



Cingular Advantage for Business *Fleet Management, Vehicle Location and Remote Diagnostics*

Wireless 'Cars on Call' Offer Glimpse of Car-Rental Future

MasterTrak Fleet Solutions by Vetronix Corporation and Cingular Wireless Makes Driving Cars by the Hour Almost as Easy as Checking Out a Library Book

Next-generation telematics in automobile systems that combine Global Positioning System (GPS) tracking with wireless data communications are enabling Flexcar to expand its "cars on call" program to occasional use motorists across the nation.

The Flexcar Story

People who rent cars frequently and achieve "preferred customer" status are afforded a number of advantages, the best of which is the ability to breeze past rental service desks and go straight to the car. On the other hand, people who rent occasionally or only need access to wheels for a few hours a week, all too often have to endure the tedium and time delay of waiting in line to pick up their keys.

Flexcar saw an opportunity to offer both the "business driver" and once-in-a-while motorist a simplified and streamlined experience by introducing a new model based on "car-sharing." Flexcar's program allows its members to drive cars by the hour for rates that cover gas, insurance and maintenance of the vehicle. These "cars on call" are reserved on a first-come, first-served basis and are parked at landmark locations spread out all over the city like train stations, office buildings and retail centers. Today, Flexcar has expanded its operations from its Seattle base to the Portland, Ore., Washington, D.C., Los Angeles, San Diego, and Chicago (through its affiliation with I-GO) metropolitan areas. The company runs car-sharing programs for more than 20,000 members in these markets, with a fleet of approximately 370 vehicles and as its experience shows, "borrowing" a car may soon never be the same again.

"Our business model needs to sustain both a high volume of members and reasonable prices. We knew that in order to expand and remain profitable, we would have to replace our paper-based check-in and trip logging system with an automated system that would reduce administration and paperwork. At the same time, we wanted the new system to give our members a seamless experience when they made a reservation, borrowed a car, returned the car, and received their bills," said Lance Ayrault, president and CEO of Flexcar.

With the help of Cingular Wireless and telematics solutions company Vetronix, the nation's largest provider of car-sharing programs deployed wireless technology to dramatically simplify and quicken its program. Today Flexcar members can swipe a card, touch a few buttons and be on their way.

Moving Quickly from Working Concept to Leading Edge - Enter Vetronix and Cingular

Initially, Flexcar wanted to prove that its commercial car sharing business model would work. They opted not to go with a technology solution, relying on an honor system in which members would track their own usage on paper trip tickets. Once they were satisfied that the idea was viable, they turned their attention to automating the usage tracking function in order to deploy the business on a large scale.

To take the next step in finding an automated entry-access and data-tracking system, in 2002 Flexcar turned to Vetronix, a specialist in creating solutions for accessing and processing data from vehicle controllers and computer systems. Vetronix joined forces with Cingular to devise a telematics solution that combined Vetronix's diagnostics technology and Cingular's data network. After a six-month design-and-development phase, in October 2002 the two companies rolled out a new version of the Vetronix MasterTrak Fleet Solution product. Flexcar can now remotely authenticate identification of members, control entry to cars, enable engine ignition, record vehicle-operating metrics, diagnose error indicators, and wirelessly transmit and update data.

The solution includes a radio frequency identification (RFID) reader and keypad that verify identity and allow entry without a key, an on-board telematics device designed by Vetronix that automatically keeps track of location, speedometer, odometer, fuel-gauge and other vehicle data, and a communications system that enables this data to be wirelessly transmitted and interfaced with a customer account database. The entire solution is anchored by Cingular's Mobitex wireless data network. Mobitex is a narrow-band packet data network technology that is designed for short burst, frequent data exchanges. Cingular's Mobitex network operates nationwide and covers 492 markets and 130 airports across the country.

"We chose Cingular's Mobitex network because it's tailor made for in-vehicle telematics applications like the one we designed for Flexcar," said Jack Rozint, general manager, Fleet Management Solutions, Vetronix Corporation. "The network is reliable, highly available with very low latency, plus coverage is abundant and roaming is seamless. Mobitex is a data-only network, so there is no risk of unavailable channels due to voice channels getting priority."

