THE MARKET

Tom Bloom

Every Region Gets Into the Technology Act

By Nicholas D. Kristof

WHEN Ann Gleason scouted for a job as a design engineer, she decided to go West. All her life she had lived in the East — Virginia, Massachusetts, New Jersey — and she wanted to sample the Western life-style. "I didn't want to deal with 'Silicon Valley,' with its high cost of living and its congestion," she recalled, so she picked Portland, Ore. Six months ago, Miss Gleason began work at the Lattice Semiconductor Corporation in Portland, and she delights in both the job and the location.

Miss Gleason's journey, and the contentment she has found at the end of it, reflect the increasing high-technology opportunities in cities around the nation like Portland, Atlanta, Dallas, Pittsburgh, Philadelphia — even New York.

The best-known technology centers, like Silicon Valley in northern California and Route 128 near Boston, continue to dominate the public mind. But as more and more cities and states try to reorient their economies from smokestacks to computers, a second tier of cities is becoming important in technology research and production. These locations spawn their own offshoots, and in time there is a critical mass that feeds on itself and generates more and more jobs. So an employee is no longer bound into one job and one company, but has good prospects at other companies in the same city.

Moreover, companies in these cities sometimes pay more to lure employees than do Silicon Valley concerns. And industry analysts say that in some cases prospective employees prefer to work in states like Colorado, Oregon, Washington or Arizona where there are few urban problems and outdoor activities such as skiing or hiking are readily available.

Not all experts, however, see much of a future in the second and third tier of high-technology hot spots. They caution that such places as Michigan and Ohio, which aspire to be high-technology centers, are so far behind the leaders that they probably will never catch up. And these experts say the ardor for high technology will fizzle when it becomes apparent that technology, however chic, creates relatively few jobs.

"We've got all these states whipped up, running around thinking that they can grow the next set of Digitals and Data Generals and Apples in their own backyard," said Michael Barker, executive director of the Gallatin Institute, an economic-research group in Washington. "That's just silly."

Mr. Barker also warns that in relatively long established high-technology centers in California and Massa-chusetts, there are more openings, so that it is easier to get a new job and easier to rise from a subordinate position to a higher level.

But other experts are more sanguine, and in particular point out how many technology jobs are available in the New York area. For example, New York State is second only to California in the number of such jobs, New Jersey is fourth and Connecticut is ninth. Among the the top 10 states, Connecticut has the highest proportion of high-technology jobs — 13 percent — and New Jersey is not far behind, at 10.3 percent.

California has the top five communities in terms of numbers of high-technology jobs. But New York City is sixth, and such apparently unlikely places as Minneapolis and Portland are also in the top 10.

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"The major employment opportunity is right in your own backyard," said Michael E. McQuade, a senior vice president of the American Electronics Association in Palo Alto, Calif. "If you look at the whole Northeast part of the country, that's the largest concentration of electronics companies in the world. If you look at raw numbers, where employment opportunities are, you're looking at New York, New Jersey, Connecticut and, of course, Massachusetts.

"The other areas that we see as real comers are Texas, which is exploding, Minnesota to a certain extent, and also Illinois. And here on the West Coast, outside of Silicon Valley, you're looking at Oregon and the Los Angeles area."

The "Silicon Apple," as New York's technology flowering might be called, is focused on New York City, Westchester County and Long Island. For example, the Loral Corporation, a military-technology company, operates its largest production facility in the Bronx, and its largest engineering and research facility in Yonkers.

"There's a wealth of technology companies doing extremely well in the New York area," said Loral's chairman, Bernard L. Schwartz. "They are inhibited by only one thing — the ability to accumulate human resources to accommodate more growth."

Such corporations as Grumman and Sperry — both involved in defense contracting as well as other areas of technology — are on Long Island, and the International Business Machines Corporation has its headquarters in Armonk in Westchester.

Other communities, like Rochester and Syracuse, also are nurturing high-technology companies. "Syracuse is one of the best kept secrets in America," boasts a city brochure. Concerns operating in Syracuse include Anaren Microwave, Magnavox CATV Systems, Welch Allyn and others involved in electronics and communications equipment.

