

EXHIBIT 28

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How Apple and Microsoft Armed 4,000 Patent Warheads

· By [Robert McMillan](#)

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Inside the reverse-engineering lab at Rockstar, Scott Widdowson is looking for products that infringe on the company's 4,000 patents. *Photo: Rockstar*

In many ways, Scott Widdowson is your typical electrical engineer. Most days, when the weather's good, he bikes the 15 miles along the Ottawa River to his company's offices in the west end of the Canadian capital. Once there, he settles in for a day of reading technical

specifications, poring over computer textbooks, or prying apart consumer electronics — logic probe in one hand and a soldering iron in the other.

But Widdowson is a specialist. He's one of 10 reverse-engineers working full time for a stealthy company funded by some of the biggest names in technology: Apple, Microsoft, Research In Motion, Sony, and Ericsson. Called the Rockstar Consortium, the 32-person outfit has a single-minded mission: It examines successful products, like routers and smartphones, and it tries to find proof that these products infringe on a portfolio of over 4,000 technology patents once owned by one of the world's largest telecommunications companies.

When a Rockstar engineer uncovers evidence of infringement, the company documents it, contacts the manufacturer, and demands licensing fees for the patents in question. The demand is backed by the implicit threat of a patent lawsuit in federal court. Eight of the company's staff are lawyers. In the last two months, Rockstar has started negotiations with as many as 100 potential licensees. And with control of a patent portfolio covering core wireless communications technologies such as LTE (Long Term Evolution) and 3G, there is literally no end in sight.

"Pretty much anybody out there is infringing," says John Veschi, Rockstar's CEO. "It would be hard for me to envision that there are high-tech companies out there that don't use some of the patents in our portfolio."

Rockstar has its roots in last year's high-profile auction of 6,000 patents owned by the bankrupt Canadian telco giant Nortel. Google made headlines when it cast the first bid of \$900 million for the portfolio, but the search giant was soon in a heated bidding war with a consortium of rivals led by Apple and Microsoft. The final sale price was \$4.5 billion, and Rockstar Bidco, as it was then called, was the winner.

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Since then, Rockstar Bidco has given way to a new entity, called Rockstar Consortium. And for the first time, the consortium's strategy for the Nortel patents is clear. Ownership of about 2,000 of the patents was shifted to the individual companies that won the auction: Apple, Microsoft, et al. But the remaining 4,000 have been transferred to Rockstar Consortium, which is now a pure patent exploitation operation funded by all of the winning bidders except EMC, which has dropped out of the picture, according to Veschi.

Rockstar is a special kind of company. Because it doesn't actually make anything, it can't be countersued in patent cases. That wouldn't be the case with Apple or Microsoft if they had kept the patents for themselves. And because it's independent, it can antagonize its owners' partners and customers in ways that its owner companies could not. "The principals have plausible deniability," says Thomas Ewing, an attorney and intellectual property consultant. "They can say with a straight face: 'They're an independent company. We don't control them.' And there's some truth to that."

When the Rockstar Bidco group purchased Nortel's patents, the U.S. Department of Justice took a look at the deal, as part of a broader investigation into several large technology patent sales. The DoJ was concerned that patent attacks might somehow be used to knock Rockstar's competitors out of the smartphone or tablet market. But in February, the DoJ [closed its investigation](#), in part because Microsoft and Apple had promised to license many of their core wireless patents under reasonable terms to anyone who needed them.

But the new company — Rockstar Consortium — isn't bound by the promises that its member companies made, according to Veschi. "We are separate," he says. "That does not apply to us." Rockstar owners could choose to simply recoup their investment by licensing the patents and then reselling them — much as Microsoft did recently when it bought patents from AOL and

then [turned around and sold them to Facebook](#). Or Rockstar could play into the strategic interests of its owner companies by going after Google, and Android partners such as HTC, says Colleen Chien, a law professor at Santa Clara University who has made a study of the market for technology patents. Microsoft, Ericsson and EMC declined to comment for this story. The other Rockstar owners didn't respond to messages.

To say that technology patents have become more important over the past decade is to risk comic understatement. A patent is essentially a government-sanctioned monopoly designed to give the inventor a two-decade head start to commercialize any new technology. But in practice, patents are weapons. Technology companies load up on patents like Cold War nations stockpiling nuclear bombs, hoarding them for use when an important market is at stake. And few companies have been loading up on patents as aggressively as Apple and Google, two companies that had nothing to do with the smartphone market 10 or 15 years ago when many of Nortel's wireless patents were being developed.

