Our devices will spin denser webs of data in 2010s

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In this combo made from file photos, the original iPod, left, is displayed in Cupertino, Calif. on Oct. 23, 2001, and the Apple iPhone 3GS, is shown at the Apple Store in Palo Alto, Calif. on July 21, 2009. Ten years ago, we would have been blown away by a cell phone with far more computing power and memory than the average PC had in 1999, plus a camera and programs to manage every aspect of our lives. (AP Photos)

(AP) -- Ten years ago, we would have been blown away by a cell phone with far more computing power and memory than the average PC had in 1999, along with a built-in camera and programs to manage every aspect of our lives. Ten years from now, the iPhone and its ilk will be antiques.

Over the next decade, the evolution of computing and the Internet will produce faster, increasingly intelligent devices. More of our possessions will contain sensors and computers that log our activities, building digital dossiers that augment our memories, help us make decisions and tame information overload.

Such ideas may sound futuristic and excessive today. And technological predictions are notoriously off-base. Short-term forecasts tend to assume too much change and long-term forecasts underestimate the possibility of sudden, major shifts.

Even so, this vision of interconnected devices that produce and filter massive amounts of data in the 2010s is a logical progression of the Web, computers and gadgetry that emerged in the 2000s. Moore's Law, the principle that computing power doubles every two years without increasing in cost, still rules.

Recall the personal computer, circa 2000. It likely had a "clock speed" - a measure of how fast it could do things - just one-sixth of many computers today.

Apple's 1999 iMac came with 64 megabytes of RAM, memory that helps computers switch among programs. Today's iMac today has 60 times as much. The vintage iMac had a 10-gigabyte hard drive for storing digital photos and other files. Now iPods have more space than that, and iMac drives start at 500 gigabytes.

Remember dial-up? In 2000, fewer than 10 percent of U.S. households had broadband Internet, according to Forrester Research. In 2008, 61 percent of homes had it.

As computers and Internet connections got faster, we enjoyed them more. In October 2002, the average American spent about 52 hours a month on a home computer, according to the Nielsen Co. This October, the figure was nearly 68 hours a month.

We filled ever-more-spacious hard drives with music and photographs, as households with digital cameras jumped from 10 percent in 2000 to 68 percent last year, and those with an MP3 player climbed from less

than 2 percent in 2000 to 41 percent in 2008, according to Forrester.

We increased the ways we could stay connected: More of us got cell phones, camera phones, smart phones and the iPhone. We bought more laptops and came to expect Internet connections almost everywhere.

Personal home pages were replaced by blogs that could be set up in seconds, which gave anyone with a computer and Web access the potential to reach a bigger audience than many newspapers. First-generation social networks, little more than online address books, gave way to sites such as Facebook and Twitter, where we add our words, photos, links and video posts to a collective stream of consciousness.

Online, we also tripped over the line between private and public. We shared intimate details with our network of online "friends," and sometimes it was simply too much information, especially when our boss was reading.

All these changes unfolded because of an explosion in computing power and connectivity that only figures to accelerate in the next decade.

As we move through our lives, we'll leave more and more digital detritus. Some of it will resemble what we share online today. Some will be emitted quietly by devices, just as mobile phones can signal their location.

We'll also have access to more data about the world around us, dwarfing the real-time stock quotes, government statistics, scientific databases and other information stores available today.

In the next decade as conjured by Forrester Research analyst James McQuivey, all that information will be available instantaneously, anywhere. He imagines spotting an acquaintance at a conference and

having at his fingertips links to the person's most recent research, plus a reminder of her husband's name.

Software will remember everything McQuivey buys, reads online and watches on TV. A "smart filter" will use his past choices to suggest the next book or show, or even what he should eat for dinner. It's a more powerful version of the way Amazon.com and Netflix make book or movie recommendations.

He also thinks we'll all use this technology just to keep up with everyone else. He likens the situation to calculators in math class: At first teachers banned them but now they're required. Leaving yours at home on test day would be a big disadvantage.

Craig Mundie, Microsoft Corp.'s chief research and strategy officer, believes we are near a long-wished-for era of computers that respond to speech, gestures and handwriting.

In Mundie's vision, "digital assistant" programs will help us solve specific problems. Imagine you're moving to a new city and need to find a house. "Relocation assistant" software would listen as you brainstorm out loud about whether you want to drive to work or take the bus, about school preferences and the market value of your current house. As you converse with it, the program scouts real estate listings and plots the best on a map.

Our smaller devices will also benefit from speedy connections to "the cloud" - powerful networks of computers that perform services remotely. In a decade, Manny Vara, chief evangelist for Intel Labs, imagines he'll tap the power of the cloud on trips to foreign countries, speaking into his phone and seeing a translation on his screen within seconds.

In another scenario, Vara imagines we will each wear a tiny camera. It could snap a photo of the cutie next to you in the bar and send it up into the cloud for analysis. If it matches your friend's nasty ex, a voice could whisper into your earpiece that it's time to move on. Your portable devices don't have to be powerful enough to run facial recognition software; they just need a connection to the cloud.

Such ideas aren't brand new, but budding technology might finally make them happen. In the 1990s, Mark Weiser, then chief technology officer at Xerox's Silicon Valley research center, wrote about "calm technology" that will exist in the periphery and come forward to claim our full attention when needed. We won't "go on the Internet." Rather, it will become built-in, ubiquitous and unremarkable, much as electricity is today.

"Every physical object will have a digital cloud around it," says Marina Gorbis, executive director at the Institute for the Future.

That raises new challenges for our privacy. And it opens the door to a new leader in the technology industry.

The 2000s saw Google become one of the world's most powerful companies because it helped us get a grip on the sprawling content of the Web. What we will need next, however, is a company that doesn't just organize data. Google, or the next Google, will have to synthesize all that information and help us understand what it all means.