Information at Your Fingertips

At the center of this will be the idea of digital convergence. That is, taking all the information — books, catalogs, shopping approaches, professional advice, art, movies — and taking those things in their digital form, ones and zeroes, and being able to provide them on demand on a device looking like a TV, a small device you carry around, or what the PC will evolve into.

—Bill Gates, "Information At Your Fingertips 2005" (Keynote Speech for Fall COMDEX 1995)

Microsoft founder Bill Gates is famous for many things, including being the world's richest man (until recently, anyway) and being the world's unofficial Alpha Geek. However, in tech circles he's also known for his longstanding vision of Information At Your Fingers. It's the simple yet transforming idea that, as Gates himself once put it, "Any piece of information you want should be available to you." The idea wasn't new (as far back as the 1970s, the motto of the Information Industry Association was "Putting Information at Your Fingertips"), but Gates championed it as early as 1989, and was in a position to do something about it. It remained his overriding goal for the next two decades.

In fact, you could argue that **IAYF** (as the cooler geeks now call it) has been the goal for the entire tech sector for the past 40 years, particularly since this whole Internet thing broke out of its academic cloister and started cavorting in the mainstream. And a funny thing happened between then and now: quietly and without much fuss or fanfare, this seemingly futuristic goal is now a reality. Wondering if that restaurant you see out your car window is any good? Ask your car's GPS system. Somebody at dinner claims that Dustin Hoffman was in Star Wars? Whip out your iPhone and look it up in the Internet Movie Database — that information is **iPhoneable**.

Information At Your Fingertips went from pie-in-the-sky to data-in-your-smartphone seemingly overnight, and we're just starting to realize how much **findability** (also called **googleability**) the world's data has. In fact, it's turning into what technologist John Seely Brown calls **calm technology**, remaining in the background until needed, thus letting you to interact with it in a calm, engaged manner. IAYF will lead to an age of **ambient findability**, the ability to find anyone or anything from anywhere at anytime.

The key is the rise of **small tech**, particularly **thin client** devices that are **web-enabled**. The slender iPhone is the archetype here, but **netbook** computers — tiny PCs optimized for web viewing and other online activities — also enable folks, wherever they are, to Google away and access **cloudware**. Mobile hardware such as digital audio players, GPS devices, and even digital cameras are becoming increasingly **web-aware** (or, at least **Wi-Fi-aware**). Radio-frequency identification (RFID) tags, real-world sensors, and other **ambient interfaces** are connecting (**deep networking**) all such devices with the world and its staggering wealth of data. Devices thereby become **environment-aware** (giving rise to so-called **ecological computing**) and bring out information **surfacing**: revealing previously hidden data that we (or our devices) can use to better make our way in this brave new world.

The ultimate expression of Information At Your Fingertips will be **ubicomp** (ubiquitous computing) where we can harness data using everyday objects and interfaces (**ambient informatics** in the lingo), which some wag dubbed **everyware**. Like the atmosphere itself, if something is everywhere it becomes nowhere; we cease to notice it. Thus, **pervasive computing** (also the name of an IEEE journal, by the way) becomes **transparent computing**.

Expect to see a privacy backlash against all this when people realize that once the world's information is at your fingertips, information about *them* is also at your fingertips. The new elite will be the **ungoogleables**, who've never posted anything online using a real name — no comments, no blog posts, no newsgroup rants, no web pages — and so they remain blissfully beyond the reach of Google and its ilk. Here's a can't-miss business idea for you, gratis: start a company that specializes in **Google scrubbing**: removing all traces of a person from Google's servers. Let me know when you're a going concern and I'll look you up on my iPhone.