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Inside Nathan Myhrvold's Mysterious New Idea Machine

As his cash-rich firm snaps up thousands of patents, fears emerge that it will become a leader in litigation—not innovation



COVER STORY PODCAST

A rocket scientist, a mathematician, a brain surgeon, and a lawyer walk into a room. It sounds like the beginning of a joke, but at Intellectual Ventures it's something more serious—a business model. IV traffics in a single product: invention. On June 17 it invited 10 of the most blindingly brilliant doctors and scientists in the country to a daylong brainstorming session at its headquarters in a nondescript office building next to a swamp in Bellevue, Wash. Assembling around a conference table, the diverse group, which included physicists from Lawrence Livermore National Laboratories, physicians from several major medical centers, and a Stanford University postdoctoral fellow in bioengineering, spent the day pondering a complex question: How can surgery be improved? The goal wasn't just incremental advances but multibillion-dollar lightning bolts that could change the world and, not incidentally, make all of the participants rich.

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As the experts spoke, Intellectual Ventures' patent lawyers, many of them with doctorates in science themselves, monitored the highly technical interchange, taking notes, recording the conversation from two microphones hanging from the

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ceiling, and snapping pictures of whiteboard drawings. The room was windowless, the furniture standard issue, and the participants casually dressed. They fueled themselves with caffeine, beef jerky, and nuts. Throughout the conversation's many twists and turns, an IV staffer at a computer terminal summoned relevant articles or patent documents and projected them on the wall for all to see. "This is really cool!" enthused IV CEO and co-founder Nathan P. Myhrvold, the moderator of the session, in reaction to one concept tossed out at the meeting. "This is really damn cool!"



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Is this the future of invention in America? Myhrvold, 47, is betting that it is. Very few others, whether in business, government, or academia, are willing to spend as much money, and wait as long, to nurture fundamental innovation. As intellectual property becomes a bigger part of the economy, figuring out how to invest in it will become a more urgent issue. Though there will undoubtedly be competition, Myhrvold hopes to set the standard. His ambitious goal is to own the next generation of transformative technology in some of the world's fastest-growing industries. Over the past three years, Intellectual Ventures has held about 70 brainstorming sessions. The result: 500 patent applications in areas including optics, biotechnology, robotics, e-commerce, and mobile networking. "We think that if we specialize in invention, we can do it better than people who do it as a sideline," he says.

ON THE PROWL

Myhrvold's bold words might be easily dismissed if they came from somebody else. But you have to take him seriously. The brainy mathematical physicist, who made a fortune during 14 years as a top Microsoft Corp. scientist, exuberantly engages in conversation about almost everything, from cooking (he trained at a French culinary school) to cosmology (he studied curved space-time with Cambridge University's Stephen Hawking) to paleontology (he's a sponsor of dinosaur digs). Myhrvold is perhaps the only person in the world with both the scientific credibility to attract Intellectual Ventures' all-star roster of inventors and the business contacts to lure the company's blue-chip investors, which include Microsoft, Intel, Apple Computer, Sony, and Nokia.

With his pink cheeks, curly blond hair, and jovial manner, he can seem almost cherubic. But not everybody views Myhrvold as an angel—far from it. That's because Intellectual Ventures is not just a think tank where big brains sit around dreaming up ideas. It also has a second business, one that is generating controversy: buying patents. In fact, that's a much larger part of the operation. Maintaining secrecy through shell companies and nondisclosure agreements, often swooping in aggressively to seal deals, it has scooped up thousands of patents and is on the prowl for many more. That has many people in the tech world worried.

What's so frightening about patents? Inscrutable documents with funny schematic drawings, patents reward inventors with an exclusive right to their inventions. They seem so all-American, evoking images of Thomas Edison and Eli Whitney. But lots of small companies, disparagingly called trolls, have gone into business solely to own a handful of patents. They then make money, sometimes lots of it, by going out and suing companies they think have ripped off the inventions. The case that has thrown the most fear into big companies is NTP Inc.'s lawsuit against BlackBerry maker Research in Motion Ltd., which RIM paid \$612 million to settle in March.

With its vast hoard of patents, IV could turn out to be the world's biggest patent troll. It could have the power, at least in theory, to sue a vast swath of Corporate America, becoming a force that smothers rather than nurtures innovation. "There's just a lot of questions about all of these patents they have and what they are going to do with them," says Christina Schneider, a spokesperson for Hewlett-Packard Co., echoing concerns heard widely in Silicon Valley.

