



Research and Innovation

FROM THE FORD “SCI LAB”

FORD AND HEALTHCARE EXPERTS RESEARCH SYNC HEALTH AND WELLNESS CONNECTIVITY SERVICES HELPING MANAGE CHRONIC ILLNESS ON THE GO

- Ford researchers demonstrate a series of possible in-car health and wellness connectivity services and apps aimed at helping people with chronic illnesses or medical disorders such as diabetes, asthma or allergies manage their condition while on the go
- Leveraging Ford SYNC®, researchers developed glucose device connectivity and monitoring capability, location-based allergy and pollen reports and voice-controlled, cloud-based health management services
- Ford is working with leading healthcare industry experts such as medical device maker Medtronic, mHealth pioneer WellDoc®, and SDI Health, developers of the informational allergy website www.pollen.com, to develop its initial Health and Wellness connectivity portfolio

DEARBORN, Mich., May 18, 2011 – As Americans take a more active role in managing their health and well-being, Ford researchers are taking a leading role in developing a series of health and wellness in-car connectivity solutions designed to empower people with self-help information while they drive.

Leveraging Ford SYNC® and its ability to connect devices via Bluetooth, access cloud-based Internet services and control smartphone apps, Ford is taking charge in this automotive whitespace area, developing industry-first voice-controlled in-car connections to an array of health aids from glucose monitoring devices, diabetes management services, asthma management tools and Web-based allergen alert solutions.

“Ford SYNC is well known in the industry and with consumers as a successful in-car infotainment system, but we want to broaden the paradigm, transforming SYNC into a tool that can help improve people’s lives as well as the driving experience,” said Paul Mascarenas, chief technology officer and vice president, Ford Research and Innovation.

Healthy statistics

Health of mind, body and spirit is a significant slice of a larger global health and wellness trend that is transcending multiple generations, spectrums and industries. So-called healthy homes, allergen-free cleaners and products, and the cosmetic and bariatric surgery boon, for example, are all converging to create an eclectic mash-up that is redefining health and wellness for today’s consumer.

An underlying consumer demand for being in the know about one's health while on the go also continues to rise, fueling the growing number and breadth of mobile healthcare devices and health- and fitness-related software and smartphone applications hitting the market today.

According to a recent survey conducted by CTIA-The Wireless Association and Harris Interactive, for example, some 78 percent of U.S. consumers expressed interest in mobile health solutions. A recent study by digital messaging powerhouse MobileStorm further confirmed this phenomenon, indicating that medical and healthcare apps was the third fastest-growing category of smartphone applications in early 2010. The major app stores, such as the Apple App Store, are now housing upward of 17,000 available health apps for download, with nearly 60 percent of those aimed at consumers rather than healthcare professionals, reports mobile research specialist Research2Guidance.

"Wireless health provides an unprecedented ability for monitoring and promotion of health and wellness for all individuals," said UCLA Electrical Engineering Professor William Kaiser, who has worked with NASA and the U.S. Department of Homeland Security's Science and Technology Directorate to study how wireless health technologies can be used to track an individual's fitness and health status and help identify potential risks and challenges. "Studies show wireless health empowers people with information and guidance that can directly address the most important health concerns.

"The new Ford health and wellness connectivity solutions represent a fundamental advancement for these individuals," Kaiser added, "providing them additional support and functionality during time spent in the vehicle."

Constant connections

Taking a smart, high-volume approach to bringing mobile health and wellness solutions inside the car, Ford researchers are first looking at two populations with the most need for a constant connection to potentially life-saving medical information – people with diabetes and those with asthma and/or allergies.

According to the American Diabetes Association, nearly 26 million adults and children are currently living with diabetes in the U.S., 3-plus million more than there were four years ago. Numbers grow even higher for those with asthma and allergies, with the Asthma and Allergy Foundation of America reporting some 60 million Americans have asthma and/or allergies.

To create relevant in-car features and services for those living with these ailments, Ford is working with experts in these fields, including medical device manufacturers, healthcare management service providers and Web-based medical alert services.

"Ford's approach to health and wellness in the vehicle is not about trying to take on the role of a healthcare or medical provider, we're a car company," said Gary Strumolo, global manager, Interiors, Infotainment, Health & Wellness Research, Ford Research and Innovation. "Our goal is not to interpret the data offered by the experts, but to work with them to develop intelligent ways for Ford vehicles using the power of SYNC. In essence, creating a secondary alert system and alternate outlet for real-time patient coaching services if you will."

For people with diabetes and their caregivers, constant knowledge and control of glucose levels is critical to avoiding hypoglycemia or low glucose, which can cause confusion, lightheadedness, blurry vision and a host of other symptoms that could be dangerous

while driving. Many now depend on a portable continuous glucose monitoring device to track their levels.

