Samsung unveils new Android phone with “S Voice” personal assistant

Samsung has released a new mobile smartphone based on Google’s 4.0 Ice Cream Sandwich Android operating system. The Samsung Galaxy S III has a 4.8-inch HD Super AMOLED display with a 1280x720 resolution, 1 GB of RAM, an 8-megapixel camera on the back and a 1.8-megapixel on the front.

The release seems specifically targeted at challenging Apple’s iPhone by including the “S Voice” personal assistant application using Nuance’s speech recognition technology. It goes a step further by including Sensory’s always-listening “launch-by-voice” technology (that Sensory brands “TrulyHandsfree”); one says “Hi Galaxy” to wake up the more general speech recognition. The combined speech technologies suggest that Samsung is attempting to challenge the apparent attempt by Apple to make speech recognition through its Siri voice assistant a major distinguishing feature of the iPhone (judging from its TV advertisements, most recently in the US with a couple of well-known stars using the feature). A Samsung TV ad for the phone similarly features the connection of the phone with humans, starting with “It understands you” and concluding with the theme “designed for humans.” The ad dramatically captures the increasing role of technology in the human experience—connecting people, recording some of their happiest experiences, and providing them information and help when and where they need it.

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Nuance speech recognition inside Samsung Smart TV line
Voice control and turn-on phrase

Samsung seems to be emerging as Apple’s major competitor in smartphones, including a voice assistant (previous article), and it may be getting to market with a voice-controlled Smart TV before Apple (SSN, February 2012, p. 1). In May, Nuance Communications announced that the voice capabilities featured as part of Samsung’s 2012 premium Smart TV line are powered by Nuance’s Dragon voice technology optimized for TV platforms. Consumers will be able to use natural voice commands to change channels, search for content on the Web, access Samsung’s Smart Hub, and connect with friends and family via Skype.

Michael Thompson, senior vice president and general manager, Nuance Mobile, observed, “The power and simplicity of voice integration as part of a TV interface is clear the moment you sit back and speak to your TV. Working together, Nuance and Samsung are demonstrating how voice truly transforms the digital living room experience.”

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Google introduces the Knowledge Graph
Google vice president wants to create an experience like the Star Trek computer

Speaking at a search conference SMG London 2012, Amit Singhal, senior vice president, Engineering, at Google, talked of his dream of developing a computer similar to those featured in the classic science fiction TV series Star Trek. He told of being inspired by watching the series growing up in the 70’s. At Google, he has been heavily involved in developing the company’s search technology.

The future computer would understand speech, but he cautioned that natural language understanding is a challenge: “Most search engines don’t understand that Taj Mahal can be a beautiful monument, a singer, or a restaurant…Computers don’t understand things, they only understand strings.” However, he expressed optimism: “We will get to the Star Trek computer, not for my kids, but for me in my lifetime.”

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An **Intel**-commissioned white paper from consulting firm **Booz Allen Hamilton** on the future of mobile technology was released May 2. It concludes that connected devices will inevitably interface with the human brain directly: “As convergence continues across device types, functions, and capabilities, the melding of mobile technologies directly into the human body becomes the logical next step.”

Is this the ultimate user interface, going beyond speech interaction and graphical interfaces? A connection external to the skull (like EEGs) would presumably not provide any means of input to the brain, so presumably the “direct” connection means invasive connection to the brain. Perhaps surprisingly, it’s been done. Researchers at the **University of California San Francisco** inserted a thin sheet of up to 256 electrodes placed under the skull on the brain’s outer surface while treating patients with severe epilepsy (SSN, May 2012, p. 27). They were able to detect that the brain can selectively ignore all but one voice (the “cocktail party” effect), but didn’t attempt to communicate with the patients by that direct connection.

Such a procedure would face tremendous practical hurdles. After all, inserting even a few wires into the human heart to treat heart conditions has proved hazardous; defective wires made by **St. Jude Medical Inc.** to connect heart-shocking defibrillators caused at least 20 patient deaths due to short circuiting, according to an article published in a leading cardiology journal. Deliberately sending electrical signals to the brain could have risks of causing seizures and permanent brain damage.

But, ignoring the obvious impracticalities and risks, would a direct brain interface be of any value? Well, we do have direct brain interfaces! And they work very well! Our eyes and ears are directly connected to our brains, after all, and allow communication with computers. They form direct evidence of the effectiveness of a direct brain interface.

But… It takes us years to learn to communicate with other humans by spoken language. (Most of us started on that project at a young age, and perhaps are still working to perfect the skill.) It took even longer to learn to communicate by written language—text. The signals from our eyes and ears are of a particular sort, of course. If the leads attached to our brains attempted to mimic those signals, so that we heard or saw the communication from the computer, then they add nothing to the less invasive solution for communication with computers that we already have. Innovations such as **Google**’s experimental eyeglasses that provide a virtual display or mobile speech assistants that allow hands-free voice communication are available if the issue is simply one of not having to hold a mobile device (and certainly more attractive than a surgeon’s knife).

Presumably the authors of the white paper are assuming some sort of more “efficient” direct digital connection than mimicking our senses. But how would that work? A direct digital input to the brain would be a series of binary digits. How do we interpret that? Is the device implanted from birth so that it becomes in effect another sense, and we learn to use it? If not, isn’t it like learning another language? And what’s the advantage over the language we are familiar with? Computers today provide us information in a form that serves our senses, and they would have to be adapted to provide information in some other form we could understand; what would that form be if not an existing language or an image?

Input to our brains is one thing. What about output to the computer? How do we make an inquiry that the computer could understand in this mysterious binary language? If we speak or type to make an inquiry, is there any real advantage to a direct brain connection to deliver the answer?

Other than these hopefully obvious issues, the idea that it is inevitable that a technology will somehow be tied to our bodies doesn’t pass the test of history. Wheels and motors are certainly key technology developments that have been around for a long time, and we use them to get around. They could be thought of as extending the function of our legs. Yet we prefer those wheels to be external to our body, and not a permanent attachment. Why not just surgically attach motors and wheels to our feet and attach the controllers to our nerves? The idea of a direct brain connection to computers is equally disturbing (and close to nonsensical).
Nuance Dragon TV adds Rovi content data, accessible by voice

Integrated Rovi-indexed content for TV shows, movies, and cast and crew details

Nuance Communications previously announced Dragon TV, a speech-understanding platform for TV, device, and set-top box OEMs and service operators (SSN, February 2012, p. 5). The software uses speech recognition and natural language understanding capabilities so that consumers can find content by speaking channel numbers, station names, show and movie names, or search for content by actor or genre. Panasonic was one of the first adopters (SSN, March 2012, p. 7).

On May 21, Nuance added a source of content information to those search capabilities. Nuance has licensed and will be integrating entertainment data from Rovi Corporation (financials, p. 46) with Dragon TV to provide TV manufacturers and cable service providers the ability to access the wide variety of Rovi-indexed content for TV shows, movies, and cast and crew details just by speaking. Rovi provides the “metadata” that allows flexible search for shows. Nuance will incorporate Rovi’s content and information data in its language models.

In one specific implementation, Nuance and Rovi are developing a new application that marries Dragon TV with Rovi’s “guide” technology, which provides an interactive TV guide normally accessed by the familiar, but slow, navigation using a visual display and manual remote control. The result is the ability to simply speak to change the channel, browse, bookmark, or search for content for both live and On Demand TV programming. Nuance provided examples:

- “Find comedies with Adam Sandler”
- “Show me information on ‘The Big Bang Theory’”
- “Who plays Chuck on Gossip Girl?”

Michael Thompson, senior vice president and general manager, Nuance Mobile, noted, “Consumers love that today’s cable services and program guides offer so many options for shows, movies, content, information widgets and more. But without an easy way to access and discover that content, today’s digital living room experience is lost.”

Lenovo smart TVs have extensive Chinese content

Voice-controlled remote continues trend for smart TVs

Hong Kong-based Lenovo Group, with $21 billion in annual revenues, bills itself as the second-largest PC company in the world, serving customers in more than 160 countries, but the company is not limiting its market to PCs. In May, Lenovo Group launched the K-series Lenovo Smart TV products for the China market.

Lenovo believes that the PC industry has entered the “PC-Plus” era, characterized by the emergence of a variety of new devices. Smart TVs, tablets, and smart phones all have the same computing, storage and network communication capabilities of a PC, offering a wide variety of features and apps based on the Internet. In the mean time, the PC itself will also be continuously adapted and innovated, the company believes.

Lenovo indicated that new Smart TV is the first television product to adopt the Android 4.0 OS. It employs the Qualcomm dual core 1.5GHz CPU. Key aspects of the offering include:

- A user-friendly interactive system, including the “Sandwich” User Interface that integrates voice, touch, air mouse, gravity sensor, smart keyboard, and traditional television remote control in a “Six in One” remote control.
- High-quality video on demand. Lenovo and Shanghai Media Group (SMG) established a joint venture, venture, Shanghai Video Cloud Company Limited, to exclusively provide users with customized online HD video resources, currently with more than 300,000 hours of viewing.
- Applications based on an open platform. With its Le Store app developer community, Lenovo has already developed over 1,000 custom apps for its smart TV covering games, education, and other areas.

Lenovo is releasing four Lenovo Smart TV K-series devices with 55-inch and 42-inch screens, priced from about $1,027 to $2,400.

Liu Jun, Lenovo Senior Vice President and Mobile Internet Digital Home President said, “China's smart TV market will experience explosive growth in 2012, and Lenovo is poised to give customers in China the technology that they want. Today we are introducing a smart TV product that went through three generations of R&D, and many more times as
much customer feedback. With our excellent products and rich content and apps, we want to give users an outstanding experience and make smart TV a new place for families to happily gather together.”

Chinese search provider introduces “Cloud Smart” handset

$160 smartphone includes Chinese in-network speech recognition

On May 15, Chinese search engine Baidu (which some consider the “Google of China”) unveiled a new smartphone that focuses on cloud services using the Baidu “Cloud Smart Terminal” platform. The Changhong H5018 handset, manufactured by Foxconn and released in cooperation with China Unicom, will sell for about $160 and will be available for purchase through designated channels nationwide shortly. The phone is based on an adapted version of Android. Baidu indicated that Dell will also offer a handset using its cloud services.

The Baidu cloud-powered phone is intended to bring personalized smart Cloud services to the mass market. The Baidu Cloud Smart Terminal platform includes intelligent search, Cloud services, and specialized Baidu applications, and personalized location-based services. Baidu has integrated traditional search with speech recognition search and handwriting input, allowing users to simply speak to search. The advanced input technologies and cloud services reduce the demand on the local capabilities of the phone, which sports a relatively small 3.5” touch screen.

As a critical piece of Baidu’s overall Cloud strategy, the Baidu Cloud Smart Terminal platform integrates the core technologies of Baidu Cloud Computing, including Baidu’s numerous Cloud-based applications, its Personal Cloud Storage service, and its multi-terminal, multi-application software platform capabilities.

The Baidu Cloud Store provides access to many applications. Baidu will provide every purchaser of the handset with 100 gigabytes of free personal storage through Baidu Netdrive. This will allow users to capture multimedia content and upload it instantly to the Cloud. In addition, the handset will include Baidu Music, Baidu Map, Baidu Mobile IME (input method editor), and other mainstream applications. Additionally, the Baidu Cloud Smart Terminal platform provides mobile data monitoring, pre-pay credit recharge, and other services.

Baidu VP of engineering Jing Wang said the Baidu Cloud Smart terminal platform will “significantly lower manufacturing costs for many mobile manufacturers and cooperating partners. Baidu is joining hands with hardware vendors, terminal manufacturers, developers and others in the industry so that everyone along the whole value chain is a winner.”

Baidu indicated that, besides Dell and Changhong, many other mainstream mobile brands are also in close contact with Baidu and plan to release smartphones utilizing Baidu’s Cloud technology at various price points.

Beyond Android, Baidu plans to take its Cloud Smart Terminal to other operating systems like Windows Phone and iOS. Kaiser Kuo, a spokesperson for Baidu, told TechCrunch, “We want Baidu’s Cloud Smart Terminal to function as a platform that sits on top of all operating systems.”

IBM to resell Voxeo’s speech-enabled CRM platforms and services

And Voxeo with resell IBM hardware with its communications solutions

Voxeo has particular expertise in IVR applications and development tools that incorporate speech recognition (SSN, April 2012, p. 10, 14). The company, however, has expanded into broader unified communications applications.

In May, Voxeo was named an IBM Alliance Partner. IBM will resell Voxeo’s speech-enabled communications platforms and services, and Voxeo will resell IBM’s hardware, software, and services to create unified multi-channel self-service solutions.

Voxeo indicated that the joint solutions can serve companies big and small.

Additionally, IBM was named a Voxeo Connect Global Partner and will resell Voxeo’s on-premise and cloud-hosted multi-channel communications platform. Customers can combine on-premise and hosted solutions to handle overflow and failover from their premises to the Voxeo cloud for lower-cost bursting, business continuity, and disaster recovery needs.
IBM introduces integrated enterprise mobile software and services

Mobile platform spans application development, integration, security, and management

With many companies struggling with the two-edged sword of the advantages of mobile computing and the potential security risks, IBM announced its Mobile Foundation, a portfolio of software and services designed to help organizations make the most of expanding mobile environments, including laptops, smartphones and tablets. Mobile Foundation builds on IBM’s acquisition in January of Worklight (which delivers mobile application management capabilities to clients across a wide range of industries including retail, financial services, technology, travel and hospitality and manufacturing). The new offering expands IBM’s strategy to provide clients with a mobile platform that spans application development, integration, security, and management.

According to IBM studies, the field represents a $22B market opportunity, expected to grow to $36B in 2015. In an IBM survey of more than 700 CIOs, three quarters said they are embracing a mobile strategy because a flexible workplace delivers a 20% improvement in employee productivity. The CIOs said they are significantly reducing the cost of doing business by decreasing dependence on email, improving social collaboration and adopting cloud technologies to reach mobile workers.

The new IBM Mobile Foundation offers organizations the following core capabilities:

- **Connect Cloud & Mobile Environments**: IBM WebSphere Cast Iron, part of the new foundation, allows clients to connect mobile applications to a variety of cloud and back-end systems.
- **Build and Connect Mobile Applications**: A new set of development and integration tools from IBM Worklight will enable clients to develop mobile applications and their supporting infrastructures for a variety of platforms just once and run them on multiple mobile platforms, including Apple iOS, Google Android, and RIM Blackberry. Through new resources provided on its developerWorks at no charge, IBM is also providing the technical skill-building information that developers need to start building secure mobile solutions.
- **Security for the Bring Your Own Device trend**: In an effort to help organizations manage the BYOD trend, the foundation includes new software from IBM Endpoint Manager to help customers deliver a single solution that manages and secures all endpoints. For example, this allows organizations to delete enterprise data and applications from endpoints when necessary. These unified capabilities extend from servers and laptops to smartphones and tablets. (A Yankee Group survey in 2011 found that security was the top concern of executives in supporting mobile and remote workers, with 56% reporting concern with security and 29% reporting “connectivity limitations” as the second-ranking concern.)
- **Extend Existing Capabilities and Capitalize on New Business Opportunities**: A new set of services, such as the IBM Quick Win Pilot, can assist clients with their mobile strategy and deployment.

Agero continues to grow its driver assistance and vehicle connectivity services

Recommends NHTSA include speech technology in review of driver distraction guidelines

Agero is one of the largest providers of roadside assistance in the U.S. and Canada, with a network of more than 30,000 service providers serving a customer base of 75 million vehicle owners through plans provided by approximately 30 insurance carriers and 20 automobile manufacturers as well as clients in the vehicle fleet and credit card industries. The company supports these services with live-agent and automated systems using speech recognition (SSN, May 2012, p. 11).

In May, Agero announced Mitsubishi Motors North America as a new customer for its Roadside Assistance Program and a sixth response center to handle growth. In a public announcement, Agero also encouraged the National Highway Traffic Safety Administration (NHTSA) to consider inclusive performance-based guidelines to mitigate driver distraction.

In comments submitted in May, Agero made recommendations on guidelines for avoiding driver distraction. The company took the position that interactive speech recognition technology needs to be considered simultaneously in NHTSA’s current evaluation of in-vehicle visual and manual interfaces for both embedded and portable electronic devices. NHTSA’s current research roadmap indicates it
won’t address potential speech/voice guidelines until 2014.

NHTSA is attempting to develop non-binding, voluntary guidelines in three phrases—embedded vehicle interfaces, portable device interfaces, and voice interfaces. Agero points out that the reality is that all three (including haptic and gesture display technologies, as well as remote, pre-drive interfaces) are already beginning to converge.

Gary Wallace, Agero’s vice president of Government Affairs, said, “From the perspective of driver safety and usability, one must consider if there are interface technologies better suited to perform secondary driving tasks. Emerging in the vehicle cockpit is a mix of currently available technologies working together to help the driver not only keep hands on the steering wheel and eyes on the road, but better manage in-vehicle workloads in a safer manner.”

Wallace emphasized that in addressing driver distraction, the benchmarks designed for visual-manual tasks will not be relevant in determining voice/speech targets. Agero is currently conducting a research study with the Virginia Tech Transportation Institute specifically on issues affecting driver distraction.

**TomTom introduces voice control for new navigation system**

*“Speak & Go” includes commands, address entry*

In May, TomTom has released the TomTom Via 130 navigation system, featuring a new “Speak & Go” with speech recognition. Drivers can control the device by voice and make hands-free calls. The company indicated that Speak & Go recognizes over 1,000 commands and their synonyms, minimizing the need to remember specific command words. The system also supports hands-free calling on a mobile phone with a Bluetooth connection. Corinne Vigreux, Managing Director of TomTom, said one can also say an address, a Point of Interest, or simply “take me home,” and TomTom plans the route.

Vigreux added, “The new Speak & Go feature helps increase focus and concentration by allowing users to keep their hands on the wheel.”

The Via 130 also pioneers TomTom’s lifetime free daily map updates. The updates are based on reports from TomTom’s Map Share community of 21 million drivers, and the updates help drivers deal with frequent road changes such as new speed limits and blocked roads.

Also launched was the TomTom Via 135, which has all of the same features and functionalities as the Via 130, but a larger screen size. The TomTom Via 130 has a 4.3” screen, and the TomTom Via 135 has a 5” screen.

**Clarion introduces portable in-vehicle controller for iPhone**

*Speech assistant app from Vlingo*

Clarion Corporation of America (CCA) announced Next GATE, a smartphone controller for Apple’s iPhone. Next GATE has a simple mounting and connection method (with Bluetooth), using a windshield mount and built-in speaker, microphone, and audio output for a vehicle auxiliary jack. Vlingo virtual assistant with speech recognition allows dictating email and connecting to social media channels while driving. (Vlingo is being acquired by Nuance, but the transaction hasn’t closed as of this
writing—see SSN, February 2012, p. 6.) Key iPhone functions become road-friendly with Vlingo support, such as Voice Launcher and Speech-to-Text for dictating content for Facebook, Twitter, and News applications.

Next GATE controls applications residing on the smartphone, adding functionality in any vehicle without the vehicle having an integrated voice system. Vehicle-friendly app partners cited by Clarion in addition to Vlingo include TuneIn (selected broadcast stations), Pandora (Internet radio), INRIX Traffic, and InfoGation (navigation), with more planned. Clarion’s new Smart Access Cloud Telematics Service will enable users to download additional approved apps under development now and in the future.

Clarion also announced the “Smart Access” Cloud Telematics Service. The service will be launched in June in North America and Japan, and will be implemented globally in stages. Clarion indicated that it is transforming from an “in-vehicle information equipment manufacturer” to an “in-vehicle information solution provider.” Next GATE is part of that transformation.

In addition to smartphone connectivity, Smart Access will include a Vehicle Relational Management service, which automates maintenance and safety management; Customer Relational Management, which continuously provides information such as maintenance requirements to the customer for his/her protection; and the “E Call” emergency calling system (which is expected to spread globally in the future).

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**Nuance launches automotive platform to support the “connected car”**

On May 22, Nuance Communications introduced Dragon Drive!, a new natural-language voice platform created and designed specifically for the connected car. Automakers see wireless connections and services as a key way to differentiate their products and perhaps to encourage consumers to buy a new car earlier than they might otherwise, but face the reality that they must offer safe alternatives to touch screens and other user interfaces that take one’s eyes off the road and hands off the steering wheel. Dragon Drive! enables automotive manufacturers and suppliers to deliver voice-only message dictation and access to content, music, and navigation, using the same core speech technologies in Nuance’s Dragon Dictation and Dragon Go!.

Nuance also notes that it can support the speech technologies with array microphone and noise cancellation technology.

Recent market research highlights the trend toward “connected cars.” IMS Research estimated the world market for connected cars will grow 650% to reach 40.5 million unit sales in 2017. A J.D. Power 2012 U.S. Automotive Emerging Technologies Study on consumer demands for in-car technology found more than two-thirds of respondents want natural language voice activation and wireless connectivity.

It’s certainly no secret that safety concerns are resulting in laws against manual texting and similar activities while driving. “The entire automotive ecosystem faces a critical challenge—keep consumers connected to the content they love, without imposing dangerous distractions behind the wheel,” said Arnd Weil, vice president and general manager, automotive, Nuance Mobile.

Not surprisingly, Dragon Drive! Messaging is the first service that will be offered by the Dragon Drive! platform. The service will provide a conversational mobile assistant messaging experience that lets users speak, listen, and respond to text messages and emails. Nuance provided examples that the system should be able to handle:

- “Send a text to Anna Smith, ‘I’m stuck in traffic. I’ll be at the office as soon as possible.’”
- “Reply to Alex, ‘Sushi sounds great. See you at 7.’”
- “Listen to the email from Alex” (to hear text read aloud with Nuance’s text-to-speech).

Nuance indicated that the text-to-speech used in this system is “newly optimized” and “human-like.”

Dragon Go! is a virtual personal assistant similar in intent to Apple’s Siri. One can use the network-based application to find local businesses and information; get directions; search and listen to any song or artist; and get knowledge and news from the mobile Web. In a model that can have a significant impact on advertising models, by using natural language processing, Dragon Go! can often provide direct results to a request rather than a long list of possibly relevant web sites. While some automotive offerings are simply connecting to mobile phones and deferring to the speech technology and services
available on those phones, the Nuance offerings may be attractive to automobile manufacturers who want more options to monetize the drivers’ interactions and brand that interaction after the vehicle is sold.

