Enterprises find treasure with location-based services

By Grant Buckler

The mobile phone industry has been discussing location-aware applications for years, but until recently it was mostly talk. Now the reality is in sight.

"This has been kind of the 12-year overnight success," says Brian Levin, co-founder and chief executive of location-aware applications developer **Useful Networks**, a Denver-based unit of **Liberty Media Corporation**.

Even as the economy worsens, interest in location-based services is growing faster than expected, says Dominique Bonte, research director for telematics and navigation at **ABI Research** in Oyster Bay, N.Y. The reasons: More phones with the necessary capabilities, consolidation of application providers, and more affordable data plans.

ABI divides location-based services into five categories. Most important is navigation, which simply means using a mobile phone to find out where you are or how to get where you want to go.

Nokia Corp. recently launched Nokia Maps on the **Rogers Wireless** network. It provides turn-by-turn navigation for drivers, says Andrew Elliott, head of software and services for Nokia North America. The company is working on separate pedestrian directions. Nokia will also offer multimedia city guides to accompany Maps.

"Navigation is the most important (application) and will probably remain the most important one," Bonte says.

However, he adds, enterprise applications like asset tracking, vehicle location and workforce management may produce as much revenue as navigation – partly due to higher prices.

The other categories are: proximity and search applications that help people find businesses or services; community applications such as friend finders that can tell you when people you know are nearby; and emergency services like enhanced 911.

The many flavours of location awareness

The idea of using a location-aware service to find what you need is easy for phone subscribers to understand, and there are many variations.

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Sam McAllister, a litigation technology specialist at Birmingham, AL, law firm **Lightfoot, Franklin and White**, uses Metromix, an iPhone application from Chicago-based **Metromix LLC** that displays nearby restaurants, theatres and other attractions with links and reviews. But he says his favourite location-aware application is WikiMe, from **SupportWare** in the Netherlands, which finds Wikipedia entries on nearby points of interest like buildings and monuments.

McAllister says OmniFocus, Seattle-based **Omni Development Inc.**'s to-do list for the iPhone, can tag tasks with a location. If he tags a reminder to 'pick up apples' with the location 'grocery store,' the phone alerts him when he passes near a grocery store. He doesn't use it as much as expected, though. "It seems useful but I have never found it worthwhile," McAllister reports.

Some developers are trying out location-based games, but Bonte is skeptical. "Mobile gaming hasn't been successful overall, let alone location-based gaming."

> The early adopters have been professional services companies

In business, the early adopters have been professional services companies with many mobile employees, says Craig Harper, chief executive at **Apisphere Inc.**, a Berkeley, CA, maker of software to enable location-aware applications. Coming from behind, but poised to overtake that group, are mobile sales representatives.

Harper says the potential includes retrieving customer data as a salesperson arrives at the client's office, and tracking the amount of time representatives spend with customers, which can then be correlated with sales results.

But he thinks all this will pale in comparison to opportunities for business travelers, who could be offered information on services such as hotels and rental cars near their location. He envisions packages of special offers being sent to mobile phones to entice road warriors.

Location-based applications are thriving partly because of **Apple Inc.**'s iPhone, which has Global Positioning System (GPS) capability as well as a large screen that Bonte says is "perfect to look at maps or to touch maps or to look at something on a map."

And the September arrival of the first phone based on **Google Inc.**'s Android platform provided another boost. Bonte says Android is even more interesting than the iPhone because it is an open platform that will make it easier for third parties to build the necessary tools. "I expect that to arrive on the Google phone much quicker," he says. "It has everything you need to have a good navigation experience."

Continued on page 11

Continued from page 10

When Google and the Open Handset Alliance held an Android Developer Challenge, all of the 10 $275,000 winners announced in early September incorporated some use of GPS or location data in their applications. Location is a minor part of some applications, but central to several.