Myhrvold, not surprisingly, dismisses these fears. He says he's opposed to patent litigation. In response to charges that he is a predator, Myhrvold describes himself as an entrepreneurial financier, somebody who is devising new ways to fund



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innovation. He likens himself to the first generations of venture capitalists and private-equity investors, who were also widely vilified. Myhrvold believes that there is an emerging trend to treat intellectual property, and patents in particular, as an asset that people and companies will invest in, the same way they do in real estate or stocks. The result, he believes, will be a boon for invention, just as venture capital and private equity have stimulated enormous growth and innovation in the American economy. "I'm one of the first invention capitalists," he says.

Of course, being a trailblazer has its perils, one of which is that the trail may go off a cliff. The business model Myhrvold and his fellow IV executives have dreamed up is ambitious and unproven. It is unclear if it will be able to produce a consistent revenue stream. Six years after opening for business and nearly four after first soliciting funds, IV still appears years away from offering its investors any return.

Brought up in modest circumstances by a single mother in Santa Monica, Calif., Myhrvold describes himself as an almost accidental mogul. Taking a leave from studying cosmology at Cambridge University to help friends with a software project, he found himself in 1984 heading a startup known as Dynamical Systems. Two years later it was acquired by Microsoft, where he ended up as the company's first chief technology officer and a close adviser to Bill Gates. Some in the tech industry dismiss him as an intellectual dandy, a brilliant attention seeker who never managed to produce any important innovations at Microsoft. Yet the barbs have done little to tarnish his star. Now he travels by private jet and hobnobs with Warren Buffett, Michael Bloomberg, Steven Spielberg, and Herb Allen.

SPREADING RISK

Myhrvold's time at Microsoft planted the seeds that would grow into his vision of IV, which he and Edward Jung, who had also been a top scientist at Microsoft, co-founded in 2000. One formative experience was his role in creating Microsoft Research, which now employs more than 700 researchers. A key insight he had in developing the operation, he says, is that predicting which inventions will be successful is enormously risky, and the only way to mitigate that risk is to invent on a very large scale. So just as a stock fund manager spreads his exposure over many positions, IV is aiming for a diversified portfolio of patents.

The invention sessions are part of that strategy. Myhrvold believes they enable IV to come up with breakthrough ideas because they combine the insights of an interdisciplinary group of experts in a way that rarely happens in industry, where expertise tends to be siloed. At the June 17 session, for instance, Lowell L. Wood Jr., a physicist who once designed nuclear weapons; Michael A. Smith, a chest surgeon from the University of Southern California; and Edward S. Boyden III, a biomechanical engineer, are among those at the table who watch as neurosurgeon Dennis J. Rivet gets up and walks over to the whiteboard.

It's midday, the air in the room has grown stuffy, and the coffee has long since run out, but the energy and attention level remain high. Rivet starts to describe a problem he faces with aneurysms. Taking a marker, he draws a picture of a blood vessel with an ominous balloon-shaped bulge.

"This is a common problem?" asks Myhrvold, who has no problem at all following a discussion about the technicalities of endovascular surgery. "It is," replies Rivet. "It's what I think about in my spare time." Myhrvold's eyes light up, and almost instantly the room is crackling with ideas for solutions. The IV patent lawyers type furiously, preparing notes they will later mine for patent ideas.

The payoff from these concepts could take a long time to arrive. It takes at least three years to apply for and win a patent. And then comes the really hard part: finding somebody to commercialize it. Because Intellectual Ventures is only about ideas, Myhrvold has no interest in manufacturing and marketing new products. His plan is to offload all of that work to licensees. Intellectual Ventures needs to attract "patient capital," Myhrvold says. The company tells investors that there's "no guarantee of profit after five years."

As for the inventors themselves, they get a share of the ultimate profits if they are listed on the patent—a matter on which Myhrvold is the ultimate decision maker. IV also pays for their time and expenses. But Rivet says that money is only a small

part of the equation. "The appeal is twofold: the opportunity to interact with a diverse group of thinkers purely for the sake of invention, and the efficiency with which IV translates imagination into intellectual capital."

Although IV's own invention efforts are what Myhrvold enjoys talking about most, they are not the most important part of the business. The company, in fact, spends much more money buying ideas generated by others. Armed with its billion-dollar war chest, IV has stockpiled thousands of patents, according to Myhrvold, who will not disclose the precise number.

"TROLL REPELLENT"

When Myhrvold and Jung first began raising money for IV in 2002, the sales pitch was crystal-clear: The company's patent portfolios would provide a way for big tech companies to defend themselves against intellectual property lawsuits. At the time, many people feared an explosion in patent litigation because of the bursting of the dot-com bubble, which had sent many startups into bankruptcy. That, in turn, had forced the defunct companies to put their patents—their last remaining assets, in some cases—on the market at bargain-basement prices. The threat that opportunistic trolls would buy the patents and then file lawsuits alleging infringement worried many executives in Silicon Valley.

