

DRISCOLL-WOLFE *MARKETING & RESEARCH CONSULTING*

2636 Via Carrillo
Palos Verdes Estates, CA 90274
310 544-5046 Fax 310 544-6056

2916 Patricia Avenue
Los Angeles, CA 90064
310 836-4615 Fax 310 836-8320

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2002 Wireless Location-Based Services Marketing Research Study

Overview

Driscoll-Wolfe Marketing & Research Consulting has released a nationally projectable marketing research study on consumer interest in location-based services. This new Driscoll-Wolfe study identifies the location-based services of greatest interest to consumers and quantifies their level of interest and willingness to pay for these services. The study also identifies wireless devices preferred by consumers for accessing telematic and other location-based services and assesses consumer opinions regarding location-based advertising, driver distraction and the potential impact of location-based services on privacy.

This study was partially funded by twelve companies, including leading U.S. cellular operators, automotive manufacturers, electronics suppliers, telematic service providers and other technology companies. Charter subscribers include Alpine Electronics, AT&T Wireless Services, BMW, GE Financial Assurance, GM OnStar, IBM, LoJack, Motorola, SignalSoft, Sprint PCS, Toyota and Volkswagen of America.

The Driscoll-Wolfe study is based on a nationwide survey of 20,000 households and a series of focus groups in key U.S. metropolitan areas. The large nationwide sample base allows for comparison of interest and willingness to pay for equipment and services based on a wide range of demographic criteria and other factors, such as use of cellular phones, cost of household vehicles and daily driving time. *This study uniquely enables subscribers to identify those segments of the population most interested in location-based products and services.*

Study Provides Answers to the Following Questions

- What is the current level of awareness of location-based systems and services?
- Which location-based services are of greatest interest to consumers?
- How much are consumers willing to pay for location-based services?
- Are people more willing to pay for services on a per transaction or monthly basis?
- How does interest and willingness to pay for services differ based on gender, age, household income and other criteria?
- Are frequent cellular, wireless Internet and PDA users more interested than others in location-based services?

- ❑ Are drivers of upper-end vehicles more interested in telematic services than drivers of mid-level or lower-end vehicles?
- ❑ What are the lifestyle characteristics and demographic profile of early adopters of location-based services?
- ❑ How interested are consumers in personal monitoring services for children, elderly, handicapped or others?
- ❑ What types of devices do consumers prefer to use for accessing location-based services, e.g. cellular phone, PDA, in-vehicle device?
- ❑ What equipment and service features are most important to consumers?
- ❑ How do people prefer to receive navigation assistance and location-based traffic information. e.g. automated voice, map display, text display?
- ❑ How much will consumers pay for a device to support location-based services?
- ❑ How much will wireless subscribers pay to have GPS or other location technology included in a new cellular phone?
- ❑ How do consumers feel about receiving location-based advertising messages?
- ❑ Will consumer acceptance of wireless advertising messages be influenced by offers of electronic discount coupons, or incentives such as reduced airtime?
- ❑ To what extent are people concerned about the potential impact of location-based services on their privacy?
- ❑ How interested are motorists in Bluetooth technology for wireless interface of portable and in-vehicle devices?
- ❑ Would consumers prefer to purchase location-based services and devices from their cellular provider, automotive company, motor club, security company, or other?
- ❑ How concerned are motorists about driver distraction when using location-based systems and services?

Location-Based Services Covered

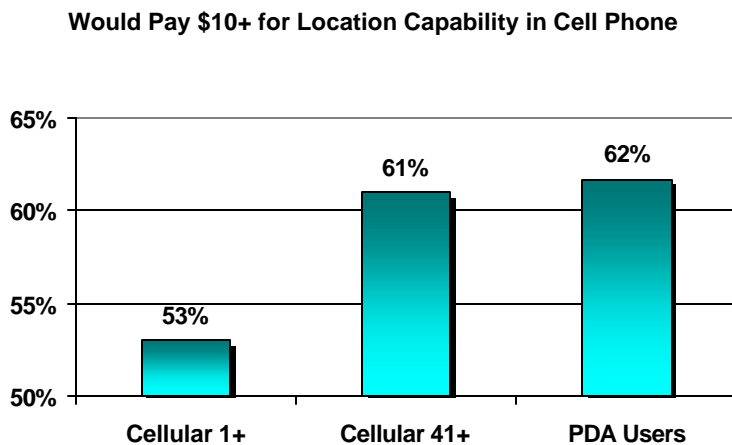
The following are among the telematics and location-based services covered in the study:

