrying Bluetooth activated phones were alerted of this opportunity as they walked by the entrance of the theatre. The message would ask the user if they would be interested in downloading 1 minute movie that would be displayed on their phone. If the user selected ‘Yes’, the file downloaded to their device. If ‘No’ was selected, they would exit the program and not asked again. This campaign lasted for several weeks during the month of December 2008.

In recent months campaigns have been launched in the food court areas of the malls. The mobile promotion is designed to create awareness of American Express Macerich gift cards. The mall gift certificate ad is text and graphics based and tells patrons that gift certificates are available for purchase at the mall’s customer service desk. This card can be used to make future purchases in any store within the mall.
6. Significance of this Study

Bluetooth proximity marketing is relatively new to United States. Regions of the world such as the United Kingdom, India and Asia have a higher percentage of cellular phone users. Because of the significant number of mobile phone usage in certain countries, businesses have deployed many proximity marketing campaigns in attempt to reach their target audience. The United States is behind the curve and still slowly adopting mobile devices as a two way communication tool with businesses.

Some may consider the late adoption as an advantage to United States mobile marketing companies. By watching the successes and failures overseas, the companies can craft emulate winning strategies that may work on their home soil.

However, it is important that feedback is gathered here in the United States. Variables such as cultural customs and prevalence of personal mobile technology may make it difficult to replicate the successes overseas. In other words, what may work overseas, may not necessarily work here in the United States. Adjustments in the mobile marketing plan may be made to accommodate the mobile audience here in the United States. Companies are currently testing the waters by implementing proximity marketing installation in limited locations.

As a researcher, I am conducting a survey targeting mall patrons who have experienced or may encounter these new proximity marketing systems. The objective of the survey is gain qualitative feedback on a newly implemented system in Los Angeles. Early analysis of user reactions may serve a key role in determining the long term success of this new
technology. The technology is readily available, but its acceptance by the masses will determine if it is a viable solution for both marketers and customers.
7. Methods

An online survey was designed and sent to individuals in the communities near the five Macerich malls in the Los Angeles, California area. The survey consists of 15 questions that gain information about the research subject’s:

- General awareness and usage of Bluetooth technology on their mobile devices
- Awareness of the current proximity marketing campaigns at nearby malls
- Attitude towards the concept of Bluetooth proximity marketing
- First hand experiences with Bluetooth proximity marketing
- Suggestions on how to improve the system

The survey was distributed online through email messages on the online social network known as Facebook. Potential subjects were located through the use of the website’s member search tool. Keywords entered into the search filter included names of malls with Bluetooth technology systems: “Westside Pavilion West Los Angeles”, “The Oaks Thousand Oaks”, “Los Cerritos Center Cerritos”, “Lakewood Center Lakewood” and “Stonewood Center Downey”. Both males, females and all ethnicities that appear in the search results had equal access to this study. This survey was conducted for four weeks during the month of March 2009.
8. Results

In this research study, 40 people participated in an online survey. Out of those participants, only three had direct contact with the mobile marketing system. This number can be attributed to the limited availability and publicity of the campaign. The other 37 participants are mobile users who frequent the shopping centers. Although they did not interact with the system directly, they are still able to give insights to user preferences and mobile advertisement usability.

Mobile proximity marketing is a new and experimental technology here in the United States. However, in the early stages of this implementation, users may choose to reject a mobile marketing message for a number of reasons. Understanding these reasons can help proximity marketing company improve their future systems. As part of this survey, participants were asked to rate their mobile marketing concerns from 1 to 5. Among the concerns is the nature of the offer. Examples may include 10% discounts and ‘buy one get one free’. Another concern is receiving an advertisement from a store of interest. Malls house many specialty stores, serving diverse customers, so it is important that the right message reaches the right people. The other concerns relates to privacy and computer viruses. Privacy refers to the security of a patron’s personal information, while viruses relate to potential dangers of malicious mobile software.

The survey revealed that top concern was “Not interested in the offer itself”. The second top concerns were “privacy issues” and “don’t like the store being promoted.” It is worth noting that 32% chose “not interested in the offer itself” and 44% chose “Don’t like the store that is being promoted” as their second choices. These
percentages indicate that the quality of the offer and the identity of the store are chief concerns. “Other” concerns included quantity of messages, fear of involuntary charges to their cellular bill and distraction from shopping.

What reasons would cause you to reject an advertisement sent to your phone?

