

# **Location-Based Advertising**

### The Key to Unlocking the Most Value in the Mobile Advertising and Location-Based Services Markets

Written by: Lisa Peterson Rob Groot

Edited by: Matteo Luccio

9812 Falls Rd., #114, Suite 300 Potomac, MD (301) 440-6885 www.petersonmobility.com

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#### About the Authors and the Editor

#### Authors

**Lisa Peterson** is Founder and President of Peterson Mobility Solutions, LLC, a company that provides strategic consulting and professional services tailored to the wireless industry, with emphasis on location-based services and mobile data applications. Peterson Mobility Solutions' clients include wireless carriers and MVNOs, wireless application service providers, content providers, telecom suppliers, and enterprises. Ms. Peterson has over 17 years of experience in the telecom industry, with proven success in analyzing markets and developing winning product, marketing, partnership, and channel strategies for wireless voice and data service providers.

Prior to forming a consulting practice in 2006, Ms. Peterson held management and senior staff positions in Products & Services, Marketing, Network Engineering, and Finance at Sprint-Nextel and MCI Communications (now Verizon Business). Most notably, as a Sr. Manager at Sprint-Nextel, Ms. Peterson helped to pioneer Location Based Services by cultivating relationships with LBS software developers and device manufacturers to successfully launch and monetize a wide array of wireless GPS-enabled enterprise and consumer applications. Key accomplishments included the launch of the first, mobile phone-based, MRM and GPS Navigation solutions in the U.S. Ms. Peterson is a subject matter expert in wireless location technologies and is a frequent speaker at industry conferences and events. Ms. Peterson was also a contributing team member on CTIA's WIC committee for LBS Best Practices and Interoperability. Ms. Peterson earned her MBA from the University of Maryland, Robert H. Smith School of Business.

**Rob Groot** is the owner and principal of Evident Strategies, providing in depth strategic advice to companies in the mobile location, logistics and GPS business. Mr. Groot is also an associate consultant for Peterson Mobility Solutions, LLC. He has built a successful US LBS business with a global reach from 2002 through 2008. Mr, Groot has chaired LBS conferences in Asia and North America and he has spoken on several occasions to further the success of LBS. In 1994 Mr. Groot, installed the first commercial GPS in Greece for logistics purposes and has held several leading positions in the ERP and logistics industry in Europe and the USA. Mr. Groot earned his MBA from Hogeschool Eindhoven in The Netherlands.

#### Editor

**Matteo Luccio**, is the founder and president of Pale Blue Dot Research, Writing, and Editing, LLC (<u>www.palebluedotllc.com</u>). He has fourteen years of experience as a magazine writer and editor. He has a master's degree in political science from MIT and co-founded the public policy magazine *Oregon's Future*, which he edited for four years. For the past nine years he has edited technical magazines on geospatial technologies, as managing editor of *GPS World* and *Galileo's World*, editor and publisher of *GPS User Magazine*, editor of *Earth Observation Magazine* and, from February 2005 to December 2007, editor of the on-line weekly <u>*GIS*</u> *Monitor* and columnist for *Professional Surveyor Magazine*.

Prior to becoming a journalist, Luccio was a research analyst on public policy issues for a private think tank and for state and local government agencies. His varied career has included employment as a case worker for homeless families, as a sailing instructor, and as an Italian teacher.

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### 1 INTRODUCTION

Location-based advertising (LBA) is established through the powerful combination of mobile marketing and advertising with location-based services (LBS), increasing the value proposition for both industry segments. Mobile LBS leverages a variety of mobile device positioning technologies — such as cell ID, GPS, and WiFi, as well as hybrids, such as assisted GPS (A-GPS) — to derive the mobile device's location, which is then used as a way to filter content and information geographically and put it into the context of the mobile user's surroundings. Mobile consumers typically use LBS to find and map nearby things, people, and places and to then get directions or navigate to them. This presents a particularly compelling opportunity for the placement of mobile marketing and advertising content. Additionally, the ability to obtain the location coordinates of a mobile device, based on the centroid of the cell tower or cell sector is now being introduced by many wireless carriers, so many non-GPS handsets will be "locatable". Knowledge of a user's location based on the cell tower, although, less precise, will be suitable for many marketing and advertising campaigns. When mobile location data is available more consistently across mobile devices, it will become an important attribute in the underlying fabric for many services in the future. Combining mobile location with other targeting parameters, such as time of day and user preferences, will be the key to unlocking the most value in the mobile advertising experience. This is a unique value proposition that no other media channel can match.

In this report, we will provide insight on the states of the LBS and Mobile Marketing/Advertising markets

in the United States. We will explore the evolution from subscription-based LBS towards "free" LBS and what is needed to make an adfunded business model work. We will discuss the benefits of bringing together the world of LBS and that of mobile marketing/advertising to create LBA. We will further explain what the stakeholders in the market consumers. advertisers, and the "enabling companies" (providers of LBS content, applications, and platforms) — stand to gain from LBA. Finally, in the conclusion, we discuss what combination of technologies, business models, and strategies, need to align to unleash LBA's market potential and why LBA is the path to creating more value in both the LBS and mobile advertising segments. We have also included the profiles and perspectives of several key market players that we interviewed in the first half of 2009, in an appendix.

#### **Report Key Takeaways**

- Location Based Services (LBS) are gaining mass appeal in the U.S. market, with the increasing penetration of "locatable" devices.
- More than 60 percent of wireless phones are locatable through GPS, cellular, and/or WiFibased positioning technologies.
- Mobile marketing and advertising will achieve the greatest success when mobile location combined with other context-aware parameters is leveraged to filter the content to increase its relevance.
- Studies show that mobile consumers want to receive relevant promotions and advertising, but will not tolerate "advertising clutter".
- The mobile LBS and advertising segments together can create more value in the marketplace.

The goal of this report is to cross-educate the key players in each segment. The target audience for this report includes brands, advertisers, media, marketing agencies, application developers, content

providers, publishers, advertising networks, technology enablers, wireless carriers, telecom suppliers, device manufacturers, and Internet companies.

### 2 THE U.S. LOCATION-BASED SERVICES (LBS) MARKET

Mobile phones have clearly become a personal extension of mobile consumers. Currently, there are four billion mobile subscribers worldwide. Many take their phones everywhere, have them always on, and personalize them with their favorite social networks, games, applications, ring tones, wallpaper, etc. Mobile consumers are increasingly aware of the full range of their phones' features and capabilities. They use them to send and receive text and e-mail messages, browse the Internet, and use a wide variety of applications — for entertainment, search, commerce, banking, maps, and directions. The convergence of advanced technologies in mobile phones — GPS, Bluetooth, WiFi, cameras, music, and video capabilities – combined with faster processors, greater storage, and advanced software development platforms, have created the foundation for new, compelling applications for mobile devices. Additionally, improvements in the user experience, most notably led by Apple with the introduction of the iPhone, along with more open application development environments and the movement towards a "free market" philosophy, has resulted in phenomenal growth in mobile data application usage. According to Nielsen Mobile, at the end of the second quarter of 2009, 68 percent of U.S. mobile subscribers used a data service.

In particular, mobile LBS are gaining momentum. The increasing penetration of GPS-enabled mobile phones, which is now reported at 60 percent for the U.S. market, according to Nielsen Mobile, combined with the fast growing smart phone segment, have contributed to the rise in these services. A study conducted by Limbo, a mobile social network, and GfK Technology, a market research agency,

indicated that one in ten U.S. mobile subscribers used an LBS in the fourth quarter of 2008. We estimate that there were 16 to 18 million LBS users of installed, paid applications in the United States at the end of June 2009. This includes subscription-based, pay per use, and bundled fee structures. There has also been significant growth in the number of free applications

Of all wireless applications, LBS generates the most revenue. The market penetration of LBS users has quadrupled between the end of 2007 and the first half of 2009.

available and users of free LBS applications, due to the increase in the number of phones with "open" GPS, such as the iPhone and many Nokia devices. While it is more difficult to quantify the number of consumers using free LBS applications, we estimate that there were well above 25M users in the U.S by the end of June 2009. This takes into account the success of Google's Maps for Mobile and Latitude offerings, available on many of the smartphone platforms, including the iPhone.

Even as the volume of free LBS increases with the changing business models (from subscription to adbased) the LBS category still holds the number one position for generating the most revenue. According to Nielsen Mobile's 4Q 2008 report on U.S. Location-Based Services, LBS is "the largest revenue-generating category of all wireless downloadable applications on the carrier decks, accounting for 74 percent." This grew from 58 percent reported at the end of 2007. Of all of the LBS applications, navigation is contributing to most of this revenue. **Figure 1** depicts the share of revenue across all mobile application categories.

While the U.S. wireless carriers and their GPS navigation partners contributed significantly to this achievement, due to the higher subscription pricing of \$9.99 per month compared with other mobile applications that typically run well below \$5/month, the growth in the number of LBS users is a different story. LBS users were still only about two percent of all U.S. wireless subscribers at the end of 2007. Last year, however, was the real turning point for LBS: the market penetration of LBS users more than doubled, with the estimated penetration in the range of four to six percent at the end of 2008. **Figure 2** shows the trends in LBS users from 2006 through 2010.



Figure 1: Share of Revenue by Wireless Downloadable Application type

While our estimates indicate that by the end of 2010 there will be 31 million "paying" LBS users (a market penetration of nearly 11 percent), we also believe that consumer LBS cannot achieve its full market potential without the help of mobile advertising revenues to subsidize the cost of providing these services. Prior to 2008, the mobile LBS business had primarily been based on subscriptions and dominated by the wireless carriers and their partners (such companies as TeleNav, uLocate, Networks In Motion, and Loopt). However, over the past two years, Google, Nokia, and Apple have entered this market, radically changing it and disrupting the LBS business model by offering free LBS directly to consumers. The movement towards free LBS is the primary driver of the growth in users between 2007 and 2008, due to the shift in the business models from monthly subscriptions to the bundling of these services and monetization through advertising.

These powerhouse companies (Google, Apple, and Nokia) are seeking to repeat the success of the Internet mapping Web sites, which are entirely ad-based, and have been adopted by the masses. They are also giving other LBS providers no choice but to follow suit or risk losing their customer base. There is great potential for significant revenues from advertising and marketing through the mobile



channel, so many LBS companies are taking their chances on it, in the hopes that there will be sizeable payoffs in the future.

