BRUCE SCHNEIER   OPINION 01.06.1406:30 AM

# The Internet of Things Is Wildly Insecure — And Often Unpatchable

systems, where computing is embedded into the hardware itself – as with the Internet of Things. These embedded computers are riddled with vulnerabilities, and there's no good way to patch them.

It's not unlike what happened in the mid-1990s, when the insecurity of personal computers was reaching crisis levels. Software and operating systems were riddled with security vulnerabilities, and there was no good way to patch them. Companies were trying to keep vulnerabilities secret, and not releasing security updates quickly. And when updates were released, it was hard – if not impossible – to get users to install them. This has changed over the past twenty years, due to a combination of full disclosure – publishing vulnerabilities to force companies to issue patches quicker – and automatic updates: automating the process of installing updates on users' computers. The results aren't perfect, but they're much better than ever before.

But this time the problem is much worse, because the world is different: All of these devices are connected to the Internet. The computers in our routers and modems are much more powerful than the PCs of the mid-1990s, and the Internet of Things will put computers into all sorts of consumer devices. The industries producing these devices are even less capable of fixing the problem than the PC and software industries were.

If we don't solve this soon, we're in for a security disaster as hackers figure out that it's easier to hack routers than computers. At a recent Def Con, a researcher looked at thirty home routers and broke into half of them – including some of the most popular and common brands.
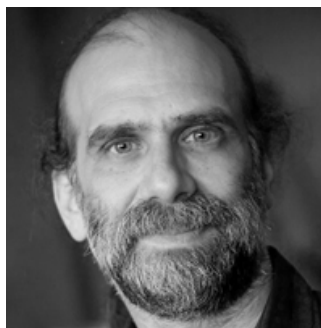
Bruce Schneier
Bruce Schneier is the Chief Technology Officer of Co3 Systems. His latest book is *Carry On: Sound Advice from Schneier on Security*.

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