- Emergency Notification
- Collision Notification
- Roadside Assistance
- Stolen Vehicle Tracking
- Navigation Assistance
- Real-Time Traffic Alerts
- Information Services
- Vehicle Diagnostics
- Personal Location Monitoring Services
- Family Vehicle Locate
- Location-Based Messaging Services
- Bluetooth
- Location-Based Advertising and Promotions
- Satellite Radio

Nationwide Survey

The nationwide survey portion of the study was conducted in collaboration with NFO Research, Inc. Questionnaires were sent to 20,000 members of NFO's consumer panel. The total sample was split into two groups of 10,000 households, with each group receiving a different questionnaire. Each sample of 10,000 was balanced to key U.S. Census demographic variables, such as geographic location, household size and income, age of head of household and cellular phone ownership. Completed questionnaires were received from over 13,000 panel members and the survey findings are projectable for the U.S. adult population.

The study compares current consumer awareness of leading providers of location-based services to awareness levels from the 1999 Driscoll-Wolfe research study. Similarly, current interest and willingness to pay for location-based services are compared to 1999 levels. The study also quantifies the level of consumer interest in purchasing a telematics device for a new or existing vehicle, and the amount consumers are willing to pay for the device. In addition, the study evaluates consumer preferences for devices to access location-based services, including cellular phones, PDAs and in-vehicle devices, and reports the level of consumer interest in adding GPS or other location technology to cellular phones. The study also covers consumer interest in personal location monitoring and location-based messaging services.



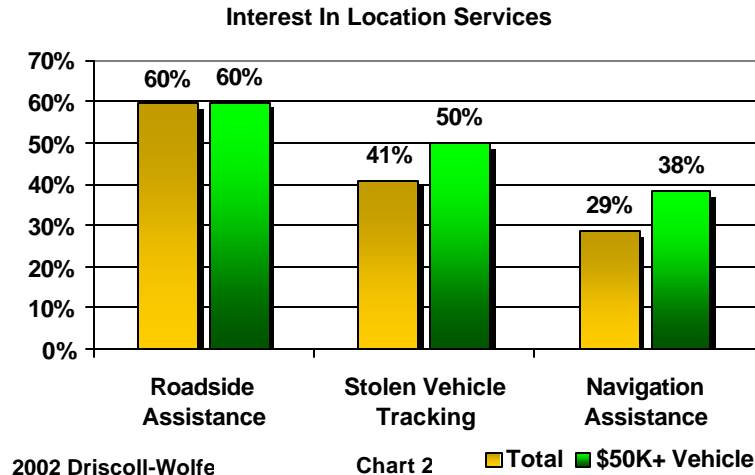
2002 Driscoll-Wolfe

Chart 1

Nationwide survey participants were asked to indicate the most they would be willing to pay to have GPS or other location technology incorporated in a new cellular phone. **Chart 1** shows that over half (53%) of those who use cellular at least once a week would pay \$10 or more for location capability in a cellular phone. However, 61% of frequent cellular users (41+ calls per week) would pay for location capability, as would 62% of PDA users.

The study quantifies the percentage of cellular users willing to pay from \$10 to \$50 to have GPS or other location technology built into a cellular phone. It also provides the average amount cellular subscribers, cellular Internet users and PDA users would pay for location capability and their willingness to pay for individual services.

Chart 2 shows the percentage of all nationwide survey respondents who expressed strong interest in location-based Roadside Assistance, Stolen Vehicle Tracking and Navigation Assistance services compared to interest among only those who own or lease a vehicle priced at \$50K+. As shown, interest of luxury vehicle drivers in Roadside Assistance service is consistent with the overall sample, but their interest in Stolen Vehicle Tracking and Navigation Assistance services is significantly above average. The report compares interest and willingness to pay for a wide range of telematic services for consumers with economy, mid-range, near-luxury and luxury vehicles.



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Vehicle Tracking and Navigation Assistance services is significantly above average. The report compares interest and willingness to pay for a wide range of telematic services for consumers with economy, mid-range, near-luxury and luxury vehicles.