Figure 2: U.S. Location-Based Services Subscriber Trends

### 2.1 Key Forces In The U.S. LBS MARKET THAT ARE INFLUENCING LBA

We have identified five key forces influencing the LBS marketplace that we believe are important to highlight for this report, in order to establish the rationale for LBA. They are as follows:

## 1. Market Disruption: The entry of powerful market influencers — especially "The Big Three": Google, Nokia, and Apple.

Although each has its own unique strategy for attracting consumers, they are all intent on disrupting the traditional business models that the wireless carriers have long controlled. The "Big Three" have all launched new initiatives that put mobile

The Big Three — Google, Nokia, and Apple — have disrupted the traditional business models that the wireless carriers have long controlled.

location at the core of their business strategies. An early indication of this planned disruption was Google's decision to begin offering free mapping applications directly to consumers in 2007 on smart phone platforms with autonomous GPS. (Note: most smart phones support standard location APIs that expose GPS, whereas access to Assisted GPS, which relies on the wireless carrier infrastructure, can only be obtained with permission from the carrier). Shortly after the release of free mapping, Google announced its Android initiative, thus setting the stage for an even greater foothold in the wireless ecosystem. Most recently, Google announced the introduction of free navigation services on Android phones. Clearly, Google plans to monetize these services eventually through advertising, after building up enough scale to attract advertising spend.



Another highlight in the United States, in 2007, was the introduction of the iPhone, which shifted the wireless subscriber purchase process away from the carrier and towards a device manufacturer. A year later the Apple Application Store was launched along with a 3G GPS

Figure 3: Growth in the Number of iPhone Location enabled Applications

version of the iPhone. In September 2009, Apple announced that more than two billion downloads had been achieved worldwide since launching in July 2008. The numbers are staggering and these dramatic results have shown the industry the importance of creating an ecosystem that considers all

stakeholders and ensures that all participants benefit. Additionally, in 3Q09, Apple reported 50 million iPhone and iPod Touch sales worldwide throughout 77 countries and also reported the availability of more than 100,000 applications, a

*"Opening" mobile location has been a major driver in the mass market adoption of LBS.* 

significant number of which are location-based. **Figure 3** shows the growth in the number of iPhone LBS applications and **Figure 4** shows the types of LBS available on the Apple App Store.<sup>•</sup> So, where previously, the U.S. LBS marketplace had been dominated primarily by the wireless carriers and the companies that they selected as LBS partners, the emergence of these new players that are capable of meeting the wireless carriers head on has dramatically changed the landscape by providing platforms that enable providers to "freely" market, sell, and distribute applications and services. There is no question that "opening" the ability to access mobile device location to the developer community has been a key driver in the growth in the number of LBS applications as well as the mass market adoption of LBS.



Figure 4: iPhone Location Applications by Type

Finally, Nokia also made significant moves during the 2006-2007 timeframe, showing clear intent to control their destiny in the U.S. market and exert more control over the LBS ecosystem by vertically integrating. In 2006, Nokia acquired Gate 5, a mobile GPS navigation software company. In 2007, it acquired Enpocket, a mobile advertising network and serving platform (now Nokia Interactive Advertising), and announced their NAVTEQ acquisition plans. Nokia ultimately purchased NAVTEQ — a leading global provider of digital map, traffic, and location data that enables navigation and location-based platforms around the world — for \$8.1 billion.

Nokia is selling its own LBS offerings directly to consumers, bypassing the wireless carriers. Nokia currently offers basic LBS — such as search, maps, and directions — as embedded features on their GPS-enabled smart phones. GPS Navigation is sold as a monthly subscription. With a 38.6 percent share of the global handset market overall, and market share of 43.7 percent in the smart phone segment, according to Gartner, the company is in a good position to drive growth in the LBS market through this massive distribution channel.

Additionally, Nokia's Ovi storefront will be used to market, sell, and distribute mobile applications. There has also been mention in the press that Nokia has plans to introduce context-aware capabilities into the store, such as the use of mobile location to determine what type of content and services to present to mobile users. Figure 5 shows a combined view of where Nokia and NAVTEQ fit in the LBS value chain. Although, NAVTEQ is now a wholly-owned entity of Nokia, the company does maintain autonomy and continues to provide map data and other content to companies in the LBS ecosystem, including some which may compete with Nokia in certain markets.



Figure 5: Nokia's roles in the Mobile LBS value chain

There is no question as to why The Big Three are betting on the mobile LBS market. According to NAVTEQ, their maps are already viewed more than 100 million times per day and this consumer behavior is expected to increase dramatically as mapping and related services become widely available on mobile handsets. "Mobility and location go hand in hand," says Nick Hopkins, Director of Products

at NAVTEQ. "LBS is particularly useful when you are mobile and outside of your home area. Often, there is a higher need to determine exactly where you are, find a relevant

According to NAVTEQ, their maps are viewed more than 100 million times per day.

destination, and get the address and directions to that place. We expect mobile map views to exceed those on the Internet within the next few years."

## 2. Market Growth: The growing penetration of "location-capable" phones and increasing smart phone sales in the U.S. mobile subscriber base

According to Nielsen Mobile, the penetration of GPS across all mobile phones in the United States has reached nearly 60 percent. A significant percentage of these are smart phones and this percentage will

The increasing penetration of smart phones with autonomous GPS and WiFi, has spurred the growth of applications in the LBS category. continue to increase. It is important to note that most smart phone platforms allow open access to autonomous GPS. Thus, developers do not require access to privileged APIs or a carrier agreement to leverage the GPS capabilities in

smart phones for applications. According to Gartner, smartphone penetration for 2008 was 14 percent, up from 10 percent in 2007. Nokia has reported that 50 percent of their phone models sold globally in 2009, will be equipped with GPS chips. Additionally, there is an increasing penetration of WiFi-capable phones. Any phone with built-in WiFi capability can be located through positioning software technologies which rely on the locations of WiFi access points. Skyhook Wireless is one provider of this service and is providing this technology for the iPhones. Skyhook also provides a hybrid positioning solution that uses GPS, A-GPS, and/or WiFi, leveraging all of the technologies available on the mobile

phone, and provides a positioning solution independent of the wireless carriers. Additionally, Google has also produced a positioning solution that is based on cell tower, GPS, and WiFi location information.<sup>1</sup> Finally, the wireless carriers are also exposing cell ID and cell sector location to application developers and service providers through location APIs. Thus, even non-GPS phones can be located at some level, which will be useful to many services that do not require the accuracy and precision of GPS. As mobile location becomes more ubiquitous across handset platforms and carriers, its usage will also increase, since mass market services will become more viable than ever before. The combination of location capabilities with the improved user experience offered by smartphones is the right foundation for mass market adoption of LBS over the next several years.

## 3. Market Scale: The movement from walled gardens to open platform initiatives is driving significant increases in users and usage

The dramatic industry changes, spurred by The Big Three, has forced the U.S. wireless carriers to rethink their past policy decisions of controlling and limiting access to mobile location data. Since the

carrier business models have been based on revenue sharing from subscription fees with their preferred partners, their revenue streams and their ability to monetize their location infrastructure investments are clearly at risk. Additionally, they are taking on an even greater risk related to consumer privacy and

The emerging "open environment" had forced U.S. wireless carriers to rethink their policy decisions regarding limited access and control of mobile location data.

the safe and secure disclosure of location information only with consent from the mobile user. The wireless carriers face much more scrutiny from the regulators than many other industry participants. So, up until the end of 2008, the solution was to exert tight control over the mobile location ecosystem. However this approach is not sustainable in the unfolding environment.

The proliferation of smart phones with autonomous and open GPS, combined with open handset and platform initiatives, such as Android, and the success of Apple's App Store have all favored the developer and content provider community. The emergence of a more "open" environment over the past two years, enables LBS content and application providers to directly market to consumers, without requiring rigorous contract negotiations and certification processes with the carriers. Other companies that have announced new mobile application stores over the past year include Google, BlackBerry, and Microsoft. So far, this shift in the landscape is proving to work. Momentum is building around mobile LBS and these services are finally gaining volume and scale through the opening of new distribution channels.

As new positioning alternatives, independent of the wireless carrier infrastructure, such as autonomous GPS in smartphones, WiFi, and WiFi/GPS hybrid solutions are made available, the role of the wireless carriers diminishes. However, it will take years before these solutions can offer the ubiquity that the

<sup>&</sup>lt;sup>1</sup>See <u>http://googlemobile.blogspot.com</u>

wireless carriers can offer through their location platforms, if they open up access to network-based positioning technologies, such as cell ID, which does not require GPS or WiFi in the phone.

At least one wireless carrier in the United States recognizes the need to "open" up access to its location network. In June 2008, Sprint announced its new Professional Developer Program, which enabled service providers to access Sprint's devices, platform, and privileged APIs, such as location services, without a co-marketing and revenue sharing agreement. Under this program, the service provider takes on the responsibility of marketing and distribution. Later that year, in December 2008, Sprint announced a new program in which they select several trusted third-party partners to be "Location Aggregators".

Currently, Alcatel-Lucent, Loc-Aid, TechnoCom, uLocate, Useful Networks, and WaveMarket are the companies that have partnered with Sprint to play this role. These location aggregators are already integrated with Sprint's infrastructure and will extend

Location Aggregators will play an important role in facilitating the delivery of mobile location to the marketing and advertising communities.

their platforms and services to reach parties interested in using location to enhance their service offerings. The target markets include developers, content providers, publishers, media, enterprises, mobile marketing, and advertising companies.

Verizon is also taking similar steps to unlock location and has announced that select smart phones, mainly Windows Mobile devices and BlackBerrys, will support open location access.

Eventually, we expect the Location Aggregators to facilitate location access across all carriers, serving to reduce the complexity in the business process and technical integration. This should result in the pervasive use of mobile location to enhance many services and ultimately enhance the overall mobile user's experience.

By unlocking the control over location, carriers will see a benefit. Enterprise markets and advertisers require scale to successfully integrate mobile location across the services they deliver to mobile consumers. Enterprises need to be able to leverage location ubiquitously, consistently, and reliably to serve the masses. As mobile location becomes more readily accessible for 100 percent of mobile users, location will simply become an element used across many services, such as mobile search, commerce, banking, payments, games, e-mail, messaging, social networking, and, of course, marketing and advertising. This moves the market orientation from vertical, stand-alone, location-centric applications, such as GPS navigation and family locator services, to location as a horizontal feature enhancing many services. Similar to what we have seen in other wireless application markets, such as SMS and MMS, where it took interoperability across the carriers to spur the volume of transactions, we expect the same to be true for mobile location usage. This scale is needed in order for LBA to gain traction in the marketplace.

