CELEBRATING 25 YEARS TECHNOTRENDS NEWSLETTER

TECHNO TRENDS

THE BIG IDEAS THAT ARE CHANGING EVERYTHING

BEYOND VOICE: HOW YOUR CELL PHONE IS EVOLVING

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH

In the early days of cell phones, they were used merely for talking. Today, cell phones have a myriad of other applications. For many people, their cell phone is their daily organizer, music player, camera, GPS system, and news and weather device. But that's just the tip of the iceberg. In the very near future, cell phones will also be people's banks, credit card, keys, remote control, and video conferencing platform, just to name a few. Clearly, today's cell phones are much more than phones, and tomorrow's cell phones will revolutionize the business world.

In order to stay competitive and ahead of the curve, businesses need to look beyond what the cell phone is today and anticipate where it will be tomorrow. You have to ask yourself, "How is the cell phone changing my customers?" "What new service could I deliver on a mobile platform?" Or, "How are these beyond voice capabilities changing my customers' customers?"

The fact is that if you don't change with your customers, they won't be your customers for much longer. For most businesses, their customers are changing rapidly. Are you changing and learning as fast as your customers are? Because today's technology is rapidly evolving, you have to go beyond keeping up. Merely keeping up will cause you to always be behind. Rather, you need to jump ahead based on what you know will happen. What do you know will happen? *continued on page 2*

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We know that there are three driving forces that create exponential technological change: 1) Processing power doubles every 18 months as it drops in price, 2) Storage capacity doubles, and 3) We get faster speeds and higher bandwidth. Because of the processing power being faster, your cell phone can go online and perform searches faster. Phone companies are continually upgrading their network so the 3G network becomes the 4G network. In less than a year processing power, storage capability, and speed have all doubled, and next year they will double again, making the cell phone as powerful as your current desktop computer.

Additionally, businesses need to look at other countries to see what they're doing. As Americans, we tend to think we're the first with technology, but that isn't always the case (and it's definitely not the case with cell phones). Culture also plays a big role. The Japanese culture, for example, loves their devices and prefers using them over face-to-face conversation. So they have more cultural incentive to unveil the next cell phone use. The bottom line is that smart businesses will start seeing the certainty of technological change of cell phones and will recognize the opportunities that lie within. Following are some current and coming cell phone uses you need to be aware of and using.

CURRENT USES

Mobile travel: Currently, some airports allow you to use your cell phone as your boarding pass. You simply download your boarding pass to your phone. When you approach security, you pull up the barcode of your virtual boarding pass and swipe your cell phone under security's scanner. You can then go through security and board your plane without a paper ticket. Such technology saves your employees' time when traveling and eliminates the last minute "where did I put my boarding pass" search.

Mobile Media: You probably already have music on your cell phone, and you may even have television programming. But now businesses can disperse training and education to employees as part of that mobile media. So while an employee is waiting in an airport for a flight, she can download the latest training information right from her phone.

Mobile management: Need to know where your salespeople or delivery drivers are at all times? We all have triangulation or GPS as part of our cell phones. There are programs, such as Looped for the iPhone, that allow you, with permission, to bring up a map and see where your employees are located right now. Granted, this program was developed for personal use, so that friends and family could see where each other are, but there's no reason why a business couldn't use it to locate employees, drivers, or anyone else who leaves the office for extended periods of time.

FUTURE USES

Mobile finance: In the near future, you'll be able to do banking on your cell phone, such as doing money transfers to other people. How do we know this? Because other countries are already doing it. For example, in Kenya, where we assume everything is behind the times, they have a mobile phone system where if someone owes you money, he can use his cell phone to transfer money from his account to yours. As the technology makes its way to the States, cell phones will become a vital part of people's banking.

Mobile commerce: There are places in the world where you can pay for your restaurant, auto service, groceries, parking meters, or any other item with your cell phone – without using a credit card. You're simply using your mobile phone to pay for the transaction. To prevent fraud, cell phones will have biometric ID capabilities that can detect everything from the user's fingerprint to voice pattern and facial recognition. Such measures are actually far more secure than using a credit card.

Mobile customer service: As mega stores dominate the landscape, shoppers need more access to customer service personnel. Imagine a customer being in a huge warehouse type store and being able to use her cell phone to pull up a map of the store and locate the nearest customer service person. Or, even better, imagine that customer being able to touch an icon on her cell phone screen, which automatically lets the customer service rep know where she is and that she needs help. The technology to do this exists today; it's simply a matter of businesses applying it to this scenario. Imagine the competitive advantage you'd gain if you were the first to roll this concept out.

OPPORTUNITY IS CALLING

The possibilities for tomorrow's cell phones are limitless: Mobile data…mobile media…mobile finance…mobile commerce…mobile health…mobile marketing…mobile security…mobile location services – these are just the beginning. Over the next few years, cell phone apps (applications) will grow exponentially as well. We'll see apps for specific segments, such as doctors, lawyers, real estate agents, etc. To stay ahead, your company needs to develop internal tools or apps for your employees that can give your organization competitive advantage, such as an app so salespeople can access key data right on their phone. Developing an app is relatively inexpensive and can work on iPhones, Blackberries, and Smartphones. Ultimately, as we move into the future of cell phone technology, the goal is to get businesspeople to not just crisis manage in the present, but to opportunity manage for the future. When you can start viewing your cell phone in that capacity, you'll be connected to a whole new world of business that can make a significant impact on your company's bottom line.

