DANIEL BURRUS'

TECHNO TRENDS

THE BIG IDEAS THAT ARE CHANGING EVERYTHING

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In This Issue

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Do You Have A Mobile First Strategy? You Should!

By Daniel Burrus, CEO of Burrus Research

We are currently in the midst of one the biggest software and hardware revolutions we've ever witnessed. With processing power, storage, and bandwidth increasing exponentially, smart phones and smart tablets are becoming our main computer. As a result, customers, employees, and other stakeholders are bringing and using their smart phones and tablets everywhere, and that definitely impacts how they see your company online and how they interact with you on a daily basis.

Unfortunately, many leaders continue to view smart phones, tablets, and the consumerization of IT as a threat. In reality, they are major, game-changing opportunities. Never before have companies been able to interact with customers anywhere at any time and start a meaningful dialog with them. Rather than throw a bunch of advertising messages out and hope your customers not only see them but also act on them, you now have the opportunity, via the mobile devices, to engage your customers directly with the precise information they need to make a buying decision. That alone is a big reason to develop a comprehensive mobile strategy right away. So let's look at a few components that would help all organizations embrace a broader view of what a mobility strategy really looks like.

1. **Make your website adaptive.** You probably have a mobile website and a main website for your organization. But chances are they don't look good on all the various size smart phone and tablet screens because they aren't adaptive. Therefore, make your site adaptive so it automatically adjusts to the size screen the user has. For an example, see http://calebogden.com/, http://owltastic.com/, http://thinkvitamin.com/, or www.burrus.com and give them a try. View them on your laptop first. Shrink the browser window and notice how the site changes to fit any size screen.

continued on page 6

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TECHNOLOGY NEWS HIGHLIGHTS

Virtual Salesperson

A new interactive presentation technology recently debuted at the South by Southwest Conference in Austin. Known as Virtual Presenter, the new product represents the next generation of digital communications, providing opportunities to merchandise products, capture data, generate leads and enhance social engagement.

The life-like digital avatar is projected from behind onto a silhouette-shaped pane, made up of millions of nano-sized glass beads, to produce a high-contrast image with a wide viewing angle. Users interact with the system and ask questions via a touch screen interface, which also allows them to share their experience on Facebook and Twitter.

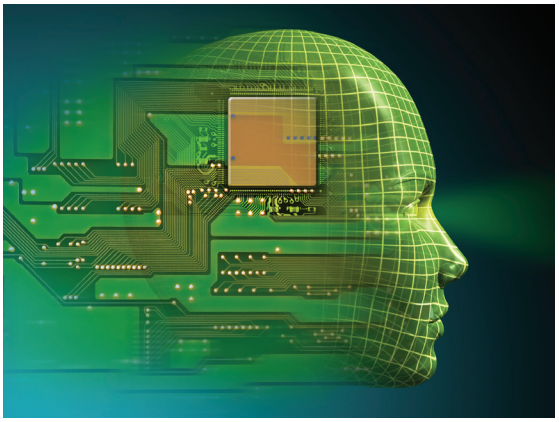
Fully integrated versions are due to be launched in select automotive dealerships in New York and Florida this month. The goal is to provide dealers with a less intrusive way to qualify buyers and generate sales leads.

For information: 3M Corporation, 3M Center, St. Paul, MN 55144; phone: 888-364-3577; Web site: ***http://solutions.3m.com/***

Language-Learning Robot

French scientists have developed a simplified artificial brain that enables robots to learn, understand, and even anticipate what's being said to them. The model may someday be used to better understand the mechanisms responsible for the linguistic breakdowns that occur in certain diseases, such as Parkinson's.

The "artificial neuronal network" basically mimics the structure of



the human brain and the mechanisms it employs for learning. Through a principle known as recurrent construction, in which connections form in recurring loops, the system continually revises its understanding to recognize sentences even when the grammatical structure changes. It's also capable of linking sentences and predicting the end of a sentence before it's provided.

This research has important implications for the field of robotics. Instead of needing to program all of the knowledge that a robot will need, it's now possible for some of that information to be acquired through a learning process.

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Flying Shark Skin

The ability of shark skin to diminish the surface resistance of moving objects has inspired researchers to investigate its application in a wide variety of fields from aerospace engineering to high tech

swimsuit design. Now research is underway to test the in-flight properties of a new aircraft surface coating that simulates shark skin, with the goal of reducing fuel consumption.

The flow behavior of some sharks is optimized by circumferential grooves in their scales – also called riblets. The new surface harnesses this effect to reduce turbulence and improve aerodynamics. It's applied using a new lacquer system that contains only minimal amounts of volatile solvents and is cured with ultra-violet light. In addition to improving fuel efficiency, the coating has also been found to be dirt repellant, abrasion resistant and UV stable.

