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Tech Savvy Phillips Trains Eyes on Nano

By Andrew Jensen

THE ROGERS OFFICE of Jim Phillips must be seen to be believed.

There, on a bookshelf, is an original, prototype Motorola flip phone with his name embossed on it.

Nearby is a framed U.S. patent certificate for PDA technology sitting alongside a few of the original camera lenses used by iPIX, now a Sony technology.

Framed advertisements, news articles from *Business-Week* to *Wired* to the *Wall Street Journal* and numerous honors cover the walls.

There's Phillips on the cover of one magazine featuring the "Vein Viewer," a product he bought and brought to market that was named *Time's* "coolest medical invention of the year" in 2006.

Inside another frame is a copy of the famous "Beam me up, SkyTel" advertisement featuring the late James Doohan, better known as "Scotty" in the "Star Trek" television series and movies.

Phillips, who co-founded SkyTel, and Doohan are posed together in another picture, and a Clio award hangs proudly for an ad Phillips wrote for SkyTel that advised businessmen they could either have lunch — by staying connected with a SkyTel pager — or be lunch.

A framed still from the "Batman" cartoon series hangs prominently, a gift from Time Warner after the fantastic success of the cable modem Phillips helped conceive and bring to market from Motorola that has revolutionized the Internet.

It's enough to make the head spin.

Phillips and the companies where he's held a leading role have touched anyone who's ever used a pager, a cell phone, high-speed Internet, sent a text message, shopped and sold on eBay, viewed or sold real estate online or booked a hotel after taking a "virtual tour" of the room.

Phillips has occupied plenty of rarified air in his 57 years — in a literal sense following his father's footsteps as an Air Force pilot and a figurative one as a member of the executive board of the U.S. Council on Competitiveness and Microsoft founder Bill Gates' exclusive entrepreneurs club.

Phillips' story is hard for even FedEx Kinkos chairman Rob Carter to believe, and he travels with the same crowd. Carter, who was named the 2005 "Chief of the Year" by *Information Week* for



Rob Carter



TOBE EMMERT

Jim Phillips helped change the world with the pager and the cable modem. As NanoMech chairman, Phillips thinks he's found the next tech revolution at the University of Arkansas.

leading FedEx's rapid and efficient response to Hurricane Katrina, worked closely with Phillips for two years developing the FedEx Institute of Technology at the University of Memphis.

Phillips took the project from concept to completion on time in just two years, shepherding the process in every aspect from the name to fund raising to navigating multiple public bureaucracies.

"One thing I appreciate about Jim," Carter said, "is that when he talks about his friends,

you wonder if he really knows these guys. The next thing I know, the phone is ringing. He is very well connected and he has a great ability to utilize those connections to move ideas forward."

Think Small

Anyone who is wondering where Northwest Arkansas is going next should pay close attention to what Phillips is doing here when he could be anywhere.

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PHILLIPS

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Phillips, who went to high school in Little Rock while his father was stationed at Jacksonville Air Force Base, moved to Rogers a year ago. He set up shop under Pinnacle Hills developer Bill Schwyhart's Pinnacle Investments umbrella. Phillips plans on getting involved in some real estate through the company, and also launched his own Pinnacle Enterprises firm to handle his investments.

One of those is the ZipHat, a unique 2-in-1 ball cap and visor with a top that zips off, manufactured by Missouri-based Paramount. The Web site recently launched and Disney is debuting more than 20 designs starting this July 4 weekend.

Schwyhart heavily recruited Phillips, and made the move easier by buying Phillips' house in Memphis for \$2 million.

"I'm here because of quality of life," Phillips said. "We could have moved anywhere."

From selling phone systems for NorTel in the 1980s to founding SkyTel to pitching the cable modem to skeptical Wall Street types and industry executives, Phillips often saw the world change years before it actually did.

As the newly named chairman of Fayetteville-based NanoMech, Phillips sees the next sea change originating from the University of Arkansas' Research Park.

The use of nano-sized particles — one billionth of a meter — has the potential to not only lead a new technology revolution that could snap the U.S. out of its economic morass, Phillips says, but to revitalize an American manufacturing sector long decimated by offshoring jobs.

"I can see NanoMech and its

associated products could turn the tide in terms of the high-tech intelligent manufacturer," he said. "We can come back to where we are the leader or a major component to create best-in-class manufacturing on a nano scale."

NanoMech was awarded Frost & Sullivan's 2005 "Excellence in Technology" honor, and U.S. Under Secretary of Commerce for Technology Robert Cresanti has given NanoMech a "Recognition of Excellence in Innovation" for overcoming barriers to nanotechnology commercialization.

Founded in 2002 as a public-private partnership between the UA and CEO Calvin Goforth, NanoMech set out with a mission to deploy nano manufacturing technology.

NanoMech chief technology officer Ajay Malshe, who calls the UA's Research Center an "innovation hatchery," sees nano as the natural progression from micro technology.

"It's the next revolution," Malshe said. "It truly can be a workhorse for the next economy."