Dragon Drive! Messaging is currently available in six languages including US and UK English, French, Italian, German, and Spanish. Additional services, languages, and country markets will be introduced throughout the year.

Deals that Nuance might enter with companies to use the new products would probably include some combination of licensing fees and continuing payments for network-based processing. A Nuance spokesperson gave the company’s comment on this point as, “There are many new business models emerging expanding on our legacy long term licensing and custom services relationships with car makers.”

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**Sensory introduces embedded speaker identification and verification**

*Sensory’s* previously available TrulyHandsfree speech recognition technology runs in always-listening mode on a device with minimal use of battery power (p. 11 and SSN, April 2012, p. 8). It can thus be used to turn on a device by saying an unlock phrase, which then can use more complex speech recognition, usually cloud-based speech recognition not supplied by Sensory. The wake-up technology is used in the new Samsung smartphone (p. 1); one says “Hi, Galaxy” to unlock the phone. Sensory claims AT&T, BlueAnt Wireless, Hashbro, JVC, Kenwood, Mattel, Mitsubishi, Toshiba, Uniden, VTech, Samsung, and Sony among its customers.

In May, Sensory expanded its product line to add speaker verification, making the embedded technology a true lock that would only respond to a specific speaker. Also in May, the company added speaker identification for consumer devices, adding the ability to know who “woke up” the device when there are speaker-specific preferences, history, settings, or data. Speaker verification and/or identification are accessed in parallel to the wakeup for a seamless user experience.

Any combination of the technologies can be used simultaneously; for example, one phrase can be used to unlock a device, requiring the voice match one user, while at the same time knowing the identity of that user. Consumer electronics that might use the technology include robotics, TVs, set-top boxes, home control, virtual assistants, automotive, and security applications, Sensory suggested.

Sensory’s products are available as dedicated chips or software in general. On mobile devices Sensory’s TrulyHandsfree wakeup is deeply embedded, implemented on low power chips below the OS layer to reduce power consumption.

However, the new verification and identification offerings are initially only available as software for Android platforms. Todd Mozer, Sensory CEO, said that the technologies would eventually be available for other platforms and in its chip solutions. A Software Development Kit for the Android version was made available in May.

Beyond the specific gateway solutions discussed here, Sensory can also support, using the same core software, a list of voice commands for a consumer device after the gateway is open. Mozer said that there are already some products on the market using the voice command capability, including some toys. The expansion of capability is done through Sensory professional services.

Mozer indicated that a key component of Sensory solutions is robustness in the presence of noise and the ability to ignore anything other than a wake-up phrase. For mobile phones, one must also be able to deal with any distortions created by the noise cancellation software or hardware in many smartphones today. Interviewed at the CTIA trade show in May, Mozer said that the wake-up technology even worked when a loud band was positioned nearby while Sensory was demonstrating the technology.

**Speaker ID**

Mozer noted that products and services often have features that assume one user, for example, tracking usage of the device and settings. But in a shared device situation this often becomes meaningless. He gave an example: “I often get recommendations for movies targeting 12-year-old girls, not because that is my preferred viewing experience, but because I have a 12-year-old daughter who also uses the TV.”

As voice control of consumer devices becomes more prevalent, Mozer said that Sensory’s speaker identification technology will “improve the user experience on shared devices by providing recommendations and suggestions based on an individual’s habits, behavior, and lifestyle, or automatically adjusting the device to the user’s unique preferences.”
**Speaker Verification**

Sensory’s speaker verification technology is text-dependent, that is, the user has to say a specific phrase; both the phrase and the voice saying the phrase are verified. In addition to security, the feature significantly reduces the likelihood of some other voice nearby triggering the device inadvertently.

For mobile devices (smart phones, tablets, etc.), combining voice activation and speaker verification allows the right user to access voice control functions, providing consumers with “truly hands free” control of their mobile devices without the concern that another’s voice will trigger their device.

Mozer noted, “Mobile devices still require tactile interactions before users can enable voice recognition and voice control functions. Combining voice activation and speaker verification enables mobile devices to be easier, more secure, safer, and more convenient to use and access information.”

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**LexisNexis Multi-Factor Authentication available as on-demand service**

*Based on Angel hosted IVR service, including speech recognition*

In April, LexisNexis Risk Solutions announced the availability of two new Multi-Factor Authentication (MFA) solutions to help financial services, health care, government, and retail organizations authenticate individuals who perform repeated high-risk, high-value transactions through remote channels, including the Web, mobile, and voice (SSN, May 2012, p. 9). In May, Angel announced LexisNexis Risk Solutions has integrated Angel’s cloud-based Interactive Voice Response technology to create LexisNexis IVR on Demand for Identity Proofing and Voice Biometrics. This new solution will enable LexisNexis customers to quickly create and deploy identity proofing and voice biometrics via the cloud. The LexisNexis IVR on Demand solutions for Identity Proofing and Voice Biometrics includes Angel speech recognition.

With the new option, organizations can leverage Angel’s IVR capabilities to implement identity proofing or voice biometrics quickly without the expense of having to build those capabilities internally. Dennis Becker, vice president, emerging markets, LexisNexis, said, “Angel has proven its voice and IVR solutions can be immediately deployed and scaled to meet the demands of global businesses, which is a huge competitive advantage within any market.

Angel’s IVR service is delivered through a software as a service (SaaS) model. The LexisNexis IVR on Demand is a fully on-demand solution that requires no hardware, software, or staff investments from the customer.

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**CSC and Daon launch multifactor identity authentication offering for banks**

*Optional voice and other biometric authentication*

CSC announced it has launched a biometric authentication service by teaming with Daon. The offering, ConfidentID Mobile, is built on Daon’s IdentityX platform to provide identity authentication for online, mobile, and other channel transactions, allowing financial institutions to customize the level of security required for different types of transactions.

The service works by combining passwords, personal identification numbers (PINs), and public key infrastructure (PKI) security architecture, along with optional biometrics such as face recognition, voice authentication, and palm identity. Location intelligence can also be used for verification through GPS, IP location, and cellular triangulation. ConfidentID Mobile is hardware-independent and supports smart phones and tablets. It authenticates both individuals and their transactions and helps organizations meet stringent requirements, including those prescribed by the Federal Financial Institutions Examination Council (FFIEC).

ConfidentID Mobile comprises both a server application and an application on the banking customer’s mobile device. When the customer initiates a transaction on the bank’s website or mobile application, such as transferring money from one account to another, a request is made to the user for authentication. ConfidentID Mobile directly informs the service provider of successful authentication on the back end without further action from the customer. Tom Grissen, CEO, Daon, said, “ConfidentID Mobile represents a tremendous opportunity for CSC to carve out a dominant position in the all-important banking sector.”
Smart Action makes it easier for call centers to use speech understanding

_A hosted natural-language solution with no up-front development costs_

Call centers have been slow to adopt natural language processing with speech recognition, despite its potential to shorten the customer interaction, saving money and improving customer satisfaction relative to highly structured hierarchical interactions. The reason for this resistance seems to be that internal personnel don’t have the skills to create a natural-language interaction, and using outside professional services can incur both high initial costs and high costs for incremental improvements or changes. When natural language is adopted, it often is only on an open-ended first utterance, e.g., “Please state the reason for your call,” and the call is directed without further natural-language interaction.

_Smart Action_ believes it has the answer to these issues and can deliver natural language speech interaction for Interactive Voice Response (IVR) systems. (For the sake of brevity, we’ll refer to the combination of speech recognition and natural language processing as “speech understanding,” a term that has historically summarized the objective.) Smart Action’s approach depends on two aspects of its offering: (1) internally developed “Artificial Intelligence” technology (focusing on natural language understanding; and (2) a hosted solution with a per-minute charge that allows it to (a) develop the application at no charge; and (b) continually update it to improve performance and include new functionality. This may seem almost too good to be true, but Peter Voss, Smart Action founder and CEO, said the company is doing well, with about 50 customers, including about a dozen Fortune-500-size companies. Smart Action Company had its best sales to date in the first quarter of 2012, Voss said. For the larger companies, Smart Action usually automates only specific, more difficult interactions, rather than the entire customer experience. Applications have included returns, order status, account processing, technical support, roadside assistance, and delivery confirmation. David Fong, Senior Marketing Manager, Smart Action, said some customers he can name include Terminix, Purity Products, National Marketing Resources, and the University of California (San Diego). Less precisely, the company claims as customers “one of the leading office supply companies in North America, some of the regional auto clubs, several HMOs, and other retailers and service organizations from middle to Fortune 500-sized companies.”

The speech recognition is **Nuance** telephone speech recognition (under a Tier 4 license, which supports Statistical Language Models (SLMs) and thus more flexible interactions). The Tier 4 license, Voss said, allows tighter integration with the Nuance software, for example, allowing natural language text processing to begin while the user is still speaking (leading to faster response times). Voss indicated that the system processed the SLMs and application-specific grammars in parallel; the better-scoring result could then be used, allowing a close match to an anticipated inquiry to override a less applicable option from the more-open SLM. A call can thus be more quickly routed if the caller speaks a prototypical response, where the action required by the request is known.

Smart Action literature says that its “Smart Call Agents are powered by our artificial general intelligence (AGI) engine or ‘brain’.” While “Artificial Intelligence” is a field of study, it is more of an objective than specific technology, and often the “intelligence” is very narrowly targeted at a specific area to achieve anything resembling human intelligence. Voss said that the addition of “general” was to emphasize that the company’s methods generalize and aren’t restricted to a specific area. Early development, he said, was very ambitious, targeting a Siri-like experience, but the company refocused on the customer service market to make the project more focused and manageable.

In practice, the generalization is more limited. The system does have an ontology describing how different bits of information relate to each other in general—e.g., an “order” has a tracking number and items ordered.

As another aspect of generalization, the company developed the ability to handle Canadian addresses in a deployment for a Canadian company. The ability to handle Canadian addresses automatically became part of its solution for other companies.

Beyond natural language, Voss notes that the system uses context to simplify and shorten interaction. It has short-term memory (e.g., the current customer’s previous answers) and long-term memory (e.g., the information associated with the customer’s account).

The system tries to understand the customer’s objective and deliver desired results. One aspect that Voss emphasizes is that the system continues to use speech understanding beyond the first utterance, allowing an interactive discussion and clarification of objectives.
One deployment was for a Fortune 500 supplier of office supplies and products. The company was disappointed with the poor performance of its existing IVR system on order-taking and order status calls. The IVR was only able to successfully complete 15% of such calls. The speech recognition system responded to too many utterances with the equivalent of “please repeat.”

Within two weeks of operation of Smart Action’s solution, Smart Call Agents were completing over 30% of calls, despite the addition of a task not even attempted with the previous IVR. Further tuning doubled the success rate to 62% over the next few months.

Interactive Intelligence introduces new mobile customer service solution

*Designed to support rapid deployment on mobile devices*

**Interactive Intelligence Group** is releasing a new software platform, Interaction Mobilizer, for deploying customer service applications on multiple mobile operating systems, devices, and social media websites. The platform coordinates mobile self-service and live agent assistance. It enables organizations to offer self-service applications to customers using iPhones, Android phones, and Windows phones, as well as the organization’s Facebook site.

Interactive Intelligence founder and CEO, Dr. Donald E. Brown, noted the motivation for the solution: “With more than 100 million smartphone users in the U.S. and about 19% owning tablets, customers are demanding more efficient ways to use their mobile devices for business transactions. We developed Interaction Mobilizer to do just that: empower companies to more quickly deploy transactional mobile apps that give customers a unified customer service experience.”

Interaction Mobilizer enables organizations to brand their own mobile applications and publish them on the appropriate app store (e.g. Android, Apple, Google, Microsoft, etc.) or offer them from their corporate website for users to download. Mobile applications are specified in a device-independent, high-level language that can be pushed out to all supported mobile devices and social media sites. The Mobilizer lets the customer request a call-back from a service representative and be updated periodically as to when the call-back will occur. Future versions will support chat, text messaging, and video.

In addition to providing features that result in a unified customer service experience, Interaction Mobilizer also provides integration to back-end corporate systems, including Interactive Intelligence Group’s all-in-one IP communications software suite, Customer Interaction Center (CIC). It also supports access to hosted data in the cloud from vendors such as Microsoft, Oracle/RightNow, and salesforce.com. Interactive Intelligence also recently announced a new customer for CIC, CSA Travel Protection. VOXDATA Solutions recently announced an outsourced contact center version of CIC.

Voxeo and Interactive Voice Solutions offer migration tool for older IVR systems

*I VS tool aids migration to Voxeo standards-based and multi-channel solutions*

**Voxeo** advertises that it “unlocks communications” by providing standards-based and integrated approaches, most of which support speech technology where appropriate (SSN, April 2012, p. 10 and 14). The company claims more than 250,000 developers, 45,000 companies, and half of the Fortune 100 as customers.

In May, Voxeo and **Interactive Voice Solutions (IVS)** introduced a new migration tool, Acra+, for companies struggling with out-of-date legacy IVR systems that want to migrate to more flexible and powerful open-standards platforms. Once migrated to the Voxeo platform, users will be able to create just one single application and deploy it across any combination of voice, text, or mobile web-based communication channels, giving contact centers the ability to provide more effective and consistent customer experiences.

Acra+ automates the migration from **Intervoice IQTalk**—Intervoice is now part of Convergys—and **Edify EVIP** platforms to Voxeo. IVS plans to add migration options for other platforms as client demand develops. IVS Chairman Jay Bolton, cited the advantages of the solution: “We’ve seen early-adopter clients reduce their conversion costs by 65% and time by 75 percent.” Voxeo also offers its own Migration Manager tool for **Nortel PeriPro** users.
The Voxeo platform is standards-based and thus provides a solution less likely to lock a company into a single vendor. Voxeo supports multi-channel self-service interactions across mobile web, smartphone apps, live chat, text, and social networks like Twitter.

**Noble Systems speech analytics adds agent performance measurement tools**

Noble technology used to deliver reports to managers that segments calls into skills or categories

**Noble Systems** has previously worked with **Nexidia** to provide a unified contact center solution that incorporates Nexidia speech analytics (SSN, April 2012, p. 15). In May, Noble announced enhancements to the integrated Noble Speech Analytics solution that provides insight into contact center activities and shows performance on key initiatives between sites, between teams within a site and between agents on the same team.

James K. Noble, President and CEO of Noble Systems, explained, “Our speech analytics tools have always offered deep business intelligence on trends and patterns in customer behavior. Today, that insight extends into the contact center to offer key performance metrics for agents. Contact center managers and leaders can now look to Noble Speech Analytics to align agent performance with overall goals.”

Available as an on-premise or hosted solution, Noble Speech Analytics can automatically organize calls by user-defined skills and categories, providing agents a score based on how well they met the criteria. By displaying results in this manner, supervisors no longer have to guess which teams or agents need help, or which calls they should listen to for a more complete performance review.

**Comverse updates its Open Media Platform**

Carrier-class solution supports speech recognition, text-to-speech, and VoiceXML

Communications in general and telephone services in particular are evolving toward the Standard Internet Protocol (SIP), and an upgraded solution from **Comverse** aids organizations that wish to move in that direction. Comverse announced the launch of the new version of its Comverse Netcentrex Open Media Platform (OMP), a standards-based media platform combining Intelligent Peripheral and Media Resource Function (MRF) capabilities on the same platform. OMP is a carrier-class solution with full network connectivity for PSTN, PLMN, and IMS networks.

An Intelligent Peripheral (also known as the Specialized Resource Function or SRF) is located in the service provider’s core network. The SRF provides all the resources required for applications such as network announcements, prepaid calling cards, wireless Centrex (virtual PBX), toll free numbers, and wake up calls, plus advanced features such as speech recognition, text-to-speech, and VoiceXML script execution.

The OMP is a replacement solution for aging “Intelligent Peripherals” and provides a first step in the migration to an IP Multimedia Subsystem (IMS), a standardized Next Generation Networking (NGN) architecture for telecom operators that want to provide mobile and fixed multimedia services. The OMP includes an IMS Media Resource Function (MRF) on the same platform. The IMS MRF is the media resource involved in all interactive voice and video communication services in IMS networks.

John Bunyan, Comverse Chief Marketing Officer, explained, “Many Intelligent Peripherals were deployed over a decade ago as proprietary systems, and are reaching end-of-life. Others lack the features required for today’s increasingly sophisticated communication networks.” He noted that Comverse is in the process of deploying the OMP SRF/MRF with two leading European operators, allowing them to add features such as speech recognition, text-to-speech and VoiceXML script execution. At the same time, he added, “With the combined MRF functions on the same platform, they secure their investment and reduce operating costs.”

OMP is a carrier-class solution with full network connectivity for PSTN, PLMN and IMS networks. The platform is also highly scalable making it suitable for deployments of all sizes and uses field-proven technologies that are a result of 15 years’ experience in VoIP and IN network solutions and deployments.

IMS uses a Voice-over-IP (VoIP) implementation based on a 3GPP implementation of SIP, and runs over the standard Internet Protocol. Existing phone systems (both packet-switched and circuit-switched) are supported.
Elevate to add voice control to its VoIP service

_Elevate_ provides broadband-based telephone services to the residence and small business market using IP technology. On May 15, Elevate announced significant changes to its digital phone product, including the introduction of voice-enabled calling features and the implementation of network level, device-agnostic Quality of Service (QoS) integration.

Bryan Ferre, who is leading Elevate’s newly formed Product Innovation Group, said that voice-enabled device control fit Elevate’s goal of making “technology simpler and more powerful for the average consumer.” He added, “Voice-enabled device control certainly lies within that scope. So much so, in fact, that we’re looking to implement the technology across our complete service offering over the next 6 months.”

Elevate will offer a core set of voice-enabled features to each of its existing residential and small business voice plans at no extra charge, and will reserve more robust features at additional cost. Voice command functionality will be available on Elevate’s softphone application for iOS and Android devices, as well as on its dedicated handset.

Elevate indicated that universal voice-enabled functionality, along with virtually every other innovation Elevate will unveil over its wireless 4G network, is made possible, in part, by the significant strides to which Elevate has gone to ensure network-level QoS.

**Coupons.com grocery shopping app uses Nuance speech recognition**

_Nuance_ announced that _Coupons.com Incorporated_’s free Grocery iQ app, Version 2.6 for the iPhone and iPad, now features Nuance’s Dragon speech recognition for iOS. Grocery iQ uses Dragon voice technology in the cloud through Nuance’s NDEV Mobile developer program.

Grocery iQ helps create, manage, and share shopping lists and to find and use coupons. The popular app now lets users add items to their shopping lists by simply speaking the item name. Users can even dictate multiple items in a continuous list for automatic recognition and addition to their list. Users can also add items by typing or scanning barcodes from product packaging using the camera on their mobile device. Matt Revis, vice president and general manager, handset business, Nuance Mobile, indicated that the Grocery iQ app “becomes faster, and even fun” with speech recognition.

The Dragon Mobile SDK that enables use of the NDEV service eases addition of the speech recognition and speech-to-text capabilities to apps. It is used in other apps, including Price Check by _Amazon_, Kraft Foods’ iFood Assistant, _Ask_ for iPhone, _Merriam-Webster_, _Dictionary.com_, _OnStar_ RemoteLink, _SayHi Translate_, and _Snapguide_.

**Aspect adds hosted customer service and workforce optimization option**

_Aspect_ focuses on solutions to customer-company relationships through a combination of customer contact software and Microsoft platform solutions and supporting workforce optimization software (SSN, April 2012, p. 13). In May, Aspect announced a hosted offering, Aspect On Demand. As features such as speech recognition require increasing expertise to manage, hosted solutions are becoming increasingly attractive for contact centers. Hosted call center services comprised a $23 billion market in North America in 2011, according to _Gartner_.

Aspect offers customers the flexibility to choose on-site, hybrid, or fully off-premise hosting for the call center. Aspect On Demand provides the flexibility to select specific functionality and agent capacity based on current business needs. The offering delivers interaction channels and workforce optimization capabilities, including inbound, outbound, or blended voice, web chat, advanced list management, workforce management, voice recording, and IVR-based self-service.
Xtone to help companies create speech-enabled apps for mobile assistants

Led by former SpeechWorks CEO, Stu Patterson

Xtone, founded in 2004, launched in 2008 a beta test of a service for subscribers to network-connected devices that lets them use their voice to dial or access web services (SSN, December 2008, p. 22). Xtone intended at that time to provide the capabilities as a managed service through partnerships with Multiple System Operators (MSOs), wireline carriers, wireless providers, VoIP services, and other phone providers.

A Boston Globe reporter blogged that Xtone is now led by Stuart Patterson, formerly CEO of SpeechWorks, a company offering speech recognition for customer service, which went public and was ultimately acquired by Nuance Communications. The company is reportedly raising a major round of venture capital funding with a somewhat different emphasis.

Riding on the success of Siri, the company offers tools to develop specialty speech-enabled apps for companies, presumably to help with sales and/or customer service. I’ve blogged that such company-specific personal assistants will eventually be as much a requirement for a company as a web site. And Patterson is quoted as saying that the smartphone will be able to handle web-based transactions successfully with speech, and “that will completely replace the old IVR world.”

Patterson was quoted as indicating that Xtone will not be developing core speech technology. He indicated that the Xtone platform will let app developers add speech functionality without having to develop it differently for different mobile operating systems (e.g., Apple iOS versus Android).

TaylorWorks corporate email and calendar server cooperates with Apple’s Siri

Synchronization function allows voice access to corporate email and other data

Florida-based TaylorWorks offers Hosted Exchange, a corporate email server that, in addition to administering and storing email, also distributes additional functions such as calendars and contacts. It has an integrated web portal that gives remote users secure access to email, calendars, and contacts through any web browser. Exchange also supports unified messaging, which can put voice mail and faxes in a user’s inbox and email in a user’s VoIP phone and smartphone voicemail systems.

Exchange integrates automatically with most smartphones through ActiveSync, allowing email, calendaring, and contacts to sync automatically. In May, the company announced that its services have been integrated with Apple’s iPhone and Siri.