## 4. Market Adoption of LBS: Location-based social networking predicted to add millions of new users

In the next couple of years, there will be dramatic growth in location-based social networking services. Now that all of the U.S. Tier 1 wireless carriers have launched location-capable devices, it is possible to share location with mobile users on different networks. While there are still issues associated with sharing cellular network-based positioning (since carriers would be required to share cell site databases with each other and there is some sensitivity around this), the proliferation of GPS-enabled handsets is making it possible to at least share GPS location information. Now that the law of large numbers is on their side, the number of users of location-based social networking services, such as Loopt, is increasing. At the end of 2008, Loopt had more than one million users. In the next couple of years, we should start to see dramatic growth in this area. Loopt has now launched on all of the Tier 1 carriers in the United States and is offered as a free service on many smartphones, including BlackBerrys and the iPhone. As more users join, a "tipping point" phenomenon is likely to occur. ABI Research forecasts 82 million worldwide subscribers of location-based mobile social networks by 2013. The ability of these solutions to someday interoperate, so that Google Latitude users can communicate with Loopt users, could create even more growth and opportunity in this application segment.

### 5. Market Convergence: As mobile and web converge, so do the business models

Until last year, the most common business model for LBS was to charge an additional monthly

subscription fee for each service. This is no surprise given that the majority of LBS applications were sold by the wireless carriers and their billing systems are designed to support subscription services. Subscription is the business model that the wireless carriers know

Downward pressure on the price of LBS services has resulted in bundling these services in with carrier data plans and moves toward ad-based models.

and understand best. On the contrary, the key Internet players — such as Microsoft, Google, Mapquest, and Yahoo — have proven success with advertising-based models on the Web. These ecosystems that they have in place already can be extended into the mobile services environment as well. Google is driving change into the mobile ecosystem by making their mobile search, maps, directions, and social networking applications available for free. Of course, Google can afford to disrupt the existing economic models and take on the risk of building up the base of users needed to attract advertising, while putting the rest of the industry players in a reactive mode. The free model is proving

To build up a user base large enough to attract advertisers, many LBS companies must are seeding the market with free applications. to be effective in building a base of users. In February 2009, only two weeks after going live, Google announced that its location-based social networking product, Latitude, had been downloaded one million times. At the end of last

year, Google Maps for Mobile was reported to have 50 million "active" users. Many LBS companies are pursuing this same strategy in the hope of building a base of users that will eventually attract advertisers. Right now, it is a land grab amongst the LBS application providers. As of the date of this report, Apple's App Store offered over 750 free GPS-enabled applications.

The moves of The Big Three have clearly accelerated the rate at which new business models must be adopted. Google clearly has the advantage of knowing the ad model well. In early November 2009, Google further solidified their position in the mobile advertising value chain by announcing an agreement to acquire AdMob for \$750M. As discussed above, Nokia has also undertaken the approach to vertically integrate by acquiring key players in the value chain to lower the cost.

This pressure on the price of the location-based services offered by the wireless carriers and their LBS partners has driven carriers to create new data bundles that include GPS navigation (both Sprint and Verizon have these), as well as action by the carriers to begin putting the infrastructure in place to support a move toward ad-based models. These new models are driving growth in the number of users. The carriers will likely experiment at first, with ad-subsidized models before moving to fully ad-based models. However, given Google's plan to introduce free navigation on all Android phones, we may see movement earlier to ad-based models, than originally expected.

Other strategies may include the addition of value-added content to LBS applications that is monetized through advertising. NAVTEQ, for example, currently provides traffic content to LBS providers using this model. However, our belief is that ad-based business models will play a critical role in enabling LBS to reach its promised potential. Therefore it is important for LBS providers to understand the mobile advertising ecosystem, before discussing the benefits of LBA. Thus, the next section focuses on mobile marketing and advertising in the United States.

### 3 THE U.S. MOBILE MARKETING & ADVERTISING MARKETS

While mobile marketing and advertising<sup>2</sup> are still in the early stages of development, there is significant interest in the marketplace from all participants in the ecosystem. With industry analysts predicting worldwide annual revenues from mobile marketing and advertising to be in

Mobile is the third screen that is always in front of consumers. The versatility of content delivery methods enables more exciting ways to reach them than with any other medium.

the range of \$12 – 20 billion worldwide within the next several years, nearly all players in the wireless industry, in addition to the brands and advertisers themselves, are assessing strategies to capitalize on this opportunity. Although mobile advertising has been discussed for many years, the increasing use of text messaging, mobile Web, and data applications has marketers and advertisers more interested than ever before in delivering content to mobile devices. Mobile is the third screen that is always in front of consumers and the versatility of content delivery methods enables more exciting ways to reach them than with any other medium.

The key advantages of mobile include:

- Reach: At the end of 2008, there were four billion mobile phone users worldwide. There are twice as many mobile devices as televisions and four times as many phones as PCs. The GSM Association estimates more than 5.5 billion mobile subscribers by 2013.
- Personal: Content delivered through the mobile channel reaches an individual. This is the only channel that presents the opportunity for highly targeted, personalized advertising.
- Interactive: Mobile devices are vehicles for two-way communication. Individuals can instantly respond to marketing and advertising content. This enables marketers and advertisers to drive

<sup>&</sup>lt;sup>2</sup> The Mobile Marketing Association provides distinct definitions for mobile marketing and mobile advertising. These definitions can be found at <u>www.mmmaglobal.com/glossary.pdf</u>.

consumers to action and capture instant feedback on the effectiveness of their campaigns — and adjust them as needed.

- Dynamic: Adjustments to marketing campaigns, such as the content and messages delivered, can be made quickly and sent out over-the-air to mobile devices.
- Precise: Marketing communications can be sent out to the right person, at the right time, and the right place (location!); the relevance of the message greatly increases and therefore the call to action is more effective and delivers much better on the promise.

There is good and bad news. While we agree that the addressable market revenues for mobile advertising and marketing are sizeable, we also believe that the pace of growth will be slower than predicted for the U.S. market. In 2008, according to The Kelsey Group, mobile advertising spending was less than \$200M in the United States. Thus, there is still a long way to go to reach the optimistic projections, which some analysts forecast to be more than \$3B by 2013 for the U.S. market.

The good news is that an increasing number of brands, enterprises, and agencies are experimenting with the mobile channel. Initial feedback from the early deployments is

The U.S. mobile ad market has been forecast to surpass \$3B by 2013. However, the pace of growth may be slower than analysts predict.

also positive. Recently, the Mobile Marketing Association reported average response rates on mobile advertisements to be as high as 12 percent, demonstrating that mobile can be more effective than Internet advertising. The bad news is that there is still uncertainty, due to lack of metrics, complexity, and concern regarding the mobile user experience. There is also still much more ad space available on mobile than what is being purchased, and as more content and service providers move towards this model, this will only increase the ad space inventory available. The bad news is that there is still uncertainty, due to lack of metrics, complexity, and concern regarding the mobile user experience. There is still much news is that there is still uncertainty, due to lack of metrics, complexity, and concern regarding the mobile user experience. There is still much more ad space available on mobile than what is being purchased.

### 3.1 MOBILE MARKETING AND ADVERTISING STRATEGIES AND BUSINESS MODELS

There are two basic strategies for mobile marketing and advertising: push and pull.

- Push: In the push method, advertising content is automatically delivered or served to the end user based on some type of trigger. For example, while a mobile user browses a mobile Web site a banner ad appears. Another example may be location-based couponing, where the mobile user's location or proximity to an address or landmark triggers a promotional message or coupon to be sent to the device. For years, the overused, "Starbucks scenario" has been discussed, in which a mobile user who is walking or driving by a Starbucks store receives a coupon for a cup of coffee. While this scenario may be of interest to marketers, we do not believe it would be acceptable to mobile users. Rather, we believe it will be critical for the advertising to be delivered in a way that is least intrusive to the mobile consumer and is viewed as relevant.
- Pull: In a pull scenario, the advertising is presented as a result of a user-initiated search or information request on the mobile device. For example, a mobile user may call a 411 service looking for a specific business. On many of the free 411 services, the mobile user hears

advertising while waiting for the information to be returned or for the call to go through. In another example, a mobile user searches for a nearby restaurant using an LBS application. When the user makes the request first, mobile advertising is more effective and relevant than any other media channel.

Marketers and advertisers have many choices when it comes to the delivery of promotional and advertising content to mobile devices. As discussed throughout this paper, the mobile channel is complex due to the variety of phones supporting different features and operating environments. Thus, the method of mobile content delivery, which can range from simple text messaging to streaming media, depends greatly on the capabilities of the devices as well as those of the carrier networks. **Table 1** below provides a high level overview of mobile content delivery methods.

Delivery method	Description	Uses
SMS	Short Message Service: text messaging to mobile phones	Promotional messages, coupons, sweepstakes
MMS	Multi-media Messaging Service: multimedia messages and graphics delivered to mobile phones	Advertisements, coupons, promotions
Mobile Websites (WAP, HTML)	Mobile Web protocols for designing mobile Web sites and landing	Banner ads; coupons, sponsored links on mobile search apps
Mobile applications	Installed software that resides locally on a device. Multiple application environments exist (e.g., J2ME, BREW, Apple, Android, Windows, etc.)	Customized, brand-specific applications, in-application sponsored advertising; loyalty marketing; coupons
Streaming media	Multimedia/video content streamed to a phone	Pre-roll advertising clips can be inserted into video content
IVR	Interactive Voice Response: software-driven technology which can be programmed to receive voice or keypad input and deliver automated services to the end user.	Pre-recorded advertising can be programmed and delivered during call hold times; voice or keypad strokes can initiate delivery of content to the phone (e.g., SMS w/ coupon)
Bluetooth	An open wireless protocol for exchanging data over short distances. Flash messages to phones with their Bluetooth on	Marketing and advertising messages can be blast to all phones within range with Bluetooth enabled

TABLE 1: MOBILE CONTENT DELIVERY METHODS

Along with the mobile content delivery technologies go the marketing tactics — which include:

- > mobile coupons
- banner ads

- > short code messaging campaigns
- customized downloadable applications
- idle screen advertising
- in-application advertising
- > interstitials
- sponsored mobile search

We will not go into the details behind each of these, because a wealth of information is available on the MMA's Web site, which also provides industry guidelines on standard business processes and formats for content delivery. The key message is that marketers and advertisers can choose among many mobile campaign strategies. Thus, it is imperative for the participants in the LBS ecosystem that are eager to attract marketers and advertisers to also understand the many options available to them and determine the unique value proposition that they can bring to marketers and advertisers — as opposed to that of others in the ecosystem who are also interested in attracting marketing and advertising spending. As improvements in business processes, platforms, and standards make it ever easier to access mobile location, it will become a routine feature of the tactics listed above.