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Ann Gleason working on a chip-design project at the Lattice Semiconductor Corporation in Portland, Ore.

New Jersey, with electronics companies scattered around the state, ranks well in listings of states with technology employment, with well over 300,000. But there is wide disagreement on what constitutes a technology company, and some say that most of the technology jobs in the Garden State are generally less advanced than those in, say, Silicon Valley.

Nevertheless, New Jersey claims to have more scientists and engineers per capita than any other state. Moreover, American Telephone & Telegraph's Bell Laboratories, RCA Laboratories and other research facilities are involved in extensive and advanced research in electronics and communications, while concerns like Hoffmann-La Roche, Merck and Johnson & Johnson do highly technical work for the pharmaceutical industry. Research and development concerns dot the stretch of Route 1 between Princeton and New Brunswick, and the presence of Princeton University has helped make the Town of Princeton a magnet for more than two-dozen research and development companies.

Connecticut also is scouting for engineers and computer whizzes for the technology companies distributed around the state. "There's a lot of interest in high technology and the companies are interested in employees," said Julianne A. Grace, assistant to the president of the Perkin-Elmer Corporation in Norwalk, which manufactures scientific instruments and other equipment. "There's a shortage."

Moving farther afield, Virginia is cultivating high technology companies, especially around the Beltway that encircles Washington. Companies there benefit from Federal contracts and research spending, and some is expected to spill over into Maryland.

The North Carolina Research Triangle is a well-known high-technology center, and Atlanta is trying to achieve the same recognition. An area north of Atlanta has been dubbed "Technology Crescent" because of its shape and profusion of companies involved in electronics, communications and computer peripherals.

"There has been a lot of growth in the last five years," noted Wayne Hodges, associate director of the Atlanta Technology Development Center. He said the boom came mostly from local, home-grown companies rather than outside companies deciding to set up shop in Atlanta. Benefiting from the presence of a bustling international airport and institutions like Georgia Institute of Technology and Emory University, Atlanta already is the site of major firms such as Scientific Atlanta, Management Science America and Hayes Microcomputer Products.

"Silicon Prairie" around Dallas, with perhaps 800 technology companies, is the technology capital of Texas, if not the entire Sun Belt. But smaller centers are emerging in Houston and Austin. The Microelectronics and Computer Technology Corporation, a research consortium sponsored by companies from across the nation, chose to locate in Austin over 56 other cities.

In the heart of what has been called the "rust bowl," Detroit is trying to revitalize Michigan with silicon chips. Some 200 high-technology concerns already are situated in the corridor between Detroit and Ann Arbor, known as "Robot Range" or "Silicon Oval." But not everyone is optimistic. "They have great, and I think almost certainly futile, aspirations," said Mr. Barker of Washington's Gallatin Institute. "They talk as if the robotics industry will fill the gap left by the decline of the auto industry."

Ohio and Minnesota are also aiming for high-technology development. Greene County, Ohio, in particular is flourishing, largely because of the presence of the Wright-Patterson Air Force Base.

The base, which is a leading Air Force site for research and development, funnels a large amount of research and contracts to local companies.

One seemingly unlikely place for high technology is the so-called "Bionic Valley" in Salt Lake City, which seeks to become a leader in producing artificial hearts and limbs, and even ears. Local companies like Symbion and Motion Control are already active in the business, and a few computer companies also have settled in Salt Lake City.

Farther west, in Oregon and Washington, the technology boom is helping to reshape the economy. A vigorous economic-development team in Oregon's capital of Salem has attracted considerable Japanese and West German investment into the state, and a proposed sales tax to alleviate other taxes that corporations pay would make it even more attractive to foreign investment. Oregon's "Silicon Forest"

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is trying hard to lure companies and individuals who are disenchanted with Silicon Valley's congestion and high rents.

Meanwhile, many other high-technology spots like tiny Xenia, Ohio, and Huntsville, Ala., dot the nation, each clamoring that it may be the next Silicon Valley. Each is shouting ever more loudly for young people with training in electrical engineering or computer science to fuel its growth.

"If you have the training that the industry needs," said Mr. McQuade of the American Electronics Association, "you can basically parachute into any location that you desire in the country and succeed. You can pretty well pick your spot."