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Self-Healing Concrete

Billions of dollars are spent each year to repair and maintain concrete-based structures, prompting materials engineers to come up with a variety of healing agents to restore damage, generally through the use of expensive catalysts. But a new approach

being investigated that uses sunlight to activate a protective coating, making it "catalyst free" and, therefore, more cost-effective.

The protective coating is designed to be sprayed on the surface, preventing small surface cracks from developing into larger ones that could compromise integrity of the structure. When small cracks appear, polymer microcapsules release their contents – a solution that turns into a water-resistant solid when exposed to light and protects the underlying concrete from further damage.

The eco-friendly material can be used even in very cold climates and makes the substrate less susceptible to penetration by water as well as road salt.

For information: Chan-Moon Chung, Yonsei University, 50 Yonsei-Ro, Seodaemun-gu, Seoul 120-749, Korea; email: ***cmchung@yonsei.ac.kr****; Web site:* ***www.yonsei.ac.kr/eng/***

Augmented Reality Shopping

In 2009, it was projected that the market for augmented reality (AR) technology would increase ninefold before 2015, and with smartphone capabilities on the rise, a number of retailers are already planning to use AR software and apps to promote sales.

For example, FrancFranc, an online retailer of furniture and accessories, will soon release an app that allows users to visualize furniture in their home. Using a tablet or smart phone, a user can snap a picture of a room, then select a piece of furniture and see what it would look like before they purchase it.

In another application of AR for retailers, San Francisco casual clothing outlet Uniqlo has been outfitted with two virtual fitting rooms. Customers can be photographed standing in front of a mirror. Using a tablet computer, they then select clothing items to "try on" and the clothes automatically appear on their image as if they were wearing them. According to company officials, the new technology encourages people to try new styles and colors that they otherwise wouldn't.

For information: BALS Corporation; 5-53-67 Jingumae, Shibuya-ku, Tokyo 150-0001, Japan; Web site: ***www.bals.co.jp/en/index.html***

Stretchy Battery

The last few years have seen amazing advancements in flexible electronics – from flexible displays to sensors that are printed directly on the skin. The batteries that power them, however, have presented a somewhat greater challenge, mainly because it's difficult to modify their dimensions without affecting performance.

A new concept in battery design was recently demonstrated that allows it to stretch up to three times its size. It utilizes small "islands" of energy storing materials spaced out on a stretchy polymer substrate. Connections are closely arranged in a serpentine pattern with wires that loop back on themselves in S-shapes. As the polymer is stretched, the turns can straighten out without becoming taut or damaging the conductors. The battery is designed to be charged inductively – using wireless energy transfer over a short distance.

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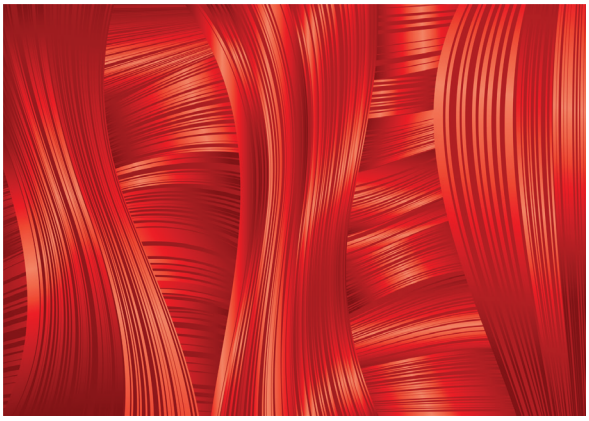
Micro-Endoscope

A miniature endoscope that's as thin as a human hair can image objects as small as 2.5 microns (millionths of a meter) in size. The innovative technology could open up new fields in the medical imaging arena, including neurological imaging and early cancer detection.



The hair-thin camera sends light through a single fiber to illuminate tiny areas inside the body. Reflected light is scanned and recorded; then power level measurements are unscrambled using a spatial light modulator.

The current prototype is a rigid fiber that could be used to image brain or muscle tissue. But the researchers are looking at ways to create a flexible endoscope as well, which will enable them to reach deeper into other organs of the body.