So Myhrvold and Jung began making the rounds of major technology companies to drum up investment in what they called the Patent Defense Fund, a name that pretty much translates into "troll repellent." Initially, each company, say several individuals familiar with the sales effort, was asked to pony up \$50 million. The plan was that IV would then go out and buy patents that were knocking dangerously around the marketplace, and investors would get a license to the entire portfolio—effectively immunizing them from the danger of intellectual property litigation.

Legal developments, meanwhile, provided some useful marketing support for the concept. In February, 2003, a jury hit Sony Corp. with \$25 million in damages for infringing a handful of patents that the plaintiff had purchased for \$65,000. (Sony settled for an undisclosed amount and took out a license.) Sony signed on with IV, as eventually did Intel, joining a group that now includes Microsoft, Apple, Nokia, Google, and eBay. Some have paid much more, and some less, than \$50 million. IV declines to confirm the identity of its investors, and the other companies declined to comment or did not return calls. IV requires investors to sign a nondisclosure agreement.

Although the ostensible purpose of the Patent Defense Fund was to protect its big investors, some executives saw an implicit threat when IV approached. It was "the greenmail pitch," says Jim Huston, a former patent and licensing executive at Intel, now at Blueprint Ventures, a South San Francisco VC outfit. "If you don't invest, you're our No. 1 target." In other words, the worry was that IV would use the patents it bought to file infringement suits against companies that turned it down. Myhrvold scoffs at this charge, noting that businesses that aren't infringing have nothing to worry about, and that IV has yet to file a single lawsuit.

But it's clear that many of IV's investors are ambivalent about Myhrvold's enterprise. Intel and Apple, for example, happen to be charter members of a group formed last month called Coalition for Patent Fairness. Myhrvold calls the CPF "the infringers' lobby," since it has already begun pushing in Congress for changes that he believes weaken protection for patent holders, such as providing more avenues to attack a patent's validity. The CPF, in turn, was eager to provide information and spokespeople for this article to advance its view that IV is nefarious.

Jason Schultz, a lawyer at the Electronic Frontier Foundation in San Francisco, who spoke on behalf of the CPF, criticizes IV for its secrecy about such things as the identity of its investors. "Having injected themselves into this debate about patent trolls and patent reform, they've sort of placed their credibility on the line," Schultz says. "So transparency is important."

Despite the fact that Myhrvold's backers include some of the biggest companies in technology, he spends a lot of time criticizing them in public. The notion of tech heavyweights "stealing" from inventors is a theme that Myhrvold returned to

repeatedly in a series of interviews with *BusinessWeek*. At many big computer and Internet companies, he says, there has long been a culture of intentionally infringing patents or turning a blind eye to potential infringement. "You have a set of people who are used to getting something for free, and they are some of the wealthiest companies on earth," he says, his voice rising in indignation as he steers his car through traffic on his way to one of his favorite Seattle restaurants. "I was there. I was in the meetings. This is they way this business thinks about it." In Myhrvold's eyes, the fact that so many large companies are blatant intellectual property rights infringers just means that there's more money to be squeezed from his patent portfolio.

For all the controversy surrounding IV, its fund-raising efforts have proceeded apace. It recently completed a second round, part of it from institutional investors. IV stakeholders now include pension funds, VC firms, and wealthy individuals, Myhrvold says. Izhar Armony, a partner at VC firm Charles River Ventures in Waltham, Mass., says: "I think that Nathan is on to something really good and important." Charles River has invested in IV, he says, because "we share a common vision of thinking of [intellectual property] as an emerging asset class."

As its investor base has broadened and its strategic vision evolved, IV has recast the way it packages its product. All references to the Patent Defense Fund are gone. It now offers two types of investment opportunities. Investors can channel money into IV's own invention efforts, where the time frame for any return is quite long, or into the patent acquisition fund, which aims at quicker gains. While Myhrvold declined to comment on the size or structure of IV's funds, he hints that there are multiple vehicles to suit varying investor needs.

How IV finds what it wants to buy is "part of our secret sauce," says Peter Detkin, who coined the term "patent troll" in 2001, when he was an inside attorney at Intel Corp. He joined IV as a managing director in 2002. An in-house acquisition team scours the market for opportunities, but IV also relies on brokers and finders to bring it deals. Universities are another source of inventions, and IV has acquired patent rights from more than 50 of them.

