New phone apps aim to boost health

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The iPhone is proven as a way to fill time, from making posts on social networks to playing silly games. Now, some entrepreneurs hope to add to its more practical uses, enabling it to monitor health and prevent disease.

Local companies are in the process of developing a new generation of iPhone accessories to help prevent heart disease, measure the temperature of food and determine whether you're exercising to your fullest potential.

"The advantage of something like an iPhone is it's becoming increasingly ubiquitous," said Steve Parente, a health finance professor at the Carlson School of Management at the University of Minnesota. "Consumers already pay the upfront cost for the data streaming and the hardware piece of it."

New ideas for the iPhone include a stethoscope-like attachment from Farmington-based AUM Cardiovascular. The Vista Institute in Minneapolis is developing an iPhone program that will help restaurants monitor food safety. Minneapolis-based PedalBrain will sell a product for cyclists later this year that will collect performance data and make it available in real time on their iPhones.

In the past, these types of technologies would have been too expensive to develop because companies would have also had to create their own hardware and support network. The iPhone changes that. IPhones, which start at $99, are estimated to make up about 21 percent of smart phones, falling behind BlackBerry's 43 percent share, according to a survey by

Cambridge, Mass.-based Forrester Research.

"The iPhone and the iPod Touch, it's a pretty cheap platform and it has a lot of power behind it," said Colin Karpfinger, owner of hardware and software developer Punch Through Design. "It's a really nice building block to do other things with."

Other new products include Oregon-based Bodelin Technologies' ProScope Mobile, a handheld digital microscope whose images can be viewed on an iPhone and saved in its photo gallery. The microscope does not attach to the iPhone, but sends a wireless signal that the smart phone picks up.

Local companies are joining in. Marie Guion-Johnson, founder of AUM Cardiovascular, said her device will provide a non-invasive way for medical professionals to detect life-threatening coronary artery disease. Guion-Johnson said she plans to raise $5 million by 2013 and bring the product to market that year.

Coronary heart disease is the largest major killer of people in the United States, representing one in every six deaths in 2006, according to a report from the American Heart Association. One way of checking for it is through an angiogram, snaking a thin tube into a patient's blood vessel to take X-ray photos of their heart.

AUM's product is placed onto a patient's chest and a microphone picks up coronary sounds associated with stenosis, in which a patient's arteries are clogged with plaque blocking blood flow to the heart. The sounds are translated into an acoustic signature clinicians can use to assess the patient's coronary artery condition.

Guion-Johnson believes her non-invasive product will help patients become more knowledgeable about their heart's condition and help them

take preventative measures to improve their health before it's too late.

"They can take life-saving measures," Guion-Johnson said. "If you have the knowledge you can do something about it. If the doctors know, they can do something, too."

She speaks from experience. In 2002, Guion-Johnson's husband died unexpectedly of a heart attack inside his car in a parking lot, despite having previously completing an exercise stress test and being told by doctors he was healthy.

Guion-Johnson, who has since remarried, said she believes her product could have helped prevent her husband's death and hopes one day her two young children can say, "Look at what my dad's death did for everybody else."

"This is what keeps me going," she said.

Meanwhile, the Vista Institute, based in Minneapolis, will launch a product next month called Shepherd, which will help clients such as restaurants and farms log food safety data into secure web databases in real time through smart phone devices such as the iPhone.

The Vista Institute says Shepherd will eliminate the need to transcribe paperwork into the database and allow clients to see data in real time. Shepherd has been beta-testing its product for the past two years.

"Shepherd can replace the pen and paper data collection," said Peter Boutros, the company's CEO, adding the technology can extend outside of the food industry to areas such as clothing production facilities or vineyards.

Karpfinger, of Punch Through Design, said he is developing the

hardware behind Shepherd, which he envisions to be a pocket-sized case that will connect to a temperature probe, used to track whether foods such as meat follow safety standards. The iPhone will slide into this case.

Meanwhile, other local companies are developing iPhone applications and accessories to maximize a person's workout. Minneapolis-based PedalBrain plans to sell a $195 product that collects wireless data from existing accessories on a cyclist's bike that measure heart rate, speed, cadence, power and other statistics. The device would deliver the information to their iPhone and a website in real time.

The website could be monitored by the cyclist's friends and family, teammates and coaches, and the product also tracks the GPS coordinates of the biker. Already about 1,000 have been sold to distributors, and the product will be available in stores later this year.

PedalBrain attaches to the iPhone and includes an integrated battery that doubles the phone's total battery life. The company is developing other sensors, such as one that will keep track of a swimmer's laps and another that can analyze a person's glucose and lactic acid levels, said founder Matt Bauer.

Other local companies are also using the iPhone in the health realm. The Mayo Clinic partnered with mobile application developer DoApp Inc. to launch mobile and Internet services provider mRemedy.

Earlier this year, mRemedy launched a Mayo Clinic $2.99 meditation application, which used musical chords and circles to teach users how to relax themselves with breathing techniques.

In 60 days, mRemedy will beta-test another application in a few hospitals, which will allow patients to send a message to their physician, look up a physician or specialist based on their need and log personal

data such as tracking their blood pressure, said Wade Beavers, CEO of DoApp.

"The advantage of mobile devices is, they are always with you," Beavers said.

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