TaylorWorks notes that smart phones and tablets are one way that sales representatives, field technicians, managers, and administrators are taking advantage of tools for communication, calendar sharing, and project planning. The company suggests that Siri on the iPhone 4S is also a good way to schedule meetings, place phone calls, and add memos, since ideas often come to mind when paper and pen is not handy. With the TaylorWorks synchronization, a user has the ability to record voice notes on the phone and have them available elsewhere, the company indicates. Hosted Exchange also allows users to share calendars and contacts with coworkers.

VoxSciences free voicemail-to-text app adds features

App can interpret dates and times in messages to add to calendar

VoxSciences (VoxSci) provides a free voicemail-to-text application in the UK using internally developed speech technology, according to the company. The company’s VERBS (Virtual Engine for Recognition of Basic Speech) engine converts voice messages into text messages and delivers them either as an email, SMS, or via an Application Programming Interface (API).

In late May, VoxSci launched a new version of their application for the Apple iPhone. Users now benefit from having their voicemail more closely integrated with some native iPhone functions. Version 1.1 of VoxSci allows users to add dates from within their transcribed voicemails direct to their calendar of choice, by simply clicking the date. In addition, if a voicemail is left saying, for example, “see you Monday at 8,” the user can tap this
highlighted text and a calendar note will be added for Monday at 8. The new version also lets users call and store numbers within their voicemail transcriptions by tapping the highlighted number on the screen.

**Nuance integrates its speech recognition and PDF products**

*New editing and sharing features for PDF documents*

**Nuance Communications** is best known today for its speech technology products and services, but it has a healthy business segment in document processing, in part a heritage from its start in software for scanners when it was ScanSoft, before taking the Nuance name after an acquisition. One of these text-based products is its PDF converter software, which provides alternatives and additional features and cost advantages beyond those offered by **Adobe** with its PDF products, including Nuance PDF Converter, which has both PDF document editing and sharing features.

In May, Nuance enhanced the text products with its speech technology. The company announced the release of Nuance PDF Converter Enterprise 8. It features Dragon Dictation, allowing users to use speech to create text for “sticky notes” or to input text into a PDF document. The new version also adds some PDF editing and sharing features, as well as improvements in the way users share documents and collaborate with new connections to Web and cloud technologies—at about one-third the cost of Adobe Acrobat.

PDF Converter 8 includes full-page PDF editing, making it easier to edit a PDF. To aid in document collaboration, the release also adds PDF Collaboration, which enables simultaneous editing of the same PDF by multiple users, document and screen sharing, and chat and voice sessions during the editing process.

PDF Converter 8 delivers a new ability to save and open PDF files in cloud services such as PaperPort Anywhere, Dropbox, or Evernote, providing anytime, anywhere access to PDF files. The version has new connectors to Documentum and Xerox DocuShare that broaden connectivity to popular document repositories.

Nuance PDF Converter Enterprise 8 is $149 with volume discounts available through the Nuance Open License Program. PDF Converter Professional 8, targeting individuals and small workgroups, is $99.

**Nuance speech technologies used in PlaySay language learning app**

*Allows learners to have multi-language conversations*

**PlaySay** sells a top-ranked language-learning app for the iPhone, iPad and iPod Touch. In May, **Nuance Communications** announced that its speech recognition and text-to-speech technology is part of the app. PlaySay integrates Nuance’s Dragon voice technology via the NDEV Mobile developer program, which provides developers access to Nuance’s speech technology in the cloud.

A #1 ranking app in the Apple App Store for Education, PlaySay is an interactive social gaming app that connects Spanish and English language learners so they can learn useful phrases, practice with other learners, and improve pronunciation. With Nuance’s Dragon speech recognition and text-to-speech technologies, PlaySay evaluates users’ pronunciation and provides feedback. Users are able to learn through an interactive game that instructs users to complete a series of real-world “missions” in scenarios such as ordering food, introducing oneself to another, and asking someone for help.

The application becomes social media, in that it allows sending voice messages to another person who is learning your language while you are learning hers. If, for example, you are learning Spanish, you can communicate with another learner trying to conquer English. You first say the phrase in English and a Spanish translation appears as text. You then say the Spanish version, and your pronunciation is scored. The English recording is sent to the Spanish partner, who completes the inverse task. The English partner sees a conversation in Spanish, and the Spanish partner a conversation in English.

Ryan Meinzer, founder and CEO of PlaySay, said, “With NDEV Mobile’s Dragon Mobile SDK, we have quickly integrated the power of Dragon into our app to expand the functionality and user experience from a non-verbal app to a social mobile experience that is changing language learning on a global scale.”
Vanguard Voice Systems supports AbeTech mobile devices in warehouse

**Voice interaction supported with “server-less” solution**

**Vanguard Voice Systems** provides its AccuSpeechMobile voice solution that upgrades any mobile workforce application (e.g., warehouse order picking) with voice control and voice response (SSN, April 2012, p. 13). In May, the company announced a partnership with **AbeTech**, which offers mobile hardware for enterprise data collection. Vanguard and AbeTech will collaborate in marketing Vanguard’s AccuSpeechMobile on AbeTech’s mobile devices. The device-focused version enables mobile workers to voice-collect, access, and hear real-time information while maintaining visual and manual focus on their tasks. AbeTech devices support barcode coding, Radio Frequency Identification (RFID), and other advanced data collection solutions as well as voice interaction.

Steve Schmidt, President of AbeTech, said, “The market scalability of Vanguard’s mobile solution allows us to offer voice productivity, not only for simplified voice picking in the warehouse, but for any of our customer’s mobile manufacturing, warehouse management, retail, transportation, or healthcare applications.”

Vanguard’s “Universal Voice Utility” non-invasively upgrades any existing mobile applications with full voice functionality and “server-less” integration with mobile devices and computers. The mobile solution eliminates the IT server as the source for voice services or application integration. The Universal Voice Utility includes a wizard-based software development kit that enables IT professionals to quickly customize the device resident voice utility.

DARPA awards $7.1 million translation technology contract to SRI-led team

**Broad Operational Language Translation (BOLT) program for breakthrough language technologies**

**SRI International** has been awarded a $7.1 million contract for Phase 1 of a five-year, $41.5 million Defense Advanced Research Projects Agency (DARPA) contract under DARPA’s Broad Operational Language Translation (BOLT) program. BOLT is an international research initiative to develop breakthrough language technologies. SRI will lead research activities with the goal of developing systems that accurately translate foreign languages and extract information regardless of genre and media. These technologies are intended to facilitate bilingual conversations with instant interpretation and automatic clarification.

The intent is to go beyond the current approach to automatic translation. “Machine translation technology has made major progress over the past decade,” said Jing Zheng, leader of SRI’s BOLT initiative and program director in SRI’s Speech Technology and Research (STAR) Laboratory. “Now we will work on fundamental breakthroughs to move from memorizing the surface forms of language to understanding the underlying meanings.”

The SRI-led BOLT team includes researchers and engineers from Columbia University’s Engineering School, Queens College City University of New York, University of Edinburgh, Hong Kong University of Science and Technology, R&D Corporation Limited, Estuate Incorporated, Oregon Health & Sciences University, University of Washington, University of Rochester, University of Massachusetts, Aix-Marseille University/National Center for Scientific Research (CNRS), and University of Texas at Dallas.

SRI previously led the Cognitive Assistant that Learns and Organizes (CALO) project, which led to the development of the virtual personal assistant technology in Apple’s Siri. (Siri was acquired from SRI by Apple in 2010.)

SRI’s speech and translation work includes research under DARPA’s Global Autonomous Language Exploitation (GALE) program to develop computer software that translates and analyzes huge volumes of speech and text in multiple languages, and under the Spoken Language Communication and Translation System for Tactical Use (TRANSTAC) program to enable two-way communication between U.S. warfighters and speakers of other languages. To achieve the objectives of the BOLT program, SRI researchers will build upon many of the linguistic resources and technologies developed for the GALE and TRANSTAC programs.

Of course, one of the most famous contributions by DARPA (ARPA at the time) was the Internet, which started as ARPANet (SSN, May 2012, p. 5). DARPA has a strong record in supporting research projects that lead to practical solutions with a relatively small investment. Perhaps reflecting this efficiency, the DARPA budget largely escaped cuts earlier this year to Defense R&D.
European project on “Distant Speech Interaction for Robust Home Applications”

Research project uses silicon-based microphones from STMicroelectronics

The three-year European research project, “Distant Speech Interaction for Robust Home Applications” (DIRHA) aims to investigate and prototype solutions for natural voice-enabled interaction between humans and machines in smart homes. The DIRHA project sets to address the challenge of distant speech interaction in the noisy, multi-speaker home environment. The goal is to create a system that can connect acoustically to speakers regardless of their position within the home.

STMicroelectronics’ microphone and audio processing technologies was recently tapped to play a role in the project. The physical and acoustic parameters of the company’s MEMS (MicroElectrical-Mechanical System) microphones address the requirements of distant-speech interaction systems. The MEMS microphone is also called a microphone chip or silicon microphone, with the pressure-sensitive diaphragm etched directly into a silicon chip. The small form factor allows researchers to easily embed entire arrays of microphones in the walls, desks, or speech-enabled appliances of the automated home.

The main fields of research in the 4.8 million euros DIRHA program include multichannel acoustic processing, distant-speech recognition and understanding, speaker identification/verification, and spoken-dialog management in four languages—German, Greek, Italian, and Portuguese. The final prototypes will be integrated in pilot households and evaluated by real users.

The DIRHA participants are Fondazione Bruno Kessler, Italy (project coordinator); “Athena” (Research and Innovation Center in Information Communication & Knowledge Technologies), Greece; Domotic Area, Italy; Instituto de Engenharia de Sistemas e Computadores, Investigacae e Desenvolvimento (INESC ID), Portugal; NewAmuser, Italy; STMicroelectronics, Italy; and Technische Universitaet Graz, Austria.

Raytheon BBN Technologies funded by IARPA for metaphor research

Intelligence Advanced Research Projects Activity supports linguistic research effort

The Intelligence Advanced Research Projects Activity (IARPA), via the U.S. Army Research Laboratory (ARL), has awarded Raytheon BBN Technologies, a wholly owned subsidiary of Raytheon, $2.5 million in funding under the Metaphor program. The goal of the BBN research task is to create analysis tools and techniques that provide insight into the underlying beliefs and worldviews that metaphors reveal. The system will automatically find, identify and categorize linguistic metaphors in large amounts of foreign language text.

Prem Natarajan, head of speech and language processing for Raytheon BBN Technologies, explained, “Awareness and understanding of metaphors will provide novel insight into underlying cultural beliefs. The ability to recognize and categorize these subtle and often unnoticed cultural metaphors in native-language text is an extremely difficult and multifaceted technology challenge.” Under the contract, Raytheon BBN will:

- Develop tools and techniques to identify, qualify and categorize metaphors;
- Build a metaphor repository that identifies and links key elements of linguistic metaphors to the conceptual metaphor; and
- Develop a fully functional metaphorical language analysis system.

The IARPA mandate is to invest in high-risk, high-payoff research programs that have the potential to provide the United States with an overwhelming intelligence advantage over future adversaries. Results from IARPA programs are expected to transition to its intelligence community customers; IARPA does not have an operational mission and does not deploy technologies directly to the field. There seems to be some overlap in goals with DARPA, the Defense Applied Research Projects Agency (p. 19).

Additional companies to resell me2me digital dictation product in North America

Transcription workflow and digital dictation with speech recognition for healthcare

me2me AG, which offers mobile dictation, transcription, and speech recognition solutions (SSN, March 2012, p. 16), earlier announced Frisbee Enterprise Server for Healthcare (SSN, May 2012, p. 

28), a cloud-based dictation solution that uses M*Modal speech understanding. In May, me2me announced it had added three North American resellers of its cloud-based service: Zephyr-TEC, based in Rancho Cucamonga, California, Talk 2 Me Technology, based in Ontario, Canada, and Kaberline Healthcare Informatics, based in Saint Louis, MO.

Zephyr-TEC will be able to offer its current and future clients the me2me digital dictation, workflow transcription, and speech understanding software as a service. Zephyr-TEC also resells software solutions, including Nuance Dragon Medical and NaturallySpeaking products, as well as dictation solutions from Winscribe and Philips Speech Processing.

As a result of this strategic partnership, Zephyr-TEC is able to offer a service-based solution to its current and future clients for digital dictation, transcription workflow, mobile applications, and speech understanding solutions. Zephyr-TEC indicated that the company believes that speech understanding is the next frontier of innovation in clinical documentation and Frisbee will allow them to extend this offering to small, medium, and large healthcare organizations.

Renee Griffith, CEO of Zephyr-TEC said, “This software translates a physician’s dictation into a searchable, structured document as well as provides a comprehensive digital workflow solution, including document signing. This technology goes far beyond commercially available speech recognition, and we believe that healthcare is waiting for an intelligent solution that will meet the physicians’ practical need for a fast and easy method for creating clinical notes.”

The agreement with Talk 2 Me is similar, with Talk 2 Me offering both medical and general business dictation solutions. As a voice technology specialist, Talk 2 Me stated that it believes that the new speech understanding technology from M*Modal used in Frisbee Enterprise for Healthcare is the next frontier of innovation in clinical documentation.

Kaberline Healthcare Informatics (KHI) signed a VAR agreement with me2me. The agreement allows Kaberline to offer Frisbee. KHI claims 3,500 customers in 49 states and 12 countries. KHI also supports speech recognition and microphone products from Nuance and Philips Speech Processing.

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Interview with Steve Chirokas, VoltDelta

Hosted service for contact centers, 511 service, concierge solutions, and outbound calling solutions

Steve Chirokas, Vice President of Marketing and Business Development for VoltDelta OnDemand and LSSI DATA in North America, VoltDelta, was interviewed by Bill Meisel in mid-May. Steve has provided marketing leadership at organizations including SpeechCycle, Convergys, SpeechWorks, Compaq, and Brooktrout. Steve holds a Marketing degree from Stonehill College and a Master of Business Administration from Bentley University.

Please provide a brief outline of how VoltDelta views its market.

VoltDelta’s voice self-service and virtual contact center solutions work to deliver superior customer satisfaction across multiple communication channels with hosted efficiency. Our market consists of contact centers of all sizes, as well as other telephony-based applications such as 511 services for states, concierge solutions for automotive and insurance companies, and outbound calling solutions.

VoltDelta’s core technology consisting of patent-pending speech technology, virtual contact center infrastructure, and call + agent screen recording, allowing us to address customer care issues that other vendors who rely on partnerships for some these key elements find challenging. For example, VoltDelta can easily transfer calls from automation to agents with a recorded “whisper” to avoid repeat questions, then track the entire call through any transfer as a single experience within call recording. All without the extra cost of including additional vendors!

Our proven ability to reliably scale for unpredictable call volume is opening new doors with contact centers that have an existing IVR or agent infrastructure but are experiencing service interruptions especially when calls spike. Customer care managers challenged with these concerns are attracted to VoltDelta’s ability to prove scalability. This is due to the fact that we are the only vendor in this space to maintain two carrier switches in our test bed, enabling end-to-end proof of performance with any call volume, coupled with an infrastructure that handles more than 2.4 billion calls annually.
Another somewhat unique aspect is that VoltDelta maintains international hosting facilities. This is especially useful for organizations with a global footprint. Exceptional Voice User Interface (VUI) design with a state-of-the-art prompt recording studio allows VoltDelta to cost effectively deliver creatively engaging speech dialogs. A recently deployed example included voice prompts recorded in 53 languages.

This range of resources allows VoltDelta to empower customer care organizations with on demand solutions that work well across multiple channels while delivering exceptional voice self-service.

VoltDelta has provided some automation for directory assistance and N11 services. Please describe the nature of those services.

VoltDelta’s for decades has provided a range of Directory Assistance solutions included hosted 411 for carriers, operator workstation software, and the compilation of names, addresses and phone numbers from virtually all carriers in the U.S. and Canada via peer business unit LSSiDATA. This work inspired the VoltDelta patent-pending speech technology we now use as saving Directory Assistance handle time with more accurate recognition of names, streets, and locations that always means bottom-line benefits.

This work translates exceptionally well to N11 services. Travellers aid 511 services in particular is a VoltDelta strength especially given the need to deliver when calls spike such as traffic jams, along with the ability to disambiguate between like-sounding roadways. VoltDelta’s hosted 511 solutions are great for government entities because there is no capital investment or additional staffing requirement with the benefit of delivering a valuable service for travellers. VoltDelta’s 511 solutions rely on speech recognition to allow callers to receive travel advisory information on traffic conditions, find alternative routes around construction or congestion, and hear public transport updates by simply asking questions and conversing with the automated 511 system.

VoltDelta 511 offering includes a number of features that enhance the overall customer experience by helping callers to quickly pinpoint the information they need. For example, exceptional disambiguation works to avoid confusion for like-sounding topics or points of interest (POIs) to increase success rates. Personalization “remembers” the stretch of road the motorist last asked about to more quickly provide targeted traffic updates.

I understand that VoltDelta provides some services for the Ford Sync (SSN, November 2011, p. 28). Can you describe those services and how VoltDelta can support similar services for other companies?

VoltDelta works with MyAssist by providing the hosted agent infrastructure, agent workstation software, and geo-located contact information for MyAssist. MyAssist manages the Ford SYNC motorist interaction with their agent concierge services.

At any time during a hands-free SYNC Services interaction, a driver can request to speak with an agent for personalized assistance. When a MyAssist operator assists with a request, the motorist can choose to receive audible directions or a text message with the name, address, phone number and information about the business (applies to certain phone carrier networks) or be directly connected to the phone of the business or residence. The call may also be completely resolved with speech recognition provided by another vendor for Ford SYNC.

VoltDelta also delivers business or residential contact information if required for directions or a phone number via LSSiDATA repository of over 100 million records updated daily. Ford SYNC is an example deployment offered by VoltDelta’s hosted telematics solution. What sets VoltDelta apart in this space is the ability to provide the agent infrastructure, voice self-service, and the business + residential data that provides the foundation for driving directions or telephone calls.

What is the source of your speech recognition technology?

VoltDelta enhances standard speech recognition engines with patent-pending CrystalWAVE (Weighted Average Voice Evaluation). This technology works with any standards-based VoiceXML browser to improve accuracy while reducing tuning requirements.
The use of multiple simultaneous grammars with context sensitivity means it can recognize with higher accuracy, especially large grammars. It also disambiguates between like-sounding words with greater confidence. Todd Schmeer, VoltDelta Director of Speech Application Services, explains this innovation in a video, [www.youtube.com/watch?v=-qX-H2YJaXs&feature=relmfu](http://www.youtube.com/watch?v=-qX-H2YJaXs&feature=relmfu).

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**Interview with David McNamara, McNamara Technology Solutions**

*Insights from the Telematics Update Human Machine Interface Report*

*Telematics Update* just published their “Human Machine Interface Report.” David McNamara, former Advanced Infotainment Systems Manager at Ford, with 30 years of experience, compiled extensive primary and secondary research, and was interviewed for SSN by Bill Meisel on the content of the report. In 2006, Dave launched his consulting business, [McNamara Technology Solutions](http://www.mctechnology.com).

Dave, what interfaces do the automobile companies see as most important? Where does speech recognition and text-to-speech synthesis fit in the spectrum of options?

To best answer this question of what interfaces are the most important, we must look at the history of automotive user interface, the development challenges and solutions. The first challenge was the integration of the radio in the car in the 1930s. The Motorola radio called the 5T71 required for the first time that the driver perform a secondary task while driving; the tuning of the radio could distract the driver from the primary task of driving. For many years—until the 1990s—the industry was focused on making radios easy to use while integrating new media choices, such as CDs. Essentially the radio was a “single mode” user interface employing large buttons, logical layout, and a highly legible display. Since the 1990s, we have seen a steady growth of new features desired by consumers, but many of them demand attention away from the driver’s primary task of driving. (The following figure outlines some of that evolution of features.)

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**Growth of Automotive Features/Functions**

- **Entertainment**
  - Sat Radio
  - DVD Player
  - Audiophile
  - HD Radio
  - Internet entertainment - Pandora
  - Apps Stores

- **Information**
  - Navigation
  - Remote Diagnostics
  - Traffic services
  - Signage - curve speed warning
  - Intersection collision warning (V2V)
  - RoadWay Assistance

- **Safety & Security**
  - Stolen Vehicle Recovery
  - Emergency Notification
  - Auto Air Bag deployment notification
  - Door Unlock

- **Infotainment ADAS**

Growth of Automotive features by Model Year (ADAS=Advanced Driver Assistance Systems)
The traditional approach to provide an interface to the driver was bigger displays and bigger buttons. With the advent of navigation, electronic climate control, and audiophile radios, the car’s interior had the appearance of your living room’s entertainment system, a stack of disparate components with their own separate dedicated displays and buttons. In the late 1990s, the luxury brands introduced “integrated controls” that integrated the various “components,” navigation, and audio and climate control, into a single display in the center stack of the car. This approach was a radical interior design challenge as it affected the instrument panel design, but allowed the ability to harmonize the interior. (Examples of the evolution follow.)

Essentially the center stack of the automobile became the locus for all the new consumer-driven features, audio related—satellite radio, navigation, digital media player integration, and smart phone integration. But most recently we have seen much creativity and new approaches to the automotive interface problem, namely the introduction of voice and new touch and gesture technologies. Today, we talk about the automotive user interface as multimodal. Multimodal means that there is more than one way to interface with the functionality and information of and from the car—you can use the buttons, talk to the car, or even make a gesture. The advantage of multiple input modalities is not only improved usability (in that one mode could be better than another), but that the driver might have a preference for one mode over another—the car’s interface can be personalized. Automotive user interface designers have an exciting list of technologies that engage all of the senses, which results in a wide range of user interface architectures depending on the level of integration and reliance on key technologies such as voice or “haptics,” the master controller made popular by BMW’s iDrive. [Haptics provides tactile feedback, such as vibration, upon touch.] (See diagram of user interface options, next page.)

Voice is increasingly playing an important role in the automotive interface, but has turned out to be a slow but methodical improvement. (See chart on auto voice development, following page.)