TECHNOLOGY NEWS HIGHLIGHTS

TINY MOTOR BREAKS SPEED RECORD

Swiss scientists have created a miniature motor that operates at an incredible one million revolutions per minute (rpm). That's more than thirty times the speed of your kitchen blender, which lumbers along at a mere 30,000 rpm on average. The mini motor consists of ultra-thin copper windings that are inserted into a cylinder made of a proprietary type of iron. A titanium shell (about the size of a matchbox) prevents the motor from flying apart. Applications for the new device include faster-spinning drills and milling machines for use in industrial machining. As electronics become smaller and smaller, the tools to assemble them will also need to shrink in size. A company has already been established to commercialize the technology for the purpose of enhancing existing products.

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NEW STATE OF MATTER?

Oxford scientists recently reported that they have created a new state of matter. Not solid, liquid, gas, or even plasma (superheated gas) the new material is a form of aluminum that's transparent to extreme ultraviolet radiation. A tiny spot of aluminum (less that one-twentieth the diameter of a human hair) was irradiated with a high-powered synchrotron radiation generator that produces brief X-ray pulses with power outputs equivalent to a city-wide power plant. Although the effect only lasted an estimated 40 femtoseconds (quadrillionths of a second) the aluminum became transparent. Scientists are hopeful that studying the new matter will provide insights into harnessing the power of nuclear fusion – the ultimate in cheap, abundant power.

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STEPPING UP SOLAR POWER

Amid the growing demand for clean energy, solar ranks high on the list of alternatives, and manufacturers continue to search for ways of making it more efficient and cost-effective. Recently, Toshiba announced they have developed a power conditioner that can convert the direct current (generated by solar cells) into alternating current (to be transmitted to the grid) with an efficiency of 97.5 percent. That's 3 percent higher than any existing device, and translates directly into energy savings. The new device will be combined with solar panels and other components from outside sources to provide turnkey solutions for large factories and power companies – a market that they expect will reach more than $10 million per year by 2010.

For information: Toshiba Corporation, 1-1, Sibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan; phone: +81-3-3457-4511; Web site: www.toshiba.co.jp/index.htm

CANCER DETECTOR

A new diagnostic tool has been developed that can screen a blood sample for cancer and other diseases in a matter

of minutes (as compared to 30 minutes or longer for current methods). It's based on the fact that specific proteins are activated at the onset of certain diseases. The new test looks for these markers and measures their concentrations to not only diagnose the presence of disease, but also how far it has progressed. The developers are aiming to have a viable technology for clinical use in five years.

For information: Hiroshi Handa, Tokyo Institute of Technology, Integrated Research Institute email: hhanda@bio.titech.ac.jp; Web site: www.iri.titech.ac.jp/english/index.html

1,000-YEAR MEMORY

The current state-of-the-art for memory storage (including the technology used in DVDs, CDs and hard disks) is generally considered to be viable for up to 30 years. At that point, the data needs to be copied in order to ensure its integrity. But a group of scientists is working on a new type of storage that would last up to 1,000 years. It uses a semiconductor chip to store the information and transfers data via high speed wireless communication – similar to the technology used for non-contact tollway or train passes. In prototype testing, the researchers were able to store up to two hours of recorded video in less than one second.

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INTELLIGENT SHOE

One-quarter of seniors in the U.S. have a chronic problem with balance, leading to 300,000 broken hips annually, nearly 40 percent of which are followed by death within one year. In fact, falling is the leading cause of accidental death in adults over 85 years of age. But now, technology that was originally developed to monitor and facilitate an astronaut's balance while walking on the moon is being used to prevent geriatric patients from falling. Called the iShoe, the new device analyzes pressure distribution throughout the insole and provides a computer readout so that doctors can diagnose balance problems. If an imbalance is detected while a person is mobile, the insoles generate tactile stimulation to correct it. And in the event that a patient does fall, it can automatically notify emergency services and/or caregivers.

For information: Erez Lieberman, iShoe, email: contact@ishoeinsole.com; Web site: www.ishoeinsole.com

STEM CELL SPERM

A new technique has been developed for making human sperm in the laboratory using embryonic stem cells. When combined with other emerging stem cell research, the methods could someday enable infertile men to father children that are genetically their own. For the time being, the current research will lead to a better understanding of the causes of infertility and how genetic diseases are passed on from generation to generation. Additional investigation will be needed to determine whether or not IVD (in-vitro derived) sperm would be viable as a fertility treatment.

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SMART CONTACTS

MEMS (microelectrical mechanical systems) technology may revolutionize the way doctors diagnose and treat glaucoma – the leading cause of blindness worldwide. Recently researchers used MEMs methods to deposit powered silver on a substrate of polydimethylsiloxane (PDMS). This creates a precise pattern of conductive wires that can measure pressure build-up in the eye and relay it to a device worn by the patient. The silver also provides antimicrobial properties. The data gathered will provide valuable information on the causes of glaucoma. Eventually, lenses may be designed that can dispense drugs as the pressure changes.

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