As with any emerging market, the value chain of industry participants for mobile marketing and advertising is highly fragmented, with many players specializing in diverse sets of technologies and services. The fragmentation is largely due to the complex and vast array of different wireless technologies, device platforms, and content delivery methods to the end users. Because the industry

has not yet consolidated, launching an effective and integrated mobile marketing campaign requires marketers and advertisers to work with many players in the mobile ecosystem. The integration of additional mobile location features into advertising

The most common revenue models for mobile advertising are the same as those that are in place for the Internet.

may be viewed as one more layer of complexity. However, as we will discuss in later sections, it is our belief that mobile location is required to truly leverage the value of the mobile channel for advertising. In the appendix we profile key players that can help marketers and advertisers achieve LBA.

The most common revenue models for mobile advertising are the same as those that are in place for the Internet:

- CPM: Advertising rates are calculated by 1,000 impressions. Ad revenue on a CPM basis for online generic Internet advertising varies from \$2 to \$8, and may increase with geographic and demographic targeting. Mobile advertising CPM increases more than three-fold, to \$10 to \$25, and mobile location could attract even higher rates.
- PPC: Pay-per-click is based on an action by the end user, such as clicking on an advertisement or a promoted search item. On search sites, the content can be promoted to the top through a bidding system, while in advertising the price for a click is generally set to a fixed rate.
- CPA: Cost-per-action is one step up from pay-per-click, where the advertiser pays the media a fee if the call to action actually leads to the desired action.

For mobile marketing and promotional content delivery, other than advertising (e.g., a coupon, free game, or message), the cost is largely dependent on the content delivery mode and vehicle. For SMS campaigns, companies typically charge a monthly fee for leasing a dedicated short code that can be assigned to the marketing campaign, plus a monthly recurring fee that covers a certain volume of text messages. In some cases, the business model is transactional and the marketer charges for the number of messages sent. In order for mobile LBS companies to attract marketers and advertisers, it is important that they employ business models that are clear and already understood.

In general, the mobile channel should command higher advertising rates, because there is a limited screen size (thus, limited inventory), plus a higher degree of targeting capabilities. As is the case with

the Internet advertising model, when geographic targeting is included the CPM or PPC increases. This increase should be even larger than for the Internet, because the mobile device offers a higher precision of geographic targeting, and due to the

Many mobile LBS companies have reported ad response rates to be five to ten times higher than on the Internet.

interactive nature, there is also the ability to collect information back from the user. Many LBS companies have reported ad response rates to be five to ten times higher than the Internet rates for location-targeted advertising delivered on mobile devices.

There are still many components that need to align, before the mobile marketing and advertising industries realize the promised potential. However, the keys to success are very basic, as follows:

## *i. Marketing companies and advertisers must view mobile as a viable marketing communications channel.*

While the mobile channel has greater reach, targeting capabilities, interaction, and flexibility than all other media channels, the marketing and advertising decision-makers that choose to use it still face some challenges. These include the complex ecosystem and value chain we discussed above, lack of performance metrics and of proven ROI, uncertainties regarding the size of the addressable audience (because this has to do with phone capabilities, services provided, and usage), and general lack of knowledge and experience in developing programs for mobile that truly leverage the personal, behavioral, and contextual targeting that mobile promises. Thus, in order for LBS companies to attract marketers and advertisers, these general concerns must be addressed.

### *ii.* Consumers must be willing to receive marketing messages and advertising.

According to CJ Driscoll & Associates' 2006 Consumer LBS Report, 22 percent of consumers indicated that they were interested in receiving advertisements on their mobile phones, if they were relevant and non-intrusive. In more recent studies, the statistics have shown that consumers are growing more receptive to receiving mobile advertising. A survey, by Azuki, indicated that 70 percent of U.S. consumers were willing to view advertising in exchange for free mobile content. Yet another survey, from Bango, conducted in the first half of 2008, reports that 78 percent of 1,200 mobile users surveyed worldwide indicated that they would be happy to receive ads tailored to their interests. Sixty-four percent of the mobile users surveyed were willing to provide personal details to improve the relevance

of the advertising messages they received. These positive results suggest that targeted marketing content and advertising is good not only for the advertisers, but also for the consumers.

### 4 THE PATH TO LOCATION-BASED ADVERTISING (LBA)

### 4.1 WHAT IS LOCATION-BASED ADVERTISING?

LBA leverages the geographic location of the user to determine context and filter the content so that it is relevant to the user. The location is used to select appropriate advertisements or promotional messages and deliver these to the end user. The location of a mobile device can be derived from several different positioning technologies supported in the device and the wireless carrier network, as defined in **Table 2**. The mobile's location can be obtained directly from the device through a local application that accesses the location information (e.g., GPS/A-GPS) by using the appropriate location application programming interface (API) for the device or may be accessed through a server-side application that interfaces with the carrier's location platform. Many of the wireless carriers are now exposing location information through a "network-initiated" location API, which does not require a local application to reside on the mobile device. Additionally, there are companies with emerging location technologies, such as Skyhook Wireless, which provides a WiFi-based positioning solution and ProximityMedia, which offers advertisers the ability to distribute advertising content and coupons using the Bluetooth capability in the device that communicates to a backend server. Since the device must be within 100 meters, the location is known and the content can be localized.

Positioning Technology	How It Works	Network	Accuracy
Autonomous GPS (GPS)	GPS receivers in mobile devices use a constellation of about 30 U.S. satellites to determine the coordinates of the device, using a positioning method called trilateration.	Not applicable	15m – 30m
Assisted GPS (A-GPS)	Uses a combination of GPS, cell towers, and aiding data (including satellite position correction data and the satellite almanac) transmitted over the wireless data network to improve GPS time to first fix and accuracy.	CDMA, GPRS, 3G	5m – 15m
Advanced Forward Link Trilateration (AFLT)	Mobile station measures the signals from three base stations and reports the time / distance readings back to the network to trilaterate the position of the device.	CDMA	50m – 200m
Enhanced Observed Time Difference (EOTD)	The phone calculates its position from pilot signal measurements it receives in a downlink from a base station.	GSM	50m – 200m
Time Difference of Arrival (TDOA)	Same as above, but the pilot signals are emitted from the phone in an uplink.	All	100m – 200m

Positioning Technology	How It Works	Network	Accuracy
Cell ID	Uses the lat/long of a centroid of each serving cell or cell sector to estimate the phone's position.	All	100m – 3,000m

TABLE 1: POSITIONING TECHNOLOGIES

### 4.2 THE BENEFITS OF LOCATION TO MOBILE MARKETING AND ADVERTISING

Location, along with time and behavior, helps to establish the mobile user's context and enables the delivery of targeted and relevant advertising. The viability of mobile marketing and advertising will depend on strong user responses and, ultimately, sales conversions or an increase in brand recognition. To ensure that this new channel takes off, consumers must be accepting of the mobile ad

To ensure that mobile marketing and advertising takes off, consumers must be accepting of the mobile ad experience. experience. If mobile handsets are cluttered with too many useless and irrelevant marketing messages and advertisements, mobile consumers will ignore them or even refuse to receive them.

There has never been a media channel with the potential

to penetrate as deeply into an end user's personal space. In the past, advertisements were brought "to your doorstep" in forms that ranged from daily newspapers to direct marketing. Broadcast added a new generic method into the mix, while Internet and e-mail marketing revolutionized the ability to target more narrowly and measure more accurately. Each of these media got closer to end users and captured more of their attention. The leap from marketing can reach one user, on one medium, at the right time and place, and provide instant feedback on the performance of the ad or marketing message (such as number of ads served and responded to). No other medium can offer these advantages.



Figure 6: Media penetration into the consumer space

The penetration of advertising and marketing messages into the personal circle makes it more important that they be relevant, since consumers will be less tolerant of unwarranted personal contact on their mobile devices. They already are less tolerant of advertising in general in an always-on, on-

demand environment, such as mobile, and this intolerance is amplified by the smaller screen on mobile phones. Therefore, it behooves the industry to work together to ensure the mobile user experience does not become fraught with advertising clutter.

Marketers and advertisers need to work with the "enablers" in the value chain to ensure that relevant

messages are delivered to the "right" mobile users, at the "right" time, and "right" place. This is where mobile location plays a key role and companies with "location-enabling" platforms, such as NAVTEQ, uLocate, and Wavemarket, as well as others profiled in the appendix, can help to ensure

As advertising and marketing messages penetrate the personal circle, it is even more important that they be relevant, so that the mobile user experience is not fraught with advertising clutter.

the delivery of the most effective marketing and advertising content.

Mobile location will bring the following benefits to mobile marketing and advertising:

- Context: The mobile channel can provide more information about individual consumers than any other one — including transaction time, user profile, user behavior, and, especially, location. In turn, analyzing this data can reveal, e.g., whether the users are at an airport, on a highway during rush hour, or at a football game. This enables marketers and advertisers to present content that is highly relevant to the users' context.
- Content localization: Knowledge of the users' location enables marketers and advertisers to tailor the content accordingly. For example, a national ticket sales company might send mobile consumers promotions for events near them, and then send them the address and directions to the location, if the user is interested. In this case, using the mobile's location is more effective than using such proxies as phone numbers. In the latter case, the mobile phone would receive the promotion, even if it is currently out of the area and could thus be viewed as unwanted or intrusive. An even greater opportunity may be for the local merchants and service providers who in the past have relied so heavily on directories (e.g., Yellow Pages), printed coupons, and local newspapers as the main forms of advertising. The mobile channel has a huge opportunity to capture new advertising revenue from the "local" community and the only way to do this is to leverage mobile location. The potential to attract more local advertisers, in combination with proving the effectiveness of the mobile channel, would eventually result in a willingness to pay a premium for advertising on mobile.
- Knowledge: The location of mobile users can also be used to trigger the delivery of marketing or advertising content to them only when they are inside a geographic boundary or close to a specific point of interest. Additionally, marketers and advertisers can study mobile users' travel patterns in aggregate throughout specific time periods, so as to learn more about their habits.
- New revenue: By delivering targeted, localized content, merchants and service providers can more effectively reach their local audience — thereby generating more traffic, increasing their conversion rate, and freeing up money for additional mobile advertising. This will ultimately result in more revenues flowing into the marketplace.

