

Doug Engelbart, a friend of Nelson's, who died in July, was described in obituaries as the pioneer of hypertext and one of the inventors of the mouse. But the programmer Bret Victor, an inheritor of the Engelbart ethos, has described him differently.

"If you attempt to make sense of Engelbart's design by drawing correspondences to our present-day systems, you will miss the point," he wrote in his own remembrance, "because our present-day systems do not embody Engelbart's intent. Engelbart hated our present-day systems." The mouse was only a means to an end: a tool for navigating the two-dimensional space of NLS, which offered the world then-barely-fathomable concepts such as teleconferencing, hypertext, and real-time collaboration—all in order to "augment human intellect," or make it possible for human beings to think new kinds of thoughts.

The man who filmed Engelbart's Mother of All Demos was coincidentally Stewart Brand, who went on to found the *Whole Earth Catalog*. In the 1984 *Whole Earth Software Catalog*, Brand wrote as clear an explication of the power of software as ever has been offered: "Software, when it is used at all intensely, comes to feel like an extension of your nervous system. Its habits become your habits. The reason the term 'personal' got stuck to these machines is, they become part of your person."

Then, almost as a postscript, he added: "Buyer beware."

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So Far, Smart Watches Are Pretty Dumb

Smart watches risk becoming just another irritating gadget unless their makers learn to use AI and sensors to take advantage of the fact that they're worn all day.

By Rachel Metz

A century ago, banker Henry Graves Jr. and industrialist James Ward Packard embarked on a decades-long competition to acquire the watch with the most “complications”—a term used to denote any feature beyond simple time-telling. Their rivalry culminated in the creation of a gold pocket watch known as the Graves Supercomplication, designed and built by the Swiss watchmaker Patek Philippe. Its 24 complications included sunrise and sunset times in New York City and a chart of the city’s night sky. Graves paid about \$15,000 for the watch in 1933 (roughly \$270,000 in today’s money); at auction in 1999, it sold for \$11 million.

Many years and countless watch styles later, a different kind of wrist-borne complication battle is heating up. Inspired by the success of smartphones and tablets, and by the ever-more-compact computer chips, sensors, and screens found in these devices, electronics companies hope the smart watch could be the next big thing. Companies including Samsung and Sony, and perhaps also Apple and Google, are rushing to produce these devices, which typically connect wirelessly to a smartphone so that you can see call alerts and message notifications on your wrist.

In theory, smart watches offer a smoother, more natural way of checking information than pulling out a smartphone. The act of glancing at your watch is a commonly accepted social custom, and it’s intriguing that an old form factor could come back to prominence. It’s just that now we want to see more at a glance than simply the time.

Unfortunately, the first smart watches are too much like the Graves watch: complicated in a way that makes them more curiosities than helpful tools. Their manufacturers, trying to please as many people

as possible, have turned them into Swiss Army knives—neat at first, but not really fantastic at anything, and ultimately destined to be ignored or replaced by a simpler, sharper blade.

After trying some smart watches, I’ve determined that a good one will need to be more than just reliable and simple to use—it will have to learn when and how to bother me. This means figuring out what I’m doing, and judging what bits of information among countless e-mails, app updates, and other alerts are most pressing. And, naturally, it must look good.

For these devices to succeed, their makers must edit them down to the most useful active features, such as alerts for incoming calls and upcoming appointments. A good smart watch should also have a smattering of passive features that can track, for example, your movement, your activity, and your vital signs—it should take advantage of the fact that you wear it all day.

“Any reduced technology like a watch will have to be smarter than our normal computers—our normal smartphones, even—because they are highly intrusive,” says Lars Hard, founder and chief technical officer of the artificial-intelligence company Expertmaker. “If it’s sitting right on my arm and it can wake up at any time giving me information, then it needs to be extremely good at what it presents.”

Any smart watch should tell me when someone’s calling, sure. But it would inform me about e-mails, texts, and social alerts only when it knows I really want to see them—which is not, for example, while I’m biking. Simple vital-sign monitoring would help track my health and fitness goals. And since the small screen on a smart watch makes it hard to input text or navigate between functions, a good device would respond to intuitive voice controls

and touch-screen gestures or other types of gestural interaction. All of this should be presented on a crisp, thin display that I can easily read in a dark room or on a sunny street. Unlike the smart watches I’ve tried, it should fit comfortably on my wrist. And don’t forget to include good battery life—I don’t want to have to charge this thing every few hours, or even every day if I can avoid it.