Likewise, those with asthma and allergies need to have a clear understanding of their environment and potential symptom triggers – such as pollen levels in the air – that can quickly lead to an attack. Growing in popularity among this group are Web-based alert services and smartphone apps that can help flag dangerous pollen levels based on location.

Ford SYNC offers three unique ways to bring health and wellness connected services into the car:

- Device connectivity via Bluetooth – Leveraging Bluetooth, medical devices can be connected to the car to share information through SYNC, just like a driver connects and accesses his or her cellphone and address book by voice control
- Cloud-based services – Ford created an off-board network of location-based traffic, directions and information providers that drivers can simply access via their cellphone. Known as SYNC Services, new services such as medical services can be easily added through this plug-and-play voice-controlled capability
- AppLink – Ford’s latest SYNC innovation allows smartphone apps to be accessed by drivers via voice control. The SYNC application programming interface (API) allows app developers to enable their apps to communicate through SYNC, delivering a smarter way for drivers to manage apps while driving

The ongoing Ford health and wellness research projects encompassing these needs include:

- **Glucose monitoring:** Working with Medtronic, a leading manufacturer of glucose monitoring devices, Ford researchers have developed a prototype system that allows Ford SYNC to connect via Bluetooth to a Medtronic continuous glucose monitoring device and share glucose levels and trends through audio and a center stack display and provide secondary alerts if levels are too low.

“To address the growing challenge of chronic diseases, Medtronic is collaborating with companies like Ford to develop innovative solutions,” said James Dallas, senior vice president, Medtronic. “Diabetes in particular is a chronic disease where frequent monitoring of blood glucose levels throughout the day is critical. As medical and consumer technologies converge, Medtronic is uniquely positioned to provide patients, caregivers and physicians with actionable insight from the data our devices can gather from the human body. By utilizing information technology and consumer electronic devices, we can help patients actively manage their health via access to real-time data on phones, hand-held devices or even in their cars.”

- **Allergy alerts:** Ford is working with SDI Health and www.pollen.com to SYNC-enable its smartphone Allergy Alert app through AppLink, giving users voice-controlled access to the app that provides location-based day-by-day index levels for pollen; asthma, cold and cough and ultraviolet sensitivity; as well as four-day forecasts.

“Our developers initially created the iPhone app to provide users with greater access to the information they’ve come to rely on from pollen.com,” said Jody Fisher, vice president

of Marketing for SDI. “Having instant, portable access for their conditions helps users plan their day or week ahead so they can remain active, which ultimately improves their quality of life.

“Collaborating with Ford is the perfect extension of this objective,” Fisher said. “We are happy to support Ford’s initiative of connecting drivers with resources and services important to their health and wellness.”

- **WellDoc:** Ford and WellDoc, a recognized leader in the emerging field of mHealth integrated services, have joined forces to integrate in-car accessibility to WellDoc’s comprehensive cloud-based personalized solutions for those with asthma and diabetes through SYNC Services. Using voice commands, SYNC users could access and update their WellDoc profile to receive real-time patient coaching, behavioral education and medication adherence support based on their historic and current disease information.

“WellDoc was founded on the concept of helping patients manage their disease with everyday, personal tools that are easy to use and can be easily accessed,” said Dr. Anand K. Iyer, president and COO of WellDoc. “Through our partnership with Ford, we’ve created a unique in-vehicle environment that supports patients so they can continuously maintain their daily routines without interruption.”

Well on the way

Although still in the prototype and research phase, Strumolo acknowledges that many of the health and wellness features and services being explored at Ford have fairly short-term implementation requirements, such as the Allergy Alert app.

Ford is also examining other more long-term health and wellness technologies and ideas related to, for example, heart rate, relaxation and reducing stress. Ford and the Massachusetts Institute of Technology (MIT) have long been studying the correlation between stressors and driving performance, wrapping up a nine-month advanced research project last fall that showed drivers are less stressed when using selected vehicle technologies such as Ford active park assist and cross-traffic alert.

“Health and wellness provides a tremendous opportunity for Ford to provide peace of mind and a personal benefit to drivers and passengers while they are in our vehicles,” said Strumolo. “As more and more devices and technologies lend themselves to such connectivity in the car, it is our responsibility, our philosophy, to examine those possibilities and open our doors to industry relationships that can help us do it intelligently, efficiently and economically.”

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About Ford Motor Company

Ford Motor Company, a global automotive industry leader based in Dearborn, Mich., manufactures or distributes automobiles across six continents. With about 166,000 employees and about 70 plants worldwide, the company’s automotive brands include Ford and Lincoln. The company provides financial services through Ford Motor Credit Company. For more information regarding Ford’s products, please visit www.ford.com.

Contact: Alan Hall
313.594.3744
ahall32@ford.com