PCB design software development wasn't always dominated by a trio of giants. Even not-so-old timers will remember the landscape once overflowed with small, entrepreneurial businesses. Pads, Cooper & Chyan, Redac, CADI, CADAM, OrCAD, Symbionics, ACT, Ambit and countless others were the foundation for what has emerged as Mentor Graphics, Cadence and Zuken. The new guard has become the old guard, and as these things are wont to do, the scene became somewhat stagnant, with the big firms putting up walls to protect their treasure (read: users), and most newer players focused on niche solutions to problems like parts libraries instead of good old basic board layout and placement.

It's a huge uphill climb to take on any of the big guys. From the brand recognition and installed base, the legions of trained users, well-developed channel partners, and huge support teams, the Big 3 (and even some of the next tier) CAD developers have a serious head start. And that's before we consider their sophisticated tools.

A rash of fresh startups is starting to emerge, however, bringing new energy and excitement to our corner of the electronics world. And like their predecessors Gene Marsh, John Cooper and David Chyan, none of these "newbies" are carpetbaggers from other industries: They all have ample experience in developing and marketing tools for circuit board design and simulation.

One advantage of starting from scratch is that you aren't constrained by generations of tradition. New companies are more likely to leverage up-to-date platforms developed by non-traditional partners such as Google.

Take, for example, Upverter. The founders, all of whom have been hardware designers, shared a common distaste for conventional CAD tools, scanned schematics, and snail-paced technology transformation. What they've invented – still, admittedly, a work in progress – is a browser-based CAD system that takes advantage of existing collaborative tools and puts the data in the cloud, and allows schematics and layout to be simultaneously developed for a fraction of the cost.

Upverter, which founder and CEO Zak Homuth launched with partners Michael Woodworth and Stephen Hamer, made its debut in 2010 with a collaborative schematic editor. In November, the firm launched its next major toolset, which includes design, simulation, rapid prototyping, a new parts library, and a revamp of the schematic editor. It doesn't have an autorouter, and large BGA breakouts are another six months away, but users can design an infinite number of layers, and differential pairs and bus routing are coming online too. The company says it has 8,000 to 9,000 designs in the system and is approaching 10,000 users. The parts library is crowd-sourced, engineered by a user and edited by another designer who wasn't the creator. "Everyone gets notified if there's an update to the part, and they can fork (halt) or accept the update," Homuth says.

I was immediately intrigued but not entirely convinced. Why, I asked Homuth, would you want to perform CAD in a browser? Aren't you tying your capability to the limits of Microsoft or Google, which don't inherently care about PCB design?

Homuth's response: While acknowledging that it's harder for Upverter to build tools in the web browser, once complete they are actually easier to use. "This has to do with what you get for free and has very little to do with that it's actually in a web browser. You don't need a server to do collaboration. You don't have to worry about installs, or put your files on Dropbox so you can get at them. There's no IT, no licenses."

Users, he added, can use their preferred browser. "All the browsers interoperate just fine. It doesn't really matter what you view it in," he said.

Most designers who have switched software tools know eventually you encounter a situation where it's 8 o'clock at night on a Sunday, and the legacy design you need to update is in a revision that is now years out-of-maintenance. If nothing else, it would be nice to (potentially) eliminate the problem of an update conflicting with an old program. You can read more about Upverter's cloud-based CAD in Around the World this month.

As this year unfolds, we plan to highlight other promising new enterprises. Risk should have its rewards, and sometimes that reward is a little publicity. I might not be buying their software, but at least I can tell our readers something about it.

Finally, I'd like to welcome Scott Fillebrown of ACD, Rob Boguski of Datest, and Chris Denney of Worthington Assembly as our newest columnists. Scott, whose EMS company was founded as a design service bureau (and whose emphasis on catering to that group is evident when you walk through their offices), will author the popular "Designer's Notebook" column with a focus on DfM, while Rob will take over the Test and Inspection column and Chris will contribute to the Soldering column. Welcome!