

Location-based Services Address Customer Needs to be Location-aware

a report by

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It is a mobile world. Advances in technology enable mobile device users to access required information – largely centred around their locations and surroundings – when and where they need it. Any content-rich service utilising a subscriber's location to deliver pertinent information is known as location-based services (LBS). LBS is of utmost importance to communications operators as it offers them a way of achieving great differentiation, better service, new revenue-generating offerings and return on investment of significant technology investment.

Business Opportunities in LBS

Mobile operators and service providers are able to generate revenues from location-based services in several ways. The mechanisms for billing the customer for their use of location-based services are no different to those of traditional mobile services. Therefore, the revenue opportunity is heavily stacked in favour of the mobile operator and service provider over the application provider. This will continue to be the case until provision for revenue sharing beyond that of messaging is made a reality. Revenue generation methods are:

- subscription;
- airtime (2G);
- downloading (2.5G/3G);
- messaging – standard and premium short message service (SMS)/multimedia messaging service (MMS);
- advertising; and
- m-commerce.

Application providers are able to generate revenue when their services are deployed across mobile operators' and service providers' networks in the following ways:

- revenue sharing;
- software licensing;
- transaction pricing; and
- hosted services.

For the most part, these models ensure application providers receive revenues that are not proportional to those received by the operator.

Revenue sharing offers application providers the opportunity to directly share in the revenues generated from subscribers' service usage. Operators favour this approach when services are new to market and untested, but are quick to move to transaction, licence and hosted based models when services become mainstream. The reality of billing under a revenue-sharing model is somewhat complex, since billing systems handling subscription, airtime, download, commerce, messaging and advertising are not unified. This often means that application providers' revenues are generated through a combination of licensing, transactions and hosting, thereby reducing the application providers' revenue opportunity.

LBS applications address common customer needs to be location-aware:

- Where am I? (location refinement)
- What is around me? (search for points of interest)
- Who is around me? (search for people)
- How do I get there? (help in reaching these locations)
- Inform others where I am? (share location information)

“Advances in technology enable those carrying a mobile device to access information centred around their location, track people and assets and direct and route people and assets. Attractive to both businesses and consumers, LBS can be used for: safety, connecting to emergency services or roadside assistance; entertainment, playing location-aware and -enhanced games; convenience, locating friends, the nearest gas station or restaurant; and, efficiency, identifying other customers in a specified area while on a sales call or to route a mobile workforce such as a delivery fleet.”¹

In the mobile world – and in wireless networks – clients range from personal data assistants and mobile

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phones to telematic devices. These clients communicate via an operator's network to a gateway, which then integrates intelligent network protocols with Internet protocols. The location server integrates the operator's network with the positioning determining equipment, allowing the application to determine subscriber location, thereby answering common location-based questions. Key to the success of LBS is how easily the application integrates into a network's infrastructure. Most developers use eXtensible Mark-up Language (XML) programming for LBS, as it is the standard for Web services programming.

LBS Technology Platform – Real and Available Now

MapInfo Corporation is a leading global software and data provider and offers the first LBS technology of its kind in the market. The MapInfo LBS technology is real and available now. MapInfo® miAware™ is a scalable platform that contains geographic data and connects XML interfaces to core servers with unique functionality for the mobile Internet environment. Such functionality includes a 'yellow pages' framework, 'find nearest', geocoding, reverse geocoding, position acquisition and profiling. Comprised of processing engines, geocoding, map visualisation, routing and content, miAware is a modular, n-tiered, multi-threaded architecture based on secure Java™ servlets and employing server clustering and load balancing.

Integral to the miAware platform is MapInfo® MapXtend™, an application programming interface based on Java-2 Micro Edition (J2ME) and Java-2 Enterprise Edition (J2EE) platforms. MapXtend allows developers to create smart and user-interface-rich applications for mobile devices. Applications created with MapXtend provide mobile field staff with live access to the most updated corporate data on equipment and customers, helping to increase efficiency and improve service.

In addition to this, in order to offer comprehensive geographic data, MapInfo creates its own data sets and partners with the world's leading data providers. Data includes global content for yellow pages, street, landmark, event and public transportation.

Thus, miAware enables communications operators to create and deliver a wide range of unique mobile applications, including city guides and find nearest. By integrating the miAware platform, carriers can differentiate their offerings for all types of customers, resulting in a significant competitive advantage. Market tested, flexible and standards approved, miAware applications are unlimited. Carriers may build their own service or use a prebuilt miAware

application that has already been created. Examples of prebuilt LBS applications follow:

- **Guidance** – Users, who profile their personal preferences, obtain information on their current location or a desired future location, as well as directions on how to get there. Such a guide LBS application can be programmed with complete and up-to-date information on hotels, restaurants, points of interest and much more. Carriers can use their own yellow page data.
- **Connection** – Carriers deliver a connection application to small- and medium-sized businesses that allows a central dispatcher to enter the address of a new job, locate the field person nearest that address and send information including a map to the field person's mobile device.
- **Friend finder** – A consumer application, a friend finder enables subscribers to locate in realtime friends, family or colleagues, obtain directions to them or send a message identifying a mutual meeting point.
- **Location finder** – A location finder allows users to easily determine their location and save the location in their profile or send it in an e-mail or SMS.
- **Directions** – A directions application can be used to provide point-to-point directions.
- **Preferences** – With a preferences application, users can establish personal preferences for all applications built on miAware. Based on specific demographic user profiles, carriers can better match location-based content to specific users.

“Such valuable services help communications operators attract new customers and keep customers. In a business world where customer churn is rampant, this is critical. In addition, LBS provides a way for operators to recoup their significant investment in technology, their networks and their infrastructure.”¹

To assist developers and content providers, a developer services program offered by MapInfo offers a developers' forum where ideas, concerns and questions can be discussed with fellow developers; 24/7 access to a hosted Web server for creating and testing LBS applications; a worldwide application showcase; technical support; and training.

Real Deliverables

Real and on the market, MapInfo LBS technology is being used by world leaders.

MapInfo is working with Siemens Information and Communication Mobile Group (IC Mobile) in its location-enabling server, which is being implemented into Vodafone's mobile networks globally. The Siemens location-enabling server enables Vodafone to offer customers value-added mobile location-dependent services and applications. One such service is the Vodafone D2 NightGuide, offering location-based services to subscribers in Germany.

MapInfo and Neumobility, a location-based software provider and a division of Cellular Technical Services Company, Inc., are partnering to provide a suite of wireless location-based applications on miAware. These include interactive multimedia messaging, permission-based mobile coupons, customised business searching and realtime mapping. Neumobility is also a member of the MapInfo miAware Developer Services Program.

MapInfo and Mobilaris are working together to combine miAware LBS with Mobilaris' middleware, enabling wireless operators to more quickly bring to

market unique, location-dependent applications.

MapInfo is working with Intrado, Inc., to enable wireless carriers in Europe and North America to target new revenue opportunities by bringing to market a broad range of cost-effective, customised, location services for the mobile Internet.

With these real world applications, people on the move are not only staying connected to their offices but using LBS as an indispensable part of their lives – affecting the way they work, live and play. ■

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