Higher Conversion Rates: Mobile local search utilizing LBS leads to higher conversion rates. Mobile local search is generally executed to fulfill an immediate need, the user is ready to make a decision. For example, they may be searching for a nearby gas station because their tank is nearly empty or checking a traffic report relevant to their commute. They are using these services because they plan to go to a specific destination in the very near term. Marketers and advertisers can leverage this higher propensity of mobile LBS users to make a purchase by presenting their messages at the right time and place. They can also assist mobile consumers reach their destination by providing maps and directions. Very few media channels could be as effective in driving consumers to a nearby business within minutes of viewing an advertisement.

If mobile location is correctly exploited, mobile devices will be more compelling for marketing and advertising than any other media channel.

### 4.3 THE BENEFITS OF MOBILE ADVERTISING TO THE LBS SEGMENT

Consumers can clearly benefit from receiving promotional offers and advertisements relevant to their lifestyles, at the right time and place. If an LBS can help consumers find goods or services they want and purchase them at a discount with a coupon, they will most likely be very satisfied and continue to use that LBS. The ultimate result is increased "stickiness" in the application (more usage, lower churn) and this benefits the entire LBS ecosystem. Marketers and advertisers should also benefit from the increased traffic into their stores.

However, LBS companies have an even larger stake in this: they cannot survive unless mobile LBS transitions to an advertising-based business model! As control shifts away from the carriers, brands and service providers, content providers gain the opportunity to form direct relationships with consumers. Companies, such as Google and Yahoo!, that have been effectively monetizing their content on the Internet through advertising, are driving these business models to the mobile environment. Mobile LBS

Mobile LBS provides functions very close to those that are available on the Internet for free. Thus, mobile consumers expect these services for free on their mobile devices. provides functions very close to those that are available on the Internet for free. Thus, mobile consumers expect these services for free on their mobile devices.

In order to build up a large enough user base to attract advertisers, LBS companies must now seed the market with free applications. This is going to be a land grab, with big companies confronting the smaller ones head on. Those companies that can stay in business despite low returns in the early years, are in the best position, since it will take time to evolve fully to an ad-based model.

Some of the carriers, such as Sprint, are also beginning to support this model. Sprint lists about a dozen free applications on its Digital Lounge and on-device software store front. If carriers and LBS partners do not move quickly to adapt new business models, many of the early innovators in the LBS category may not survive as larger players such as Google, Nokia, and Microsoft go after their customer base directly. The larger players can afford to be disruptive and drive the new economic models into the business, even if it means losses in the near-term. Thus, this puts more pressure on

the early innovators and their carrier partners to make ad models succeed. Carriers need to fortify their positions now, in order to maintain their strength in the value chain over the long-term. Thus, it is essential for participants in the LBS value chain to understand more about the mobile marketing and advertising ecosystem, so that they can formulate and communicate a clear value proposition about the advantages of mobile location to this community.

### 4.4 THE LBA VALUE CHAIN

The LBA value chain (see Figure 7) is based on the convergence of mobile location and mobile advertising. This value chain emphasizes the number of players involved in the delivery of LBA content to the consumer. This also accentuates the many different distribution points that the consumer may touch.



Figure 7: The LBA Value Chain

The red arrows show the potential relationships between the two value chains. For example, NAVTEQ, one of the leading providers of LBS content (e.g., map data, points of interest, traffic), works directly with advertisers and agencies to aggregate ad content and integrate it with their LBS content. This ad content may be "activated" as an additional feature in the LBS content they provide to their customers, which include the leading mobile LBS application providers, as well as GPS navigation suppliers. Additionally, other mobile ad networks, such as AdMob, Quattro Wireless, and Jumptap, are serving ads directly to some LBS application providers.

The figure also shows the relationships between the location technologies and platforms (e.g., location aggregators) and the mobile ad networks and marketing platforms. As the market matures we expect that the mobile ad network and platform providers will become more interested in having the ability to determine a mobile user's location to deliver targeted, relevant marketing messages, coupons, and ad content. However, the mobile advertising industry is in a very nascent stage, so it will likely be a couple of years before we see mobile location accessed more frequently and used for delivering location-relevant advertising and marketing content. Many of the companies that provide mobile advertising and marketing platforms that we spoke with, indicated that, while access to the mobile user's current location was interesting, brands and advertisers were more interested in reaching their target audience by being able to segment mobile users based on their profiles. Additionally, according to the

companies we spoke to, the majority of advertisers were satisfied with geographic targeting based on designated media area or ZIP code.

Based on this feedback, it is evident that the industry has more work to do to clearly articulate and prove the value proposition of automated mobile location (requiring no ZIP code entry), the ability to provide more accurate and precise location information, and the targeted placement of advertisements and coupons within LBS applications and GPS navigation, to the advertisers. More market trials and deployments are needed, and the results must be measured and communicated in the forms of success stories and case studies.

### 4.5 LBA TACTICS IN USE: NAVTEQ, 1020 PLACECAST, AND USEFUL NETWORKS

### 4.5.1 NAVTEQ

In late 2008, NAVTEQ launched an interactive advertising service, designed to subsidize the costs of real-time traffic services delivered to end users. Then, in the first half of 2009, NAVTEQ expanded the service offering and announced a product called NAVTEQ LocationPoint<sup>™</sup> Advertising (LPA), which enables two-way interaction between the end user device and the platform, in order to deliver location-targeted mobile advertising and coupons. This platform supports mobile LBS applications which run on the iPhone, Blackberry, Nokia and other smartphone devices as well as on portable navigation devices from companies such as Garmin and Magellan. This service is a good example of the types of location-based marketing and advertising tactics that brands, advertisers, and agencies can leverage to reach their target audience at the appropriate time and place.

NAVTEQ already has established a network of more than 200 brands and advertisers through a program called Direct Access. Direct Access allows the brands and advertisers to submit content, such as icons and store locations, so that this information can be displayed precisely on the maps viewed by millions of users. Now, in addition to Direct Access, NAVTEQ offers LocationPoint, giving advertisers the ability to reach mobile users, on foot and in their cars, who are within their market draw areas (that

With NAVTEQ's LocationPoint platform, advertisers can target messages to consumers that are near their stores, stimulating "impulse" visits and related purchases. is, close enough to respond to a promotion with an impulse visit). By targeting their message to consumers who are already "out and about" and near their stores, advertisers can drive awareness of their locations and stimulate impulse visits and related purchases. Delivery of

mobile coupons, display of nearby store locations within the ad display, and one-click Map and Directions calls to action embedded within the LocationPoint ads, can further enhance response rates. Additionally LocationPoint uses the additional targeting parameters we have already mentioned to establish context and deliver relevant advertising content, such as time of day, user preferences, and search behavior.

 Table 3 below describes some of the mobile advertising tactics supported in the NAVTEQ

 LocationPoint platform.\

Feature	Description
Storefront Targeting	Allows advertisers to establish a geofence <sup>3</sup> around areas, including each of their store locations. This enables advertisers to deliver ad content only to those within the proximity of the store or in a set geographic region. Geofences can be any size or shape.
Dynamic, Localized Content	The ad content can be tailored with the store address information or other relevant, location-specific information. The content is updated in real-time, based on the consumer's location.
In-application Landing Pages	Enables an advertiser to display ad content within an application with a call to action to click through to a landing page produced by the platform. By presenting the landing page within the application, the user's session remains active and unlike click-throughs to a mobile browser site, would not be suspended or terminated.
Localized Calls To Action	The platform includes call to action features after an advertisement is presented to a user. These include the ability to "get directions", "map the location", "place a call", "link to a website", "view and save a coupon".
Mobile Coupons	Advertisers can dynamically deliver mobile coupons which the end user can then save in a virtual wallet within their application. Coupons can be both graphical and textual, enabling to advertisers to tune the coupon mechanism (image with or without a barcode, text POS code, etc.) to the capabilities of their Point of Sales systems.
Reporting	Detailed campaign analytics reports highlighting key performance indicators, such as ads served, coupons delivered, and response rates for Landing Pages and all of the one-click Calls to Actions are available.

Table 3: advertising tactics supported in navteq's locationpoint platform

<sup>&</sup>lt;sup>3</sup> A geofence is a virtual geographic region (such as one mile around a mall or arena).



Figure 8: Example NAVTEQ LocationPoint Advertisements

According to NAVTEQ, the initial market feedback from a base of more than 700 users of portable navigation devices, which included NAVTEQ's dynamic Traffic and LocationPoint Advertising Content, has been extremely positive. A recent study directed by NAVTEQ, showed that 72 percent of the users found the advertisements on their devices to be acceptable. Nearly 75 percent of the consumers were aware of the free life-time traffic and find it an acceptable trade-off for advertising. Among the users surveyed, 42 percent found the ads to be relevant. The most preferred advertising was for fuel, restaurants, and coffee shops. An average of 31 percent of the users actually clicked through an advertisement and 24 percent visited a retail location after viewing the advertisement. NAVTEQ's VP of Advertising, David Klein, believes that, "These early results show that Location Based Advertising can be an extremely effective medium for influencing consumer behavior. As an industry we need to share more metrics like this and case studies, to help advertisers truly understand the benefits they can realize from LBA."

#### 4.5.2 1020 PLACECAST

According to Blair Swedeen at 1020 Placecast, "Click-to-call and click-through rates increase dramatically when the advertising is more relevant, personal and targeted based on location." 1020 has the metrics to prove this from several LBA trials and deployments. 1020 Placecast uses location-based information across the Web and mobile to target ad placements for their customers. One recent trial entailed a major retailer with 2,000 store locations across the United States looking to drive customers to a specific subset of stores. The advertisements were placed on several Web sites and a leading weather publisher's mobile Web site. On the mobile site, the user-entered postal code was correlated to the subset of stores to which the retailer was interested in driving more traffic, and a banner ad was presented with the local address and phone number of the closest store. According to 1020 Placecast these location-enabled mobile ads resulted in a 124 percent increase in the click-to-call rate and a 50 percent increase in the click-through rates to the mobile landing page in a controlled test versus a standard national banner ad with no location information. This is a clear demonstration that LBA is effective when implemented correctly.