Voice in the automotive environment is demanding because of road noise, and the need to interface with many different consumer voices, that is, dialects. These “noise factors” when coupled with a mission-critical environment that is intolerant of errors has caused the automotive OEMs to be appropriately cautious in their use of voice. An industry consensus is that voice continues to need significant improvement. The industry underestimated the effort to make it work in the noisy environment of the car. The worse case situation is using voice when the window is down. The automotive consumer will give voice one or two chances to work and then give up, never returning to voice control mode again. The graph below depicts the accuracy issue and the impact on system performance—and therefore on customer satisfaction. (See accuracy chart, following page.)

“An industry consensus is that voice continues to need significant improvement. The industry underestimated the effort to make it work in the noisy environment of the car.”
"Many think that the large touch screen complemented by conversational voice connected to services will become the automotive UI architecture of the future."

**User Interface Architectures, Supporting Components and Technologies (source: MTS LLC)**

**Auto Voice Development – A long Roar**

**Automotive Voice Development Time Line (Source: MTS LLC)**

*Chart from* Thomas Schalk VP, Voice Technology, ATX
Companies like Nuance, for example, have provided very capable embedded solutions that have addressed the issue of a variety of speakers through extensive modeling and skill at dealing with in-vehicle noise sources. Other companies such as VoiceBox have added an all-important conversational wrapper around the embedded voice engine such as Nuance’s, to provide flexibility and utility. Apple’s Siri has shown what is possible when conversational voice is integrated with server-based informational services. Voice solutions from Google and Apple will benefit from large-scale deployment and will expose and train drivers. The auto industry is increasingly being driven by the consumer industry and will quickly respond with voice-based user interfaces as drivers become familiar and demand this modality, as was the case with touch screens in the United States from 2002 until now. Many think that the large touch screen complemented by conversational voice connected to services will become the automotive user interface architecture of the future. There are now numerous examples of this architecture: MyFord Touch based on Ford SYNC and Toyota Entunes as shown below.

MyFord Touch

Toyota Entunes

How do you see the Human-Machine Interface (HMI) opportunity growing in general, and for speech technology in particular?

As part of my writing of the Telematics Update The Auto HMI Report 2012-13, we interviewed 40 automotive HMI experts and industry insiders. We also conducted an extensive online Internet survey of over 100 HMI developers representing the entire automotive value chain. The automotive HMI or user interface has become the main differentiator between automotive OEMs.

Our interviews of industry experts confirmed that the HMI is as much a differentiator for car purchase as is basic vehicle performance and styling. This is especially true of younger car buyer, the millennium or smart phone generation. The best confirmation of this trend is the success of Ford SYNC and its importance to the sale of the Ford Focus over competing vehicles. Ford marketing consistently asserts that Ford SYNC is responsible for selling more Fords and Lincolns. Ford competitors have responded with very similar products recognizing the importance of the user interface and the ability for the customer to access their smart phone and use their data plan to enjoy digital media and information services, such as Pandora, server-based navigation, real-time traffic, etc.

The overwhelming consensus of those interviewed is that voice is the interface of choice for the advanced automotive UI. (See survey chart, following page.)

Why do the automotive experts in spite of the development challenges rank voice as key? The number one reason is the issue of driver distraction, a growing problem in light of the consumer’s desire to want more and more feature content. There is a minority that thinks that auto OEMs need not offer or limit feature choice, but in my opinion the consumer will have none of this. The automotive consumer—especially the emerging new customer or youthful customer—will think that the biggest turnoff to the purchase of a car will be an inability to access and enjoy all the new features available through their smart phone and their data plan. Ford SYNC, launched in 2007, recognized the importance of smart phone connectivity quickly, followed by all the other OEMs as they clamored to provide the same smart phone connectivity in the car, in a safe and easy-to-use manner. Voice is ideal for new features such as dictation and answering/listening to texts. For example Nuance’s latest technology, Voice Control 2.0, provides a comprehensive solution for developing speech-based access to mobile phone based features and services, enabling customizable voice commands and a set
of tools for mobile device voice control systems, including text-to-speech from the display of a cellular handset. Many European OEMs are deploying dictation solutions with Germany leading the way.

Technologies Ranked by Importance to Advanced UI Performance and Value (source: Telematics Update 2012 Internet Survey)

Therefore, voice has a very important role as it allows the driver to have eyes and hands on the road and is a flexible platform for the integration of new customer-driven features. The second reason for the growth of the use of voice is cost and flexibility. There is an obvious benefit of placing functionality in the cloud rather than embedding the cost in the car. Voice becomes the portal to unlimited off-board services with the ability to provide fresh and relevant data to the car and consumer. The key enabler is high bandwidth cellular, 4G or LTE, which is becoming available to car infotainment systems through consumer smart phone adoption.

In conclusion, we can expect that voice technology will be a key part of the auto user interface, especially for cloud-based solutions. It will be a steady evolutionary growth because of the challenges of developing a
robust automotive solution. New UI technology especially large panel LCDs, touch screens, and voice represent significant revenue opportunity of around $350–$400 million a year in the 2013 to 2016 time frame. Revenue from voice will grow at a modest but healthy 7–10% CAGR.

**Samsung phone (cont.)**

*Continued from page 1*

S Voice has a number of voice commands that can handle such features as finding and playing your favorite songs, adjusting the volume, dictating and sending text messages and emails, creating and accessing schedules, and launching the camera and capturing a photo quickly. The Nuance technology includes natural language processing, and so can deal with many voice requests by going directly to an application or web site; information used by the app or web site is automatically inserted if it was part of the voice request. Nuance is the speech recognition technology behind the Samsung Smart TV remote, p. 1.

The phone’s user interface also features “Smart Stay,” an eye-tracking technology using a front-facing camera. Face recognition software adjusts the screen depending on how you are using the phone, for example, preventing it from dimming if you're reading a book. A feature called “smart alert” will flag missed messages or calls by vibrating when picked up after being idle. The phone also comes with Flipboard, a social media aggregation app similar to an Apple iOS feature. The phone also detects motion; for example, one can lift the phone to one’s ear and use a voice command to make a call without first invoking the phone application.

“S Beam” builds on the previously announced Android Beam, allowing a 1GB movie file or music to be shared with another Galaxy S III phone by simply touching the other phone, using, WiFi, 3G, or NFC. Another feature allows sharing files with a remote tablet, PC, or TV using the Internet.

Samsung is expecting to sell more than 9 million units on the scheduled release date at the end of May, according to Telegraph.co.uk.

The S III is also the official phone of the London Olympics 2012. Samsung and Visa announced in May that the phone will be the platform for a limited edition showcase device at the Olympics enabled with Visa’s mobile payment application, Visa payWave, Near Field Communication (NFC) payment capability, available for Samsung- and Visa-sponsored athletes, making it possible to buy merchandise with a wave of the device at thousands of retail locations throughout London.

Visa payWave for mobile allows users to simply select the Visa icon on their mobile device and hold the phone to a contactless payment terminal to pay. Purchases above £20 require a passcode. The app also allows customers to check their transaction history and view their account balance.

In another sign that Samsung intends to compete strongly with Apple’s mobile phone offerings in addition to the device itself, Samsung launched the MusicHub in the UK in late May for the S III. MusicHub is a music service that could be considered a competitor to Apple iTunes. The service will give UK customers access to more than 19 million songs for purchase, with free 30-second previews.

**Nuance and Samsung TV (cont.)**

*Continued from page 1*

An interesting feature is that users can use Nuance technology to turn on the TV by saying “Hi TV, power on.” With that feature, the remote control becomes theoretically unnecessary. The relatively long phrase is presumably to prevent accidental action from conversations in the room. This feature may be controversial if buyers don’t understand that, while the TV is always listening—even when apparently turned off—it is only listening for the turn-on phrase and is not storing any speech. However, since the device is connected to the Internet, and a PC-like general-purpose device, it is theoretically susceptible to hacking. Manufacturers would face a challenge in insuring that the set can’t be hacked and the always-on mic functionality misused. This functionality issue is relevant to a number of Smart TVs coming on the market. (See www.meisel-on-mobile.com/2011/12/07/voice-control-of-your-tv for commentary on this issue.)

Samsung’s Smart TV offering seems to be very strong, as indicated by the announcement that new 2012 Samsung Smart TV owners will be able to access DIRECTV services without the need for an additional set-top box. Samsung has revealed that it will be enabling support for DIRECTV on its entire new lineup of Smart TVs and promises a seamless user experience that offers the same interface that customers are used to with the DIRECTV DVR set-top box.
A Samsung TV ad shows the potential dangers of gesture control, with an attractive girl waving at her TV and the gesture being misinterpreted by men viewing through her window (www.examiner.com/video/seductive-motion).

Google Knowledge Graph (cont.)

Continued from page 1

In a May 16 posting on the Official Google Blog, entitled Introducing the Knowledge Graph: things, not strings, Singhal took a step toward his vision. He said that Google has been working on an intelligent model—a graph—that understands real-world entities and their relationships to one another: “things, not strings.”

Google has begun to gradually roll out the Knowledge Graph to US English users. It’s also going to be available on smartphones and tablets.

Singly said that the Knowledge Graph enables one to search for things, people, or places that Google knows about—for example, landmarks, celebrities, cities, sports teams, buildings, geographical features, movies, celestial objects, and works of art—and “instantly get information that’s relevant to your query.” He noted that this knowledge of relationships is a “critical first step towards building the next generation of search, which taps into the collective intelligence of the web and understands the world a bit more like people do.”

Google’s Knowledge Graph currently contains more than 500 million objects, he indicated, as well as more than 3.5 billion facts about and relationships between these different objects. And it’s continually tuned based on searchers’ actions.

In its initial implementation, Knowledge Graph enhances Google Search in three main ways:

1. Find the right interpretation: Full search results for the most common interpretation will be presented (in the case of the Taj Mahal, the monument in India), but a pop-up menu will offer the option of clicking to make the results relevant to the musician or the casino in Las Vegas. The examples provided by Google suggest that the addition won’t be overly intrusive to the results that are familiar to users.

2. Get the best summary: With the Knowledge Graph, Google can better understand a query and can summarize relevant content around that topic, including key facts you’re likely to need for that particular thing. To discover that, Singhal said Google would go back to their users and study in aggregate what they’ve been asking Google about each item. For example, he said, people are interested in knowing what books Charles Dickens wrote, whereas they’re less interested in what books Frank Lloyd Wright wrote, and more in what buildings he designed.

3. Go deeper and broader: The Knowledge Graph can help make unexpected discoveries. A searcher might learn a new fact or new connection that prompts a whole new line of inquiry. Singhal gave the example of where Matt Groening, the creator of the Simpsons, got the idea for Homer, Marge, and Lisa’s names? Google will tell you that his parents were named Margaret and Homer, and his sister was Lisa. Singhal indicated that this feature might “help answer your next question before you’ve asked it, because the facts we show are informed by what other people have searched for.” For example, the information Google shows for Tom Cruise in the Knowledge Graph answers 37% of next queries that people ask about him.

The version for mobile devices uses the same principles, but the display is tailored somewhat to the smaller devices, with touches and swipes allowing one to optionally display more information. The mobile features are currently rolling out to most Android 2.2+ and iOS4+ devices. On Android, the feature is available through Google in the browser and the Quick Search Box. On iOS, the feature is available in the browser and will be coming soon to the Google Search App.

News briefs

Apple CEO sees “unbelievable potential” in Siri and Apple is “doubling down” on it with continuing development

Apple CEO Tim Cook said during an interview at the latest AllThingsD Conference (D10) May 29, “Siri is one of the most popular features of iPhone 4S…But there’s more that it can do, and we have a lot of people
working on this. And I think you will be really pleased with some of the things you’re going to see over the coming months. We have some cool ideas about what Siri can do. We have a lot going on on this…Siri’s proven to us that people want to relate to the phone in a different way…It is profound…This is something that people dreamed of for years, and it’s here. Yes, it can be broader, and so forth, but we see unbelievable potential here…We’re doubling down on it.”

State Farm to offer auto insurance discounts to owners with Ford Sync

In truth, it’s difficult to come up with effective penalties for distracted driving (other than the obvious risk of death or other unpleasant side effects). Perhaps we should search for incentives for those who try to avoid distracted driving.

**Ford** has teamed with **State Farm Insurance** to offer such an incentive, a discount for drivers who use Ford Sync, which has hands-free features. Ford and State Farm will be offering drivers who use Sync discounts under the State Farm Drive Safe and Save Program. Drivers of these Ford Sync vehicles can save up to 40% per year on insurance premiums depending on the number of miles driven annually.

Any driver of a Sync-equipped vehicle that enrolls will save about 5% on insurance immediately. Drivers who go about 1000 miles a month can save around 10% on premiums with drivers who drive less saving up to 40%.

Microsoft said to expand voice search capabilities for Xbox and include Kinect voice and gesture control

It is rumored that **Microsoft** is currently testing a modified version of Internet Explorer 9 on its Xbox 360 console. The Xbox 360 currently includes Bing voice search limited to media results. Microsoft’s new Internet Explorer browser for Xbox will reportedly expand on this functionality to open up a full browser for the console. Microsoft will also integrate Kinect gestures and voice control heavily into the experience.

Amazon Instant Video now available on Xbox 360, with voice access

**Amazon** and **Microsoft** introduced a new Amazon Instant Video app for Xbox LIVE Gold subscribers that gives customers access to movies and TV episodes on their Xbox 360 console. The app also offers access to Prime Instant Video, a service with more than 17,000 movies and TV episodes available to Prime members at no additional cost. The new Amazon Instant Video app for Xbox 360 includes the ability to browse and play videos with the Xbox 360 remote control or Kinect voice and gesture commands.

New Harry Potter game for Microsoft Kinect uses speech recognition

**Warner Bros. Interactive Entertainment** announced a release later this year of the Harry Potter for Kinect videogame exclusively on the Kinect for the Xbox 360 video game and entertainment system from **Microsoft**, based on all eight Harry Potter films. Players will be able to scan in their own face to create a unique witch or wizard to journey through the adventures of the film. Kinect’s hands-free and speech recognition capabilities allow gamers to cast spells using physical maneuvers and by calling out spell names. Samantha Ryan, Senior Vice President, Production and Development, Warner Bros. Interactive Entertainment, said, “Harry Potter for Kinect will engage Harry Potter fans old and new by bringing them into the wizarding world as truly active participants.”

Health Fidelity launches cloud-based natural language processing service for healthcare

**Health Fidelity** announced the launch of REVEAL, a cloud-based Natural Language Processing (NLP) service for healthcare IT application companies and healthcare organizations (HCOs). REVEAL is designed to extract and codify the unstructured clinical data that HCOs capture but typically do not fully use. The company also cites improved workflow as a benefit of the automation. Using the newly codified information accelerates electronic health record (EHR) adoption and use, quality measurement and reporting, care coordination, efficiency, and health information exchange (HIE). Health Fidelity estimates that 80% of clinical information is trapped within the unstructured notes of physicians, nurses, and care managers.

As a cloud-based service, REVEAL accepts a wide range of unstructured clinical data and can produce structured, codified information using industry standard terminologies (e.g., SNOMED). Health Fidelity partners with Healthcare IT solution companies to enable healthcare organizations to utilize their previously untapped content.
Nuance launches Dragon Medical 11 for Dutch-speaking markets

**Nuance** has introduced Dragon Medical 11 in Dutch, the latest version of its medical desktop, real-time speech recognition software. Dragon Medical supports non-native speakers of Dutch, and new medical vocabularies cover a range of specialties and sub-specialties. Patient report confidentiality and compliance is assured through the encryption of audio and text files.

New features include Electronic Health Record (EHR) support and “Hidden Mode,” which enables users to click anywhere within a clinical application while dictating and return to that spot to add text afterwards. Dragon Templates automate form-filling by adding voice-enabled fields in dictation templates. The customizable PowerMic hand-held microphone also allows buttons to be programmed to execute any Dragon Medical function or other command.

Bright House Networks offering Ditech voicemail-to-text service

**Bright House Networks**, the US’s sixth largest provider of cable TV, phone, and Internet service, is now offering Ditech’s PhoneTag voicemail-to-text services to both residential and business customers with their phone option. Bright House Networks offers service in Florida, Indiana, Alabama, Michigan, and California.

Scribe Healthcare Technologies introduces a new speech recognition transcription solution that provides immediate text

In many applications, particularly in healthcare, speech-to-text transcription using speech recognition is done in a “batch” mode, that is, after the dictation is completed, often so that an independent transcriptionist can edit it; this approach is often called “back-end” speech recognition. **Scribe Healthcare Technologies** has unveiled a new “front-end” speech recognition solution, Scribe Interactive, that provides the text as the user dictates, allowing immediate correction or review. With Scribe Interactive, a healthcare provider uses a microphone to dictate into any application on the PC, whether it is an Electronic Medical or Health Record (EMR/EHR) system, word processor, or online transcription editor. The text is immediately generated and populates the user’s designated transcription layout. The solution uses **M*Modal**’s Speech Recognition Engine.

“This new voice recognition tool is stored in the cloud for shared language model creation,” said John Weiss, vice president of Scribe, in a statement. “An Internet connection and login permission provides universal access to this powerful dictation tool without expensive software installation, or extensive system training. Since commands, macros, and snippets are in the cloud, any customizations can be transferred if users install Scribe Interactive on another PC.”

RIM unveils new OS with early version for developers

**Research In Motion** (RIM) unveiled its vision for the BlackBerry 10 platform in May at the BlackBerry World conference and released the initial developer toolkit for native and HTML5 software development. Christopher Smith, Vice President, Handheld Application Platform and Tools at Research In Motion, said, “Developers can use this first beta of the tools to get started building apps for BlackBerry 10 and as the tools evolve over the coming months, developers will have access to a rich API set that will allow them to build even more integrated apps. The toolkit we are delivering today also meets developers on their own terms. Whether using the powerful Cascades framework, writing direct native code or developing in HTML5, BlackBerry 10 will empower developers to create attractive and compelling apps that excite customers.”

Applications created with any of the BlackBerry 10 tools will run on BlackBerry 10 smartphones as well as BlackBerry PlayBook tablets when the new platform becomes available for the PlayBook. All of the SDKs will be updated to give developers access to more of the BlackBerry 10 capabilities over the coming months. There was no mention of support for speech technology in the announcement.

Avantar’s business directory app includes free turn-by-turn voice GPS navigation on the iPhone

**Avantar**’s Yellow Pages app is offers free voice navigation on the iPhone. The latest release gives users the option to use free turn-by-turn voice navigation. Those who subscribe to a GPS service like **TomTom** or **Navigon** still have the option to use those services, but users who don’t pay for those subscriptions now have a third option, Avantar’s free, integrated app. The Yellow Pages app continues to offer voice recognition search, ratings and reviews, movie listings and trailers, and more.
FreedomPACS to integrate Dragon medical speech recognition software

Radiology Picture Archiving and Communications Systems (PACS) store and provide access to images and reports for medical imaging systems such as x-rays. In May, radiology PACS System provider FreedomPACS announced a strategic partnership with Dragon Medical Practice Edition by Nuance to support healthcare organizations increase productivity with radiology imaging systems, Electronic Health Records (EHR), and the US government’s requirement for “Meaningful Use” to receive federal support. Dragon Medical Practice Edition helps clinicians and healthcare organizations create medical notes directly into FreedomPACS or any EHR in real-time. Combined with the FreedomPACS web-based PACS system and diagnostic DICOM viewer, medical professionals can capture more information and access it quickly, increasing productivity and enhancing patient care. The companies claim that Dragon Medical Practice Edition alone can save clinicians 40-60 minutes per day on documentation.

M*Modal signs interface license agreement with 3M Health Information Systems

M*Modal, a provider of clinical documentation services, speech understanding, and computer assisted coding technologies (SSN, March 2012, p. 16), announced it has entered into a software interface license agreement (SILA) with 3M Health Information Systems. The agreement licenses the interfacing of M*Modal’s computer assisted coding solution to the 3M Coding and Reimbursement System.

Best known for coding solutions and ICD-10 expertise that allow medical reports to be categorized by such attributes as a specific medical diagnosis, 3M Health Information Systems delivers software and consulting services for clinical documentation improvement, computer-assisted coding, case mix, and quality outcomes reporting, with healthcare data dictionary and terminology services to support the Electronic Health Record.

Human-Machine Interface on vehicles to evolve, including user-chosen screen layouts simulating traditional dials

ABI Research has published an Automotive Human-Machine Interface (HMI) study. Dominique Bonte, ABI VP and group director, telematics and M2M, summarized, “There are many other new and enhanced HMI features that will be launched by all the major car companies over the next decade, including touchscreens, voice control, head-up displays, gesture recognition, and haptic feedback. In the longer term, augmented reality is the goal that many are already working on.” Apparently, augmented reality refers in part to what ABI calls a “dynamic cluster,” an interactive display that allows drivers to rearrange layouts of instrument simulations of traditional dials.

David Alexander, principal analyst, automotive technology, ABI, said, “With advanced safety and navigation systems becoming more popular and the clear demand to integrate smartphones, HMI will be one of the primary areas that manufacturers will be looking to in order to differentiate their products in the coming years. Dynamic clusters will feature in all market segments. Our analysis indicates that the dynamic cluster installation rate in new vehicles is expected to grow from 2.5% in 2012 to 80% in 2020.”

According to a release, General Motors has already previewed its new Cadillac CUE system, which uses this technology. Unlike most new technologies, many new HMI features will be seen on high-volume models, not only high-end luxury vehicles.

Kraft shifting ad budgets to digital and mobile platforms

It’s no secret that companies are struggling with how to reach customers with their advertising in a world where digital devices such as smartphones are increasingly key ways to reach a customer. In a keynote talk at conference in May, B. Bonin Bough, vice president, global media and consumer engagement at Kraft, said he was committed to shifting budgets at the consumer products giant increasingly to digital and mobile platforms. He noted Kraft’s partnership with Nokia earlier this year to create a mobile innovation lab. Kraft earlier rolled out an iFood Assistant app for finding recipes and building shopping lists and recently added a TV connection so users could watch cooking-related videos.

