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# Why Touch Screens Will Not Take Over

Why personal computers still need the keyboard and mouse, despite Microsoft's best efforts to kill them off

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For decades the cynical observer could be forgiven for viewing Microsoft as a giant copying machine. The inspiration for just about every major Microsoft initiative can be traced back to a successful predecessor: Windows (Macintosh), Internet Explorer (Netscape), Bing (Google), Zune (iPod).

But in late 2012 Microsoft broke from the pack. It made a billion-dollar gamble that personal computing is taking a new direction. The gamble was Windows 8, and the direction is touch.

Using a series of fluid, light finger taps and swipes across the screen on a PC running Windows 8, you can open programs, flip between them, navigate, adjust settings and split the screen between apps, among other functions. It's fresh, efficient and joyous to use—all on a touch-screen tablet.

But this, of course, is not some special touch-screen edition of Windows. This is *the* Windows. It's the operating system that Microsoft expects us to run on our tens of millions of everyday PCs. For screens that do not respond to touch, Microsoft has built in mouse and keyboard equivalents for each tap and swipe. Yet these methods are second-class citizens, meant to be a crutch during these transitional times—the phase after which, Microsoft bets, touch will finally have come to *all* computers.

At first, you might think, “Touch has been incredibly successful on our phones, tablets, airport kiosks and cash machines. Why not on our computers?”

I'll tell you why not: because of “gorilla arm.”

There are three big differences between these handy touch screens and a PC's screen: angle, distance and time interval.

The screen of a phone or tablet is generally more or less horizontal. The screen of a desktop (or a laptop on a desk), however, is more or less vertical.

Phone, tablet and kiosk screens, furthermore, are usually close to your body. But desktop and laptop screens are usually a couple of feet away from you. You have to reach out to touch them. And then there's the interval issue: you don't sit there all day using a phone, tablet or airport kiosk, as you do with a PC.

Finally, you're not just tapping big, finger-friendly icons. You're trying to make tiny, precise movements on the glass, on a vertical surface, at arm's length.

When Windows 7 came out, offering a touch mode for the first time, I spent a few weeks living with a couple of touch-screen PCs. It was a miserable experience. Part of the problem was that the targets—buttons, scroll bars and menus that were originally designed for a tiny arrow cursor—were too small for fat human fingers.

The other problem was the tingling ache that came from extending my right arm to manipulate that screen for hours, an affliction that has earned the nickname of gorilla arm. Some experts say gorilla arm is what killed touch computing during its first wave in the early 1980s.

(Another problem is finger grease. You can clean a phone's screen by wiping it on your jeans, but that's not as convenient with a 32-inch monitor.)

Now, half of Windows 8 addresses half of the touch-screen PC problems: Windows 8 is actually two operating systems in one. The beautiful, fluid front end is ideal for touch; only the underlying Windows desktop has the too-small-targets problem.

The angle and distance of PC screens are tougher nuts to crack. Microsoft is betting that Windows 8 will be so attractive that we won't mind touching our PC screens, at least until the PC concept fades away entirely. Yet although PC sales have slowed, they won't be zero any time soon.

My belief is that touch screens make sense on mobile computers but not on stationary ones. Microsoft is making a gigantic bet that I'm wrong.