Microsoft Surface Pro 3
The Surface Pro 3 is Microsoft’s latest attempt at creating a tablet that could replace your laptop. The computer is a thin tablet with a 12” touchscreen that runs on Windows 8.1 Pro. The Pro 3 comes with a 5.3” Surface Pen for sketching or taking notes, and there’s an optional keyboard available that attaches magnetically. The “laptop replacement” claim is based on the operating system, processor, and auxiliaries. You can install the full Microsoft Office Suite (sold separately) and thousands of programs and apps created for the Windows platform. The Pro 3 gets its computing power from a fourth-generation Intel Core i3, i5, or i7 processor. Auxiliaries include a full-size USB 3.0 port, a microSD card reader, and a mini DisplayPort. It comes with 4GB of RAM and 64GB of basic memory, but you also can opt for 128GB, 256GB, or 512GB versions. The 12” screen is a ClearType full-HD display with 2,160 × 1,440 resolution in a 3:2 aspect ratio. The Surface 3 is the thinnest of all the tablets in this line, with a sleek magnesium-encased profile measuring 11.5” × 7.93” × 0.36” and weighing only 1.76 lbs. The kickstand on the back provides a whole series of lock positions ranging from almost perpendicular to just slightly raised above the table. There are five-megapixel and 1,080-pixel HD front- and rear-facing cameras, front- and rear-facing microphones, and stereo speakers with Dolby Audio enhanced output. A few sensors are built in, including an ambient light sensor, accelerometer, gyroscope, and magnetometer. The battery provides up to nine hours for Web browsing.

Motorola Moto E
Motorola’s Moto E is an entry-level smartphone from Google that provides midrange performance at an affordable price. The 4.3”, 540 × 960 resolution display is covered with scratch-resistant Gorilla Glass that’s treated with an anti-smudge coating, and the Motorola Shell on the back is curved and interchangeable. It peels right off. The phone has a rear-facing five megapixel camera and a camcorder capable of 854 × 480 pixels at 30 frames per second. The processor is a 1.2 GHz Qualcomm Snapdragon 200, and it comes with 4GB of memory on board with up to 32GB of additional storage from microSD and microSDHC cards. The browser is Chrome, and the operating system is Android 4.4 KitKat. Additionally, connectivity includes Bluetooth 4.0, Wi-Fi 802.11 b/g/n, USB 2.0, and tethering. Overall, the Moto E measures 4.91” × 2.55” × 0.48” and weighs 5.01 oz. The Moto E performs well for a low-priced Android smartphone (only $129 without a contract). For those looking for more than a basic cellphone, the Moto G isn’t bad.

Toshiba Encore 2
The two forces in tablets are Apple and Android, with Windows tablets lagging behind. Toshiba is now adding two new sizes of Windows 8 tablets to the Encore 2 line. The 8” and 10.1” tablets are priced substantially lower than last year’s Toshiba offerings. Available in the U.S. this month, the 8” model will begin at $199.99, and the 10.1” tablet will start at $269.99. Both tablets have a satin gold body and matching slim bezel with rounded edges. Both are about 0.4” thick. The 8” model weighs only 0.81 lbs., and the 10.1” model weighs only 1.21 lbs. The base 8” Encore has a 1,280 × 800-pixel display with 1GB of RAM, 32GB of storage, and a microSD card.
If the predictions are right, we will soon be tapping less and talking more to our computers, whether they are strapped to our wrists, embedded in our cars, or riding around in our pockets.

When our chipped devices talk to each other, they’re usually chatting in numbers, not English—but you only have to tap the keyboard, and they will listen to you. Most of the time, this discourse is managed on mobile devices with our thumbs or fingertips or on QWERTY keyboards on our laptops. There are occasional “OK Google,” or Siri queries, but these out-loud interrogations are much less frequent than our silent conversations.

Now, as the title of Leonard Klie’s article proclaims in the Summer 2014 issue of Speech Technology, “Speech Is Set to Dominate the Wearables Market.” But that will only make a difference if wearables can gain a better foothold. So what will boost the currently almost invisible wearables market? In a few words, Apple and a saturated market. Reuters reports that “Apple Inc is preparing to sell its first wearable device this October, aiming to produce 3 million to 5 million smartwatches a month in its initial run.” (You probably remember what Apple did for tablets back in the spring of 2010.) And the Financial Times online predicts a possible shift due to slowing or even peaked sales of smartphones in developed countries. Handset makers are now looking around for the next disruptive technology—probably a wearable.