STEALTH MOVES

Intellectual ventures can be very aggressive. After *BusinessWeek* ran an article in February describing the plans of a firm called Ocean Tomo to hold a public patent auction, IV got in touch with several of the companies identified in the article that said they planned to submit some of their patents for sale, says James E. Malackowski, Ocean Tomo's chief executive. It persuaded BellSouth Corp. to yank its lot from the Ocean Tomo auction and then bought the patents, which covered wireless services and voice messaging. <(IV declined to comment on this.)

Stealth is another of IV's hallmarks, as it is for many companies that don't want to tip off competitors to the type of technology they are buying—or drive up the price if they are seen as having deep pockets. The shell companies IV has used to acquire patents have whimsical names, often leaning toward the literary (Steinbeck Cannery, Dickens Coal, Kipling Sahibs) or the colorful (Sky Blue Interchange, Steel Gray Server, Midnight Blue Remote Access).

IV's acquisitions range widely across many technologies. The aim, Myhrvold says, is to get a "critical mass" in 5 to 10 areas. While IV won't identify them, there is clearly a focus on core technologies such as chip manufacturing and design and telecom. IV's own invention efforts focus on such things as biotech and optics, which could produce some relatively near-term payoffs, and on highly esoteric fields where any bet is highly speculative, such as meta-materials, engineered composites with unusual electromagnetic properties. The materials have potential use in stealth technology for the military.

Ronald S. Laurie, at patent brokerage and consulting firm Inflexion Point Strategy in Palo Alto, Calif., calls IV "the buyer of last resort" for the sellers he represents. "You don't get the best price," Laurie says, "but you get a quick deal." IV got in touch with the inventors of a TV-related patent and offered them less than \$50,000 for it. After the inventors retained broker IPotential, they got IV to go up to \$150,000, but the inventors held out for more. The final sale price last year, to an Asian electronics company: \$1 million. IV says the patent had problems because a

lawyer had placed a lien on it, though that was resolved.

STILL BUILDING

The \$64,000 question (or \$640 million, to approximate how much it cost BlackBerry maker Research in Motion to settle the patent infringement suit filed by NTP) is: How does IV plan to use its patent portfolio to make money for its investors? Is it going to devise cool new products? Or is IV going to launch a barrage of patent lawsuits against every big tech company that is not an investor? The company says it is at least a year from executing what it calls its "go-to-market" strategy. That's largely because it hasn't yet acquired a critical mass of patents. "There's strength in numbers," managing director Detkin says, because patents are more attractive when related technology can be bundled, giving users more freedom to operate.

Brent Frei, IV's executive vice-president, who's managing the go-to-market plans, says there are multiple ways it will extract value from its holdings that do not involve lawsuits. Intellectual Ventures could sell a patent to a company that planned to commercialize it. Or it could enter into a joint venture or a licensing arrangement. Those are all nice things. But the unavoidable fact is that not everybody will want to play ball with Myhrvold & Co. When Myhrvold asks some companies for licensing fees, they'll resist, and then Intellectual Ventures will have no choice but to go to court. Myhrvold adamantly rejects the idea that suing people will become a mainstay of his business operation. "Litigation is a huge failure," he says. It's "a disastrous way of monetizing patents."

What Myhrvold hopes will happen instead is that what he calls the culture of infringement will come to an end and companies will voluntarily pay for rights to technology they use. He draws an analogy to a patron stiffing a restaurant on a check by simply leaving without paying the bill. Most people don't dine and dash, but it's not because they're afraid they would get caught and suffer consequences if they did. It's because most people simply think that paying for their meal is the right thing to do.

Twenty years ago, he notes, software makers—some of whom now flout patents—faced the same predicament with trying to get the market to respect copyrights. Even big corporations, he says, would buy a single copy of a spreadsheet program and copy it. That has largely changed, through education, changes in the law, and some vigorous enforcement. Myhrvold is aware he may have to do some enforcement of his own. A moment after calling litigation "disastrous," he adds: "Sometimes disaster happens, and you have to do it."

Myhrvold has other ambitions that transcend IV's business. "I'd like to be successful enough that a model gets started," he says. That model entails a network of firms that exist to finance invention. Just as venture-capital firms took root in Silicon Valley 30 years ago, Myhrvold envisions an industry devoted to funding the earliest stage of the product-creation cycle. "Today invention is an area that people view as too illiquid, too uncertain, and too risky, so that nobody wants to invest in it," he says. "The world has shown that if you provide capital and expertise to an area that is starved for capital and expertise," then "really good things will happen."

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