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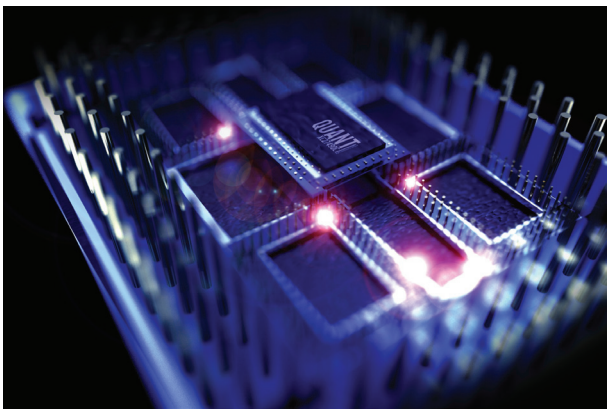
Superfast Organic Materials

Engineers at the University of Utah have demonstrated the feasibility of building topological insulators using organic materials – a discovery that will likely open up a whole new field of materials research and could eventually make quantum computers a reality.



The material, which resembles chicken wire (at the molecular level) acts as an insulator inside but conducts electricity on its edges because of the unique behavior of a special type of electrons known as Dirac fermions. As they move along the surface, fermions act as weightless photons, conducting electricity at the speed of light. But when they move inside the materials, they screech to a halt. Because they also possess a property known as "spin" they can be used to store information. And unlike traditional electronics, heat dissipation is not an issue.

Although inorganic topological insulators have been studied for several years, this is the first demonstration of organic or molecular versions of these unique materials. Just as organic materials led to lower cost LEDs and solar cells, this discovery could make topological insulators more affordable and easier to produce.

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Do You Have A Mobile First Strategy? You Should!

continued from page 1

Then try them on your tablet or smart phone. Regardless of screen size, they will all look and work great.

2. Design your website for mobile first. People are making decisions using their phones and tablets more so than on their laptops. We are now at a point where more tablets and smart phones are being sold than PCs. And last year, the majority of phones sold globally were smart phones. This trend will only continue to grow, so think mobile first when you redo your website, not desktop or laptop.

3. Rethink how people pay. Credit cards are easy, but e-wallets are easier. Currently, Google has a mobile wallet that works with Citi MasterCard, and in the future it will work with other credit cards. It is secure and enables you to make payments with your smart phone. In the near future, as every financial service firm gets into mobile payments, we will move very quickly from a leather wallet to a smart phone wallet. One example of an enabling technology is NFC, near-field communications chips, which are being built into smart phones as you read this article. They allow for secure and easy payment, so be ready for it. Not ready for e-wallets? How about payments using smart phones

and tablets by adding a Square or similar system. Starbucks and others are using this already with great success.

4. Look where technology is going, not where it's been. Apple recently introduced Siri, which is a natural language technology that allows you to ask a question in regular language and Siri answers in a human-like voice. The power of Siri is in the cloud, and other mobile platforms have already come up with their own version of this early stage ultra intelligent agent. The time for an organization-specific or retail-specific version of Siri is ripe. Think of it like a mobile concierge for your company. Yes, the technology is there. It just hasn't been applied in this manner yet.

5. Make it easy to shop with you. Many stores are so large these days that it's difficult for shoppers to find things. And to keep costs under control, stores keep staff lean. But when customers can't find what they're looking for and can't find a salesperson to help them, they leave the store frustrated. Imagine how many more sales you'd make if you offered consumers an app that enabled them to find exactly what they want. Rather than work off of GPS, the location feature would work off of wireless local-navigation in the store so consumers can see the store layout and where the salespeople are in real time. Then they simply type in or ask, "Where are the digital cameras (or ladies jogging clothes or gluten-free potato chips or anything)?" and the app or Siri-like assistant tells the consumer exactly where to go in the store. But this isn't just for retail. Service provider firms could also have a custom app that makes their clients' life easier. For example, if you are a financial planning firm, you could give each client an app that lets them manage their portfolio and get daily updates and alerts from you, to name just a few.

6. Make it easy to work for you too: Apps aren't just for consumers; they can make your staff more productive too. Rather than have customer service reps tied to a computer at a counter, you can give them a tablet with key apps that enable them to help customers on the floor in real time. With these apps they can see if products are in stock or in the warehouse, give product arrival dates, process simple exchanges, and do almost everything that's usually done at the customer service counter without the long lines.

7. Let your apps sell for you: All stores stock what they think is the best in class for their customers and market. But what if what you carry isn't the brand the customer wants? With your app, the customer can type in a specific product's brand name, and the app will show not only the equivalents that you carry, but also why the brands you stock are better than what the customer requested. Maybe there's an additive in the other product or it's been proven not to last as long. Now you're helping customers make better and more informed buying decisions.

The Future of Mobility

Make no mistake: It's a hard trend (a certainty) that tablets and smart phones are becoming people's main computer. Therefore, you want to create a mobile strategy that uses the power of these devices to your benefit. Are all these suggestions for a mobile strategy possible? Most definitely! Remember, if it can be, it will be. The question is, who will be first?

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