The reason that speech will be a better interface for these smaller devices is because of the size of the screens and the complexity of the functions. The smaller the target (as with a watch screen), the more frustrated touch users will become. In “Speech Is Set to Dominate the Wearables Market,” Dan Miller, a senior analyst at Opus Research, points out that “The instances where voice is more convenient and trusted are growing and will continue to grow as wearables...”
become more prominent and voice is more elegantly combined with gesture in the mobile user interface.”

Nuance Communications, maker of the Dragon Mobile Assistant speech recognition software, previewed a smart-watch app at the Consumer Electronics Show earlier this year. It used spoken commands to send e-mail and text messages, set reminders, manage calendars, search online, update social media, access sports scores and stock quotes, recommend restaurants, and check the weather.

Machines began processing human speech when companies started using chips for SRT (Speech Recognition Technology) and TTS (Text-to-Speech) playback functions. Recently, though, developers have progressed to include deeper levels of meaning that involve understanding full sentences rather than just command terms. They added NLUIs (Natural Language User Interfaces), which can understand grammar and syntax. Artificial Solutions, a leading specialist in Natural Language Interaction (NLI), says NLI “enables people to interact with any connected devices using everyday words and phrases.” Without NLUI functions, you have to memorize the single-word commands or phrases your device recognizes before it will do what you want. With NLUI functions, you can explain yourself as you do with people, choosing any number of ways to say what you want.

**AUGMENTED REALITY**
Besides the already marketed smartwatches, the other high-profile wearable is Google Glass. At this point, there has been as much written about what is wrong with this device as what is extraordinary. Not that it functions poorly, but it does introduce questions about security, privacy, and isolation. Google Glass does what you would expect from a smartwatch, but then it adds a number of video functions. And it has to be a better listener than your smartphone because of the way it’s worn. And then there’s the Google claim that it can “augment your reality.” For example, a pilot is coming in for a landing. Wearing Google Glass, he would be able to focus on the environment outside his windscreens as the displays from the control panel are simultaneously in his view without having to look up or down at the gauges.

In addition to the conventional smartphone functions, other more interesting specialty apps have been created for Google Glass. Klie writes about the company IPatientCare, which developed an app for Glass called miGlass. “[It’s] a real-time voice, video, and image capture solution that allows for nearly effortless communications between patients and their healthcare providers. MiGlass can also be used as a reminder tool (alerting users when a medication should be taken, for example).”

But Google Glasses aren’t the only digital spectacles. Klie also writes about xPick, “a warehouse voice picking solution created by xCon Partners, on its Vuzix M100 smart glasses, which come with an on-board processor, video camera, voice recognition, and gesture control. xCon Partners is developing several applications, including remote service, maintenance and repair, and medical support for the Vuzix wearables.”

Another device called EyeTalker was developed for the blind. Klie explains, “It looks like a normal pair of dark sun-
glasses but features text-to-speech technology, two high-definition micro-cameras, and an earphone that enable users to have printed material read to them.” If you’re thinking only books and letters, consider also cereal boxes at the grocery store.

And then there’s the audio-only kind of wearable. Intel demonstrated a voice-enabled smart headset that would function as a personal assistant working with your smartphone’s Siri or Google Now functions. The Intel concept design is called Jarvis, and it’s a wireless headset that features always-listening voice recognition.

Klie offers a whole catalog of predictions for later this year that indicates a substantial move toward speech-enabled wearables, including: Newer Samsung Galaxy Gear watches will be transitioning off the Android platform to Samsung’s Tizen mobile operating system; Sony’s smartwatches will remain on Google’s Android; Google will push the new version of its mobile operating system, called Android Wear, with LG’s G Watch to be an early adopter of the new OS; Motorola will release its Moto 360 smartwatch; and, of course, Apple will release its first iWatch, likely running on iOS. And although most of the attention on this technological disruption will center on the hardware—watches and glasses, headphones and earbuds—the real tectonic upheaval will be the beginning of what will likely be a long, pervasive audible conversation between us and the chips we carry and wear. **SF**