<table>
<thead>
<tr>
<th>Answer</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not interested in the offer itself</td>
<td>28%</td>
<td>32%</td>
<td>24%</td>
<td>12%</td>
<td>4%</td>
<td>25</td>
</tr>
<tr>
<td>Privacy issues</td>
<td>24%</td>
<td>4%</td>
<td>24%</td>
<td>32%</td>
<td>16%</td>
<td>25</td>
</tr>
<tr>
<td>Don't like the store that is being promoted</td>
<td>24%</td>
<td>44%</td>
<td>8%</td>
<td>16%</td>
<td>8%</td>
<td>25</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>12%</td>
<td>4%</td>
<td>8%</td>
<td>16%</td>
<td>60%</td>
<td>25</td>
</tr>
<tr>
<td>Fear of computer/phone viruses</td>
<td>12%</td>
<td>16%</td>
<td>36%</td>
<td>24%</td>
<td>12%</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
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<td>25</td>
<td>25</td>
<td>25</td>
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<td>100</td>
</tr>
</tbody>
</table>

Intera’s AzureMayan began transmitting marketing content for several weeks in December 2008. Their first campaign involved a download movie trailer. The second campaign started earlier this year, with the promotion of mall gift cards. This informational message made patrons aware that gift cards were available for purchase at the customer service desk. In the next section, survey participants were asked what content they would like to receive on their phones. Information about a current sale was ranked the highest, followed by store coupons and discounts. The third choice was general store information such as hours and location.
Which of the following material would you be interested in receiving on your mobile phone while you are visiting a mall?

<table>
<thead>
<tr>
<th>Type of Mobile Content</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about a store's sale that day</td>
<td>16</td>
</tr>
<tr>
<td>coupons</td>
<td>11</td>
</tr>
<tr>
<td>general store information (store hours, location etc.)</td>
<td>9</td>
</tr>
<tr>
<td>none (please explain)</td>
<td>5</td>
</tr>
<tr>
<td>multimedia material such as mp3's &amp; movies</td>
<td>4</td>
</tr>
<tr>
<td>other (please explain)</td>
<td>2</td>
</tr>
</tbody>
</table>

Bluetooth is integrated in many mobile phones but is still an optional feature. It is important to learn what percentage of participants utilizes this technology during their daily lives. This may help in determining how many individuals Bluetooth marketing campaign can potentially reach.

In this survey, 32% stated that they use the Bluetooth feature on their phone. All participants indicated they use Bluetooth to perform tasks such as connecting with a headset or communicating with another device such as a laptop or automobile.

Do you use Bluetooth on your mobile device?

<table>
<thead>
<tr>
<th>Answer</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32%</td>
</tr>
<tr>
<td>No</td>
<td>66%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
**What tasks do you perform with your mobile device's Bluetooth feature?**

<table>
<thead>
<tr>
<th>Bluetooth Tasks</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecting with a hands-free headset</td>
<td>9</td>
<td>53%</td>
</tr>
<tr>
<td>Syncing with another device such as a laptop</td>
<td>5</td>
<td>29%</td>
</tr>
<tr>
<td>Syncing with an automobile system</td>
<td>3</td>
<td>18%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Participation in a Bluetooth Proximity system requires users to ‘opt-in’. Awareness of a marketing campaign can improve the overall participation. When participants were asked how they learned about the Bluetooth advertising system, 54% were unaware of the campaign. Twenty-three percent indicated they learned through word of mouth while 15% learned about Bluetooth when a message was sent to their phone. No participants learned about this Bluetooth marketing through the internet, newspaper article or sign inside the mall.

**How did you first learn that Bluetooth advertisements were available at your mall?**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Heard of It</td>
<td>7</td>
<td>54%</td>
</tr>
<tr>
<td>Word of Mouth</td>
<td>3</td>
<td>23%</td>
</tr>
<tr>
<td>A message was automatically sent to my Bluetooth device</td>
<td>2</td>
<td>15%</td>
</tr>
<tr>
<td>Announcement over mall loudspeaker</td>
<td>1</td>
<td>8%</td>
</tr>
<tr>
<td>Internet or Newspaper Article</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Billboard or Sign</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Survey participants had the opportunity to provide qualitative feedback regarding Bluetooth proximity marketing. These written responses can give insight to how users feel about proximity market and may indicate opportunities for future system designs.

Survey participants responded with many ideas when asked for suggestions on future improvements. The wide range of answers fell into common themes that align with general mobile marketing guidelines.