The solution consists of four components, all of which are nearly invisible to the driver:

- The **telematics control unit (TCU)** serves as the nerve center and data repository of the solution. The TCU authenticates the identity of a member through a connection to the RFID reader and a keypad. It's also tied to the door locks and an engine immobilizer so that entry to and operation of the vehicle can be controlled.
- The **vehicle serial network interface** measures speed, distance, fuel and other operating data. It feeds this information to the TCU, which aggregates this data for each engine ignition cycle to allow a bill to be generated for each member's trip.
- The **wireless radio and GPS** enable each member's trip readings to be transmitted to a Vetronix database via the Cingular Mobitex network and each Flexcar vehicle to be located through satellite tracking.
- **Cingular's Mobitex data network** transmits GPS and in-vehicle data to and from the Flexcar server in real time. In-vehicle devices can operate continuously, and do not require remote wake-up to function or to request and setup sessions for each data exchange. The technology ensures that data stored on in-vehicle devices is successfully transmitted as the vehicle moves in and out of coverage.

"The Flexcar telematics system allows members to reserve and drive cars with a minimum of time and effort," explains Rozint. "It works like this. A Flexcar member makes a reservation for a car by logging on to a Website or by calling an automated phone system. The member enters the car by first swiping an RFID card across a reader that is located inside the rear window. Upon validation that the card belongs to a valid member in good standing, the TCU sends a command to open the door locks. Once inside the vehicle, the member then enters a personal identification number (PIN) into a keypad and upon validation of the PIN, the TCU allows the member to start the car and make his or her trip. During the trip, the TCU monitors and collects data on location, distance, and fuel use. At the end of the trip, this data is sent via Cingular's Mobitex network to a database at Vetronix, which then aggregates this data for each member trip and relays this information to Flexcar for billing."

Happier Members and Lower Costs

This streamlined process has translated into a number of benefits for both Flexcar and Flexcar members.

Convenience: the solution allows members to simply make a quick phone call or Internet visit and walk right up to a reserved vehicle and begin a trip. No lines to navigate. No paperwork to manage. And virtually no time needed to complete the check-in process.

Security: the solution provides double protection by verifying the identity of a driver through both an RFID card reading and a PIN entry. Only after these two actions are successfully completed will the doors be unlocked and the engine immobilizer disengaged.

Safety: not only can the solution provide assistance to lost drivers through its GPS tracking, but it can also make diagnoses of engine and transmission error indicators to help motorists quickly and confidently get back on the road. For example, the solution can determine the problem for a range of "check engine" light situations.

"The capability to remotely diagnose vehicle error indicators represents a real milestone in car-rental customer service," says Nathanael Sommer, business developer, Fleet Management Solutions, Vetronix. "Imagine, you've just begun a road trip with your family and the 'check engine' light comes on in the car you're driving. Ordinarily, you would have to stop your trip and return the vehicle to the car-rental center or to another location to pick up a new car. However, with the functionality and accuracy of the Vetronix telematics technology along with the reach and reliability of Cingular's Mobitex network, we can wirelessly receive on-board data and often help a member immediately fix a problem right over the phone. As an example, we have many 'check engine' light situations that are related to loose gas caps and only require a simple tightening of the cap to resolve."

In addition to happier members, the Vetronix and Cingular solution has meant a number of other benefits for Flexcar. Not only has the solution helped the company lower costs associated with lines, paperwork and staffing, it has helped Flexcar implement a more accurate system to record time, distance and fuel to bill members.

As of mid-2004, Flexcar has installed the solution in approximately 350 of its 375 vehicles. With the success of the first phase of the solution rollout, the company eventually plans to equip its entire fleet with the solution.

"Cingular and Vetronix have helped us leverage wireless technology to save time, cut costs, reduce overhead and make customers happy, which is a great value proposition. Flexcar is now poised to move its idea of wireless 'cars on call' into high gear," said Ayrault.

For more information on Cingular Wireless solutions for fleet management, vehicle location tracking and remote monitoring and diagnostics, contact Cingular at 1-800-FITSBIZ (800-348-7249) or visit Cingular's B2B Web site at www.cingular.com/business

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