FORTUNE

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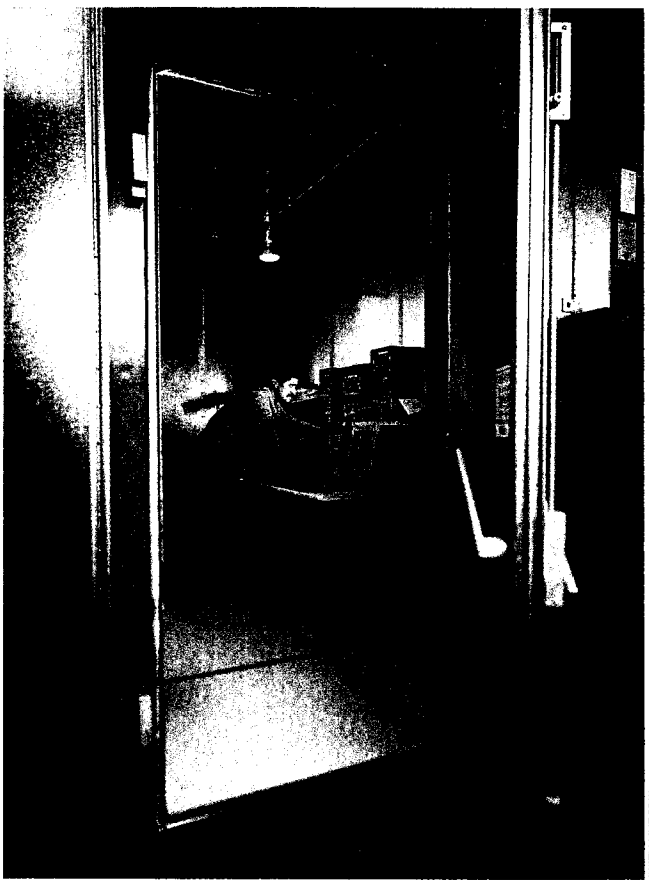


MOJGAN AZIMI

An engineer in Microtune's environmentally shielded "screen room."

smoke and mirrors

Are Patents Really a Virtue?

Big tech firms may flaunt them. But the truth is, often the best science is kept under wraps.

In this era of insane stock valuations, how can you ever tell when a company's technology is really worth the multiple that investors are paying? One obvious way, it would seem, is to look at the company's patents (if you have a Ph.D., that is). But since most of us don't have advanced degrees in silicon-wafer technology or computer programming, that might not be easy.

Still, that hasn't stopped many investors from using such mysterious intellectual property and schemata as a leading indicator of a company's prospects. They simply add 'em up. For example, its rough September aside, investors have smiled at IBM, thanks in part to its mammoth portfolio of proprietary technology. Big Blue pulls in about $1 billion a year from licensing its 26,000 patents.

In fact, a number of older, established tech firms have strategically opted to patent everything in sight, using a massive cache of protected material as both a revenue stream and a truncheon against the competition. Take Texas Instruments, which has guarded its stockpile of 10,000 patents as if it were Fort Knox. If a smaller company

goes to market with an integrated circuit that's even remotely close to one of TI's, the veteran chipmaker—with its behemoth legal budget—can scare it off by threatening an expensive lawsuit. That typically leads smaller companies to settle out of court, or strike some kind of licensing or royalty deal, simply to stay in business. TI generates a whopping 20% of its profits through royalties.

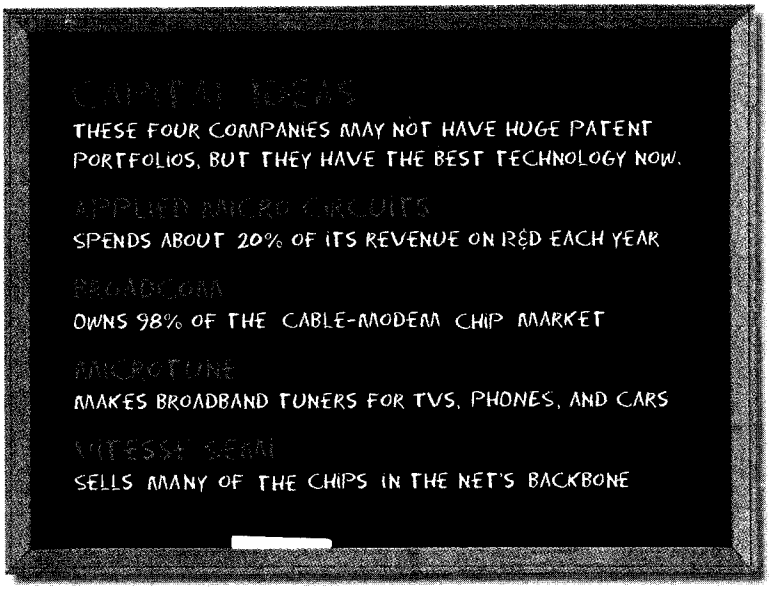
Likewise, mighty Intel, in its latest courtroom battle, has unleashed its legal arsenal on competitor Broadcom, which the chip giant says infringed on five of its patents (and a few trade secrets to boot). Intel has a war chest of 3,000-plus patents, while Broadcom—whose chips get used in communications devices like cable modems—has a mere eight. That's right, *eight*.