Given those criteria, the closest thing to a truly useful new genre of device is the Pebble. It can identify and reject callers with a touch, its e-paper screen is easy to read, and it has a backlight that you can activate with a flick of the wrist. But those alerts for incoming calls and texts can be either helpful or overwhelming, depending on how many people are trying to reach you. And since anyone can develop apps for the Pebble, there are a growing number of useless ones, such as a calculator that can be used only by manipulating the Pebble’s buttons. A few apps, however, hint at how a smart watch could enhance

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a smartphone. The Pebble Phone Ringer Switcher, for example, lets you quickly silence your phone from the watch.

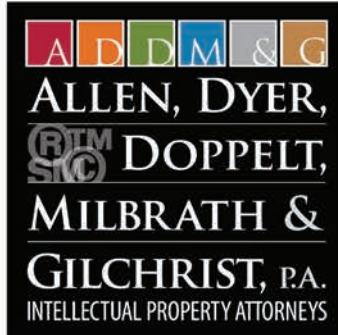
The MetaWatch Frame, another smart watch, has a serious problem for a tiny device operated with one hand—it’s hard to use. The watch includes a few basic functions that are reasonably useful and not too disruptive, such as weather, missed calls, Gmail, and appointments. You can also enable a slew of pop-up alerts for incoming calls, texts, and more. But the functions of the three buttons on each side of the screen are not intuitive, and its silver-toned reflective display, which has disappointingly low resolution, can pro-

Pebble
\$150

MetaWatch Frame
\$229

Samsung Galaxy Gear
\$299

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GRAY MATTER MATTERS

duce a painful glare if the sunlight hits it just right. Worse, there's nothing exceptionally smart about the MetaWatch—it doesn't do anything that I can't do by glancing at my smartphone, and the few third-party "widgets" I saw for it didn't add much (the company says it plans to open its platform, which is now in a private beta test, to all developers soon). It's good to keep things simple, yes, but a smart watch should also reveal new possibilities not achievable with a smartphone.

The most significant effort to develop a smart watch so far has produced the Galaxy Gear, from the world's largest smartphone maker, Samsung. Among its clever features: it lets you switch from viewing a message on your wrist to seeing it on your phone just by picking up your handset, and it automatically locks your smartphone whenever you stray too far from it while wearing the watch. On the downside, its interface looks clumsy and ill-designed, and it crams way too many features into a tiny package. It also func-

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tions only with the latest Samsung Galaxy Note smartphone (for now), and it costs a relatively hefty \$299.

Another downside: the Galaxy Gear isn't very good-looking. It has a large, thick, steel-framed display and a camera protruding from its band; its color options, like lime green and mocha gray, are ugly. This isn't trivial: since smart watches are always visible, they shout something about the wearer's sense of style. Enduring watches, like a Patek Calatrava or a Rolex Submariner, are steeped in good design.

These three watches suggest that either the designers and engineers behind

them have an unfocused view of what consumers want and need, or they can't bring themselves to leave features out and concentrate on a selection of functions. Alerts are vital, but too many notifications are worse than none at all. The Galaxy Gear offers voice controls, which is smart, but it also comes with a superfluous camera in the wristband and unnecessary messaging capabilities.

Beyond adding distractions, these functions eat up battery life. "I'm kind of dreading the idea of having a smartphone and a smart watch that I always have to feed," says John Maeda, president of the Rhode Island School of Design.

Maeda says that technologists tend to focus too much on what technology can do rather than how it would feel to use it. Smart watches seem like a good example of this, and that's a shame, because the technology exists to make them very clever. They could read my calendar and use their accelerometers and GPS—the Galaxy Gear even has a gyroscope—to detect when I'm on the move or in a meeting and shouldn't be pinged. They could know I've been looking for a shirt of a certain size at J. Crew—perhaps by analyzing my Web activity—and let me know I'm passing a store that has that item in stock and on sale.

The popularity of wrist-worn health-tracking gadgets like Fitbit, Nike's FuelBand, and Jawbone's Up attests to a desire for gadgets that focus on passive data collection. By reading or collecting even more data, smart watches could go much further. They could become a more advanced and intimate version of Google's anticipatory personal-assistant software, Google Now, and preemptively make decisions about all kinds of information. Now that would really be a smart watch—and it wouldn't feel too complicated.

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