**Sales Incentives**

| “Definitely target the way consumers can save...that’s the only way "in" to a user” |
| “Circuit city style (yes, I know they're out of business) but **checkout straight** from an advertisement on your phone and just go to the store to pick it up.” |

Much feedback revolved around the idea of discounts or coupons. In this case, the mobile advertisement enables the user to redeem a discount by accepting the message and displaying it to originating store. One participant proposed a buy directly through phone option, where users can buy an advertised directly through their phone. This suggests a level of comfort in mobile commerce interactivity.

**Opt-in and Opt-out**

| “I want to **opt-in** and be able to **easily opt back out**” |
| “**Voluntary access** to info would be interesting. Perhaps offer a number on the window of the shop to access info or to receive a text.” |
“Stronger privacy controls and opt-out features”

“I don't like having surprising messages sent to my phone. I complained to the front desk because I was confused.”

Many who took the survey questioned their own privacy and expressed a need for opt-in requirements.

*Relevant and Personalized Information*

“If it is relevant to me and easy to ignore, I'd be in favor of it... as long as they ask permission first.”

“Set up preferences so you can control what kind of messages you want and the option to turn it off.”

“Email the person, but make sure that it’s something they know they would look at. Such as in movies if they go to the movies or places to eat.”

“Tailor advertisements to user personal preferences that the user elects, in advance, to share with marketers, to avoid privacy issues. If ads are tied to actual purchases or stores visited, it just becomes too much of a violation although it would be a marketer's dream.”

Finally, participants were in favor of messages that were relevant to their personal needs. Those who mentioned personalized information also expressed a need for ‘opt-in’ controls in their responses.
9. Recommendations

The survey results captured responses that may have mobile marketing design implications.

Personalization of Ads

Among the top two concerns that would prevent survey participants from viewing a mobile advertisement was “Don’t like the store this being promoted.” At this time, only one general advertisement is promoted through Intera’s system: an all purpose mall gift card. This gift card can be used to make purchases in any store in the mall. If the mall begins to offer gift cards to specific stores, there is potential for sending advertisements that are irrelevant to certain mall patrons. For example, a women’s shoe store may choose to transmit advertisements to all patrons who walk by their store. Males who receive this offer may not be interested in this store because they not likely to purchase women’s shoes. In this scenario, the need for personalization is clear cut: men are not likely to be interested in purchasing women’s shoes, and therefore would not immediately benefit from a discount transmitted by a women’s shoe store. In other scenarios, the costumer’s preferences may not be so clear. Some patrons may simply not be interested in a particular store for numerous reasons beyond their gender type. In any case, a proximity marketing system needs to define a specific attributes for their target audience.

There are several methods than can be used to gather customer data. A customer completing a transaction at a store can be asked if they would like to receive mobile alerts in the future. This gives a customer the opportunity to participate with a store they are
interested in. Over time, a customer’s purchases can be compiled and mobile ads that complement his or her shopping habits could be sent.

A second way to deliver relevant content is to have mall patrons fill out a general preference form. This could be done on paper, on a computer, or on their phone. This form could allow customers to choose from various categories of stores found in that particular mall. These categories may include electronics, jewelry, sporting goods, restaurants, men’s apparel, women’s apparel and entertainment. If ‘sporting goods’ is selected, all sporting goods related stores in that mall would have permission to send Bluetooth advertisements as the patron walks by.

No matter what approach Bluetooth proximity marketing company decides to take, they must send personalized material that will benefit the receiver. Irrelevant advertisements will be considered ‘spam’ and may spawn bad feelings towards proximity marketing. This may cause patrons to shut off their Bluetooth feature completely, and thus, shutting them off as future customers.

**Bigger Incentive**

According to the survey, the highest rated reason to reject a mobile advertisement is “Not interested in the offer itself.” This suggests that reluctant mobile users may be willing to participate if there is enough incentive in the mobile advertisement. It is important to remember that mobile advertising co-exists with traditional forms of advertisements such as paper coupons. Because this service is new, an appealing incentive may be necessary to ‘convert’ patrons to the mobile proximity system. For example, if a clothing store is offering 20% certain merchandise, the store could give an
additional 5% off with a mobile coupon. Another incentive could involve exclusive deals that are only available by viewing a proximity marketing advertisement. For example a physical sign posted in the mall can state that certain deals are only available if patrons activate their Bluetooth feature.

**Literacy Campaign/Awareness**

Proximity marketing is still relatively new and patrons must understand the system before they can begin to trust it. More than half of the Macerich mall patrons have never heard of the Bluetooth marketing campaign, based on survey results. This percentage may be attributed to the early stages of implementation and minimal advertising. In addition to this, only 32% of survey takers have used Bluetooth on their phone. These numbers suggest that mobile users need to learn more about proximity marketing and Bluetooth technology in general.