Locale, developed by a team at the **Massachusetts Institute of Technology** (MIT), automatically changes a phone's settings based on its location. A user might create settings for meeting rooms, which would include having the phone vibrate rather than ring or accepting only calls from certain callers. Then the user can designate one or more locations as meeting rooms and the relevant settings take effect automatically when the phone is at one of those locations. There might be settings for home, for movie theatres, and so on, says Carter Jernigan, a member of the Locale team.

> Setting up location-aware services still has challenges

Because of its openness, "the Android phone is going to kind of do what the iPhone didn't" for location-aware services, says Clare Bayley, another Locale team member.

A winning team from Germany developed Cab4Me, a service that detects a mobile caller's location, then finds and dispatches the nearest available taxi. Cab companies sign up to see calls in their service areas on a Web-based interface, says Konrad Hubner of **SkyCoders**, the application developers.

"Several years ago the carriers all talked about location awareness and what you can do with it," Hubner observes – "and what happened? Nothing. The reason is that the devices were not ready." That is changing with the arrival of the iPhone and Android, as well as GPS-equipped phones from other vendors, he says. Bonte notes that Nokia has committed to providing GPS in all new phones.

GPS has its limits

Setting up location-aware services still has challenges, though. Stephane Attal, chief executive of Toronto-based **AskKinjo**, says his company first looked into using GPS location data for a service it has just launched in the greater Toronto area, but "quickly realized that the market was too small in terms of number of users to make sense."

So AskKinjo turned its sights on location information that mobile carriers must collect in order to provide Enhanced 911 emergency service. A few years ago, Attal says carriers were saying they would soon provide that data to third parties, but after AskKinjo waited two years it still wasn't available.

So this summer, AskKinjo launched its service – which provides information about nearby gas stations, restaurants, coffee shops and other services as well as traffic reports – using speech recognition so callers can speak their locations. The company plans to add the automatic location feature as soon as data is available from carriers and "we hope to hear good news from one carrier within a few months," says Attale.

Once independent companies can get caller location data from carriers, and once GPS phones become more prevalent, Attal expects the market for location-based services to grow.

Weak GPS signals indoors are another issue, Bonte notes. Because it relies on satellites, GPS doesn't work very well inside buildings, including the shopping malls where many of the young cellphone users who are primary targets for such services hang out.

Triangulation from cellphone towers works better under a roof, but as AskKinjo found, Canadian carriers haven't so far been ready to make that data available to third parties. Another prerequisite for location-aware services to take off, Hubner believes, is flat-rate data plans. "There is a psychological aspect," he says. "If you know you can use the web as much as you like, you will do it."

It also needs to get easier for independent developers to create location-aware applications that work across different phones and carriers, Bonte says.

"If you subscribe to a service on a certain network, you want to keep using it when you engage with your friends and family who are on a different network," he says. You also want it to work when roaming on other carriers' systems.

Carriers are doing some things to make cross-platform applications easier, Harper says, "but it's still incredibly difficult." What application developers really need is a single programming interface that will work with multiple phones and networks, and Apisphere's business is providing just that.

That common interface is hard to do today, Harper says, but he expects it to get easier. "I see the carriers opening their networks to companies like Apisphere and maybe a dozen or half a dozen more." In two or three years, he says, there will probably be a common exchange format for location data.

> Privacy is the final issue

It's much like what happened with text messages, where at one time is wasn't possible to send a message to a phone operating on a different carrier's network. "Text took off when cross-carrier capability came in," Levin observes.

But does Harper worry that the carriers – who he describes as "a loose association of warring tribes" – will make cross-network services so easy as to put his company out of business? Not at all, he says – there will just be less back-end engineering work.

Privacy is the final issue. "Wireless operators are very much concerned about protecting people's privacy," Levin says, "and location has that huge stigma around it." The idea of being bombarded with unsolicited advertisements for nearby businesses raises a lot of alarms. Levin doesn't think the public will accept unsolicited location-based advertising, but he sees "huge opportunity" in an opt-in model. "It's not hard at all to get people to sign up for this stuff."