Many companies stockpile patents for defensive purposes, but others actively look for ways they can make money from them — big money. The kind of reverse-engineering practiced by Widdowson happens more often than most people realize. It's just not widely discussed.

"Big companies are doing this work with a combination of their own resources and outsourcing," says Fas Mosleh, senior vice president of IP transactions with Kanzatec, a Los Altos, California, company that sells the type of reverse-engineering services that Widdowson practices in Rockstar's Ottawa lab.

The companies that do this are big because the costs are big. When patent fights go to trial, the legal fees typically run into the millions of dollars. "This is the sport of kings," says Ewing. "Ordinary people can't play in this arena."

But the rewards can be great too. In 2007, a U.S. jury hit Microsoft with [\\$1.5 billion in damages](#) after finding that it violated Lucent's MP3 patents (that verdict was later appealed, and most of the case [settled out of court](#)). On Friday, the U.S. International Trade Commission [threatened to halt the import of all Motorola Mobility's Android phones](#) and tablets after finding that Motorola had violated a Microsoft patent on how to fire off meeting requests from a mobile device.

Welcome to Ground Zero

Right now, ground zero for the patent wars is the smartphone market, where everyone from Google, Oracle, Microsoft, and Apple to Motorola, HTC and Samsung are battling it out in the courts. Some companies use patents as a competitive weapon, launching legal wars of attrition against competitors. Others find that they can make big money in some areas without necessarily having to win in the marketplace. Qualcomm makes nearly \$4 billion annually licensing its mobile patents. IBM, one of the top patent-holders on the planet, makes over \$1 billion each year.

"The creation of these conglomeration of patents — what this does is create a barrier to entry for the little guy." — Julie Samuels

Veschi says that he — and not Rockstar's board of directors — is calling the shots when it comes to licensing deals. The company's mission is "to manage the patent portfolio to achieve a return on investment, probably through a combination of licensing and sales," says Veschi. "So, in some cases, we might be selling some patents, and in other cases, we might be licensing some patents." Rockstar hasn't sued anyone yet, but Veschi expects that to happen too.

Because it doesn't actually produce anything, some knock Rockstar as a straight-up patent troll. "This deal is indicative of a much larger fundamental problem that we see today," says Julie Samuels, a staff attorney with the Electronic Frontier Foundation. She says she hears from small companies regularly who get pressured out of the U.S. market because they simply

can't defend themselves against massive patent claims, whether legitimate or not. None of them want to talk to the press, though, for fear of drawing attention — and possibly more legal troubles — to themselves. Ultimately, Samuels worries that patents — especially software patents — will hurt innovators rather than help them. And that's exactly the opposite of what patents are supposed to do.

“The creation of these conglomerations of patents ... what this does is create a barrier to entry for the little guy,” Samuels says. “It makes it so much harder to break into the market if you are a creator or an innovator.”

After surviving the Nortel meltdown, Rockstar CEO John Veschi now controls 4,000 patents.
Photo: Dan Krauss/Wired

Building in the Nortel Crater

With just 32 employees, Veschi's company is tiny, but it has a big legacy. It's the final resting place of the patent portfolio of Canada's most storied technology company, Nortel Networks, a telecommunications giant whose origins date back to 1882 when it was the telephone manufacture and repair department of the Bell Telephone Company of Canada. Three-quarters of Rockstar's employees, including Veschi and Widdowson worked at Nortel and kept their jobs by helping the creditors understand and then sell Nortel's patent portfolio. Nortel flamed out spectacularly in 2009, in a complex international bankruptcy that cost more than 30,000 employees their jobs, left others without pension and life insurance coverage, and saw several top executives face fraud charges in a [trial that's still ongoing](#).

“How the hell did you guys go bankrupt? Why weren't you Google? Why weren't you Facebook?” — John Veschi

Employee pensions were slashed in half when the company could no longer meet payment obligations. Some workers lost life insurance or medical benefits when the company's self-funded programs collapsed. And they're still hurting three years later, waiting for courts in

the United States, Canada, and the United Kingdom to hammer out final bankruptcy settlements, says Anne Clark-Stewart, a spokeswoman with Nortel Retirees and Former Employees Protection Canada, a group representing more than 20,000 former Nortel employees.