Phillips can go on and on about the possibilities. First, there is the already patented and sold TuffTek coating, which sprays cubic boron nitrate nano particles onto the surfaces of cutting tools used by large industries, improving the efficiency and durability by as much as 300 percent.

NanoGlide will soon launch as an oil additive, Phillips envisions house paint that never fades, medical implants that never wear out and cost less and undetectable solar photovoltaic cells in roof tiles rather than the large panels currently in use.

"It will disrupt the entire manufacturing process as we know it," Phillips said. "It will disrupt the entire coating process as we know it. Products will last longer, be stronger,

work better.

"Nano is real. It's not hyperbole or some loose code. It's truly tangible science. That's why I'm in a shepherding role here as chairman."

Phillips said he's "surrounded by geniuses" at NanoMech, and he's helping steer the protection of intellectual property rights, bring his formidable marketing skills and connections to bear and set up an investment vehicle for venture capital firms and others to put their stake in nano technology.

"We can grow this into the next Hewlett-Packard right here in Arkansas," Phillips said. "It has that kind of capacity."

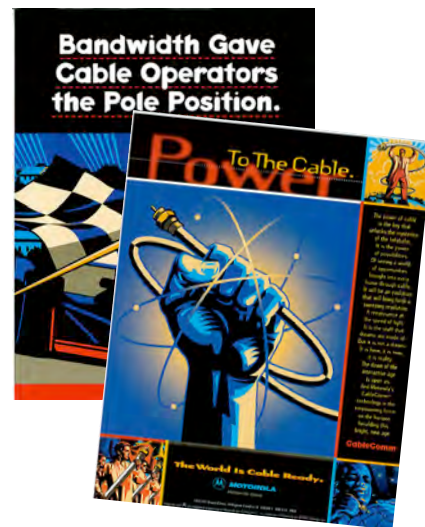
The University of Arkansas is the first to commercialize the nano-spray coating, said Malshe. It's a process *Cutting Tools* magazine, a trade publication, has called the "Holy Grail" of coatings.

With its patents, the UA stands to reap a potential windfall of royalty revenue. The cutting tool industry alone is a \$20 billion annual business.

"The beauty of NanoMech is that it will pay tremendous royalties back to the University of Arkansas," Phillips said.

Carter put it simply. "Northwest Arkansas' gain is Memphis' loss," he said. "What the Northwest Arkansas community should recognize is that he's not only highly successful, but he believes in giving back to the community that supports him."

Don Hutson, the Memphis-based author of the *New York Times* No. 1 bestseller "The One-Minute Entrepreneur," said Phillips' move was "a compliment to the whole area." A fellow University of Memphis alumni, Hutson said the "Phillips philosophy" permeates his book.



Phillips pitched the cable modem to executives by telling them a decade in advance that one day people would download movies over the Internet.

"It's a can-do spirit with a take-charge follow through," as Hutson defined it. "A lot of entrepreneurs talk a great game and don't have that. He's got it. He's the man."

'A serial entrepreneur'

Chris Galvin, the former CEO of Motorola and current CEO of the Harrison Street Fund in Chicago, knows well the entrepreneurial spirit. His grandfather founded Motorola in 1928, and after leaving Motorola in 2003, Galvin went on to be CEO of Navteq Inc., which sold to Nokia last summer for \$8.1 billion.



Chris Galvin

Carter calls Phillips "a serial entrepreneur." Galvin credits Phillips for "launching the broadband market."

"It was brilliantly marketed by Jim," Galvin said. "Without him it may not have come to pass."

Galvin was effusive in his praise, like Carter and Hutson using the word "unique" to describe Phillips' vision.

"Jim has a great track record at early marketing," Galvin said. "He has enormous amounts of energy and he's

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very clever about how you break through new ideas. “He loves being on the front end of brand new things.”

After leaving SkyTel, which eventually sold to MCI Worldcomm, Phillips became president of Telular and took the company public with its patented wireless loop technology and alarm systems. Phillips was also a senior vice president at MobileComm, which eventually sold to BellSouth for \$3 billion.

Phillips went on to become a vice president and general manager at Motorola and was on the front end of both digital cell phone technology and the cable modem.

In a Motorola lab as he talked with engineer John Batten in 1994, he noticed Batten was “pinging” (communicating) data with another technician. In the late 1980s, Motorola had begun exploring the possibilities of using cable wires with their radio frequency capability as an alternative to the regional Bell operators for transmitting telephone calls.

Cable companies weren’t much interested in the phone business back then, but the Motorola engineers kept the device.

“I asked him, ‘How fast are you doing that?’” Phillips recalled. “He said, ‘27 meg.’ Prior to that, the Internet was at 56 kilobits. It was massively faster.

“I said, ‘So we have the ability to do that?’ And he said, ‘Sure, that would be easy. It would be a lot easier than the voice-over cable systems.’”

Phillips sat back and said, “Eureka! We started the cable modem industry right then and there. Within the matter of a year, we had our first cable modems out. We were delivering ahead of everybody else to Time Warner, TCI, and I had a

great opportunity to front that to the world.

