Don't trust anyone over 30. That's the prevailing wisdom in Silicon Valley, a land once again bestrode by millionaire CEOs who just learned to shave. Many people believe that the breakthrough ideas come only from the young. And why not? Media stories constantly recite the ages of a few famous founders: Bill Gates of Microsoft, 20; Mark Zuckerberg of Facebook, 20; the Google boys, 25; YouTube's Chad Hurley, 28. Tumblr founder David Karp is 21 — and on his second successful company.

Young people rule tech innovation, we tell ourselves, because they have several key advantages. They're fearless and naive, so they'll try anything. They can spy markets that elders, with their locked-in views, cannot. And without dependents or spouses, twentiesomethings can work the sort of pyramid-building hours necessary for a startup. It's a kind of Logan's Run world: If you're ending a third decade, you're obsolete.
But hold on. A recent study has finally collected some data on age and high tech innovation and found that older geeks are just as successful as young Turks. What's more, the chronologically advanced are especially successful at solving problems we increasingly — and desperately — need solved.

In other words, the high tech future may belong to the over-30 set. The Ewing Marion Kauffman Foundation surveyed 652 US-born CEOs and heads of product development who founded high tech firms in the boom (and bust) years of 1995 to 2005. Both the average and median ages were 39 — far older than the mythic dorm-room visionary. Turns out those youthquake pioneers don't really represent the pack. They're outliers.

So why is our intuition wrong about this? Because young and old founders create different types of startups.

Mature entrepreneurs tend to launch startups that require huge amounts of capital — biotech companies, energy firms, outfits that make expensive hardware. Startup costs in these areas include tens of millions for research resources, large staffs, maybe a laboratory. Then, to take their invention to market, they have to navigate complex, entrenched industries, which requires connections. "You need to know how to run a company right off the bat and inspire confidence in investors," says Vivek Wadhwa, a Harvard Fellow who coauthored the Kauffman Foundation report.

In contrast, those sexy Web-service firms that have dominated headlines on and off for the past decade require almost no capital. The "social software" market also rewards people who intuitively understand new media experiences. "There's been social change, too," says Paul Graham, cofounder of Y Combinator, a seed-funding firm. "Ten years ago, it was bizarrely unusual for someone graduating college to launch a startup. Now almost everyone who gets a computer science degree at least thinks about doing it."

In essence, the high tech world divides itself: Young people create the way-kewl consumer software — the Twitters and the Loopts — and older folks tackle the heavy-industry stuff. Young founders hack information; old founders hack atoms.

But we're moving to a world where we need more and more of the latter. Think of some of the thorniest high tech challenges — solar energy, battery systems, plug-in cars. These all reside in the world of atoms. Whoever cracks the problem of carbon sequestration is going to reap a multibillion-dollar reward. But they'll have to solve some hellishly complex physics puzzles and then introduce the solution to an energy industry riddled with byzantine state-by-state regulations and run by an old-boy network of cigar-chewing gazillionaires. Not something easily accomplished in sweatpants.

When you look at it this way, the constant hype over social applications like Facebook or Tumblr can seem a bit misplaced. I'm not saying that Web 3.0 or 4.0 apps are going away (or that they'll stop being fun). But here's my bet: When we finally start solving our global energy and resource dilemmas, the next generation of media-feted tech CEOs will look more like your parents than your kids. Or, to put it another way: Don't trust anyone who wants to put an age limit on innovation.