### 4.5.3 USEFUL NETWORKS

Earlier this year a successful LBA trial was conducted by an LBS and location aggregation company called Useful Networks. They trialed their AdWhere<sup>™</sup> service with a Tier One U.S. wireless carrier, an advertising network service, and an automotive manufacturer. The goal of the trial was to determine whether click-throughs to a mobile landing page showing a map of the nearest dealer location would increase if the mobile banner advertisement was location-enabled. In the trial there was a control group that was required to manually enter a ZIP code on an intermediary page and a trial group that saw the location-enabled banner advertisement. Those who viewed the location-enabled banner advertisement were not presented with an intermediary page to collect a ZIP code. The trial results yielded 100 percent of the trial group users clicking through to the nearest dealer location page, while only 28 percent of the control group that was instructed to manually enter a ZIP code made it to the automotive manufacturer's dealer location page. According to Christopher Glode, Sr., Director of Product Management for Useful Networks, "The results of this trial prove that automatically capturing the mobile user's location is much more effective in terms of driving the mobile user to a specific action, than relying on the mobile user to manually input their location. Useful networks has the tools that make it simple for advertising networks, publishers, and advertisers to leverage mobile location ubiquitously across mobile devices and platforms, so that advertising can be localized and made relevant to the mobile consumer."

### 5 CONCLUSIONS

So, what needs to happen and when? In order for both LBS and the mobile marketing and advertising markets to achieve their fullest potential, they must connect — through LBA, which uses location to filter and tailor advertising content. To succeed in the mobile market, marketers and advertisers must leverage this location information to optimize their messages for the mobile environment and create the best experience for the end user.

In order for LBA to take off, several things must happen.

### *i. Marketers and advertisers need to understand the "location value proposition."*

To what degree will location information improve their mobile marketing campaigns? Will it help them optimize the ad experience for their targeted users? Can their campaigns be tailored to leverage location? Are there storefront locations? Marketers and advertisers need to understand the LBA ecosystem, identify appropriate partners, figure out how they can work with them to design effective location-based campaigns, and understand what level of location accuracy these campaigns require. They also need to understand how location will help them reach their target audiences and achieve their target response rates. Brands and advertisers will need mobile location to be available ubiquitously and consistently across all mobile devices in order for LBA to gain momentum.

### *ii.* Localized advertising content is needed.

Since no other medium has had the ability to target an individual so precisely, very little localized, digital content exists. National marketers and advertisers have not had any significant incentive to tailor their content towards location and local businesses have had little reason to create digital advertising content. For LBA to be most effective, marketers and advertisers need to create more local content and provide it to the ad networks for distribution whenever they know the location of their audience. Many of the ad networks have only needed to support geographic targeting based on Designated Media Area (DMA). Now that mobile devices can provide much more accurate location information, it is possible to tailor content for much smaller areas, such as specific streets. This will be necessary in order to capitalize on mobile users' sense of urgency by displaying ads in response to their geographic searches. In turn, this requires the ad networks to have a large supply of localized content and the ability to tag it and serve it using a more granular location than DMA. Additionally, the use of the actual location of the device instead of just the billing address information from the mobile subscriber's account, needs to be considered in the process of selecting the most relevant advertising to deliver.

## *iii.* The LBS companies, as the "enablers", need to understand how to communicate with marketers and advertisers and give them what they need.

The LBS companies must make their unique value proposition clear and present measurable results. Unfortunately, in such early stages of development of both markets, it is not clear which will or should come first, "the chicken or the egg." In order for the LBS companies to attract marketers and advertisers, many are seeding the market with free applications, so as to build up the number of users sufficiently to interest the advertisers. They are also doing as much as possible to offer interesting and compelling content to keep users engaged, which leads to more impressions. To drive the market, LBS companies also need to take the following actions:

- Help marketers and advertisers understand their mobile content delivery choices and provide a solution that is most relevant to them and their customers. Beyond their experience with mobile location, LBS companies must be able to demonstrate a broad range of knowledge of the ecosystem.
- Profile their user base by device types, demographics, behaviors, interests, travel patterns, etc. Companies need to be able to show better performance metrics on response rates associated with LBA, especially if CPM and PPC rates are higher than on other media channels.
- Assist marketers and advertisers in using location information effectively to enhance their marketing campaigns is a starting point. However, if location can be combined with other user data that is available or could be collected during the campaign (upon permission to do so), then this truly leverages the power of mobile's personal, behavioral, and contextual targeting capabilities, which cannot be matched by any other medium.

## iv. The business models and purchasing process need to be consistent with other forms of media.

Ideally, advertisers will be able to purchase mobile location-based advertising utilizing the same tools and procedures that they use for other media purchases. In order to provide more value to local advertisers, the ability to purchase ad space just for mobile users that are within a specific geographic region could be very compelling. Additionally, the business model needs to reflect the value of location. Thus, performance-based models, such as CPA, will likely work best. The advertiser will need to be able to see clear metrics on the click-through rates and be able to correlate the advertisement to store traffic.

### v. Consumers must realize benefits.

In exchange for consenting to disclose their location and receive advertising, consumers will need to derive value from it and not see it as intrusive. If LBA is done correctly, mobile consumers will have the most to gain. They will be able to take advantage of free and better location-based services, with improved content and information. They will receive promotions and advertisements at times and places where they are most useful. Ultimately, they benefit by saving time and money, since they will be able to get the merchant or service provider that is the closest and has the best offer for them. Overall, LBA should be more effective for the advertiser and more efficient for the mobile user.

So, in conclusion, the industry must seek ways to collaborate and implement strategies which enable the key participants to establish credibility around the location value proposition. Careful planning and execution around how mobile location is used to enhance mobile marketing and advertising campaigns will be critical in these early stages. Consumer acceptance in these early stages is also a must. While the industry is likely still two years away from having the necessary components align and from having the metrics to substantiate any credible claims around the value of mobile location, there is a lot of momentum in the marketplace. The use of mobile location to enhance marketing and advertising — whether it simply be using an xy coordinate to filter, select and deliver relevant content; a geofence that triggers a message when the user enters the range; or advertising placements within an LBS application, such as GPS navigation — LBA will be an extremely powerful tool to advertisers and marketers in the years to come.

### 6 APPENDIX: LBA ENABLERS AND THEIR PERSPECTIVES

We interviewed several leading participants from each component of the LBA value chain to get their perspectives on the viability of mobile location-based advertising, the current state of the market, and what they were doing to drive it forward. Below are the profiles of the companies interviewed with some extracts of these discussions. It is important to note that the majority of these interviews took place in the first half of 2009.

### A. Marketing Services/Platform Providers

### Acuity Mobile (acquired by NAVTEQ in September 2009)

Acuity Mobile [www.acuitymobile.com] provides a mobile marketing and content delivery solution that leverages user location, interests, and activity to deliver highly relevent content to mobile users. Through Acuity's patented Embedded Mobile Advertising Platform (eMAP<sup>™</sup>), the Company provides enterprise customers with Spot Relevance<sup>™</sup>, the ability to deliver targeted marketing and content to the right person, at the right time and the right location. The solution entails a software toolset which allows the enterprises to leverage the investment that they have made in their marketing and customer relationship management databases to segment and target end users by delivering relevant information and marketing messages. The platform supports delivery of content through simple text messaging, mobile websites, and customized applications.

Acuity Mobile partnered with NAVTEQ, to build NAVTEQ's recently announced Location Point System. Additionally, Acuity Mobile has relationships with Acxiom and Experian to provide mobile marketing solutions to their customers. Acuity Mobile has launched commercial systems and pilots with customers across many verticals. According to Gregg Smith, CEO of Acuity Mobile (before being acquired by NAVTEQ), "Our customers are seeing good results and consumer acceptance. If the offers are relevant, actionable and good deals, people will gladly accept this."

### iLoop Mobile

iLoop Mobile [www.iloopmobile.com], a privately-held company headquartered in San Jose, California, provides mobile services and technology for interactive mobile marketing, mobile advertising, and mobile content distribution. The company's mFinity<sup>™</sup> platform enables brands, marketing agencies, content owners and other companies to create mobile phone initiatives worldwide — via text messaging, multimedia messaging, mobile websites, voice, and branded applications.

iLoop Mobile strongly believes in context, and sees location as a key element of context. Rather than trying to replicate what is already readily available in the industry, iLoop Mobile's platform can and does integrate with leading industry location solutions via standard interfaces. According to Michael Becker, VP Strategy, "Our mobile marketing platform is designed with open architecture and APIs so that presently, we can integrate with current best-of-breed LBS technology providers when required for customer campaigns, and going forward we are assessing the best way to incorporate the use of mobile location technologies directly into our solutions. There are many different options which include GPS, cell tower, WiFi, Bluetooth at physical locations, and billboards. We want to ensure we have a thorough understanding of all options and the use cases, so we can then educate our marketing and

advertising customers. Advertisers are confused right now as far as how to leverage mobile location, since it is not available on a ubiquitous basis, the business models are complex and the experience across phones is inconsistent." All of this said, Becker believes that, "location offers a very unique, very powerful, and important capability not supported by other media channels."

### mBlox

mBlox (<u>www.mblox.com</u>) is the world's largest mobile transaction network specializing in providing operator connectivity and mobile billing capabilities to businesses around the globe. mBlox is the intermediary between businesses and mobile operators managing the delivery and billing of mobile messages, content and services. mBlox provides mobile marketing and advertising solutions to brands, enterprises, publishers, and content providers, and essentially acts as an aggregator for message and content delivery between the operators and third parties. mBlox's capabilities include advertising insertion to text messages, short code messaging-based campaign implementation and management, direct marketing, couponing, and ticketing. "Although mBlox has not yet integrated mobile location technologies into the platform, it is a logical next step for us," says Karl Freter, Director of Product Management – Americas for mBlox. "Allowing our customers to tailor messaging and content delivery with more precise targeting parameters, such as time of day and location, will result in improved overall performance of marketing campaigns and increase their return on investment."

### **B. LBS and Location Platform Providers**

### Alcatel-Lucent

Alcatel-Lucent (www.alcatel-lucent.com), a leading global provider of end-to-end voice, data and video services and applications for fixed and mobile technologies, provides a geofencing technology called, "Geographic Messaging Services Platform (GMSP)". The platform enables automated delivery of advertising and marketing content relevant to a specific geographic area which can be defined as a GMSP enables "push" geolocation services, triggered by the mobile user entering a aeofence. predefined geofence. Alcatel-Lucent is working with the wireless carriers to define areas of mobile commerce (e.g., metropolitan areas) in order to connect mobile users to retailers in their vicinity. Earlier this year, Alcatel-Lucent announced a partnership with Sprint to be a Location Aggregator. In this arrangement, Alcatel-Lucent will be authorized to serve mobile location data via its Open API Service (www.openAPIservice.com) to third parties through a simple to use, secure, standard interface. One of the key markets for this service is mobile marketing and advertising. "Location information enhances the targeting capabilities of advertisers enabling them to serve more relevant content, which should lead to higher response rates," states Mark Disbrow. "Our goal is to also help the carriers monetize this data, by unlocking mobile information that is valuable, in a secure and private way." Alcatel-Lucent also recently announced a partnership with 1020 Placecast which will enable the companies to offer location based mobile advertising to advertisers and agencies. There are currently trials underway which will allow both companies to better understand the mobile consumer's overall experience and acceptance of location based advertising.

