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## The Troublesome Task of Rejigging the Keyboard




By Jessica Mintz  
 AP  
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**The standard arrangement of the computer keyboard is a holdover from the mechanical limitations of ancient typewriters. Research suggests that people might be able to learn to type with greater efficiency on alternative keyboard designs. However, even a slight change to any keyboard layout is seen as a risky move by top computer designers.**

Lenovo  put nearly a year of research into two design  changes that debuted on an updated ThinkPad laptop this week. No, not the thinner, lighter form or the textured touchpad -- rather, the extra-large "Delete" and "Escape" keys.

It may seem like a small change, but David Hill, vice president of corporate identity and design at Lenovo, points out, "Any time you start messing around with the keyboard, people get nervous."

Computers get smaller and faster every year, but keyboard design remains largely stuck in the 19th century. When Beijing-based Lenovo, which bought IBM's (NYSE: IBM)  personal-computer business in 2005, looked into improving the keyboard on the new ThinkPad T400s, a US\$1,600-and-up laptop for businesspeople, it knew it had to proceed with caution.

To understand Lenovo's concern, turn the clock back to the 1800s.

### The Typewriter's Legacy

Back then, fast typing would jam typewriters, so a keyboard layout that slowed down flying fingers was devised. The commonly used "A" key, for example, was banished to the spot under the relatively uncoordinated left pinky.

Typewriter technology evolved. Mainframe computing led to function keys and others of uncertain use today. The PC era dawned. Yet many laws of keyboard layout remain sacred, like the 19-millimeter distance between the centers of the letter keys.

Tom Hardy, who designed the original IBM PC of 1981, said companies have tried many times to change the sizes of keys. That first PC had a smaller "Shift" key than IBM's popular Selectric typewriter did, and it was placed in a different spot, in part because the industry didn't think computers would replace typewriters for high-volume typing tasks.

IBM reversed course with the next version to quiet the outcry from skilled touch-typists.

"Customers have responded with a resounding, 'Don't fool with the key unless you can improve it,'" said Hardy, now a design strategist based in Atlanta.

## New Form Factors

PC makers relearned this lesson in the past year, as netbooks -- tiny, cheap laptops -- have become popular with budget-conscious consumers. Early models boasted screens measuring as little as 7 inches on the diagonal, requiring shrunken keyboards that many people found to be too small. Some even repeated IBM's mistake by cutting the size of the "Shift" key.

The computer makers have largely shifted focus to 10-inch or larger netbooks, so that there'd be room for near-standard keyboards or better.

Push-back from consumers hasn't stopped companies from testing and even manufacturing keyboards with unconventional designs over the years, in some cases demonstrating that people could learn to type faster than on standard [QWERTY](#) keyboards, so-called because of the arrangement of the top row of letters. During Hardy's time at IBM, researchers came up with ball-shaped one-handed keyboards that he said were faster than standard ones.

"A lot of those things never passed the business planners and the bean counters because they were concerned about manufacturing something that was just basically an experiment," Hardy said.

Ones that did get made have remained niche.

Paul Bradley, an executive creative director at the global design group Frog Design, said makers of ergonomic keyboards that also improved typing speed were counting on concern over carpal tunnel syndrome during the dot-com boom of the 1990s to drive demand, but the market never materialized.

## The Caps Lock Conundrum

If ever there were a time to make radical changes to the keyboard, now might be it. As evidence, Bradley noted the high tolerance many younger people show for tapping out cell-phone messages on tiny keypads using only their thumbs.

Lenovo is on a more conservative course. In designing the new ThinkPad, it installed keystroke-tracking software on about 30 employees' computers (They volunteered). On average, they used the "Escape" and "Delete" keys 700 times per week, yet those were the only "outboard" keys, or non-letter keys, that hadn't been enlarged.

Lenovo made those two keys about twice as long in the vertical direction to fit the way people reach up, rather than to the side, and then deliberately whack those keys, said Hill, the Lenovo executive who was at IBM for nearly 20 years before the 2005 sale to Lenovo. The new design cuts down on accidental taps of the "End" and "Insert" keys, too.

The new keyboard isn't perfect. Hill called "Caps Lock" a frustrating hangover from typewriter days, a key that can introduce garble, emulate shouting or foil password entries without the user noticing.

"I think maybe sometime in the future, we should maybe entertain removing it," he said. "It's one of those things you kind of have to approach with caution. There might be some people out there who just really like their 'Caps Lock' key for whatever reason." [ECT](#)

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