“It was a very exciting time.”

Phillips, whose job at Motorola was to convince CEOs and analysts that one day people would watch TV and download movies over the Internet, honed his confidence as a salesman early on in his career after earning his MBA from what was then Memphis State University.

After writing his thesis on the possible acquisition of Telecommunications Systems of America by Nortel — which happened soon after — he joined Nortel at the bottom learning the industry by pulling cable in attics.

By age 27, Phillips was running a third of U.S. operations for Nortel and was competing head-to-head on the sales trail against Centel vice president Jim Lovell.

Yes, that Jim Lovell, the Apollo 13 astronaut immortalized on film by Tom Hanks in the 1995 movie.

Phillips said he would often follow Lovell in boardroom presentations, usually receiving a greeting that included the word “junior” from Lovell as he’d pass by.

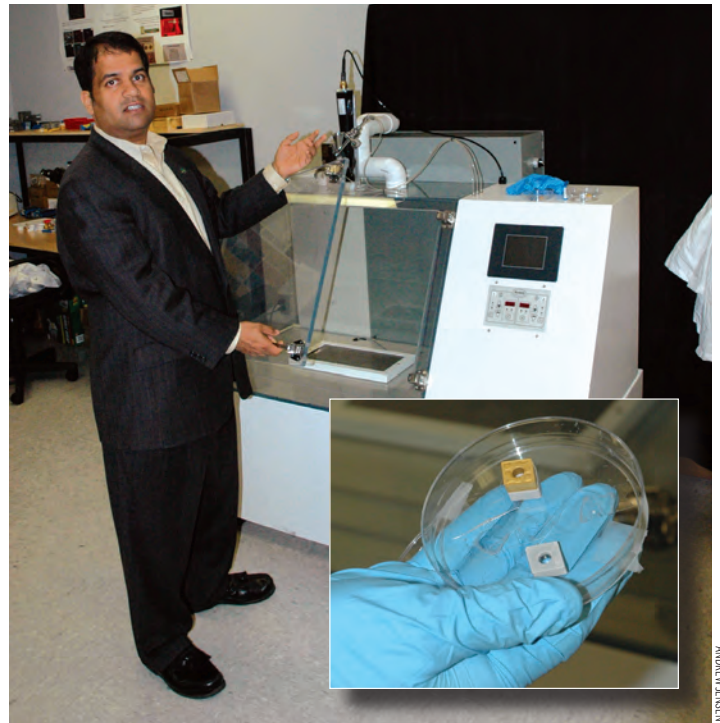
Then one Thanksgiving at home in Tennessee with his father, Phillips received what he calls his “greatest compliment.”

“My dad got the call, he says, ‘There’s a guy named Jim Lovell on the phone. Is that ‘the’ Jim Lovell?’” Phillips said. “Jim tried to hire me and move me over. I thought, ‘I must be pretty decent.’ It was a big confidence builder.”

Asked if he’d just beaten Lovell out on a big deal, Phillips laughed.

“I got a lot of contracts he didn’t,” he said, still laughing. “This was before Tom Hanks played him. After that, I would have been shut out.”

Following Motorola, Phil-



NanoMech CTO Ajay Malshe shows off a “turn-key” nano sprayer that can apply particle coatings to various surfaces to improve durability and efficiency. INSET: At top is a finished tooth for a cutting tool coated with cubic boron nitrate particles.

lips set about seeding companies to produce content for the suddenly enabled Internet. He went on to become CEO of TeleRobotics, which he renamed iPIX and turned from a startup imaging platform he thought may eventually become a \$100 million company to a \$3 billion market leader that *Forbes* would call the “Kodak of the Internet.” Phillips stepped down from iPIX in 2001 after navigating the company through what he called the “tech wreck,” otherwise known as the “dot-com bust,” before leading the FedEx Institute project at the request of FedEx founder Fred Smith.

Phillips, who called his departure from iPIX “very harmonious,” is still proud to note that iPIX wasn’t one of the Internet companies that went belly up overnight and that he was able to help it survive by raising fresh capital when virtually no one else could in the tech sector.

Seven years and two CEOs

later, iPIX filed for bankruptcy in 2007 and Sony eventually bought the iPIX patents.

Another of those startups Phillips funded was Picture Works, which developed the drag-and-drop image software utilized by eBay. In a basement at the University of Tennessee, he discovered a crude product called “On Target,” which illuminated veins and allowed the accurate insertion of needles for IVs and other procedures, particularly benefiting elderly and neonatal care.

Phillips renamed it the Vein Viewer, named the company Luminetx, got the device approved within two years by the FDA and raised \$30 million to take it commercial.

Not every idea has to be high-tech. Phillips was just as excited about opening up a new Minnie Mouse ZipHat as he was talking about the potential for NanoMech.

“If Jim thinks it’s possible,” said Galvin, “if anyone can make it work, it’s him.” ▀

ANDREW AINEN