A literacy campaign can benefit mall patrons, because many of the common concerns are addressed by common mobile marketing standards. For example, several survey participants were concerned that their mobile phone accounts would be charged if they received advertisements. Other survey participants stated they would only participate if there are strong “opt-in” and “opt-out” options. These concerns are addressed by the CAN-SPAM Act of 2003 (15 U.S.C. 7701, et seq., Public Law No. 108-187, was S.877 of the 108th United States Congress).

Literacy campaign materials could include informative pamphlets that provide Frequency Asked Questions (FAQ’s) regarding Bluetooth marketing. Also,
informational posters or signs hung in Bluetooth areas, or AzureZones may prompt patrons to activate their Bluetooth devices. Intera already plans to provide signage in their Los Angeles mall locations containing technical instructions as they did in previous campaigns in San Francisco. The signs may increase the number of participants only if the patrons understand the Bluetooth marketing.

**Timeliness**

“Information about a store’s sale that day” was by far, the most preferred type of mobile content among survey participants. In this context, timeliness is important because store promotions are temporary. Some stores may have a winter clearance sale that lasts for one week, while another store may be in the middle ‘one day only’ sale. If patrons are made aware of a sale occurring that particular day, they can immediately visit the store.

One participant expressed an interest in receiving “Happy hour or other restaurant specials; book signings -- notifications of anything you can't do online basically”. These are examples of promotions that are time sensitive. The last part of the statement, “notification of anything you can’t do online”, reinforces the need for information on-the-go. If the customer has to wait until they reach their home computer to learn about a sale, they may have already missed their opportunity.
10. Limitations

The usage of this technology is relatively new to this region of the world. It may take time before users reach a comfort level and provide clear feedback. Secondly, the time frame of four weeks limits the number of potential candidates that could provide useful feedback.

The Intera marketing group is still in the early stages of their proximity marketing campaign deployment. The company chose to limit the exposure of this campaign while they refine the technology. As a result of this strategy, important proximity marketing elements are still missing. For example, physical signs that cue users to activate their Bluetooth devices are absent from the malls. The presence of these visual cues may alter the results in future experiments.

The constant and rapid evolution of wireless technologies also impacts the results of this study. Intera has documented past problems in communicating with IPhones, a popular mobile device because of their limited Bluetooth capabilities.
11. Technical Issues

In addition to the usability issues faced by Bluetooth marketing, it is important to acknowledge the technical issues that may influence the sustainability of this marketing technique.

*Users Deactivating Bluetooth*

Although Bluetooth is designed for very low power consumption and can be powered down during inactivity, users may completely switch off this feature to save their mobile phone’s battery power for other tasks. A default deactivation may cause problems in allowing fortuitous discoveries of Bluetooth devices in a Bluetooth zone. This makes signage and public awareness a crucial element in Bluetooth’s success. However, this situation may change as mobile phone battery technology advances and become longer lasting.

*Compatibility with High End phones*

For Bluetooth marketing to succeed, the transmission hardware must be compatible with users’ phones. Although many phones have Bluetooth technology, two popular higher-end smart phones cannot receive Bluetooth marketing material. The Blackberry and IPhone cannot accept files via Bluetooth, due to a factory installed blockage on the devices ([http://azuremayan.wordpress.com/](http://azuremayan.wordpress.com/)). Their Bluetooth capabilities are limited to pairing with headsets and synching with other designated Bluetooth devices ([http://www.apple.com/iphone/preview-iphone-os/](http://www.apple.com/iphone/preview-iphone-os/)). Blackberries and IPhones are considered high end phones and are typically owned by tech-savvy users. Because of the technical restrictions, Bluetooth marketing is not reaching an audience that may be more open to
this new method of information delivery. In other words, the ideal target users are not being reached.

In addition to IPhone and Blackberry restrictions, approximately half of Verizon mobile devices have restrictions on Bluetooth capabilities

Other Ways to Deliver Local Information

It is important to acknowledge that Bluetooth is one of the existing ways to delivery proximity marketing material. The most comparable alternative is WI-FI (IEEE 802.11). This wireless technology is used to create local area networks and is often used for internet access. For example, many cafes and public areas provide Wi-Fi “hot spots” that allow mobile users to connect to the internet. Wi-Fi technology can provide a stronger connection and can create a wider ‘zone’ than Bluetooth, but has inherited security risks like other wireless networks (Dushinski, 2009). Another factor that must be considered is cost and power consumption. Bluetooth technology costs a third of Wi-Fi to implement and use a fifth of its power
(http://www.bluetooth.com/Bluetooth/Technology/Works/Compare/).