And that brings up the real technology surprise: Despite the high-profile litigation and the impressive royalty figures, the patent issue may be a red herring after all—at least as far as investors are concerned. Contrary to popular perception, a huge stable of patents does not necessarily mean better technology—or success in the courtroom, for that matter. (Some analysts, like Mark Edelstone of Morgan Stanley Dean Witter, think Broadcom will win its fight with Intel.)

Indeed, some companies—especially smaller, faster chip designers—make the strategic decision not to patent their best ideas, in part because they don't want competitors to follow their trail. Filing a public document at the U.S. Patent Office is like broadcasting to the competition what you're working on. "If I patent, I give away everything," says Robert Dobkin, CTO of Linear Technology. "So we only patent products that will protect our position, and are happy to pay reasonable royalties on patents that we infringe."

So if you can't simply tally up patents to evaluate a company's technology, what should you look for? The research-and-development budget is a big clue (it's usually provided in annual reports). PMC-Sierra, for example, spends 24% of its sales on R&D in a given year—the chip industry average is 14%. You should also look for breakthrough technology, a loyal customer base of big, known companies, and a sizable chunk of a specialized market.

Right now Wall Street experts are betting on companies that make chips for Internet infrastructure and for data communication devices like cable modems. Companies such as Broadcom, Vitesse, and Applied Micro Circuits, for example, have all solved vital communications problems in which the heavyweight chip designers have little expertise. (Their analog chips are used for run-of-the-mill applications—and are much less profitable.) The sheer complexity of their chip designs is also likely to keep potential infringers at bay. Moreover, communications is an area in which gearmakers like, say, Cisco, can't afford a failure. They are therefore unlikely to swap in cheaper, knockoff chips. That explains why the market for these companies is exploding. San Jose–based Dataquest expects it to more than double, to $10.3 billion in 2004, up from $4.1 billion in 1999.



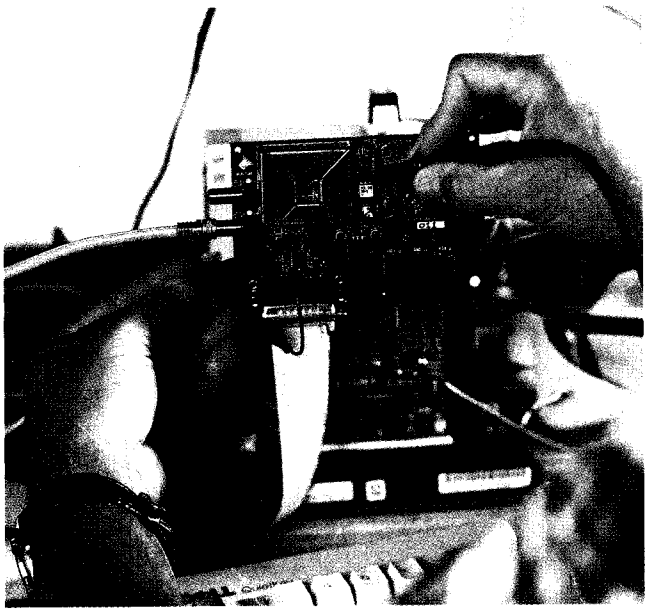
Witness Vitesse Semiconductor (VTSS, $89), which owns a modest 20 patents. It makes chips for optical-networking equipment, and for more consumer-friendly items like Internet devices. Vitesse sells three of every four networking chips into the "sweet spot of the market" for the Internet backbone, as IDC analyst Kimberly Funasaki puts it. "They make one of the building blocks of networking equipment." Vitesse's R&D budget—18% of revenue—is above average for its competitors.

Then there's Broadcom (BRCM, $256), which virtually owns the digital cable-modem market and is making acquisitions to cover the gaps in its design expertise. The company has bought about a dozen smaller chip firms recently, giving it a toehold in exciting areas like sending voice packets over the Internet, and Bluetooth (the technology that will let electronic devices in a home operate wirelessly). "Broadcom is a standout," says analyst Drew Peck of SG Cowen. "It's done so much innovative stuff."

Applied Micro Circuits (AMCC, $214) makes optical components like transceivers and amplifiers, but its latest edge is a new, sexy, high-speed technology called Silicon Germanium (basically a material that goes into chips and speeds the transmission of data dramatically). Around 40% of its sales stem from Nortel, a top maker of fiber-optic gear. The company, which also owns 20 patents, devotes about a fifth of its sales to R&D.

And a new one to watch, says Peck, is Microtune (TUNE, $47) of Plano, Texas. Microtune's flagship product is a single-chip broadband tuner for interactive TVs, cell phones, and even cars. Its share price has tripled since its August IPO, helped by a few cable deals it recently inked with Cisco and 3Com. Microtune spends about 21% of its sales on engineering. —*Carolyn Whelan*

Microtune's new dime-sized broadband tuner



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