Other talks at the conference discussed the difficulty of using the small mobile platform for advertising. But Kraft’s and other big consumer firm’s interest in the channel will presumably drive creativity, something ad agencies are supposed to be good at.
iHear Network Android app acts as news narrator by reading content with TTS

iHear Network’s new Android app acts as a news narrator for Android. The app works by reading personalized content out loud using text-to-speech technology. There are more than 35 premium voices available for purchase through the app. This enables people to listen to the blogs, columns, and news they follow while mobile, as well as social channels such as Facebook or Twitter. Paul Simons, iHear CEO, explained, “Think of iHear Network as Pandora Radio for social news consumption.” Here’s how it works:

- Download the iHear Network app to an Android phone, connect the app to Facebook, Twitter, or a Pocket account.
- Create custom channels consisting of tweets, Facebook updates, or articles to be saved to Pocket’s content-shifting service. iHear uses text-to-speech technology to read this content out loud.
- Subscribe to content channels such as sports, business, news, or entertainment; iHear will voice updates.
- Choose what content you want to hear and select from multiple “voices” to read it.

Google’s voice assistant said to use text-to-speech from company Google acquired in 2010

Phonetic Arts offered text-to-speech technology, largely used in games (SSN, June 2009, p. 44). The company was acquired by Google in December 2010. Phonetic Arts technology allows creating a voice from recordings of an actor that creates other voice content for an application.

On their web site, IQ Capital, one of the investors in Phonetic Arts that sold the company, claimed that Phonetic Arts technology will be used in an “impending release” of Google’s voice-activated software, code-named Majel, supposedly an answer to Siri, and an extension of Google’s “Voice Actions.”

Nuance demos a new healthcare platform for streaming speech recognition

Nuance Healthcare showcased its new 360 | Development Platform at the HEALTH+IN4MATICS conference in the UK in May. The 360 | Development Platform enables live-streaming speech recognition for healthcare, helping to speech-enable a wide variety of medical applications and devices. The company discussed its newly designed product portfolio and the delivery of its technologies and products in the cloud. Nuance Healthcare announced that its speech recognition solutions for healthcare are set to be available to the UK’s National Health System (NHS) Trusts through a NHS Framework Agreement which has selected four Nuance Healthcare Partners to supply speech recognition nationwide.

Stefan Herm, Vice President and General Manager, Nuance Healthcare EMEA, explained, “Speech-enabling clinical applications on computers, web browsers, tablet PCs or smart phones, such as iPhones, has changed from a complex process to the easiest thing to do. Nuance can deliver high-end speech recognition at the click of a button; hospital-wide, literally within minutes. Today, every doctor in every hospital can have access to the benefits of speech recognition, on whichever device they prefer to use.”

Eckoh secures two three year contracts in the UK utility sector for its speech authentication and payment solutions

Eckoh’s payment solutions for voice, web, and mobile channels uses internally developed speech authentication for biometric security in its payment service (SSN, December 2011, p. 26). In May, the company announced it has been granted new three-year contracts by three water companies in the UK, including Bristol Wessex Billing Services Limited (BWBSL), to provide the EckohPAY secure card payments solution. BWBSL is the combined billing service jointly owned by Bristol Water and Wessex Water, which serves over one million customers. The third water company, based in the South of England, supplies water services to approximately half a million people. The EckohPAY service will allow customers to make their water bill payments 24 hours a day, seven days a week, with secure authentication.

Eckoh wins contract to provide National Rail Enquiries with new speech recognition TrainTracker Service

Eckoh announced that it has a contract to provide National Rail Enquiries (NRE) with a new TrainTracker service. TrainTracker is a speech-recognition-based train update service that provides callers over the phone with real-time and timetabled journey plans (including fares) throughout the UK rail network. The service is one of the most widely used speech services in the UK, and Eckoh has been operating it since it first went live in 2004. Since its launch, the service has taken over 27 million calls. The new contract, which
runs until 2014, will feature a completely new version of TrainTracker utilizing Eckoh’s latest speech recognition technology and VoiceXML platform.

**Google expected to add semantic search results**

There have been reports that Google is trialing displaying more explicit information from a search at the side of the usual list of web sites, based on semantic analysis of the request. This move may be in part a response to personal assistant apps that can bypass a full search and return the answer more directly. See [www.meisel-on-mobile.com/2011/11/14/mobile-phone-marketing-and-customer-service](http://www.meisel-on-mobile.com/2011/11/14/mobile-phone-marketing-and-customer-service) for my discussion of this impact of personal assistants on advertising and marketing. Providing a more compact answer on a mobile phone may be a competitive necessity for search engines. Google has talked about a major upgrade to its search engine, but hasn’t provided any details.

The supplementary data may also be a defensive move related to Microsoft’s just-announced upgrade to its Bing search engine. Microsoft is introducing a new, three-column screen design. Alongside the familiar search results displayed in blue to the left of the screen, Bing is rolling out an instant snapshot column, which displays extra information and links most likely to be useful such as maps, reviews, and reservation tools. A third column displays social-networking links.

**Microsoft to cease 800-BING411 free directory assistance service**

Google dropped its 1-800-GOOG-411 free business directory service that used speech recognition to automate the standard 411 service (which typically carries a charge) in early 2011, leaving Microsoft’s 800-BING-411 service and Jingle Network’s 1-800-FREE411 as alternatives. The numbers can be dialed from any phone, and no Internet connection is required. Microsoft has now announced to callers to the number that the service will be discontinued on June 1. When Google stopped providing the service, they said they had learned all they needed about how callers said business names.

**Nuance Dragon Dictation and Dragon Search app now available in the Czech Republic and Romania**

Nuance Dragon Dictation and Dragon Search applications for the iPhone, iPod touch, and iPad are now available free in the Czech Republic and Romania App Stores. Supporting the Czech and Romanian languages as part of their Eastern European expansion, Dragon Search and Dragon Dictation allow iOS consumers to dictate SMS text messages, emails, social media updates, mobile Web searches, and more.

**SDL expands commitment to machine translation with a new R&D facility in Cambridge, UK, led by Bill Byrne**

SDL specializes in helping global businesses to engage with their customers in the local language. The company has opened a new R&D facility in Cambridge, UK, to expand the company’s focus on machine translation. The new facility and team will be led by Bill Byrne, a leading research scientist in natural language processing and Reader in Information Engineering in the Department of Engineering at the [University of Cambridge](http://www.cam.ac.uk). Until 2004, Byrne was Research Associate Professor at the Center for Language and Speech Processing, [Johns Hopkins University](http://www.jhu.edu), in the US.

SDL has been committed to machine translation for over a decade and the acquisition of Language Weaver in 2010 enabled the company to leverage machine translation for their customers. The research team expansion will accelerate the company’s advances in statistical machine translation and machine learning to make it applicable within a broader ecosystem.

**Rumors that Apple’s iOS 6 release will give developers access to Siri**

There are rumors that Apple’s upcoming mobile iOS 6 release (codenamed “Sundance”) is expected to include a new API that the rumors suggest will give third-party developers access to “Siri.” It is more likely that, if Apple provides this cloud-based service, it will be speech recognition alone, and not the natural language parts of Siri. Both Google Android and Microsoft Mobile make speech recognition in the network available to developers, but not the interpretation of that speech recognition, which tends to be application-dependent.
SAIC and Lingotek team to offer translation solution tailored for language service providers

Science Applications International Corporation (SAIC) and Lingotek announced a new machine translation solution incorporating the SAIC Omnifluent Translate hybrid machine translator (HMT) within Lingotek’s Collaborative Translation Platform. The offering has a per-word pricing model, available exclusively to Language Service Providers (LSPs); the pricing enables access to corporate-level machine translation and workflow management technology on demand.

Jonathan Litchman, SAIC senior vice president, explained, “This offering leverages the best of both technologies to integrate high quality hybrid machine translation, translation memory, and workflow management into a single, collaborative solution. It simplifies and accelerates the translation process from end-to-end.”

Omnifluent Translate is a hybrid machine technology, combining statistical machine translation and rule-based machine translation. The solution can be tailored to each customer’s domain including terminology and domain-specific vocabulary. The Lingotek Collaborative Translation Platform supports collaborative translation technologies, workflow management, and community collaboration.

LG uses Google TV in demos

LG demoed in May at Internet Week New York its LG’s new Smart TV with Google TV. The sets have LG’s new L9 dual-core chipset, which gives the TV the power for Google TV Search across the web and live TV. Each model also includes LG’s Smart TV platform, for on-screen access to thousands of movies, TV shows, YouTube, Chrome, the Google Play store, and more. To navigate through all of the goodies, each set comes with LG’s 5-mode Magic Remote with QWERTY keyboard and speech recognition.

Kirusa platforms processed 600 million calls in March

Kirusa’s solutions include the Kirusa Voice SMS service (sending a “text” message that ties to a voice recording), mobile social media, and mobile infotainment, used by over 30 carriers around the world (SSN, February 2012, p. 27). The company announced it processed more than 600 million calls in March 2012, a new company record. Kirusa also reported that the number of unique mobile users of Kirusa mobile services grew to over 70 million in March 2012.

New Jersey town fines texting while walking

Fort Lee, New Jersey, escalated a texting ban to modes of transportation beyond driving, such as walking. Police who catch pedestrians that text while jaywalking and causing a danger to others will get an $85 fine. There were three fatal pedestrian texting accidents so far this year, the local police report.

A new application for “hands-free” speech recognition? Or will talking while walking become illegal?

Candidate recommendation for the Emotion Markup Language (EmotionML) and “Vocabularies for EmotionML” published

Debbie Dahl, W3C Multimodal Interaction Working Group Chair, announced that the Group has published the Candidate Recommendation of the Emotion Markup Language (EmotionML) specification: www.w3.org/TR/2012/CR-emotionml-20120510. The group also published “Vocabularies for EmotionML” at www.w3.org/TR/emotion-voc.

The specification of Emotion Markup Language 1.0 aims to strike a balance between practical applicability and scientific well-foundedness. The language is conceived as a “plug-in” language suitable for use in three different areas: (1) manual annotation of data, (2) automatic recognition of emotion-related states from user behavior, and (3) generation of emotion-related system behavior. Vocabularies for EmotionML provides a list of emotion vocabularies that can be used with EmotionML to represent emotions and related states.

Motorola Mobility introduces on-screen TV display for finding programs that eases navigation, but doesn’t include voice search

At The Cable Show in Boston in May, Motorola Mobility demoed an entertainment alternative that the company will launch in North America this year. DreamGallery is a new on-screen display that is designed to look more like a Web browser than the usual TV guide grid. In addition to being more graphical, it lets one...
bookmark content for quick retrieval later. It provides recommendations tailored to viewer. However, speech recognition was not a feature announced.

**Apple says in filing that suits challenging claims for Siri should be dismissed**

*Apple* is being sued in a number of lawsuits that claim Siri doesn’t work as shown in advertisements. Apple said in a recent court filing that Siri may not be perfect (in fact, characterized as a “beta” version) but the technology is still “cutting edge.” From Apple’s motion to dismiss (dated June 21):

“They offer only general descriptions of Apple’s advertisements, incomplete summaries of Apple’s website materials, and vague descriptions of their alleged—and highly individualized—disappointment with Siri. Tellingly, although Plaintiffs claim they became dissatisfied with Siri’s performance “soon after” purchasing their iPhones, they made no attempt to avail themselves of Apple’s 30-day return policy or one-year warranty—which remains in effect. Instead, they seek to take an alleged personal grievance about the purported performance of a popular product and turn it into a nationwide class action under California’s consumer protection statutes. The Complaint does not come close to meeting the heavy burden necessary to sustain such claims.”

**Ingenico partners with Saygent to add immediate recorded feedback after a customer service call**

*Ingenico* is a provider of payment solutions, with over 17 million terminals deployed in more than 125 countries. In May the company announced with *Saygent* a partnership that gives merchants on Ingenico’s new Mobile Retail Platform (iMRP) a way solution to get invaluable timely customer feedback. Immediately after making a purchase customers are asked their thoughts on their shopping experience via Saygent’s voice feedback solution. Saygent’s technology records the response, allowing a manager to gauge mood as well as content. The inquiry close to the experience provides a better gauge than a later inquiry. The ability to express one’s frustration, if that is the case, may also help defuse an annoyed caller, and perhaps reduce the chance they will signal their discontent through social networks.

**Intel offering Indian car manufacturers a new dual-screen in-vehicle infotainment system**

*Intel Corporation* is reportedly in negotiation with Indian car manufacturers for the introduction of a new In-Vehicle Infotainment (IVI) system for passenger cars. *Kia Motors* of South Korea has already agreed to introduce IVI in a luxury sedan. The system is said to have two displays, one for the driver and one for the passenger. The touch screen on the dashboard interfaces with the driver information system (DIS) navigation and allows the driver to use speech recognition. The dual displays can overcome some of the safety issues that have been raised with large, potentially attention-grabbing screens in vehicles.

**University of Geneva uses the Koemei Web Service platform to transcribe lectures using speech recognition**

*Koemei*, which provides large scale video and audio transcription, announced that the University of Geneva, Switzerland has successfully completed a pilot to use the Koemei Web Service platform to transcribe the university’s lectures and archive them for indexing, search and retrieval. Temitope Ola, CEO, Koemei, said, “The successful pilot with UNIGE demonstrates Koemei’s readiness to address the education market using state of the art speech recognition for automatic lecture transcription. More in higher education are turning to Koemei for automatic lecture transcription particularly to address accessibility compliance and provide a means to index and search the growing number of recorded lectures.”

Koemei estimated that nearly $16 billion is spent annually on traditional transcription with approximately 120,000 transcriptionists in United States, with growth of 21% annually expected in the corporate and education markets. Koemei Web Services is used in enterprises and by transcription service providers to increase accuracy and efficiency.

**Nuance licenses Rovi entertainment data for integration with Dragon TV**

*Rovi Corporation* and *Nuance Communications* announced that the two companies are collaborating to accelerate voice-activated discovery and guidance applications for cable service providers and consumer electronics manufacturers. Nuance has licensed and will be integrating Rovi’s rich entertainment data with Dragon TV to provide TV manufacturers and cable service providers the ability to access the wide variety of Rovi-indexed content for TV shows, movies, and cast and crew details just by speaking. Dragon TV is
Nuance’s voice and language understanding platform for set-top boxes and connected TV devices (SSN, March 2012, p. 7).

Nuance and Rovi are also developing a new application that combines Dragon TV with Rovi’s guide technology. The result is the ability to simply speak to change the channel or browse, bookmark, and search for content on both live and On Demand TV programming. For instance, a viewer can say, “Find comedies with Adam Sandler”; “Show me information on ‘The Big Bang Theory,’” and “Who plays Chuck on Gossip Girl?”

(See Rovi financial report, p. 46.)

IBM blocks Siri over security concerns

MIT’s Technology Review reported that IBM doesn’t allow employees to use Apple’s Siri over concerns that the audio is shipped to Apple. Apple’s iPhone Software License Agreement makes it clear that this is the case and provides no assurance re what is done with the audio or how long it is kept: “When you use Siri or Dictation, the things you say will be recorded and sent to Apple in order to convert what you say into text… By using Siri or Dictation, you agree and consent to Apple’s and its subsidiaries’ and agents’ transmission, collection, maintenance, processing, and use of this information, including your voice input and User Data, to provide and improve Siri, Dictation, and other Apple products and services.” Presumably, the data is used to improve the speech recognition algorithms and language models. Since one could be dictating a company-confidential email, the content could be of concern. Of course, there are many non-speech applications that work through the Internet that could be of concern as well; when one enters an address into a web-connected navigation system, the address is sent to a central location and the provider in theory knows where you’re going and could retain that information. In general, companies are struggling with the trend of employees bringing their own digital devices to work (and doing work-related tasks on them).

Apple adds more celebrity ads for Siri

Apple ads shown in May include two by John Malkovich, an actor/producer who has appeared in in more than 70 motion pictures and received Academy Award nominations. A number of the video ads are available at www.apple.com/iphone/videos.

Google search for iPhone updated, includes voice search

The Google Search app for Apple’s iPhone has been updated to version 2.0.0. Google Search 2.0 features a completely redesigned interface with full-screen image search, faster results, and more. Predictive text allows faster autocompletion of typed search entries and the app is more visually pleasing, making looking at multiple pages more convenient. Voice search is available in the new release.

SoundHound music recognition software moving toward 100 million users by the end of the summer

SoundHound’s applications, SoundHound and Hound, use the company’s Sound2Sound technology for music recognition and for search for music from singing and humming. It can also automatic align of lyrics with music. The company has also claimed “instant-response large scale speech recognition systems” (SSN, June 2011, p. 8). The company claims fast growth. Last year the user base swelled from 10 million to 50 million, and the company expects to pass 100 million by the end of the summer. The company has $16 million in venture funding to help fuel its growth.

Touch Panel Control adds home automation voice control from smartphones

Touch Panel Control apps make devices such as smartphones and pad computers controllers for AMX home control solutions. Using consumer technology such as iPhones/iPod Touch and Android mobile devices, the company develops software that to enable clients to provide customers with intuitive control interface solutions. One recently added option is voice control, allowing commands such as “I want to watch ABC.”

AMX hardware and software solutions span control and automation, system-wide switching and audio/video signal distribution, digital signage, and technology management. They are implemented worldwide in conference rooms, homes, classrooms, network operation / command centers, hotels, entertainment venues, and broadcast facilities, among others.
Satechi remote allows control of any iOS Bluetooth device, including one-button Siri activation

No more being left out of the picture when taking one with an Apple iPhone. Satechi has a new BT Media Remote that can control the phone by Bluetooth wireless connectivity at a distance. The wireless remote has a camera shutter button. The Bluetooth HID remote allows users to control any iOS Bluetooth Device while the device is connected to a TV, dock station, or car stereo. The BT Media Remote is positioned as a multimedia companion for iPhone or iPad. The BT Media Remote features multimedia control that allows users to control the playback of any music or video on the iPhone or iPad. The Home button on the remote can be used to activate Siri even while connected to another device. The Satechi BT Media Remote is available for $39.99 at Satechi.net and Amazon.

Philips Speech Processing partnering with Vertex to provide dictation solutions for law offices

Philips Speech Processing, a manufacturer of mobile and stationary dictation solutions (SSN, May 2012, p. 22), will partner with Vertex Solutions, an IT solution provider for the law industry, to provide professional services and support for integrating voice workflow solutions into law firm IT environments.

Speech-to-text for dictation in next release of Mac OS?

The 9to5Mac site displays a file for a version of the Safari web browser that will be in the next edition of the Apple operating system, OS X Mountain Lion, that is entitled “Start Dictation…new in Mountain Lion.” The feature, apparently similar to the speech-to-text available in the latest iPad, is launched by pressing both command keys at once.

Lingo Media’s ELL Technologies launches newly designed kids online English learning

Lingo Media, which offers both online and print-based English language learning solutions announces that its wholly-owned subsidiary, ELL Technologies is launching its newly designed Q Kids Online English program and the first sale of the version in Turkey. Q Kids is for young learners from 4-10 years old.

Simon Fraser University launches voice-driven campus directory

Simon Fraser University in Vancouver, Canada, has added a campus directory, ASKME, where one can call extension ASKME (27563) or 778.782.7563 from off-campus to connect to a service that lets one speak the name of the person one is trying to reach on campus. ASKME was developed by the IT Services team at the university. Given the multicultural nature of Canada, the IT department indicates that the directory has been programmed to interpret cultural accents. It will also recognize name variations; for example, it will identify William Smith and Bill Smith as the same individual.

Robot vacuum cleaner from Sharp responds to speech and has moods

Sharp announced it would release its voice- and smartphone-controlled robot vacuum cleaner Cocorobo in early June. Cocorobo can recognize 36 voice commands and has a voice reply function. The speech recognition is available in Japanese, English, and Chinese. Smartphones can be used for remote control of Cocorobo and for monitoring its operation in real-time with pictures taken by a camera mounted on its body. robot acts differently depending on how it feels, according to Sharp; if you don’t talk to it for a while, it apparently pouts.

Cocorobo avoids obstacles when cleaning by using an ultrasonic sensor. It also has an air purifier that employs Sharp’s Plasmacluster technology. Cocorobo is priced around $1,600 for the camera-equipped version and $1,100 for the basic version, which doesn't have a camera and can't talk.

RIM launches BlackBerry screen reader for customers with visual impairments

Research In Motion (RIM) launched BlackBerry Screen Reader, a free software application that helps customers who are blind or visually impaired operate their BlackBerry smartphone. BlackBerry Screen Reader provides an audible output based on visual information displayed on a BlackBerry smartphone. Users can customize the text-to-speech settings (volume, pitch, and speech rate) and preferences for punctuation, verbosity, and password security. Users can also set speech and audio preferences through keyboard shortcuts.
Royal National Institute of Blind People adds Ivona TTS for Freeview set top boxes in the UK

Freeview is a UK television service, currently serving over 20 million homes. The company indicated that, when 4G services roll out, over 90% of the UK will have Freeview either on a main or secondary set.

The Royal National Institute of Blind People (RNIB) has developed software that integrates text-to-speech technology with Freeview Plus set top boxes. RNIB partnered with set top box manufacturer TVonics and text-to-speech developer Ivona to develop the software that can speak text in the electronic program guide, library, timers, menu system, and information banners to users.

Korea’s first sight-impaired judge uses TTS to review legal documents

Korea’s first blind judge Choi Young uses a laptop computer and earphone to review documents and notes in audio form while holding trial. He converts text documents to audio using text-to-speech software before a trial. Observers at his first trials said that the proceedings went smoothly. Young is apparently a very determined man; passing the judicial exams without sight was a difficult hurdle.

Apple TV speculation

The Cult of Mac blog posted what it claimed was information about the upcoming Apple TV, which will supposedly be called iTV, from an unnamed source that supposedly saw it. A mock-up image showed a natural language discussion (text on the screen) between a viewer and the device regarding a choice of movie. It has been widely speculated that the TV will include Siri-like speech recognition and natural language interpretation, and the Cult of Mac source seems to have validated this fairly obvious guess.

Some reports have indicated that Apple is having trouble lining up deals with content providers (in order to offer downloaded content from an online Store), and that these negotiations will delay launch. According to an article in China Daily in mid-May, however, Foxconn chief Terry Gou said at a news conference that his company is getting ready to start producing an Apple television. However, Foxconn denied in a statement that Gou did so.