Wi-Fi systems, like Bluetooth systems, would require the end user to have the proper technology to communication with a wireless base station. While most mobile phones do not have Wi-Fi capabilities, laptops, IPhones and Blackberries have this capability. As noted earlier, IPhones and Blackberries have limited Bluetooth capabilities. AzureMayan has taken this into consideration and is leveraging Wi-Fi as a secondary method of distributing marketing material.
Two methods include advertising on a network connection splash page and providing a URL on a sign. When a new device connects to a secure wireless network, a ‘splash page’ appears, often containing a terms of service agreement or password prompt. This home page could hold a small advertisement banner. Stores such as Starbucks have utilized this technique to promote in-store gift cards (http://www.starbucks.com/retail/wireless.asp). The second option would involve providing a website address that can be accessed through a mobile device’s web browser. A sign posted in a physical space would inform patrons that additional material is online. These methods are not as direct as Bluetooth marketing since they require extra steps on the part of the user. However, Wi-Fi could be an alternative if Bluetooth devices are not available.
12. Conclusion

Bluetooth proximity marketing is still in its experimental stages here in the United States and must leverage its technical capabilities to benefit the business as well as the individual. This may be achieved by creating a general public awareness and providing users with timely, personalized information.

Although many Bluetooth marketing companies aim to deliver personalized content, there is still room for future improvement. If Bluetooth proximity grows, it must find a way to deliver relevant information to the right individuals. Today, proximity marketing advertisements appear generalized and uniform. Although, by definition, geography is the main factor when sending proximity marketing material to its users, other variables must be considered, such as time and the user’s individual preferences. General advertisements may work on a small scale where there is only one campaign occupying a single space. However, personalization will be necessary if Bluetooth marketing expands and multiple campaigns co-exist in the same space. Users may suffer an ‘information overload’, causing them to shut off their devices. Irrelevant information will be simply dismissed as a new form of ‘spam’, turning users off from the idea completely. For these reasons it is important to use discretion when crafting a Bluetooth Proximity campaign.

Businesses must remember that mobile users seek information that is relevant to them at that specific place and at specific point in time. Very rarely is an individual receptive to the idea of receiving an ‘advertisement’, in any medium. It is not enough to simply implement ‘awareness’ advertisements. The campaign must leverage the
technology is a way that generates immediate value to the users. If Bluetooth proximity is to survive, businesses must continue to listen to its users, and translate their feedback into design solutions.
13. Works Cited


http://na.blackberry.com/eng/devices/blackberrycurve8300/curve_specifications.jsp


Michael Alex Mobile marketing: achieving advantage through wireless technology


http://direct.motorola.com/hellomoto/razr/


Ringtonia, August 2005.


14. Appendix

Survey questions

1) For what tasks do you typically use your phone or PDA’s Bluetooth feature?
   [ ] connecting with headset
   [ ] Synching with another device such as a laptop
   [ ] I don’t use it
   [ ] Other (please specify)

2) How did you learn that a Bluetooth advertisement was available at your mall?
   [ ] Billboard or Sign
   [ ] Word of Mouth
   [ ] An official announcement over a loudspeaker
   [ ] A message was automatically sent to my Bluetooth device

3) How many times have you gone to the mall since January 2009?

4) How many times have you received an invitation to view marketing material from the mall’s Bluetooth system?

5) How many times have you accepted to view Bluetooth marketing material?

6) What reasons have caused you to reject a Bluetooth offer?
   [ ] Privacy issues
   [ ] Fear of viruses
   [ ] Don’t like the store that is being promoted
   [ ] Not interested in the offer itself
   [ ] Other (please specify)

7) How many times have you visited a store as result of its’ Bluetooth promotion?

8) How many times have you made a purchase as a direct result of a store’s Bluetooth promotion?
9) What type of Bluetooth material do you prefer receiving at the mall?
   [ ] Redeemable Coupons
   [ ] Information about a store’s sale
   [ ] Multimedia material such as music Mp3s and Movies
   [ ] General store information
   [ ] Other (please specify)

10) Has a Bluetooth promotion caused any technical issues to your mobile device?
    If so, explain.

11) Can you describe a Bluetooth promotion that you enjoyed?

12) Can you describe a Bluetooth promotion you didn’t like?

13) If you could change anything about the mall’s Bluetooth advertising, what would it be?

14) Any additional thoughts?