But what was a tragedy for the company's employees turned out to be an unprecedented opportunity for Rockstar's investors. Nortel had a massive patent portfolio — nearly 9,000 patents in all — most of them related to computer networking. And according to Veschi, they were high-quality patents — the kind that you'd normally find in a Bell Labs or an IBM; the kind that would be likely to stand up in a court case. Nortel's patents covered broad areas of wireless networking, telecom switching, internet routers, modems, personal computers, even search and social networking.

“A lot of people are still surprised to see the quality and the diversity of the IP that was in Nortel,” he says. “And the fundamental question comes back: ‘How the hell did you guys go bankrupt? Why weren't you Google? Why weren't you Facebook? Why weren't you all these things, because you guys actually had the ideas for these business models before they did?’ They were within a Bell Labs-y kind of environment, and maybe the wherewithal of turning them into businesses wasn't necessarily there.”

Nortel went bankrupt because it was mismanaged and, ultimately, fizzled out in the marketplace. Best known as a maker of telephone-company hardware and corporate phone systems, it once boasted more than 90,000 employees. But it lost out in the data center to Cisco, and it was outmaneuvered in its traditional telecom business by China's Huawei.

No More Friendly Canadians

When Veschi signed on in 2008, Nortel hadn't done much work to license its intellectual property. It was run by friendly Canadians who didn't want to antagonize partners and customers by suing them. But the company had been remarkably adept at filing patents. “We had huge patent ceremonies in the CTO group that we made a big production of every year,” says Gillian McColgan, a former Nortel technical manager who is now chief technology officer with Rockstar.

Nortel's patents sold for \$4.5 billion — \$1.3 billion more than the combined value of all of the company's business units.

Employees were paid bonuses, and sometimes, they'd join up with senior management at fancy award ceremonies [held at swank venues such as the five-star Adolphus Hotel in Dallas](#), home to Queen Elizabeth II whenever she's in Texas.

Nortel had long patented its inventions, but encouraged by former CEO Mike Zafirovski, it started doing something called “defensive patenting.” Engineers were encouraged to file patents that could be used to fire back in the event that someone brought a patent suit against Nortel. “A large focus of our patenting efforts had been around in the pre-bankruptcy era, had been trying to identify what our competitors might do, and laying down inventions in those spaces to protect ourselves,” McColgan says.

“We ended up with a large portfolio of patents that are directed toward products and areas of technology that our competitors were working in, where we didn't necessarily have products ourselves,” she adds.

When Nortel went belly up, patents representing tens of billions of dollars in research and development were suddenly made available on the open market. It was an unprecedented opportunity for patent buyers. “There had never been anything like it up to this point, not even close,” says David Descoteaux, a banker with Lazard, an investment firm that advised Nortel through the bankruptcy.

It wasn't just the quality of the patents that attracted serious investors. It was the sheer volume. Having thousands of high-quality patents to aim at a competitor is a uniquely useful weapon in this new sport of kings.

Patent attorneys love large patent portfolios because they make negotiations easier, says Thomas Ewing, the IP consultant. "When you get to these big numbers ... you're not talking about merits anymore. The merit discussion just goes out the window," he says. The reason? When you're paying lawyers between \$10,000 to \$15,000 per patent to drill down and research each patent, it's usually less expensive to cut a licensing deal. "Anything over 200, nobody's talking about merits," he says.

But Google, Apple, and Microsoft saw the same promise as Veschi, and soon, they marshaled forces for a bidding war over Nortel's patent portfolio. When the dust settled, Nortel's patents sold for \$4.5 billion — \$1.3 billion more than the combined value of all of the company's business units.

The \$4.5 Billion Sales Job

John Veschi and his small team of former Nortel employees had front-row seats to the bidding war. In fact, they deserve a lot of the credit for driving the patent portfolio sale as high as it went.

Veschi is serious and intense. A half-marathon runner who likes to talk, but with a peripatetic way of qualifying his thoughts in mid-sentence. His first job out of school was as an officer at Fort Monmouth, New Jersey, the now-decommissioned Army signals facility that was once the workplace of Julius Rosenberg.

Veschi signed on to run Nortel's licensing business in the summer of 2008 — just six months before the company declared bankruptcy. He had run licensing practices at Lucent and semiconductor maker LSI before Nortel, and he saw a rare opportunity: a vast portfolio of top-quality patents that nobody had yet tried to license.