Acme Packet and NICE Systems introduce session recording solution based on SIPREC Protocol

The Internet Engineering Task Force (IETF) supports a Session Recording Protocol (SIPREC) working group chartered to define a SIP-based protocol for controlling a session (media) recorder. The “Session Recording” problem presents certain unique requirements that are not addressed in the current SIP protocol specification. These include requirements such as the need for a distinction between the session that is being recorded versus the session that has been established for recording.

Acme Packet, which supports session delivery networks, and NICE Systems announced what they call “the industry’s first available solution for interactive session recording based on the Internet Engineering Task Force’s (IETF) Internet draft of the standardized Session Recording Protocol (SIPREC).” The solution is said to deliver affordable, reliable, and scalable recording to enterprises, contact centers, and service providers offering hosted session recording or contact center outsourcing. The joint solution allows organizations to leverage the NICE Interaction Management suite and Acme Packet’s Net-Net Session Director session border controller (SBC) in real time regardless of the telephony infrastructure they use.

NICE introduces analytics-driven real-time customer interaction management offering

NICE announced that it has introduced an integrated Customer Interaction Management offering, which enhances its current offering with the integration of capabilities from recent acquisitions of Fizzback and Merced. The main advantage seems to be realtime feedback that can help an agent, for example, close a sale by detecting the appropriate offering or solution to a customer’s problem while the customer is on the call. The offering integrates real-time analytics and guidance solutions with “Voice of the Customer” and workforce optimization (WFO) solutions to provide an enhanced customer experience, greater operational efficiency, increased revenue growth, and improved compliance.

DataPhysics Research adds M*Modal speech understanding to its radiology image management software

Due to the world’s aging population; the number of MRIs, CT, and PET/CT images is estimated to rise over 400% in the next few years. DataPhysics Research (DPR) offers its software, CaseReader, to help
radiologists manage, organize, analyze and report on radiologic image data. In May, DPR announced it has entered into an agreement with M*Modal (p. 32), DPR has embedded M*Modal Fluency Direct technology, which leverages the contextual understanding of a physician's narrative, into CaseReader. CaseReader is fully integrated with M*Modal's technology for voice-driven navigation and dictation, which allows radiologists to complete more exams on a given day and produce reports more quickly. CaseReader also integrates with the RIS, PACS, and the 2D viewing application resulting in a linkage whereby measurements are systematically captured within CaseReader and into the final report.

UpSellit automated chat technology can understand more than one problem in one chat message

UpSellit announced the addition of a “Compound Recognition” module to the SmartAgent automated chat solution. With a natural language parsing engine and a knowledge base architecture, the SmartAgent automated chat solution assists website shoppers to reduce site abandonment and capture valuable consumer feedback. Before the addition of the Compound Recognition engine, SmartAgent would simply recognize and address one consumer question at a time. When a customer’s entry covered diverse subjects, SmartAgent could only identify the highest-ranked match and send a single automated chat message. The Compound Recognition engine allows SmartAgent to distinguish and intelligently respond to a site visitor who covered multiple topics within a single chat input.

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Statistics and Surveys

Smartphone sales are expected to reach 1.53 billion globally in 2017

Total smartphone sales are expected to reach 1.53 billion units globally in 2017, with emerging markets accounting for 63% of all smartphone sales, up from 42% in 2011, according to a new report from Pyramid Research.

Vocalabs study finds many complaints about the language skills of customer service agents

A Vocalabs analysis of customer service complaints at eleven companies over the past 15 months found that Dell, HP, Chase, and Citi customers often complained about the language skills of the companies’ customer service representatives. Customer service automation was the most common complaint overall, and led other complaints at Apple, AT&T, Sprint, T-Mobile, Verizon, Bank of America, Chase, Citi, and Wells Fargo.

The analysis of 2,379 customer complaints collected during 7,194 National Customer Service Survey interviews between January 2011 and March 2012 yielded several other insights including:

- Customers of Dell and Wells Fargo surveyed were more likely than customers of other companies to report incidents of rude or impolite behavior.
- Apple, Verizon, and Citi had the highest frequency of complaints about customer service automation in their respective industries.
- Customers of Dell, HP, and Wells Fargo were more likely to report being hung up on than customers of other companies.

“Our interviews for the National Customer Service Survey are fairly extensive, and at the end we ask the customer if he or she has any other comments or suggestions,” said Peter Leppik, CEO of Vocalabs. “This gives us a look at what's really bothering customers about their customer service experience. In our analysis we expected to see complaints about language barriers and automation, but reports of rude behavior and customers getting hung up on were surprising.”

An executive summary of this data is available for download at www.vocalabs.com/published-research.

Distracted driving survey finds an increasing number of companies manage employee mobile phone use

ZoomSafer released its second annual distracted driving survey with responses from more than 900 professionals. The survey found that 80% of respondents report that their employers have a cell phone use policy in place, up from the 62% of respondents in 2011. The survey also found that 52% of companies
without policies have plans to put one in place. 86% of total respondents report that their companies enforce their written policies, an increase from the 53% of companies in 2011. However, only 26% of respondents report they are “very confident” that their companies’ current policy enforcement methods are sufficient to modify driver behavior. Over a quarter (26%) of all respondents report their companies plan to evaluate either phone-based software, cell phone use analytics, or in-vehicle cameras within the next twelve months. (ZoomSafer offers a software solution, SSN, April 2012, p. 24).

Global mobile media sales exceeded $100 billion in 2011

Global consumer spending on media content, apps, and services for mobile phones exceeded $100 billion barrier in 2011, according to Strategy Analytics. Consumers will increase spending on mobile media from $121.8 billion in 2011 to $138.2 billion in 2012, a 13.4% jump, the research firm predicts. At the same time, advertisers’ spending on mobile media is expected to almost double, increasing 84.1% from $6.3 billion to $11.6 billion, resulting in the total mobile media market reaching $149.8 billion in revenue in 2012, a 17.0% increase from $128.1 billion in 2011. Mobile media includes wireless carrier data plans, social network microtransactions (such as Facebook coins), apps (in-app transactions and in-app advertising), music, wallpapers, and advertising associated with videos.

The firm predicts that most consumer spending, 60%, will be on data plans—$82.8 billion in 2012, up 9.5% from 2011. However, consumers internationally downloaded more than 23 billion apps in 2011; this second largest category is forecast to increase by 38% to more than 32 billion in 2012.

Mobile users to consume eight times more social media in 2016

In 2016, mobile phone users will consume 6.5 times as much video, over eight times as much music and social media, and nearly 10 times as much game time as in 2011 according to forecasts from Informa Telecoms & Media. The group forecasts that, in 2016, the average mobile user will be browsing six times as many web pages and downloading 14 times as many megabytes of applications on their handset as in 2011.

Text (SMS) and picture (MMS) messaging traffic will continue to grow, but at a slower pace. On average, mobile users sent 118 SMSes and two MMSes a month in 2011, compared to the 146 SMSes and four MMSes they will be sending in 2016.

The growth in traffic won’t be matched fully by growth in revenues. Global mobile data traffic is expected to grow from 3.89 trillion megabytes in 2011 to 39.75 trillion megabytes in 2016, amounting to a tenfold increase. Local mobile data revenues will grow from $326 billion in 2011 to $628 billion in 2016, a twofold increase.

Mobile web traffic has tripled over the past year

Mobile web traffic has increased 202% over the past year, according to the latest Quarterly Mobile Report from Latitude. Relative to website visits from all sources in March, 11.5% came from smartphones and 3.5% from tablets. Latitude estimates that 30% of all paid search clicks will come from smartphones and tablets by the end of 2012.

Adobe study indicates that website traffic from tablets has grown 10 times faster than than of smartphones and will represent 10% of all Website traffic by 2014

Adobe Systems announced findings from its Adobe Digital Index report. The report found that tablet devices will generate more Web traffic than smartphones by early 2013 and that consumers find browsing websites on tablets nearly as engaging as on PCs. The results suggest that tablets have become a channel distinct from smartphones.

The report found that the share of website visits from tablets grew approximately 10 times faster than the rate for smartphones in the first two years after market introduction and grew more than 300% in the last year. The growth is partly driven by a disproportionately higher number of website visits per tablet than per smartphone. Although consumers consider the tablet website experience to be nearly as engaging as that of PCs, they use PCs to visit websites three times as frequently as tablets. (As an editorial comment, one could argue that this is evidence of the difficulty of using the classical Graphical User Interface on the smaller devices.)

Tablets’ share of website traffic was forecast to exceed smartphone traffic by early 2013 and reach 10% of total website traffic in 2014. The report concluded that consumers who visit retail websites using tablet devices are more valuable online customers than those who visit websites using smartphones or traditional
desktop/laptop computers. Based on its analysis of 16.2 billion visits to the websites of more than 150 retailers in 2011, the Adobe Digital Index found that “Tablet Visitors” spend over 50% more per purchase than visitors who use smartphones (“Smartphone Visitors”) and over 20% more than visitors who use desktop/laptop computers (“Traditional Visitors”). Additionally, Adobe found that Tablet Visitors are three times more likely to make a purchase than Smartphone Visitors and nearly as likely to purchase as Traditional Visitors. Tablet Visitors appear to spend more because of their demographics, the nature of the tablet user experience, and the environment in which Tablet Visitors shop online. (Editorial comment: Exercise care in interpreting these results. If it is easier to check out a web site because of a faster connection or bigger screen, one might respond to an email ad or respond to an impulse more readily. One might only do so on a smaller screen with a slower connection if one is more motivated to buy. Thus, user interface changes, particularly the evolution of the personal assistant model that gets to a result more quickly on smaller devices, may impact these statistics.)

Mobile and online will account for the largest increase in local ad spending, nearly doubling in five years

Local advertising is expected to grow at a rate of 2.6% per year between 2011 and 2016, according to BIA/Kelsey’s new Media Ad View reports. During that time, revenue is projected to rise from about $132 billion to $150 billion. The reports predicted that mobile and online will account for the largest increase in local ad spending, nearly doubling from $11.1 billion in 2011 to $21.8 billion in five years, an annual growth rate of 14.4%. The research firm found that the major source of advertising in the mobile and online space will be technology/telecom, which will spend $5.1 billion by 2016 (up 80.7%). Other top spending categories include retail ($4.5 billion), automotive ($2.6 billion), and health care ($815.3 million). Technology/telecommunications will increase its investment in online and mobile advertising by an estimated 35.1%, while reducing its spending in newspapers and magazines, direct mail, TV, and radio.

Google search has 97% market share in India

According to StatCounter data, Google Search has a 97% market share in India, with Yahoo Search and Microsoft Bing each having only about a 1% share.

SMS forecast to remain more popular than mobile messaging apps over next five years

Mobile applications WhatsApp and iMessage are alternatives that allow text messaging without service provider fees. For example, the 99-cent WhatsApp, which allows unlimited free text messaging between users that have the app, is available for iPhone, Android, and BlackBerry. iMessage is part of iOS 5 from Apple. However, SMS will still dominate mobile messaging traffic and revenues to 2016, according to Informa Telecoms & Media forecasts. Mobile operators will still generate a total of US$722.7 billion in revenues from SMS between 2011 and 2016, the research firm estimates. While Informa is forecasting either slowing growth or even a small decline in person-to-person SMS revenues in some developed regions and countries, total global SMS revenues will increase at a compound annual growth rate of 3% over the next five years.

Patents, patents, everywhere

Near the end of May, the United States Patent and Trademark Office issued its 8,185,968th patent since 1790.

Financial Notes

Nuance Communications reports non-GAAP revenue growth of 26% to $415 million in quarter ended March 31

On May 10, Nuance Communications, Inc. (NASDAQ: NUAN) announced financial results for the second quarter of its fiscal 2012, ended March 31, 2012. Nuance reported GAAP revenue of $390.3 million in the second quarter of fiscal 2012, a 22.4% increase over GAAP revenue of $319.0 million in the second quarter of fiscal 2011. Nuance reported non-GAAP revenue of $417.7 million, which includes $27.4 million
in revenue lost to accounting treatment in conjunction with acquisitions. Second quarter fiscal 2012 non-GAAP revenue grew 25.8% over non-GAAP revenue of $332.0 million in the same quarter last year.

In the second quarter of fiscal 2012, Nuance recognized GAAP net income of $0.9 million, or $0.00 per diluted share, compared with GAAP net income of $1.7 million, or $0.01 per diluted share, in the second quarter of fiscal 2011. In the second quarter of fiscal 2012, Nuance reported non-GAAP net income of $138.8 million, or $0.43 per diluted share, compared to non-GAAP net income of $99.9 million, or $0.32 per diluted share, in the second quarter of fiscal 2011. Nuance’s second quarter fiscal 2012 non-GAAP operating margin was 36.8%, up from 32.9% in the second quarter of fiscal 2011. Nuance reported cash flow from operations of $100.5 million in the second quarter of fiscal 2012, compared to $96.1 million in the second quarter of fiscal 2011. Nuance ended the second quarter of fiscal 2012 with a balance of cash and marketable securities of $976.8 million.

The company reported that, compared to Q2 11, Nuance’s Q2 12 non-GAAP revenue benefited from (1) growth in healthcare licenses and on-demand services second quarter non-GAAP revenue was $149.9 million, up 23.9%), (2) strength in mobile products and services (mobile and consumer solutions, second quarter non-GAAP revenue was $115.1 million, up 22.8% ), (3) product licensing and maintenance and support from the imaging business, and (4) product licensing and maintenance and support from the company’s enterprise business. In Q2 12, the United States contributed 65% of non-GAAP revenue and international contributed 35%.

At the end of Q2 12, the estimated 3-year value of total on-demand contracts was $1,386.5 million, up 13.1% from $1,225.5 million at the end of Q2 11. In Q2 12, Nuance had record bookings for healthcare on-demand contracts. Also contributing to bookings growth was a material contract with a leading consumer electronics OEM for voice-enabled personal assistant services across mobile devices and entertainment platforms. [Editorial speculation: Referring to Samsung mobile phone and Smart TV? (p. 1)]

“Across our markets, we are experiencing unprecedented interest in voice and natural language systems that understand user intent, create conversational outcomes, and deliver answers to complex questions,” said Tom Beaudoin, Nuance executive vice president and CFO. “Strong performance in all of our markets enabled us to deliver 15% organic revenue growth in the quarter.”

Revenue growth was broad based across markets and across revenue types, the company indicated. Healthcare revenue growth was driven by increasing volume in Nuance’s on-demand business as well as record license revenue in Dragon Medical and Diagnostic systems. Mobile & Consumer revenue growth was driven by license revenue for handsets, automobiles, and other consumer electronics, as well as increasing mobile services volumes. Enterprise revenue growth was driven by increased on-premise licenses, maintenance, and on-demand systems. Imaging revenue growth was driven by increasing deal sizes in networked Multi-Function Printer solutions.

On-demand bookings, led by Nuance’s Healthcare and Mobile & Consumer businesses, enabled 13% growth in the estimated 3-year value of on-demand contracts. Enterprise, which had been lagging the rest of the segments, was up 18% year-to-year organically to $91.4 million.

(Editorial comment: Nuance’s stock price closed at $20.77 on May 30 as this issue of the newsletter was completed, 33% below its 52-week high of $31.15. The weakness could be attributed to general stock market performance, but perhaps also reflects concern of some investors of competition in speech technology from Google and Microsoft, which use their speech technologies to promote their business indirectly, in effect giving it away to promote its search engines or their versions of voice personal assistants. A competitive view would be that Nuance provides one of the only heavily patent-protected independent options for advanced speech technology and natural language processing, giving an independent option to companies such as Samsung and perhaps wireless service providers that don’t want to turn the customer over to the providers of the phone operating systems. With Google acquiring Motorola Mobility and the ability to manufacture phones internally, along with having immense profits and cash to support its goals, a phone manufacturer that didn’t look at a Nuance option should be considered naïve. There have, of course, been rumors of acquisition of Nuance by Apple for so long they are probably discounted at this point, but Apple is widely assumed to be depending on Nuance technology with Siri and dictation applications. And Google recently lost Michael Cohen, a key speech technology researcher, to an unknown outside venture. Further, Nuance’s role in automating segments of healthcare reporting, with few complete competitors, is an asset—the healthcare segment is dependent on trends like the aging of populations, and not as much on general economic trends. Ironically, the healthcare operations are sometimes cited by analysts as discouraging acquisition by
consumer-focused companies, but a segment with some $150 million in quarterly revenues could easily be spun off as a separate company, and generate profits to Nuance by paying licensing fees for the core technology.)

**Synchronoss acquires SpeechCycle and reports increased Q1 profit**

*Synchronoss Technologies, Inc.* (NASDAQ: SNCR), a provider of transaction management, cloud enablement, and connectivity services for connected devices, acquired *SpeechCycle*, a pioneer in using speech recognition in call centers (SSN, March 2012, p. 8). The acquisition was revealed during a conference call in May on Synchronoss latest quarterly financial report. The company said it plans to deploy the SpeechCycle technology within its new AT&T care channel this year, indicating the technology would allow Synchronoss and AT&T to achieve targeted automation rates more quickly than originally anticipated.

On May 7, Synchronoss announced financial results for the first quarter of 2012. On a GAAP basis, Synchronoss reported net revenues of $64.6 million, an increase of 22% compared to Q1 of 2011. Gross profit was $35.9 million, and income from operations was $8.3 million in the first quarter of 2012. Net income applicable to common stock was $5.5 million, earnings per share of $0.14 compared to $0.04 for the first quarter of 2011.

On a non-GAAP basis, Synchronoss reported net revenues of $64.9 million, an increase of 22% compared to the first quarter of 2011. Gross profit for the first quarter of 2012 was $37.5 million, representing a gross margin of 58%. Income from operations was $15.3 million in the first quarter of 2012, representing a year-over-year increase of 27% and an operating margin of 24%. Net income was $10.1 million in the first quarter of 2012, leading to diluted earnings per share of $0.26, an increase of 30% compared to $0.20 for Q1 of 2011.

On May 9, the company also announced that its Board of Directors has authorized a stock repurchase program under which the company may repurchase up to $25 million of its outstanding common stock.

Stephen G. Waldis, Founder and Chief Executive Officer of Synchronoss, said, “The success of our cloud-based mobility services strategy is evidenced by our expanded relationship with *Verizon Wireless*. We believe our multi-year agreement provides a solid opportunity for us to deploy the first ever comprehensive carrier based subscriber cloud platform designed to manage millions of devices for a unique and personalized experience. With both *Verizon* and *Vodafone* subscribers as anchor clients, we feel we are well positioned to drive our expanded roadmap over the coming years.”

**Google acquisition of Motorola Mobility closes**

On May 22, *Google* (NASDAQ: GOOG) announced that the acquisition of *Motorola Mobility* has closed. Responding to concerns by companies delivering Android-based mobile phones, Google reassured the industry in a press release: “Motorola Mobility will remain a licensee of Android and Android will remain open. Google will run Motorola Mobility as a separate business.” Not too independent, however: Sanjay Jha will step down as CEO of Motorola Mobility and be replaced by long-time Google employee Dennis Woodside.

In a blog posting on May 22, Google CEO Larry Page, summarized aspects of the synergy he expects in the long term:

“People tend to overestimate the impact technology will have in the short term, but underestimate its significance in the longer term. Many users coming online today may never use a desktop machine, and the impact of that transition will be profound—as will the ability to just tap and pay with your phone. That’s why it’s a great time to be in the mobile business, and why I’m confident Dennis and the team at Motorola will be creating the next generation of mobile devices that will improve lives for years to come.”
Motorola Mobility announces first quarter financial results, merger with Google expected to close by end of June

On May 1, Motorola Mobility Holdings, Inc. (NYSE: MMI), which is to be acquired by Google, reported net revenues of $3.1 billion in the first quarter of 2012, up 2% compared to the first quarter of 2011. The GAAP net loss in the first quarter of 2012 was $86 million, or $0.28 per share, compared to a net loss of $81 million, or $0.27 per share, in the first quarter of 2011. On a non-GAAP basis, the net loss in the first quarter 2012 was $10 million, or $0.03 per share, compared to a net loss of $25 million, or $0.08 per share, in the first quarter of 2011. The Company had operating cash outflow of $98 million in the first quarter. Total cash at the end of the quarter was $3.5 billion.

As previously announced on August 15, 2011, Motorola Mobility and Google entered into a definitive agreement for Google to acquire Motorola Mobility for $40.00 per share in cash, or a total of approximately $12.5 billion. A press release indicated that Motorola Mobility and Google continue to work closely with the authorities in China for approval on the acquisition and that the transaction has been investigated and cleared without conditions in all other jurisdictions requiring approval. The companies expect the transaction to close during the first half of 2012.

M*Modal reports record revenues in Q1

MModal Inc. (NASDAQ/GS: MODL), a provider of integrated clinical documentation solutions for the U.S. healthcare industry (that writes its company name in most cases as M*Modal), announced its financial results for the three months ended March 31, 2012. Net revenues increased 5.5% to $117.4 million for the first quarter of 2012 compared with $111.2 million for the first quarter of 2011. Adjusted EBITDA for the first quarter of 2012 was $26.6 million, or 22.6% of net revenues, compared with $26.7 million, or 24.0% of net revenues, for the first quarter of 2011. Net loss for the first quarter of 2012 was $(2.9 million), or $(0.05) per fully diluted share, compared with net income attributable to MModal Inc. of $2.3 million, or $0.05 per fully diluted share, for the first quarter of 2011. Adjusted net income for the first quarter of 2012 was $16.7 million, or $0.30 per fully diluted share, compared with $16.0 million, or $0.30 per fully diluted share, in the first quarter of 2011.

Commenting on the financial results, Ron Scarboro, Chief Financial Officer of M*Modal, stated, “I'm pleased with the positive momentum we've established over the last three quarters. We've demonstrated both volume and revenue growth in our M*Modal Fluency for Transcription clinical documentation business and in our M*Modal Fluency and M*Modal Catalyst product families, with early key wins yielding record revenues in the quarter while maintaining our significant gross margins. We are on track with our commercialization and go-to-market initiatives and plan for continued growth from these initiatives in the second half of the year. Additionally, we remained focused on the core business, building offshore volumes and integrating automated speech recognition into our core platforms.”

Audience IPO successful

Shares of Audience Inc. (NASDAQ Global Select Market: ADNC), which makes noise cancellation chips and software used in Apple’s iPhone, rose after its Initial Public Offering (IPO) on May 10. The Mountain View, California-based company priced its shares at $17 each for 5,270,180 shares. The stock closed at $19.10 on May 25.