### Loc-Aid

Loc-Aid (<u>www.loc-aid.com</u>), a privately owned company, specializes in location aggregation platforms and customized wireless mobile data solutions. Loc-Aid's technology enables the integration of wireless location information into any service or application across multiple device platforms and carriers. Loc-

Aid is already supporting location based marketing and advertising trials. David Allen, CTO for Loc-Aid, believes that "Mobile advertisers and marketers will be big consumers of mobile location in the future." According to David, "We are currently working with ad networks to localize advertising content. Ideally, advertising networks would like to use mobile location so ads can be rotated and presented to the mobile user based on their location, so they are more relevant. The largest issue at hand is that advertisers need breadth, depth, and consistency in user experience in order to get interested in this market." Loc-Aid is working to solve this problem through their platform which will be connected to multiple carrier location platforms, enabling their customers to access the location of the mobile device through a network request which "pulls" the location, as opposed to a mobile client that must be downloaded to the device to "push" the location.

### Loopt

Loopt [www.loopt.com] provides a location-based social networking application, however, Loopt employees refer to it as "social mapping". Loopt's "always on" location technology enables users to receive alerts when their Loopt friends are nearby. The locations are also displayed on a map within the application. Loopt also enables mobile users to search and locate points of interest nearby and learn about what to do and where to go. In the U.S., the Loopt service is now available on all of the major carriers, so Loopt users can interact with each other across carrier platforms.

At the end of 2008, Loopt launched Loopt Mix on the iPhone, which enables mobile users to view profiles of other Loopt users. Loopt Mix lists users in order of nearest distance and can send a blind message or email, allowing people to search for other Loopt users with shared interests. Loopt recently added Facebook Connect, which enables Loopt users to post updates to Facebook® with locations and photos. Loopt offers these services for free on the iPhone, as well as other smartphone platforms. Loopt is introducing advertising within the applications to subsidize the costs of providing the service. The free versions of Loopt, include location based advertising, which mainly consists of banner ads today. However, Loopt will also soon support delivery of coupons. According to Brian Marciniak, VP Business Development at Loopt, "The ecosystem economics for mobile LBS need to be adjusted by moving towards an ad-based business model, in order for this business to really take off." As a step toward this goal, Loopt announced a technology licensing agreement with Qualcomm for the QPoint™ Assisted GPS platform, which allows Loopt to expand their location services portfolio and deliver endto-end location platform solutions to wireless carriers. Loopt also intends to drive the overall economics down by subsidizing "turn-key" location solutions they offer through advertising. Marciniak believes that, "consumers will be most receptive to receiving coupons and advertisements after conducting a search for something, similar to the sponsored search results that are displayed on the internet search sites today."

### Networks In Motion (recently acquired by TCS)

Networks In Motion [<u>www.networksinmotion.com</u>] (NIM) provides white labeled mobile GPS navigation and related LBS applications, such as family locator and mobile search. NIM's customers include Verizon Wireless, AAA, and Yellow Pages. NIM also offers a location platform enabling solution providers and developers to easily integrate navigation into their services. Since mid-2003, NIM has been delivering products to major wireless carriers and enterprise customers. NIM is privately held and headquartered in Orange County, California, with international offices in Sweden and Spain. In our interview with Doug Antone, CEO, NIM, earlier this year, we were looking to better understand when we may readily see advertising used within mobile GPS navigation services, and more specifically, if their wireless carrier partners were supportive of ad-based models. Doug stated that, " NIM is working in concert with the carriers to look at smart ways to bring in relevant advertising. They are conducting trials around this." NIM is also heavily involved in the design and development of their own product to include advertising. However, Doug stated that "it will be a couple of years before the economics of providing mobile GPS navigation services can be supported solely through advertising. At the current acquisition rates, the volumes of users are too low to interest advertisers. That said, some of their carrier partners are definitely interested in adjusting the pricing models to lift penetration from 5 to 20%. They are looking at annual pricing, bundled pricing and advertising subsidized subscriptions, to lower monthly pricing and drive uptake."

### NAVTEQ

NAVTEQ (www.navteg.com) is the leading global provider of digital map, traffic and location data that enables navigation and location-based platforms around the world. This content is supplied to many market segments, including automotive, portable and mobile navigation markets, as well as more broadly across internet and mobile mapping sites and LBS application service providers. Earlier this year, NAVTEQ announced their interactive location based platform, NAVTEQ LocationPoint<sup>™</sup> Advertising. As described in an earlier section, this platform enables advertisers to tailor their ad content to local communities. The platform also includes additional parameters for establishing business rules for ad content selection, such as time of day, trading radius, user preferences and responses to past advertisements. David Klein, VP Advertising at NAVTEQ, indicated that NAVTEQ has employed an ad-based model for their Traffic.com website and is leveraging their experience and existing ad network to roll-out this model for the distribution of their map and traffic content to their current mobile and portable navigation customer base. According to David, "NAVTEQ is in a good position to provide the scale which appeals to advertisers. While the LBA market is very nascent, we believe that presenting advertising within LBS and navigation applications adds value to both the consumer and the advertiser. Ads are presented only where it makes sense, such as when a user conducts a search for a point of interest, similar to the experience on the internet. The user's actual location and destination will be used to select and deliver advertising content, so end users can potentially gain immediate benefits. Mobile consumers have a higher tendency to act on impulse and this presents a great opportunity."

### Skyhook Wireless

Skyhook Wireless [skyhookwireless.com] provides XPS, a hybrid positioning system it developed that takes advantage of the tens of millions of Wi-Fi routers in urban areas, as well as GPS and cellular tower triangulation. Consumer device location positioning based on XPS yields sub 30 m accuracy and the position data is returned is less than 2 seconds, 100% of the time. As a software-only implementation, XPS doesn't require additional specialized hardware embedded on the device or installed at the cellular base-station. XPS is positioned to exploit the rapid adoption of WiFi and GPS-enabled mobile devices.

In our interview with Jed Rice, he conveyed that "Right now Skyhook is focusing more on enhancing advertising on the Web with location, given that nearly 100% of laptops are now WiFi-enabled and GPS

is also being added to many." Skyhook has been focusing on location-enabling websites with their Loki location technology. For example, by just adding a couple lines of code to the javascript, a search engine can leverage WiFi-based location. Skyhook recently announced a partnership with Mozilla to location-enable browsers. According to Rice, "Web makes more sense right now, since there is already an ad-based model which has been proven and well-established. Mobile is still in very early stages and mobile phones as a viable platform for distributing advertising are still coming into their own. However we are definitely ready to take advantage of the mobile environment and we believe that 2010 may be the year of mobile location based advertising."

### TCS

### (recently acquired LocationLogic, LLC, formerly Autodesk)

TCS [www.telecomsys.com] provides a full suite of E911 and commercial LBS platform solutions, as well as LBS applications to the wireless carriers. Their LBS solutions also target content partners, publishers, and enterprises. TCS provides the capability to turn on ads within their mobile LBS applications through APIs and works with several ad networks to enable this. Kevin Tsurutome, VP Location Applications, acknowledges, "At this point it is still early in the mobile market for advertisers to understand LBA, given that there are still numerous challenges with mobile marketing and advertising, in general. There are challenges in selling inventory and challenges delivering relevant advertising."

### TeleNav

TeleNav [www.telenav.com] specializes in delivering location-based applications via mobile devices. The first to launch a GPS navigation and mobile workforce management service on a cell phone in North America, the company is partnered with most of the wireless carriers in the U.S., as well as leading handset manufacturers. TeleNav provides the GPS navigation software for both Sprint and AT&T Navigator. TeleNav offers products in 29 countries on 14 carriers covering one billion subscribers on more than 500 devices. TeleNav also offers a Portable Navigation Device with wireless connectivity, called Shotgun, which was launched late last year.

TeleNav has not yet introduced advertising into their current product line, however, according to Sal Dhanani, Sr. Director, Marketing, "If done correctly, where advertising is relevant and non-intrusive, mobile users will consider this more helpful than hurtful to their overall experience." Sal believes that the most effective form and least intrusive will be local search with sponsored links, and that mobile coupons based on location will also be important. TeleNav is prepared to enable their services with advertising when the market is ready. They will offer sponsored search advertisements, and support standard industry business models like Click Per Call (CPC), Cost Per Thousand (CPM), and Cost Per Action (CPA). "There are still not enough users to attract advertisers. We believe the market is 6 - 12 months away," says Sal.

### Trimble

Trimble Outdoors [<u>www.trimbleoutdoors.com</u>] is a software product family from Trimble – a manufacturer of GPS receivers since 1978. In 2003, Trimble began offering a product line of consumer LBS for mobile phones, first launching Trimble Outdoors. With Trimble Outdoors, consumers can use their GPS-enabled cell phones to navigate trails and highways, track their fitness performance, geocache, and create, manage and share those experiences with others. These applications are available on AT&T, Sprint/Nextel, BlackBerry, Verizon Wireless, and Alltel handsets, as well as the mid-to-high end Nokia

devices. According to Rich Rudow a Managing Director of Trimble and head of the Trimble Outdoors product portfolio, "We currently offer a free version of our geocache application on Nokia phones. There is a high uptake of these devices and millions of map transactions are conducted each month on these devices."

With Trimble's geocache application, mobile users search for a nearby geocache and the ten closest are displayed. Rudow believes, "This is a perfect opportunity to also include sponsored advertisements from nearby franchises, like McDonald's or Starbucks. The mobile user could then obtain directions to both the geocache and the nearest location of the advertiser." Although, Trimble does not yet have advertising turned on in the application, the functionality is there. "In order to attract advertisers we realize that we need to build up a base of a couple million impressions per month. We are optimistic that we will be there soon," says Rudow.

### uLocate

uLocate's (<u>www.where.com</u>) cross-carrier location platform enables the deployment of handset and network-based LBS applications. Its flagship product WHERE® is a leading local mobile portal, providing consumers with information that informs, entertains, and helps them save time and money. WHERE aggregates best-of-breed point of interest content from multiple sources to create a top-tier local search experience that includes real-time user generated recommendations and targeted offers based on the end user's preferences.