"I was getting my equity struck at a nice low point and the future was rosy and I could help make it that way. We could be less wimpy about our IP." — John Veschi

He thought it was the perfect time to jump onboard and work on building a licensing business that rivaled Lucent or IBM. "I was getting my equity struck at a nice low point and the future was rosy and I could help make it that way," he said, because "we could be less wimpy about our IP."

What he ended up with was a quick hiring freeze and then, after bankruptcy, the job of analyzing Nortel's 8,500 patents, figuring out which ones should be sold with the company's business units, and which ones could be sold separately at auction. When this job — called the Patent Segmentation Exercise — was done, Veschi had a portfolio of 6,000 patents to put up at auction.

It's a remarkable story. Veschi and his small team ended up riding along with Nortel right through the bankruptcy, and ultimately selling Nortel executives and creditors on the idea that the patents should be split apart from the rest of company's assets and sold separately. That wasn't immediately obvious to some creditors and company executives who thought they could bump up the sale prices of Nortel's business units by rolling in more patents. "It was at the time controversial," says Michael Lasinski, an early ally of Veschi's who worked on a committee for unsecured Nortel creditors during the bankruptcy.

Lasinski was quick to see the value of Nortel's patents because, like Veschi, he'd had some experience in the patent marketplace. He'd worked at the Ocean Tomo Patent Brokerage, a company that had pioneered the idea of Sotheby's-style patent auctions.

Veschi and his team started building financial models. From his time at Lucent, he knew how to show just how much Nortel's patent portfolio could bring in. At first, some executives thought it would be less than a billion dollars. But with Lasinski's support the models showed

a lot more money. The team built a database of Nortel's patents and mapped them out to current and emerging networking standards to show where they might play.

Then came the sales job of proving just how valuable these patents were to potential buyers. Google was first out of the gate, with a \$900 million stalking horse bid — a bid pre-approved by Nortel's management and creditors aimed at establishing the minimum amount that the patents would sell for in bankruptcy auction.

It didn't take long for others to jump in. At first, Apple, Intel, RIM, and others were interested, as was a patent company called RPX, which buys up patents defensively, so they cannot be used against its investors. By the time the bidding got to \$4.5 billion, there were just two groups: Rockstar, and a group called Ranger. Ranger was Intel and Google.

Does Rockstar Own 4G?

After the Rockstar group acquired the 6,000 Nortel patents, about 2,000 were transferred to the companies behind the consortium. But 4,000 remained with Rockstar the company, which is actively trying to make money from them.

It turned out that Nortel had patents that covered parts of the up-and-coming mobile data technology called Long Term Evolution. Also known as 4G, this is the standard now bringing speedier internet access to mobile phones. Many of those patents are now [owned by Rockstar](#) and could be enforced against mobile phone companies — Google, for example — in the coming months.

“You knew you were making tens or hundreds of millions of dollars' difference.” — Scott Widdowson

But Nortel's patents also covered core networking technologies used by routers and switches and many other areas. The European Telecommunications Standards Institute, the standards body for the European telecommunications industry, has a [database](#) that lists whose patents may apply to emerging telecommunications standards, and it lists 43 standards areas, many relating to LTE, where Nortel patents — some of them now transferred to Rockstar — are in play.

Close to 25 of Rockstar's employees are former Nortel workers, including lawyers, managers and engineers. Having longtime Nortel engineers like Widdowson and McColgan — people who know the business and the patent portfolio — is going to help Veschi do a better job in figuring out where to go looking for licensing fees. Widdowson won't say what he's working on, by the way, except that it's related to consumer telecommunications technology.

But that's not why Widdowson says he stuck it out through the bankruptcy. He was offered another job, and he turned it down.

Former coworkers might have found this a little strange, but it turned out that Widdowson liked the work he was doing. The mesh of the legal and technical work was a new challenge for him, but there was another reason he stuck with it. He felt like he was helping his former Nortel colleagues who were hurting because of the bankruptcy.

McColgan reports a similar story. Even though she had colleagues telling her she was “off her rocker,” she stuck it out with the patent work because she thought she could make a difference and increase the amount paid back to Nortel's workers.

“You knew you were making tens or hundreds of millions of dollars' difference,” Widdowson says, “which is not usual for someone who is an engineer.”

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