(Editorial comment: Audience may see some slowing in its revenues if its customers shift to licensing the software to run on the device’s core processor rather than buying separate chips, which it appears Apple may have done with the iPhone 4S.)

Trigence Semiconductor, which drives audio speakers with digital signals, gets investment from Intel Capital

On May 29, Trigence Semiconductor, the inventor of Dnote full digital audio signal processing technology, announced it has received investment from Intel Capital, Intel’s global investment organization. Details of the investment were not released.

Trigence Semiconductor develops and licenses digital audio technology that delivers high audio quality to consumer electronic, PC, and automotive platforms. Dnote, its digital signal processing technology, enables large reductions in power consumption while improving audio quality by driving speakers directly through digital signals rather than through a digital-to-analog converter. Trigence expects the technology to replace
current analog audio systems. Trigence’s technology has already been licensed to Japanese car-audio manufacturers.

Convergys reports Q1 results, declares new quarterly dividend

On May 8, Convergys Corporation (NYSE: CVG), which provides customer relationship management solutions, announced its financial results for the first quarter of 2012. The Board of Directors of the company also declared its first regular quarterly dividend of $0.05 per share. In a press release on the same date as its financial report, Convergys announced planned management changes that will align its leadership team with the company’s focus on the Customer Management business after an agreement to sell its Information Management business.

As a result of the company’s agreement to sell its Information Management business (reported in March), results for the Information Management segment were reported as Discontinued Operations. Results from continuing operations include:

- Total revenue of $498 million, up 7% compared with prior year;
- Customer Management operating income of $39 million, up 21% compared with prior year;
- Customer Management operating margin of 7.9%, up 90 basis points compared with prior year;
- Customer Management EBITDA of $58 million, up 18% compared with prior year; and
- Non-GAAP EPS from continuing operations of $0.22 compared with $0.17 in prior year period; GAAP EPS from continuing operations of $0.18.
- Cash and cash equivalents was $411 million, compared with net cash of $295 million at December 31, 2011.

“We performed well in the first quarter with improvement in revenue, operating income and earnings per share,” said Jeff Fox, president and CEO of Convergys. “We are raising our guidance for the full year to reflect our solid execution. In Customer Management, we are investing to expand our capacity, deliver quality service and win more business. With the sale of the Information Management business we significantly increase our strategic and financial flexibility and are making excellent progress completing the simplification of our company. We will emerge as a well capitalized market-leading customer management business, and will remain disciplined with our capital deployment strategy.”

Rovi reports Q1 results

On May 5, Rovi Corporation (NASDAQ: ROVI), which recently announced a partnership with Nuance to ease access to entertainment options (p. 6), announced that it had first quarter 2012 revenues of $175.0 million, compared to $152.7 million for the first quarter of 2011. Revenues and results from continuing operations exclude the results of the Roxio software business that was sold on February 1, 2012. First quarter GAAP net loss was $4.6 million, compared to net income of $17.0 million in the first quarter of 2011. On a non-GAAP Adjusted Pro Forma basis, first quarter 2012 revenues were $175.0 million, compared with $177.6 million for the first quarter of 2011. Adjusted Pro Forma Income was $61.0 million in the first quarter of 2012, compared to $68.4 million in the first quarter of 2011.

Contact Solutions acquires Adaptive Audio

Contact Solutions provides cloud-based customer self-service solutions for large commercial and government enterprises. On May 21, Contact Solutions announced that it has acquired Adaptive Audio, a patented software technology that automatically analyzes caller behavior and creates a personalized self-service experience, from Interactive Digital (see guest article by Daniel O’Sullivan, Interactive Digital, in SSN, August 2011, p. 19). O’Sullivan has joined Contact Solutions as Principal Technologist and will lead the company’s efforts to create more personalized customer service experiences across multiple channels and touchpoints. Adaptive Audio software enables an IVR system to adapt to the behavior of the caller.

BigHand, UK dictation solution provider, acquired by investment firm Bridgepoint Development Capital

BigHand is the largest provider of voice productivity software to the legal, healthcare, and professional services market in the UK and has a growing international client base. It currently supports over 150,000 professionals globally across 1,450 organizations. The company has been acquired by Bridgepoint Development Capital, with its management, in a transaction totaling 49 million pounds ($77.5 million).
BigHand provides workflow software, including integrated speech recognition technology, that makes the creation, distribution and processing of voice files more efficient and secure. Its software allows a user to dictate from any device (including the latest smartphone devices) and route that voice file to the required recipient for transcription and formatting. The company predominantly sells its software on an initial license basis followed by an annual maintenance contract but also has a growing on-demand hosted offering for smaller customers.

People

Convergys announces executive changes, Andrea Ayers to be President and CEO

Convergys, which announced Q1 results May 8 (p. 46), announced several planned management changes that will align the leadership team with the company’s sharpened focus on the Customer Management business. Jeff Fox, currently President and CEO and a director of the company, will become Executive Chairman of the Board of Directors in the fourth quarter of 2012. Phil Odeen, currently non-Executive Chairman, will continue to serve as a director of the company. Fox will be succeeded as President and CEO by Andrea Ayers, currently President and COO of Customer Management. Previously, Ayers served as President of Customer Management, where she was responsible for all delivery operations. Ayers has also held senior positions in sales, operations, and marketing during her 22-year tenure at Convergys. Earl Shanks, currently CFO, plans to leave the company in the third quarter of 2012 after leading the corporate simplification process and reporting the company’s second quarter results. Shanks will be succeeded as CFO by Andre Valentine, currently Senior Vice President Finance for Customer Management. Previously, Valentine served as Senior Vice President and Controller. Valentine has been with Convergys and its predecessor companies since 1997. The management changes will be effective in the third and fourth quarter of 2012.

American Express appoints Katrina Lane Executive VP and David Yoo Senior VP to enhance customer services

On May 3, American Express (NYSE:AXP) announced Katrina Lane and David Yoo have joined the U.S. Consumer Services leadership team. Katrina Lane will lead the company’s Consumer Cards and Experiences team as Executive Vice President, managing the consumer cards products and services portfolio. Most recently, Ms. Lane served as Chief Technology Officer for Caesars Entertainment. In her new role, Ms. Lane will create new offerings to enhance the cardmember experience and oversee customer segmentation, retention, and advocacy.

As Senior Vice President, David Yoo will lead the Commerce Innovation team where he will pioneer new applications and experiences that help American Express cardmembers shop smarter whenever and wherever they choose. Mr. Yoo joins American Express from Boku, a global mobile payments network that enables customers to purchase virtual goods using their mobile phone numbers.

Philippe Tartavull named CEO of Converse, Inc.

Converse Technology, Inc. (CTI), announced that, effective May 21, 2012, Philippe Tartavull, the former President and Chief Executive Officer of Hypercom Corporation, will become President and Chief Executive Officer and a member of the Board of CTI’s wholly-owned subsidiary Converse Inc. (CNS), a global leader in BSS, mobile internet and value-added services. As previously announced, CTI plans to spin off CNS as an independent public company in a transaction that is expected to become effective in September or October of this year.

CTI, through CNS, provides software and systems enabling converged billing and active customer management and value-added voice, messaging, and mobile Internet services. CNS’s customer base spans more than 125 countries and covers over 450 communication service providers serving more than two billion subscribers. CTI also holds majority ownership positions in Verint (Nasdaq:VRNT), which provides enterprise workforce optimization software and services, including speech analytics (SSN, January 2012, p. 1), and privately-held Starhome.
Kathryn Twiddy joins M*Modal as Chief Legal Officer

M*Modal, a provider of clinical documentation services and speech understanding solutions (p. 32), announced that Kathryn Twiddy has joined the company as Chief Legal Officer.

LinguaSys names security technology strategist Mark Sauter Senior Advisor

LinguaSys, Inc., an international provider of natural language and Machine Translation (MT) technologies (SSN, April 2011, p. 35), announced that it has retained Mark Sauter as Senior Advisor. Sauter, a well-known corporate advisor and author in the security sector will help drive strategic partnerships and position LinguaSys in the fast-growing federal “big data” market. LinguaSys serves some of the world's largest mutual fund and technology companies, hoteliers, and commercial banks, providing enterprise and mobile translation solutions. LinguaSys provides data analytics for enterprises, as well as mobile translation applications on smartphones for consumers. It offers software for developing new languages and creating natural language understanding applications.

For Further Information on Products Mentioned in this Issue

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Product Mentioned</th>
<th>Contact info</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Athena&quot; (Research and Innovation Center in Information Communication &amp; Knowledge Technologies)</td>
<td>Greece</td>
<td>Research organization</td>
<td><a href="http://www.certh.gr/6DF336BC.en.aspx">www.certh.gr/6DF336BC.en.aspx</a></td>
</tr>
<tr>
<td>3M Health Information Systems</td>
<td>Salt Lake City, UT</td>
<td>Healthcare software and services</td>
<td>(800)367-2447; <a href="http://www.3Mhis.com">www.3Mhis.com</a></td>
</tr>
<tr>
<td>AbeTech</td>
<td>Rogers, MN</td>
<td>Enterprise mobile computing</td>
<td>(888)682-3113; <a href="http://www.abetech.com">www.abetech.com</a></td>
</tr>
<tr>
<td>ABI Research</td>
<td>Oyster Bay, NY</td>
<td>Market research</td>
<td>(516)624-2500; <a href="http://www.abiresearch.com">www.abiresearch.com</a></td>
</tr>
<tr>
<td>Acme Packet</td>
<td>Bedford, MA</td>
<td>IP controllers</td>
<td>(781)328-4400; <a href="http://www.acmepacket.com">www.acmepacket.com</a></td>
</tr>
<tr>
<td>Adobe Systems</td>
<td>San Jose, CA</td>
<td>Software solutions</td>
<td>(408)536-6000; <a href="http://www.adobe.com">www.adobe.com</a></td>
</tr>
<tr>
<td>Agero</td>
<td>Medford, MA</td>
<td>Driver assistance and connected vehicle services</td>
<td>(781)393-9300; <a href="http://www.agero.com">www.agero.com</a></td>
</tr>
<tr>
<td>Amazon</td>
<td>Seattle, WA</td>
<td>Product sales on the Web</td>
<td><a href="http://www.amazon.com">www.amazon.com</a></td>
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<tr>
<td>AMX</td>
<td>Richardson, TX</td>
<td>Home automation</td>
<td>(800)222-0193; <a href="http://www.amx.com">www.amx.com</a></td>
</tr>
<tr>
<td>Angel (subs. of Microstrategy)</td>
<td>McLean, VA</td>
<td>Speech-enabled telephone service for smaller businesses</td>
<td>(703)269-1070; <a href="http://www.angel.com">www.angel.com</a></td>
</tr>
<tr>
<td>Apple</td>
<td>Cupertino, CA</td>
<td>Personal computers, music players, wireless phones</td>
<td><a href="http://www.apple.com">www.apple.com</a></td>
</tr>
<tr>
<td>Ask.com (IAC Search &amp; Media)</td>
<td>Oakland, CA</td>
<td>Web search service</td>
<td>(510)985-7400; <a href="http://www.ask.com">www.ask.com</a></td>
</tr>
<tr>
<td>Aspect Software</td>
<td>Chelmsford, MA</td>
<td>Telephone self-service system with speech recognition</td>
<td>(978)250-7900; <a href="http://www.aspect.com">www.aspect.com</a></td>
</tr>
<tr>
<td>Company</td>
<td>Location</td>
<td>Product Mentioned</td>
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<tr>
<td>Audience</td>
<td>Mountain View, CA</td>
<td>Noise suppression software and chip</td>
<td>(650)254-2800; <a href="http://www.audience.com">www.audience.com</a></td>
</tr>
<tr>
<td>Avantar</td>
<td>Provo, UT</td>
<td>Local business search</td>
<td><a href="http://www.avantar.us">www.avantar.us</a></td>
</tr>
<tr>
<td>Baidu, Inc.</td>
<td>Beijing, China</td>
<td>Search in Chinese</td>
<td><a href="http://ir.baidu.com">http://ir.baidu.com</a></td>
</tr>
<tr>
<td>BIA/Kelsey</td>
<td>Chantilly, VA</td>
<td>Market research</td>
<td>(703)818-2425; <a href="http://www.biaslsey.com">www.biaslsey.com</a></td>
</tr>
<tr>
<td>BigHand</td>
<td>London, Sydney,</td>
<td>Professional transcription options</td>
<td>+44 20 7940 5900; <a href="http://www.bighand.com">www.bighand.com</a></td>
</tr>
<tr>
<td>BMW</td>
<td>Westwood, NJ</td>
<td>Automobiles</td>
<td>(201)307-4000; <a href="http://www.bmw.com">www.bmw.com</a></td>
</tr>
<tr>
<td>Booz Allen Hamilton</td>
<td>McLean, VA</td>
<td>Consultancy</td>
<td>(703)902-5000; <a href="http://www.boozallen.com">www.boozallen.com</a></td>
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<tr>
<td>Bright House Networks</td>
<td>Tampa, FL</td>
<td>Cable TV, phone, and Internet service</td>
<td><a href="http://brighthouse.com">http://brighthouse.com</a></td>
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<tr>
<td>China Unicom</td>
<td>Hong Kong, China</td>
<td>Wireless carrier</td>
<td><a href="http://www.chinaunicom.com.hk">www.chinaunicom.com.hk</a></td>
</tr>
<tr>
<td>Cocorobo</td>
<td></td>
<td>Robot vacuum cleaner</td>
<td></td>
</tr>
<tr>
<td>Comverse Technology</td>
<td>New York, NY</td>
<td>Network-based communication services</td>
<td>(212)739-1000; <a href="http://www.cmvt.com">www.cmvt.com</a></td>
</tr>
<tr>
<td>Comverse, Inc. (subs of Comverse Technology)</td>
<td>Wakefield, MA</td>
<td>Communications solutions</td>
<td>(781)246-9000; <a href="http://www.comverse.com">www.comverse.com</a></td>
</tr>
<tr>
<td>Contact Solutions</td>
<td>Reston, VA</td>
<td>Out-sourced contact management</td>
<td>(703)480-1620; <a href="http://www.contactsolutions.com">www.contactsolutions.com</a></td>
</tr>
<tr>
<td>Convergys Corporation</td>
<td>Cincinnati, OH</td>
<td>Customer care and employee-benefit solutions</td>
<td>(513)723-7153; <a href="http://www.convergys.com">www.convergys.com</a></td>
</tr>
<tr>
<td>Coupons.com Inc.</td>
<td>Mountain View, CA</td>
<td>Grocery iQ shopping-list mobile app</td>
<td>(650)605-4600; <a href="http://www.coupons.com">www.coupons.com</a></td>
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<tr>
<td>CSC</td>
<td>Falls Church, VA</td>
<td>Business solutions and services</td>
<td>(703)876-1000; <a href="http://www.csc.com">www.csc.com</a></td>
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<td>Daon</td>
<td>Reston, VA</td>
<td>Identity assurance software</td>
<td>(703)984-4000; <a href="http://www.daon.com">www.daon.com</a>; <a href="http://www.identityx.com">www.identityx.com</a></td>
</tr>
<tr>
<td>DataPhysics Research (DPR)</td>
<td>San Ramon, CA</td>
<td>Informatics solutions for Radiology</td>
<td>(925)327-0835; <a href="http://www.dpresearch.com">www.dpresearch.com</a></td>
</tr>
<tr>
<td>Dell</td>
<td>Round Rock, Texas</td>
<td>Manufacturer of PCs, mobile phones, and other products</td>
<td>(800)388-8542; <a href="http://www.dell.com">www.dell.com</a></td>
</tr>
<tr>
<td>Dictionary.com (subs. of IAC)</td>
<td>Oakland, CA</td>
<td>Online and mobile dictionary</td>
<td><a href="http://dictionary.reference.com">http://dictionary.reference.com</a></td>
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<tbody>
<tr>
<td>DIRECTV</td>
<td>El Segundo, CA</td>
<td>TV service provider</td>
<td><a href="http://www.directv.com">www.directv.com</a></td>
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<tr>
<td>Distant Speech Interaction for Robust Home Applications (DIRHA)</td>
<td>Povo, Italy</td>
<td>EU research project</td>
<td><a href="http://www.dirha.fbk.eu">www.dirha.fbk.eu</a></td>
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<tr>
<td>Ditech Networks</td>
<td>Mountain View, CA</td>
<td>Voice quality and voicemail-to-text solutions</td>
<td>(650)623-1300; <a href="http://www.ditechnetworks.com">www.ditechnetworks.com</a></td>
</tr>
<tr>
<td>Domotic Area</td>
<td>Italy</td>
<td>Home automation</td>
<td>+39.0464.750.200; <a href="http://www.domoticarea.com/DAITA/home">http://www.domoticarea.com/DAITA/home</a></td>
</tr>
<tr>
<td>Eckoh</td>
<td>Hemel Hempstead, UK</td>
<td>Hosted voice-enabled services</td>
<td>+44 800 916 50 50; <a href="http://www.eckoh.com">www.eckoh.com</a></td>
</tr>
<tr>
<td>Elevate</td>
<td>San Clemente, CA</td>
<td>Mobile phone service and device</td>
<td><a href="http://www.goelevate.com">www.goelevate.com</a></td>
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<tr>
<td>ELL Technologies (acquired by Lingo Media)</td>
<td>Kfar Saba, Israel</td>
<td>English language learning (Q Group brand)</td>
<td><a href="http://www.qgroupplc.com">www.qgroupplc.com</a></td>
</tr>
<tr>
<td>Federal Financial Institutions Examination Council (FFIEC)</td>
<td>Washington, DC</td>
<td>Agency promoting uniformity in the supervision of financial institutions</td>
<td><a href="http://www.ffiec.gov">www.ffiec.gov</a></td>
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<tr>
<td>Fondazione Bruno Kessler</td>
<td>Trento, Italy</td>
<td>Research organization</td>
<td>+39 0461 210111; <a href="http://www.fbk.eu">www.fbk.eu</a></td>
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<td>Ford</td>
<td>Detroit, MI</td>
<td>Vehicles and informatics (Ford Sync)</td>
<td><a href="http://www.ford.com">www.ford.com</a></td>
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<td>Foxconn</td>
<td>New Taipei City, Taiwan</td>
<td>Consumer product manufacturer</td>
<td><a href="http://www.foxconn.com">www.foxconn.com</a></td>
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<td>FreedomPACS</td>
<td>Southfield, MI</td>
<td>Radiology information system</td>
<td>(855)740-1130; <a href="http://www.freedompacs.net">www.freedompacs.net</a></td>
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<td>Freeview</td>
<td></td>
<td>TV content and settop boxes</td>
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<td>Gartner Group</td>
<td>Stamford, CN</td>
<td>Information technology reports and consulting</td>
<td>(203)316-1111; <a href="http://www.gartner.com">www.gartner.com</a></td>
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<tr>
<td>Google</td>
<td>Mountain View, CA, and Cambridge, MA</td>
<td>Voice and directory search</td>
<td>(650)253-0000; <a href="http://www.google.com">www.google.com</a>; <a href="http://www.google.com/mobile">www.google.com/mobile</a>; <a href="http://www.grandcentral.com">www.grandcentral.com</a></td>
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<tr>
<td>Health Fidelity, Inc.</td>
<td>Menlo Park, CA</td>
<td>Natural language healthcare report processing</td>
<td><a href="http://healthfidelity.com">http://healthfidelity.com</a></td>
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<td>IBM</td>
<td>Somers, NY</td>
<td>Information systems</td>
<td>(877)426-3774; <a href="http://www.ibm.com">www.ibm.com</a></td>
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<td>iHear Network</td>
<td>Seattle, WA</td>
<td>Social news narrator for Android</td>
<td><a href="http://www.iHearNetwork.com">www.iHearNetwork.com</a></td>
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<td>iMessage</td>
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<td>Text messaging app</td>
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<tr>
<td>IMS Research</td>
<td>Wellingborough, UK</td>
<td>Market research</td>
<td>+44 1933 40 22 55; <a href="http://www.imsresearch.com">www.imsresearch.com</a></td>
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<td>InfoGation</td>
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<td>Navigation service</td>
<td><a href="http://www.infogation.com">www.infogation.com</a></td>
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<td>Informa Telecoms &amp; Media</td>
<td>London, UK</td>
<td>Market research</td>
<td>+44 20 7017 4800; <a href="http://www.informatandm.com">www.informatandm.com</a></td>
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<td>Ingenico</td>
<td>Paris, France</td>
<td>Payment solutions</td>
<td>+33 1 58 01 80 00; <a href="http://www.ingenico.com">www.ingenico.com</a></td>
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<td>INRIX</td>
<td>Kirkland, WA</td>
<td>Traffic information</td>
<td><a href="http://www.inrix.com">www.inrix.com</a></td>
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<tr>
<td>Instituto de Engenharia de Sistemas e Computadores, Investigacae e Desenvolvimento (INESC ID)</td>
<td>Lisboa, Portugal</td>
<td>Research organization</td>
<td>+351.213100300; <a href="http://www.inesc-id.pt">www.inesc-id.pt</a></td>
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<tr>
<td>Integrated Voice Solutions</td>
<td>Wakefield, MA</td>
<td>IVR solutions</td>
<td>(781)853-0400; <a href="http://www.integratedvoicesolutions.com">www.integratedvoicesolutions.com</a></td>
</tr>
<tr>
<td>Intel Capital</td>
<td>Santa Clara, CA</td>
<td>Intel's global investment organization</td>
<td>(408)765-8080; <a href="http://www.intelcapital.com">www.intelcapital.com</a></td>
</tr>
<tr>
<td>Intel Corporation</td>
<td>Santa Clara, CA</td>
<td>Semiconductors</td>
<td><a href="http://www.intel.com">www.intel.com</a></td>
</tr>
<tr>
<td>Interactive Digital</td>
<td>Smithtown, NY</td>
<td>Technology for enhancing dialog applications</td>
<td>(631)724-2323; <a href="http://www.interactive-digital.com">www.interactive-digital.com</a></td>
</tr>
<tr>
<td>Interactive Intelligence Group Inc.</td>
<td>Indianapolis, IN</td>
<td>Unified Communications and IVR</td>
<td>(317)872-3000; <a href="http://www.ININ.com">www.ININ.com</a></td>
</tr>
<tr>
<td>Internet Engineering Task Force (IETF)</td>
<td>—</td>
<td>Internet standards body</td>
<td><a href="http://www.ietf.org">www.ietf.org</a></td>
</tr>
<tr>
<td>Intervoice, Inc. (now part of Convergys)</td>
<td>Dallas, TX</td>
<td>IVR and telecommunications solutions</td>
<td>(972)454-8712; <a href="http://www.intervoice.com">www.intervoice.com</a></td>
</tr>
<tr>
<td>IQ Capital Partners</td>
<td>Cambridge, UK</td>
<td>Venture capital fund</td>
<td>+44 1223 34 56 16; <a href="http://www.iqcapital.co.uk">www.iqcapital.co.uk</a></td>
</tr>
<tr>
<td>Ivona Software</td>
<td>Gdynia, Poland</td>
<td>Ivona text-to-speech software</td>
<td>+48 58 782 14 41; <a href="http://www.ivona.com">www.ivona.com</a></td>
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<tr>
<td>J.D. Power and Associates</td>
<td>Westlake Village, CA</td>
<td>Surveys and studies</td>
<td><a href="http://www.jdpower.com">www.jdpower.com</a></td>
</tr>
<tr>
<td>Jingle Networks, Inc.</td>
<td>Bedford, MA</td>
<td>Free Ad-supported Directory Assistance</td>
<td>(781)791-3444; <a href="http://www.free411.com">www.free411.com</a>; <a href="http://www.jingleconnect.net">www.jingleconnect.net</a></td>
</tr>
<tr>
<td>Kaberline Healthcare Informatics</td>
<td>Saint Louis, MO</td>
<td>Services and software for healthcare</td>
<td><a href="http://www.edocoffice.com">www.edocoffice.com</a></td>
</tr>
<tr>
<td>Koemei</td>
<td>Martigny, Switzerland and San Francisco, CA</td>
<td>Large scale video and audio transcription</td>
<td>+41 79 622 2273; (415)746-0316; <a href="http://www.koemei.com">www.koemei.com</a></td>
</tr>
<tr>
<td>Kraft Foods</td>
<td>Northfield, IL</td>
<td>Processed food products</td>
<td><a href="http://www.kraftfoodscompany.com">www.kraftfoodscompany.com</a></td>
</tr>
<tr>
<td>Latitude Group</td>
<td>London, UK</td>
<td>Market research</td>
<td>+44 97 1 43911490; <a href="http://www.latitudegroup.com">www.latitudegroup.com</a></td>
</tr>
<tr>
<td>Lenovo</td>
<td>Hong Kong, China</td>
<td>Personal computers and TVs</td>
<td><a href="http://www.lenovo.com">www.lenovo.com</a></td>
</tr>
<tr>
<td>LG Electronics</td>
<td>Seoul, South Korea</td>
<td>Mobile phones, TVs, and navigation devices</td>
<td><a href="http://www.lge.com">www.lge.com</a></td>
</tr>
<tr>
<td>LightSquared</td>
<td>Reston, VA</td>
<td>Wireless broadband network</td>
<td>(877)678-2920; <a href="http://www.lightsquared.com">www.lightsquared.com</a></td>
</tr>
<tr>
<td>Lingo Media Corporation</td>
<td>Toronto, ON, Canada</td>
<td>English language learning</td>
<td>(416)927-7000; <a href="http://www.lingomedia.com">www.lingomedia.com</a></td>
</tr>
<tr>
<td>Lingotek</td>
<td>Draper, UT</td>
<td>Translation services</td>
<td><a href="http://www.lingotek.com">www.lingotek.com</a></td>
</tr>
<tr>
<td>LSSI Data (subs. of VoltDelta)</td>
<td>Edison, NJ</td>
<td>Telephone directory databases</td>
<td><a href="http://www.lssi.net">www.lssi.net</a></td>
</tr>
<tr>
<td>M*Modal (was MedQuist)</td>
<td>Pittsburgh, PA</td>
<td>Speech recognition technology for healthcare transcription</td>
<td>(412)422-2002; <a href="http://www.mmodal.com">www.mmodal.com</a></td>
</tr>
<tr>
<td>McNamara Technology Solutions</td>
<td>Baton Rouge, LA</td>
<td>Automobile and telematics consulting</td>
<td>(225)753-3515; <a href="http://www.mcnamaratech.com">www.mcnamaratech.com</a></td>
</tr>
<tr>
<td>me2me</td>
<td>Zurich, Switzerland</td>
<td>Storing and retrieving personal information by phone</td>
<td><a href="http://www.me2me.com">www.me2me.com</a></td>
</tr>
<tr>
<td>Microsoft Corporation</td>
<td>Redmond, WA</td>
<td>Various applications and products</td>
<td>(206)454-2030; <a href="http://www.microsoft.com/speech">www.microsoft.com/speech</a></td>
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### Companies mentioned in this issue

