THE MIXED SIGNALS IN HIGH TECH'S FUTURE

In December 1982, video games excited anyone who loved the challenge of man against machine. And judging by the amount of dollars generated by the games, the machines were winning. So were the black engineers and arcade owners who capitalized on this outrageous fad.

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The booming success of video arcades and home video games set off an explosion in the electronic toy and home computer industries. And black

engineers and entrepreneurs were determined to grab a share of the megabuck future in this hyped-up bonanza. The 1982 cover story reported on the tremendous growth and resulting career and business opportunities in the $7 billion industry. Unfortunately, the market went soft soon after. Sales of games and attendance at video arcades plummeted. In fact the whole market peaked well below the levels expected by the Wall Street whiz kids who analyzed this field.

In reality, the explosion fizzled. Games were for kids, and by 1984 it was apparent that the real hot spots were in more sophisticated applications of high-tech know-how. So, like their fellow techies, black engineers and entrepreneurs are following the example of the founders of Apple Computers. These men and women are courageously going against the big corporations in the race to design better computer software, telecommunications systems and even electronic video scoreboards. These captains of high-tech companies are playing for keeps, but the competition is rough. They are mastering the necessary skills to stay ahead of the pack: sharp marketing techniques, hard-nosed business strategies and, of course, a never-ending quest to build a better widget.

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When it came to games, Jerry Lawson was a key player at Fairchild Camera and Instrument Corp. So much so that when the Mountain View, Calif., firm decided to create a video games division in 1977, he was chosen as the unit's first employee. But when it came to playing the corporate game, Lawson soon realized how elusive personal fulfillment could be in a major corporation.

"I got the entrepreneurial bug at Fairchild by handling all the organizing and planning for the games division," says Lawson. The unit ultimately was closed, a victim of the intense competition that shook the entire video games industry. Lawson stayed at Fairchild two more years before finally ending 20 years in the corporate world.

"A feeling among whites is that blacks can't handle the higher levels of the corporate structure," he says. "Too many times, we get stuck in middle management. Being on your own means the elimination of many problems and politics."

Lawson, 44, is now president of Video-Soft Inc. in Santa Clara, Calif. The company was founded in 1981 and experienced early financial success writing programs for Atari video games. But since then, Lawson has had to shift strategies to adapt to

By David Squires

changing market demands. When the games market went bust, Video-Soft started creating more hardware designs and applications software.

In addition to being well-known in the industry for his technical skills, Lawson has a reputation for being able to "squeeze blood from a stone" when it comes to raising funds. These days, however, he is finding that the stones are harder to find.

"Venture capitalists are being really tight in advancing money for start-ups," he says. "It's almost impossible. High tech now is stigmatized as the kind of investment that people are shying away from. That's because the computer industry was very glamorous and many people went into it. When the industry took a downturn, folks lost money in ventures that didn't make it."

In retrospect, Lawson feels that the thing he most underestimated when he started his company was the availability of capital for minority high-tech companies. "If a guy has been a vice president of General Motors and has a Harvard M.B.A., then financiers would lend him money. But how many black guys fall into that category? And while those credentials will get you the money, it doesn't mean that you're knowledgeable in the high-tech area."

He has further observed that the business community, in general, seems more focused on advancing and assisting women and Asians than blacks. "But you just have to keep dealing." As for his strategy for surviving the future trends of the business, Lawson says he's looking to make arrangements with larger companies and to "staying on the fringe of things that have never been done."

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Edouard Pinede (left), founder and president of PKS Communications, a publicly held telecommunications firm, and Ed Hansen, VP of technical services for PKS.

As a teenage vocalist, Lemuel Newmuis just missed getting his name in lights. While a group of his band mates soared to fame and fortune as the Stylistics, Newmuis set about trying to make inroads with his first love—computers.

These days his singing engagements are confined to the occasional performing of the national anthem at Philadelphia Flyers hockey games. However, Newmuis' microcomputer-based signature system was the breakthrough he needed to gain top-flight credentials in his competitive role as an entrepreneur.

Newmuis, 34, is president of the upstart Integrated Computer Technologies Inc., a firm based in Delran, N.J., dedicated to incorporating microcomputer systems into small- and medium-size businesses. ICT evolved from his earlier firm, Digital Display Systems, when Newmuis opted to pool talents with new partners Harvey Sklar and John Sorrel.

But the central figure is Newmuis, who spends 12 to 16 hours a day tinkering with computers at the office or at his home laboratory in Berlin, N.J., near Philadelphia. It is Newmuis' devices that ICT touts when trying to secure financing for other ventures. Also, having failed with several start-ups during the late '70s high-tech rush, he knows the ins, the outs and the uncertainties of the territory.

Newmuis first dabbled in computers while at Dobbins Tech preparatory school in Philadelphia. It was there that he and some friends formed the nucleus of what would become the Stylistics. But Newmuis left the group to attend South Carolina State College on a golf scholarship. After two years and changing his major from business to mechanical engineering, Newmuis returned to Philadelphia. And he continued to dabble in computers.