Most Willing to Pay Monthly Fee for Package of Services

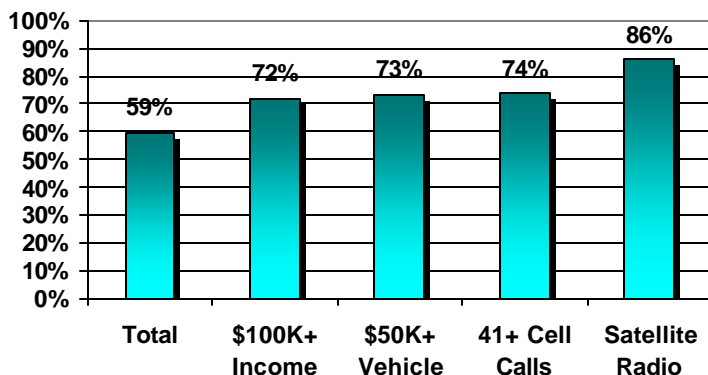


Chart 3 shows categories of U.S. consumers with strong interest in paying \$10 or more for a package of telematics services, including Emergency & Collision Notification, Roadside Assistance, Stolen Vehicle Tracking, Navigation Assistance, Traffic Alerts and related services. While 59% of the total sample reported that they would pay \$10 a month or more for these services, nearly three-fourths of those who use cellular frequently (41+ calls per month), those with high incomes (\$100K+) and those who own or lease luxury vehicles (\$50K+)

would pay for the services. Among those with a strong interest in subscribing to the new Satellite Radio services, 86% would also pay \$10 or more for telematics services.

The study includes detailed information on consumer willingness to pay monthly fees ranging from \$10 - \$30 for a package of telematic services.

Focus Groups

A total of eight focus groups were conducted in February, 2002. Two groups were conducted in each of four metropolitan areas including Washington, D.C., Chicago, Dallas and Los Angeles. These cities were selected to provide geographic representation of major population centers.

Focus Group Locations
(Two groups in each city)



One focus group in each city was conducted with cellular subscribers who have an average monthly bill of \$75 or more, and who use cellular primarily for business. The other group was conducted with individuals who use cellular primarily for personal communications, have an average monthly cellular bill of under \$75. Participants also use the Internet at least weekly. All participants were 25~65 years of age, have a household income of \$60,000 or more and have been cellular subscribers for 12 months or more.

The focus groups provided detailed information on consumer awareness and interest in location-based services, preferred service features, and willingness to pay for equipment and services. Focus group participants commented extensively on their preferences for devices to access location-based services and device features. They also provided their opinions regarding location-based advertising and promotions, privacy, driver distraction, new technologies such as Bluetooth and preferred suppliers of location-based products and services. The following are some of the key findings from the focus groups:

- Most respondents favored a portable device over an installed device for accessing location-based services in order to be able to use the device outside the vehicle and in more than one vehicle. Those who favor an in-vehicle device would pay about \$400, on average, for the device.
- The majority of participants would prefer to have a live operator for security-related services, but prefer automated services for navigation, traffic alerts and other non-security services.
- Many participants would accept some advertising from nearby retailers, if it is not intrusive, in exchange for a discount on services or airtime.
- Many respondents expressed concern about the potential loss of privacy with location-related services. The ability to control who locates them and when they are located is important to consumers.

Detailed Report

The 140-page report of the research findings includes the following sections:

- Overview of the study, including objectives and methodology
- Executive summary of the key findings
- Conclusions of the research
- Detailed report on the findings of the nationwide survey
- Detailed focus group report
- Appendix with nationwide survey questionnaires

Subscribers may purchase a paper (bound) copy of the report only, or both hard and soft (CD) copies of the report together with the nationwide survey statistical tables (approx. 400 pages) with details of responses and demographic data for each nationwide survey question.

Optionally, subscribers to this study may schedule an Executive Presentation of the findings by one of the Driscoll-Wolfe senior partners. Additional copies of the report and video tapes of the eight focus groups are also available.

Driscoll-Wolfe Marketing & Research Consulting, with offices in Los Angeles and Palos Verdes Estates, CA, conducts multi-client and private marketing research studies covering wireless communication products and services. The current study is the company's fifth multi-client study and the fourth emphasizing location-based services. Charter subscribers to previous Driscoll-Wolfe multi-client studies have included AT&T Wireless, ATX Technologies, Cingular Wireless, Ford Motor Company, General Motors OnStar, Intel, LoJack, Lucent Technologies, Microsoft, Motorola, QUALCOMM, Verizon Wireless, Visteon and other major corporations.

CONTACT:

Clem Driscoll

310 544-5046

cdriscoll@driscoll-wolfe.com

Dick Wolfe

310 836-4615

dwolfe@driscoll-wolfe.com

WEB SITE: www.driscoll-wolfe.com