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Product Mentioned</th>
<th>Contact info</th>
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<tbody>
<tr>
<td>Motorola Mobility (acquired by Google)</td>
<td>Downers Grove, IL</td>
<td>Mobile phones, portable devices</td>
<td>(630)353-8000; <a href="http://www.motorola.com">www.motorola.com</a></td>
</tr>
<tr>
<td>MyAssist</td>
<td>Stevens Point, WI</td>
<td>Live phone personal assistant service</td>
<td>(877)692-7747; <a href="http://www.myassist.com">www.myassist.com</a></td>
</tr>
<tr>
<td>National Rail Enquiries (NRE)</td>
<td>Plymouth, UK</td>
<td>Railroad schedule service</td>
<td><a href="http://www.nationalrail.co.uk">www.nationalrail.co.uk</a></td>
</tr>
<tr>
<td>Navigon</td>
<td>Hamburg, Germany</td>
<td>Navigation systems and software</td>
<td>+49 40 / 380 383-0; <a href="http://www.navigon.com">www.navigon.com</a></td>
</tr>
<tr>
<td>NewAmuser</td>
<td>Italy</td>
<td>Multimedia services</td>
<td><a href="http://www.newamuser.it">www.newamuser.it</a></td>
</tr>
<tr>
<td>Nexidia</td>
<td>Atlanta, GA</td>
<td>Audio content search</td>
<td>(404)495-7220; <a href="http://www.nexidia.com">www.nexidia.com</a></td>
</tr>
<tr>
<td>Nice Systems</td>
<td>Ra'anana, Israel</td>
<td>Multimedia analytics</td>
<td>+972 9 775-3777; <a href="http://www.nice.com">www.nice.com</a></td>
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<tr>
<td>Noble Systems Corporation</td>
<td>Atlanta, GA</td>
<td>Speech-enabled contact center solutions</td>
<td>(404)851-1331 ; <a href="http://www.noblesys.com">www.noblesys.com</a></td>
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<tr>
<td>Nokia</td>
<td>Helsinki, Finland</td>
<td>Mobile phones and personal navigation devices</td>
<td>+358-9 1807 459; <a href="http://www.nokia.com">www.nokia.com</a></td>
</tr>
<tr>
<td>Nortel</td>
<td>Bohemia, NY</td>
<td>Telephony and networking systems for service providers and enterprises</td>
<td><a href="http://www.nortel-canada.com">www.nortel-canada.com</a></td>
</tr>
<tr>
<td>Nuance Communications</td>
<td>Burlington, MA</td>
<td>Speech technology, applications, and services</td>
<td>(617)428-4444; <a href="http://www.nuance.com">www.nuance.com</a></td>
</tr>
<tr>
<td>Onstar (GM)</td>
<td>Troy, MI</td>
<td>Automobile wireless service</td>
<td><a href="http://www.onstar.com">www.onstar.com</a>; <a href="http://www.gm.com/handsfree">www.gm.com/handsfree</a></td>
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<tr>
<td>Panasonic (brand of Matsushita Electric Industrial)</td>
<td>Osaka, Japan</td>
<td>Digital recorders and phones</td>
<td><a href="http://www.panasonic.co.jp/global/top.html">www.panasonic.co.jp/global/top.html</a></td>
</tr>
<tr>
<td>Pandora</td>
<td>Oakland, CA</td>
<td>Internet radio</td>
<td>(510)451-4100; <a href="http://www.pandora.com">www.pandora.com</a></td>
</tr>
<tr>
<td>Philips Speech Processing</td>
<td>Vienna, Austria</td>
<td>Digital and analog dictation solutions</td>
<td><a href="http://www.philips.com/dictation">www.philips.com/dictation</a></td>
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<tr>
<td>PlaySay Inc.</td>
<td>Bethesda, MD</td>
<td>Mobile games</td>
<td><a href="http://www.playsay.com">www.playsay.com</a></td>
</tr>
<tr>
<td>Pocket</td>
<td>San Francisco, CA</td>
<td>Mobile app for storing content</td>
<td><a href="http://getpocket.com">http://getpocket.com</a></td>
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<tr>
<td>Pyramid Research</td>
<td>Cambridge, MA</td>
<td>Market research</td>
<td>(617)871-1900; <a href="http://www.pyr.com">www.pyr.com</a></td>
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<tr>
<td>RemoteLink</td>
<td>Aurora, IL</td>
<td></td>
<td>(800)362-9446; <a href="http://www.remotelink.com">www.remotelink.com</a></td>
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<tr>
<td>Research in Motion (RIM)</td>
<td>Waterloo, ON, Canada</td>
<td>Blackberry mobile devices</td>
<td>(519)888-7465; <a href="http://www.rim.net">www.rim.net</a></td>
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<tr>
<td>Rovi Corporation</td>
<td>Santa Clara, CA</td>
<td>Entertainment discovery solutions for television, movies, music and photos</td>
<td><a href="http://www.rovicorp.com">www.rovicorp.com</a></td>
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<tr>
<td>Royal National Institute of Blind People (RNIB)</td>
<td>London, UK</td>
<td>Charity organization</td>
<td>+44 20 7388 1266; <a href="http://www.rnib.org.uk">www.rnib.org.uk</a></td>
</tr>
<tr>
<td>SAIC</td>
<td>McLean, VA</td>
<td>Speech and translation technology and applications</td>
<td>(703)676-4300; <a href="http://www.saic.com">www.saic.com</a></td>
</tr>
<tr>
<td>Samsung Electronics</td>
<td>Seoul, South Korea</td>
<td>Wireless telephones and TVs</td>
<td><a href="http://www.samsung.com">www.samsung.com</a></td>
</tr>
<tr>
<td>Satechi</td>
<td>San Diego, CA</td>
<td>TV remote</td>
<td>(858)268-1800; <a href="http://www.satechi.net">www.satechi.net</a></td>
</tr>
<tr>
<td>Saygent</td>
<td>Mountain View, CA</td>
<td>Telephone interviews and automated voice feedback on apps</td>
<td>(650)264-7846; <a href="http://www.saygent.com">www.saygent.com</a></td>
</tr>
<tr>
<td>SayHi</td>
<td>--</td>
<td>Translation</td>
<td><a href="http://www.sayhitranslate.com">www.sayhitranslate.com</a></td>
</tr>
<tr>
<td>Scribe Healthcare Technologies</td>
<td>Lake Forest, IL</td>
<td>Web platform for medical documentation and records</td>
<td>(877)669-8746; <a href="http://www.scribe.com">www.scribe.com</a></td>
</tr>
<tr>
<td>SDL</td>
<td>Maidenhead, UK</td>
<td>Translation solutions</td>
<td><a href="http://www.sdl.com">www.sdl.com</a></td>
</tr>
<tr>
<td>Sensory, Inc.</td>
<td>Santa Clara, CA</td>
<td>Embedded speech recognition and speaker ID</td>
<td>(408)625-3300; <a href="http://www.sensoryinc.com">www.sensoryinc.com</a></td>
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<tr>
<td>Shanghai Media Group (SMG)</td>
<td>China</td>
<td>TV content</td>
<td><a href="http://www.smg.cn">www.smg.cn</a></td>
</tr>
<tr>
<td>Sharp Electronics Corporation</td>
<td>Mahwah, NJ</td>
<td>HD TV and other consumer products</td>
<td>(866)484-7825; <a href="http://www.sharpusa.com">www.sharpusa.com</a></td>
</tr>
<tr>
<td>Simon Fraser University</td>
<td>Vancouver, BC, Canada</td>
<td>University</td>
<td><a href="http://www.sfu.ca">www.sfu.ca</a></td>
</tr>
<tr>
<td>SINA Corporation</td>
<td>China</td>
<td>Media provider</td>
<td><a href="http://corp.sina.com.cn/eng">http://corp.sina.com.cn/eng</a></td>
</tr>
<tr>
<td>Smart Action Company</td>
<td>El Segundo, CA</td>
<td>IVR systems</td>
<td>(310)776-9011; <a href="http://www.smartaction.com">www.smartaction.com</a></td>
</tr>
<tr>
<td>Snapguide</td>
<td>San Francisco, CA</td>
<td>App for creating how-to guides</td>
<td><a href="http://snapguide.com">http://snapguide.com</a></td>
</tr>
<tr>
<td>SoundHound</td>
<td>San Jose, CA</td>
<td>Music identification and search</td>
<td>(408)441-3200; <a href="http://www.soundhound.com">www.soundhound.com</a></td>
</tr>
<tr>
<td>SpeechCycle</td>
<td>New York, NY</td>
<td>Automation of telephone customer care</td>
<td>(646)792-2720; <a href="http://www.speechcycle.com">www.speechcycle.com</a></td>
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<tr>
<td>StatCounter</td>
<td>Dublin, Ireland</td>
<td>Web analytics</td>
<td><a href="http://statcounter.com">http://statcounter.com</a></td>
</tr>
<tr>
<td>State Farm Insurance</td>
<td>Bloomington, IL</td>
<td>Auto insurance</td>
<td><a href="http://www.statefarm.com">www.statefarm.com</a></td>
</tr>
<tr>
<td>Strategy Analytics</td>
<td>Newton, MA</td>
<td>Market reports</td>
<td>617 614-0700; <a href="http://www.strategyanalytics.net">www.strategyanalytics.net</a></td>
</tr>
<tr>
<td>Synchronoss</td>
<td>Bridgewater, NJ</td>
<td>Tools for managing multiple delivery platforms</td>
<td>(866)620-3940; <a href="http://www.synchronoss.com">www.synchronoss.com</a></td>
</tr>
<tr>
<td>Talk2Me Technology, Inc.</td>
<td>Waterdown, ON, Canada</td>
<td>Healthcare dictation solutions</td>
<td>(866)554-8877; <a href="http://www.canusadiction.com">www.canusadiction.com</a></td>
</tr>
<tr>
<td>TaylorWorks</td>
<td>Florida</td>
<td>IT services</td>
<td>(407)478-6600; <a href="http://www.taylorworks.com">www.taylorworks.com</a></td>
</tr>
<tr>
<td>Technische Universitaet Graz</td>
<td>Graz, Austria</td>
<td>Engineering school</td>
<td><a href="http://www.tugraz.at">www.tugraz.at</a></td>
</tr>
<tr>
<td>Telematics Update</td>
<td>London, UK</td>
<td>Telematics news and market research</td>
<td>+44 207 375 7585; <a href="http://www.telematicsupdate.com">www.telematicsupdate.com</a></td>
</tr>
<tr>
<td>Tellme (part of Microsoft)</td>
<td>Mountain View, CA</td>
<td>Voice application hosting and services</td>
<td><a href="http://www.microsoft.com/en-us/tellme">www.microsoft.com/en-us/tellme</a></td>
</tr>
<tr>
<td>TomTom NV</td>
<td>Concord, MA</td>
<td>Personal navigation products and services</td>
<td>(866)486-6866; <a href="http://www.tomtom.com">www.tomtom.com</a></td>
</tr>
<tr>
<td>Touch Panel Control Ltd</td>
<td>Hertford, UK</td>
<td>Voice control of home automation</td>
<td>+ 44 20 7138 2789; <a href="http://www.touchpanelcontrol.com">www.touchpanelcontrol.com</a></td>
</tr>
<tr>
<td>Toyota</td>
<td>Japan</td>
<td>Automobiles</td>
<td><a href="http://www.toyota.com">www.toyota.com</a></td>
</tr>
<tr>
<td>Trigence Semiconductor Inc.</td>
<td>Tokyo, Japan</td>
<td>Technology for driving audio with digital signals</td>
<td><a href="http://www.trigence.co.jp">www.trigence.co.jp</a></td>
</tr>
<tr>
<td>TuneIn</td>
<td>Palo Alto, CA</td>
<td>Radio stations by Internet</td>
<td><a href="http://tunein.com">http://tunein.com</a></td>
</tr>
<tr>
<td>TVonics Solutions Ltd.</td>
<td>UK</td>
<td>Settop box manufacturer</td>
<td><a href="http://www.tvonics.com">www.tvonics.com</a></td>
</tr>
<tr>
<td>U.S. Army Research Laboratory (ARL)</td>
<td>Adelphi, MD</td>
<td>Defense research</td>
<td><a href="http://www.arl.army.mil">www.arl.army.mil</a></td>
</tr>
<tr>
<td>University of California San Francisco (UCSF)</td>
<td>San Francisco, CA</td>
<td>University</td>
<td><a href="http://www.ucsf.edu">www.ucsf.edu</a></td>
</tr>
<tr>
<td>University of Geneva</td>
<td>Geneva, Switzerland</td>
<td>University</td>
<td><a href="http://www.unige.ch">www.unige.ch</a></td>
</tr>
<tr>
<td>UpSellit</td>
<td>Westlake Village, CA</td>
<td>Automated chat software</td>
<td>(866)504-9619; <a href="http://www.upsellit.com">www.upsellit.com</a></td>
</tr>
<tr>
<td>Vangard Voice Systems</td>
<td>Irvine, CA</td>
<td>Speech-enabled warehouse solutions</td>
<td>(949)435-.1001; <a href="http://www.vangardvoice.com">www.vangardvoice.com</a></td>
</tr>
<tr>
<td>Verint Systems (Subs. of Comverse)</td>
<td>Melville, NY</td>
<td>Call center and security solutions</td>
<td>(631)962-9600; <a href="http://www.verint.com">www.verint.com</a></td>
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<tr>
<td>Vertex</td>
<td>Manchester, UK</td>
<td>Business process outsourcer</td>
<td>+44 161 493 2200www.vertex.co.uk</td>
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<tr>
<td>Virginia Tech Transportation Institute (VTTI)</td>
<td>Blacksburg, VA</td>
<td>Research institute</td>
<td>(540)231-1500; <a href="http://www.vtti.vt.edu">www.vtti.vt.edu</a></td>
</tr>
<tr>
<td>Visa International</td>
<td>Foster City, CA</td>
<td>Credit card services</td>
<td>(650)432-5769; <a href="http://www.corporate.visa.com">www.corporate.visa.com</a></td>
</tr>
<tr>
<td>Vlingo (being acquired by Nuance)</td>
<td>Cambridge, MA</td>
<td>Voice-powered interface for mobile phones</td>
<td>(617)871-2987; <a href="http://www.vlingo.com">www.vlingo.com</a>; <a href="http://www.vlingomobile.com">www.vlingomobile.com</a></td>
</tr>
<tr>
<td>Vocal Laboratories (Vocalabs)</td>
<td>Golden Valley, MN</td>
<td>Usability testing</td>
<td>(952)941-6580; <a href="http://www.vocalabs.com">www.vocalabs.com</a></td>
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<tr>
<td>Voicebox Technologies</td>
<td>Bellevue, WA</td>
<td>Embedded voice control and search applications</td>
<td>(425)968-7900; <a href="http://www.voicebox.com">www.voicebox.com</a></td>
</tr>
<tr>
<td>VoltDelta Resources, LLC</td>
<td>New York, NY</td>
<td>Directory Assistance, Hosted Contact Center Solutions and IT Outsourcing</td>
<td>(212)704-2400; <a href="http://www.voltdelta.com">www.voltdelta.com</a></td>
</tr>
<tr>
<td>VOXDATA Solutions Inc.</td>
<td>Montreal, Quebec, Canada</td>
<td>Inbound and outbound contact center services</td>
<td>(514)654-1050; <a href="http://www.voxdata.com">www.voxdata.com</a></td>
</tr>
<tr>
<td>Voxeo</td>
<td>Orlando, FL</td>
<td>Voice hosting and contact center solutions</td>
<td>(407)418-1800; <a href="http://www.voxeo.com">www.voxeo.com</a></td>
</tr>
<tr>
<td>VoxSciences</td>
<td>London, UK</td>
<td>Voicemail-to-text application</td>
<td>+44 20 7060 0200; <a href="http://www.voxsci.com">www.voxsci.com</a></td>
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<tr>
<td>W3C Multimodal Interaction working group</td>
<td>—</td>
<td>Standards effort</td>
<td><a href="http://www.w3.org/2002/mmi">www.w3.org/2002/mmi</a></td>
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<td>Warner Bros. Interactive Entertainment</td>
<td>Burbank, CA</td>
<td>Computer games</td>
<td><a href="http://www.warnerbros.com">www.warnerbros.com</a></td>
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<td>WhatsApp</td>
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<td>Mobile messaging app</td>
<td><a href="http://www.whatsapp.com">www.whatsapp.com</a></td>
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<tr>
<td>WinScribe</td>
<td>Chicago, IL</td>
<td>Dictation solutions</td>
<td>(866)494-6727; <a href="http://www.winscribe.com">www.winscribe.com</a></td>
</tr>
<tr>
<td>Xtone Networks</td>
<td>Boston, MA</td>
<td>Speech-enabled mobile customer service apps</td>
<td>(617)204-5744; <a href="http://www.xtone.com">www.xtone.com</a></td>
</tr>
<tr>
<td>Zephyr-TEC</td>
<td>Rancho Cucamonga, CA</td>
<td>Dictation solutions</td>
<td>(909)481-9991; <a href="http://www.zephyr-tec.com">www.zephyr-tec.com</a></td>
</tr>
<tr>
<td>ZoomSafer</td>
<td>Reston, VA</td>
<td>Safety service for mobile phones</td>
<td>(703)542-4110; <a href="http://www.zoomsafer.com">www.zoomsafer.com</a></td>
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