His computer graphics prowess began in the early '70s at Philadelphia's Spectrum arena when a friend let Newmuis help run the scoreboard at a 76ers game. But Newmuis wanted to get at its guts. He did—developing a graphics and animation program for the scoreboard. He has been run-

ning and perfecting the arena's graphics since 1972. In 1980 he developed a system to show a regular television image on the Spectrum's screen. "I believe I'm the only one in the country who can do this," he quips.

In between, Newmuis worked in several programming jobs, including a position with the German-based Siemens AG, for which he developed computer instructions for defending against missiles and for flying guided missiles.

"But I always had aspirations around making it on my own," he says.

In the late '70s, Newmuis wanted to develop a specialty in the scoreboard area. "But I couldn't get the funding I needed, without having to give up more than I was willing to."

His break came when a friend heard that Bally's Park Place in Atlantic City wanted a system for keeping hotel and casino customers' signatures on file—on computer.

Newmuis got the job and devised the

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system using the newly created DDS technology. Under the system, hotel workers can punch in a name and pull up a customer's credit file along with a digitized impression of his or her signature. Newmuis went on to put in similar systems at such other Atlantic City hotels as Hilton, Trump Plaza Harrah's and Harrah's Marina.

With ICT Newmuis, Sorrell and Sklar hope to pioneer new medical graphics, for instance, that allow a doctor to call up a patient's record that would include digitized CAT scans and X rays. They also hope to market low-cost video scoreboards for arenas and small colleges.

"Many companies have come and gone," says Newmuis. "In high tech, it's a little difficult for investors to size you up. But when you've got something you can show, it's a whole lot easier to get support."

Most high-tech entrepreneurs say—and Newmuis concurs—a key is to find a niche and keep improving it. But even that doesn't guarantee success. For Newmuis, that niche is graphics for microcomputer-based systems.

"I don't know too many people trying to pioneer in graphics for micro-based systems," he says. "And we have a good bit of software as well as hardware knowledge. That gives us an edge in that we can develop specialized hardware along with specialized software."

As for funding, he says, "Things are easier now; I've developed products that have been proven. I guess in the beginning, people thought I was some dumb black dude. But I've proven that, when given the opportunity, I've been able to do what I said I could do.

"I also think people are less wary now of trying a small guy. They know it doesn't take two hundred guys to get something up and running that will make everyone a bunch of money."

But Newmuis believes the biggest reward is being his own boss. "I feel the Lord has blessed me with some real natural ability," he says. "Working with someone else, that ability is stifled, wasted. Being on my own, I've really been able to let it develop to its full potential."

The dream of every engineer is to work for himself. It gives you complete satisfaction.

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Edouard Pinede worked about 17 years "for other people" in the lucrative world of telecommunications. Today, he's dealing dollars for himself.

Pinede, 46, is president of PKS Communications, a publicly held firm based in Milford, Conn.

Pinede found his niche in designing and marketing telecommunications equipment for small- and medium-size businesses. It's a mission he has kept since starting his company in 1982, and for good reason. The business is steady, and he has remained out of the firing line of the AT&Ts and ITTs.

PKS's specialty is the key telephone: the multiline, multibutton phones used in modest-size offices, those not large enough to warrant the expensive PABX systems, for which AT&T, Northern Telecom, Rolm and others fiercely compete.

Pinede maintains that while millions could be spent on a PABX system for offices of 1,000 people or more, a key telephone system—for offices of five to 60 people—sells for $1,500 to $3,000.

"We provide the best cost-performance system in the area we address," he says. "We bring the sophistication to small- and medium-size businesses that only large businesses previously could afford. It's taking the performance of a Jaguar and putting it into a Volkswagen."

Pinede uses some basic reasoning to figure why his business won't run dry. "PABXs serve the means for very large offices," he says. "Usually these are of very large business. But they are the Fortune 1,000, and for every one company of the Fortune 1,000, there are 1,000 others. These are my customers. And you can't run a company without a telephone."

PKS systems are in operation throughout the United States and Canada.

Pinede sees telecommunications as an area that more blacks should try. The breakup of AT&T left many small-business owners, for the first time, with an option to buy equipment from independent companies, companies that can better serve their specialized needs.

"We won't see the evaporation or the saturation that occurred with personal computers," says Pinede. "With a telephone system, once a business expands, it may need new equipment. When a business moves, it changes equipment. Also, there's a large amount of obsolete equipment still in place from before the divestiture. That in itself is a market."

In 1962 Pinede left his native Haiti for France to study telecommunications. He later moved to Canada and worked for ITT, where he was manager of research and development. In 1972 ITT moved him to New York to be technical director of ITT's North American Telecommunications group and vice president for engineering and manufacturing. He spent 14 years with ITT and three for the smaller Tie Communications.

Pinede remembers a time when the high-tech field was so hot just about all one had to do was come up with an idea, ask for and receive financing and begin operation. And after the divestiture of AT&T, he remembers the telecommunications field virtually sprouting start-ups. Now he hears of new firms only every six months or so. "Since we began, there has been continuous adjustment. When I started, I didn't think we'd go public so soon. We went public December 1983. That was the most competitive means available to us."

Pinede says he appreciates the discipline learned in working for a large corporation, but "the dream of every engineer is to work for himself. It provides a more complete involvement, hence a more complete satisfaction." □