The company partners with carriers, MVNOs, device manufacturers, content providers, and consumer brands to bring its services to mobile subscribers. WHERE targets mobile consumers that are typically in the 17 to 45 year old age range. The service offers mobile users the ability to search for people, places and things, as well as access local content, such as weather, traffic, and movie show times. It is available on most of the carrier phone decks (including pre-loads on AT&T and T-Mobile), as well as leading smartphones such as the Apple iPhone, Google Android, BlackBerry, and Palm Pre and Pixie.

Dan Gilmartin, uLocate's VP of Marketing, shared his views on mobile advertising with us, indicating that, "Mobile advertisements were introduced into WHERE over a year ago on several phone platforms and we are seeing early success. We have the capability to serve ads based on location (which could be a city, zip code, street address, or as precise as a latitude/longitude), time of day, and search criteria. In order for location-based advertising to be successful, brands need to work with publishers and/or ad serving partners who have a quality product(s) with a wide reach, and will ensure that advertising is served in a manner that is unobtrusive and contextually relevant to the end user."

### **Useful Networks**

Useful Networks [<u>www.useful-networks.com</u>], a subsidiary of Liberty Media, creates location-aware Web and mobile applications; offers brands and agencies a platform for geo-targeted banner ads, automated store-finders, and proximity-based rewards; and offers a cross-carrier location clearinghouse that content providers use to aggregate LBS. Useful Networks has conducted several trials and deployments of LBA campaigns for national brands and advertisers. "The main challenge has been building up enough volume to offer advertisers the scale and reach they need," according to Chris

Glode, Sr. Director, Product Management for Useful Networks. "Mobile is the perfect media for enabling advertisers to reach their target audience in a highly personalized, relevant and interactive manner. However, as an industry we need to work to bring the right components into alignment and make the purchasing and implementation processes turn-key for the advertisers. Right now, because the industry is nascent, there is a lot of confusion and lack of proof. That said, the results of our deployments have been extremely positive and we are embracing the technology and doing our best to get the word out."

### Wavemarket

WaveMarket [wavemarket.com], founded in 2001, provides LBS applications to carriers and developers while protecting the privacy of users' location information. Wavemarket offers white label mobile locator services tailored for small to mid-size businesses, as well as friends and family. These services are available on mobile carriers throughout North America, South America and Asia, including AT&T, Sprint, Bell Mobility and SK Telecom. Late last year, Wavemarket announced the Veriplace® platform and have been named one of the few selected Location Aggregators for Sprint-Nextel. Wavemarket's Veriplace platform enables developers to easily integrate mobile location. As a Sprint-Nextel partner, Wavemarket ensures that the carriers' mobile location privacy policies and related rules are enforced. They can also provide white labeled consumer facing websites to enterprises to collect the appropriate permissions and enable the enterprise's customers to configure location settings and preferences. "As an example, mobile users can set the accuracy level of the mobile location that they want to share. This may be as precise as GPS or a broader setting like cell id," says Jim Smolen, VP Business Development at Wavemarket. "We are extremely sensitive to protecting the privacy, as well as securing the identity of mobile users. This information should only be provided with the appropriate permissions and for the use intended by the mobile user." Brands and advertisers are coming directly to Wavemarket to get access to location. According to Smolen, "They want to know how many people watch a certain channel at a certain time in a certain location. This is interesting for pricing advertising." Earlier this year, Wavemarket announced a partnership with Millennial Media. Through this partnership, Wavemarket will have the capability to support advertising within their suite of LBS applications, and Millennial Media will be able to receive the user's mobile location to deliver targeted advertising content.

### C. Ad Networks

### Jumptap

Jumptap [www.jumptap.com], provides targeting mobile advertising solutions to brand and direct response advertisers, wireless carriers, publishers, and content providers. Jumptap's advanced targeting helps advertisers get the highest return on their campaigns and publishers and application developers maximize revenue from their mobile properties.

Jumptap has a premium mobile ad network which consists of quality premium publishers, applications and carrier portals, including AT+T, Sprint, E-online, MSNBC, and Fox News. Brand advertising is sold direct from agencies and an experienced global sales team. Jumptap's self service interface for direct response advertisers is called tapMatch, which is similar to Google AdWords, but allows advertisers to not just use keywords, but to also target by categories, location, demographics, carriers, and handset type. The solution is ideal for heavy users of direct response marketing in key verticals such as CPG,

financial services, automotive, and retail. Recently, Jumptap launched a platform called tapLink that enables wireless carriers to extract data from their subscriber provisioning and billing systems to develop audience profiles and mobile advertising targeting parameters in order to improve the relevancy of the advertising delivered to the mobile user. The mobile subscriber data is pulled directly and assigned a unique ID to mask customers' personal identifiable information. According to Paran Johar, CMO of Jumptap, "This system sits behind the carrier's firewall. We can currently leverage 62 parameters for delivering targeted advertising. While mobile location is important, it is an incredibly over-hyped component of mobile advertising. You cannot just rely on location to send a coupon, like the commonly referred-to Starbucks example. This is not enough. What if the consumer doesn't like coffee? Ideally, you need to know more about the consumer. Location is only a single component of relevance. Relevance is the key to mobile, so along with location you also need to know the mobile consumer's demographics and preferences." Jumptap's platform is not currently integrated with the wireless carriers' location platforms, so the geography used for targeted is based on the ZIP code of the subscriber billing address or DMAs. "We do expect to leverage mobile location for direct response marketing to allow national retailers, automotive dealers, franchises, etc. to localize their advertising by ZIP code. However, we believe the industry is at least six to nine months away from street-level targeting".

### Nokia Interactive Advertising

Nokia Interactive Advertising [www.advertising.nokia.com] (formerly Enpocket) is a premium mobile ad network. By premium, NIA claims that they can guarantee placement, time, and brand safety (e.g., an advertiser's content won't be shown next to something "negative" or by a competitor). NIA has been working with advertisers since 2001, initially providing advertisers with SMS short code-based marketing campaign management and then offering mobile web-based advertising in 2005. NIA's unique selling proposition to advertisers is their deep knowledge of mobile consumers, having conducted 50-100K interviews of mobile customers over time. NIA knows consumer segments and has the unique capability of matching advertising based on this and what works on mobile. NIA helps publishers monetize their ad space inventory. They have unparalleled distribution through Nokia, the parent company which has 40 percent share of the handset market and more than 1 billion devices in use. NIA consists of Nokia Media Network, which comprises more than 150 mobile sites of media companies and the Internet services that come bundled on Nokia's handsets, and the Nokia Interactive Solutions team, which develops mobile advertising solutions and campaigns. Nick Lim, Director Products at NIA, believes that, "Mobile advertising is past the hype curve. We are seeing repeat buyers and people that understand the benefits. When it comes to LBA, there are two parts – detecting the device location and then providing that location to the ad network in a format that they can best handle in order to deliver the location-specific advertisement. Right now, many advertisers are still just specifying a Designated Media Area (DMA) for geographic location targeting, since this is what they understand. In order to make LBA more interesting to advertisers we need to educate them, and foster more innovation and creativity around mobile, since many think it is just internet on the phone. We also need to be able to close the loop and link advertising to sales transactions. When using mobile location there are also still the challenges of indoor location, user interface and processing power that need to be addressed."

#### 1020 Placecast Inc.

1020 Placecast [www.1020.com], is a company which specializes in location based marketing and advertising solutions. The company offers Placecast Media for advertisers and Placecast Platform for publishers, both of which target audiences using location information. The company, founded in 2005, is based in San Francisco and New York and began delivering WiFi location aware campaigns in 2006, on WiFi hotspot home pages. 1020 Placecast specializes in location based content management and ad serving. Their platform enables advertisements to be tailored for the user based on their actual geographic location and time of day. 1020 Placecast sells ad space on behalf of their publisher customers which have inventory across the web, mobile, email, and WiFi. According to Blair Sweden, "While the mix of our advertising sales is primarily web right now, we are seeing huge growth in mobile advertising. There is still a long way to go however. Brand advertisers are interested in scale. It is reach and frequency that is important to brands, since they are looking to buy an audience. Direct response marketers need to link advertisements to actions, so the ability to target the advertisement to the appropriate audience is important. They understand targeting parameters, but don't quite understand the value of proximity. Right now the lack of access to mobile location consistently across all devices and all carrier platforms makes it more challenging, since the ROI is perceived as limited due to the smaller audience (e.g., GPS phones are now just a subset of all devices). That said, we are actively engaged in LBA trials and deployments and are helping to pave the way for the future success of LBA." 1020 Placecast announced a partnership with Alcatel-Lucent earlier this year.

#### Yahoo!

Yahoo! Inc. [www.yahoo.com], headquartered in Sunnyvale, California, is a global online network of integrated services, serving hundreds of millions of users worldwide. The four pillars of the company's products and applications are content, search & marketplace, community, and personalization. In 2008, Yahoo! launched AMP, a suite of tools that offers precise geographic, demographic, and interestbased targeting across a vast network of Yahoo sites and ad sales deals Yahoo has struck with more than 600 newspapers, Comcast, and eBay Inc. The tools make it simple for any advertiser to place ads "Yahoo is a large advertiser network," says Tyler Bell, Director, by entering them into the system. Advanced Products Yahoo! Geo, "and there is a major push within the organization to open up advertising. Yahoo has built the system from the top down - it is massive and scalable and the infrastructure was always geo-aware - now we are bringing precision down to curbside level, in order to optimize the experience for the mobile user." Bell is in Geo-technologies group, which he explains as the glue that joins ads to mapping content and then to users. According to Bell, the company uses the term "geo-targeted" advertising, which he states, "is a comprehensive view that considers where the user is currently, where the user is going, and what they user is interested in." Yahoo! applies georelevant targeting across all Yahoo! properties. This ability to provide advertisers scale across multiple delivery channels and to reach a large number of users, while leveraging targeting capabilities seems to be an advantage that Yahoo! has over small mobile advertising networks and LBS companies that are just building their infrastructure from the ground up. Bell believes that these companies could benefit from partnering with Yahoo! instead of trying to build out the infrastructure themselves. Finally, when we asked Bell what hurdles the industry still needed to overcome in order for mobile location based advertising to be successful, he cited three. The first is to ensure that the user experience is satisfactory and not intrusive. The second is the need for ubiquity and consistency across mobile

devices. And the last was the ability to synchronize the user experience across devices, web, and mobile web properties, by centrally managing their location and other relevant attributes that could then be used to improve the overall usefulness and effectiveness of the advertising content that is presented.