Location Information is Critical to Wireless

To be competitive in the 'mobile age', companies must deliver reliable, high quality mobile networks, devices, services and relevant contents.

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Last year it was the new hype: access the Internet via your mobile phone. Check the stock markets from the car, search for the nearest Italian restaurant in town...even be guided to the place you want to go. Growth predictions of this market have been adjusted but focus on mobile Internet applications is still very high, with the number of wireless subscribers expected to break one billion by 2004, with most phones offering multimedia capabilities.

Mobile communication efforts vary globally with Western Europe, Asia and North America taking the lead.

Growth will be stimulated by emerging technologies and new technical developments. That will help solve some of the current issues but the largest growth limitation right now is in education. While the wireless industry has focused on building the network for carrying information, it has been slow to research and understand the importance of content for location based services.
Content providers are serving the essential information for all kinds of applications. There are location related providers like Tele Atlas whose data defines where a user is relative to the products and services the user seeks. Because Tele Atlas has the experience of packaging information to users in the wired world, the company knows a lot about user needs. There are also non-location data providers like yellow pages, time tables, etc.

What are &quotLocation Based Services&quot?

Location based services use data about a user's position to transmit information and content related to their immediate or requested locality. In a recent ABI consumer market survey of wireless and wire line phone users, location based services is ranked as the third most desired feature in the mobile phone with Internet access, behind email and weather information. One of Tele Atlas most important focuses, LBS, will be where the innovative applications emerge.
The key to delivering LBS is knowing the precise location of the user and relating that to other information the user wants to know. Just knowing where a user is

located by latitude/longitude coordinate is not enough to form the basis of a location-based service. You must know where that coordinate is in relation to all the possible streets, points of interest, products and services the user would be interested in.

For example, Tele Atlas' location based service does the following to assess &quothow do I get to the nearest McDonald's?&quot. It starts with the exact latitude/longitude coordinate, which is then related to a certain addressable location and road network, which can then be related to all restaurants in the area. Once found, the application defines the route between the user's addressable location and the McDonald's. Now the app needs to know all the streets and routes between the two points, assessing in a simple, intuitive manner to communicate efficiently and rapidly. Add to that the fact that &quotnearest&quot can mean nearest as in distance (line of sight), distance to travel (as in shortest route), or even travel time (which is typically what's preferred). The application has to be well-crafted to meet all these capabilities and relies on accurate geographic location data.

Why Location is Important?

Seen as a killer wireless application suite, location based services are facing high expectations. The market for location-based service applications is growing very fast but it still is very unstructured with many players moving in different directions. Sources project that from 2002-2003 the increase of location based service subscribers will take off rapidly, reaching about 700 million subscribers by the end of 2006.

The success of location based services will depend initially on the choice of services, the target audience, the quality of information and the way services are presented. Surveys show that the top five interests among consumers is access to traffic, weather, travel directions, road construction information, and the ability to search for a location by address. Quality content will encourage people to use their phones more often. User-friendliness is critical. Routing someone the wrong way on a one-way street or providing an inaccurate route that can result in getting lost will likely send that customer to another service the next time.

Market Growth

Expectations vary from source to source, but all indicate a significant growth in the mobile communication and Internet access in the coming 2-3 years across Western Europe, Asia-Pacific and North America.

Western Europe

Western Europe is one of the best regions for mobile phone use and it will be one of the most attractive regions for data use as well.

Estimations are that by year-end 2004, there will be 85.6 million data subscribers, almost even split among access subscribers (44.6 million) and WAP subscribers (41.0 million). From 2002 on we'll see a stronger growth, because more services will be developed, GPRS handsets will be sold in large quantities allowing easier entry into data, and capacity and speeds will be improved.

Asia-Pacific

This region is the most promising region for mobile phone growth and data. Overall, there should be over 62 million data users by year-end 2004, with close to 14 million Internet access users and close to 49 million truncated access users. Japan already has its own success story: I-mode.

North America

The North American market may be one of the most lucrative with the high

adoption rate of Internet access and mobility.
Canada is a solid market, concentrated in the so-called &quothockey corridor&quot (Ottawa, Montreal, Quebec, Toronto, Winnipeg, Edmonton and Vancouver). The US, on the other hand, is one of the most competitive markets, so carriers will have to build data services in order to remain at the leading edge of technology. By year-end 2004, the area should be covered by competitive data offerings in terms of real Internet access and truncated access, with over 65 million data users.

Understanding Geographic Data Sources

Linking geographic information to WAP or Internet sites is a natural enhancement of services. A wide variety of applications use geographical information, ranging from simple search functionality to requiring complex algorithms implemented on full content databases. These services will change from a pure &quotfind the nearest and get me there&quot service to highly personalized recommendations &quottaking my preferences&quot into account.
Geographic applications come in many levels of complexity. The entry level services use the location to answer simple questions like &quotWhere am I now?&quot. The next level includes questions related to proximity search: &quotWhere is the nearest?&quot, &quotWhere is the least expensive?&quot. More complex questions include route guidance as in &quotWhat is the route?&quot (which is now found on more advanced search engines). And finally, the most premium services will incorporate traffic information, including the exact location of the accident, the time to resolution, current speeds, and some services may offer suggestions for alternative routes. All of these require a sophisticated, well coordinated environment with a detailed street database and GIS functionality coordinated with real time information (traffic, weather, road construction, etc).
Route guidance is not all equal nor is it simple. A geographic map database with only basic facts about the road network might direct a user to take one-way roads the wrong way, recommend turns off over passes onto roads below, maneuvers against turn restrictions, and even overrun barriers or median strips. An ideal route will take into account overpasses, turn restrictions, road classes, one-ways, barriers, sign post information, etc. It requires the map provider to add subtle detail to the database, most of which can only be collected and verified with extensive field collection.
Finally, accuracy is critical. Everyone can tell a story about how a mapping engine on the Internet gave inaccurate directions. No matter how good the application is, if the underlying data is inaccurate, the user will be unhappy. This applies whether the device reports an inaccurate location or an inaccurate route. Tele Atlas requires its data be complete, precise, and verified before it's delivered to customers. The company focuses on accuracy across its complete road network, routing attributes that are collected and verified through field data, and real-time traffic and road construction updates.

Conclusion

Although it's still a fast evolving market and the industry standards are still being consolidated, we are in the 'Mobile Age'. To be successful, companies must deliver reliable, high quality mobile networks, devices, services and relevant contents. They have to provide the mobile user with information that really adds value to the way he interacts with his environment. Tele Atlas is positioned at the heart of this development and is extremely well placed to provide the high-quality geocontent for mobile services.

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