

The Rise of Tech Valley

By F. Michael Tucker

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AIMS OF THE EDRP Through the EDRP Program, IEDC is taking its mission to a new level, assisting practitioners to successfully compete in the global economy and increase prosperity for communities at an accelerated pace, empowering ED professionals to better define their vision and voice.

METHODS AND BENEFITS OF THE EDRP PROGRAM The Partners meet 4 times a year, sometimes with experts in the field, to coordinate activities and focus agendas on pertinent and practical issues. This innovative program provides an incredible opportunity to strengthen the communities in which we operate and the profession as a whole.

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A CALL FOR CHANGE

Upstate New York has a rich tradition of manufacturing and innovation dating back more than 150 years ago with the founding of companies such as global powerhouses General Electric and IBM. However, over the past three decades the traditionally robust manufacturing base of upstate New York has been substantially reduced as manufacturers seized opportunities to reduce production costs by moving operations both in the United States and overseas.

In the wake of massive job layoffs, corporate closures, population decreases and manufacturing relocations, leaders across government, academia, and the private sector recognized in the early 1990's that the upstate economy needed a paradigm shift towards leading-edge, high-value technology industries that would transform and drive the economic resurgence for decades to come.

To address this issue, energy provider National Grid funded a joint study between the Center for Economic Growth (CEG) and Rensselaer Polytechnic Institute's (RPI) Lally School of Business, which ultimately identified five key industries as viable transformational opportunities for the region based upon existing infrastructure and asset strength. As a result of the study, future growth, marketing, and attraction efforts for the region began to focus on advanced materials, biotechnology and life sciences, clean energy technology, information technology and nanotechnology and semiconductors.



Grow. Attract. Prepare. New York's Tech Valley

Through the initial efforts of three Capital Region Chambers of Commerce, Chambers and economic development organizations throughout 19 counties now brand the region "Tech Valley". Initiatives to grow economic vitality, attract new business and investment, and to prepare communities for future growth are underway at every level. Based upon the region's growing asset matrix in the nanotechnology and semiconductor industries, and to best affect positive long-term economic growth for the whole region, CEG, working together with stakeholders in business, government, and education initiated a global outreach program in 1999 that has since been branded "NY Loves Nanotech." The success of this initiative, as well as the significant technical achieve-

Upstate New York is known for its strong manufacturing base. As manufacturing began to decline in the 80s and 90s, the region began a focused marketing effort to attract new manufacturing in high-tech sectors.

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A COLLABORATIVE PARTNERSHIP HELPS REVITALIZE A REGION THROUGH TECHNOLOGY-BASED ECONOMIC DEVELOPMENT INITIATIVES

Upstate New York has a tradition of manufacturing and innovation history with global powerhouses such as General Electric and IBM. Over the past decades the traditionally robust manufacturing base of Upstate NY has been reduced as manufacturers seized opportunities to reduce production costs by moving operations both in the US and overseas. With massive job layoffs, corporate closures, population decreases and manufacturing relocations, leaders across government, academia and the private sector recognized in the early 1990s the upstate economy needed a paradigm shift towards leading-edge, high-value technology industries. Twenty counties formed together to brand the region "Tech Valley," a global outreach program in 1999 that has since been branded "NY Loves Nanotech."

ments of the private/public partnership at the University at Albany's College of Nanoscale Science & Engineering and at Rensselaer Polytechnic Institute (RPI), provided the foundation to develop and implement programs and initiatives to capture the convergence points within the region's technology sectors.

Consistent with the collaborative initiative to attract diverse industries and economic investment, the partners developed a broad-based, multi-industry global strategic marketing outreach initiative. Under the expanded marketing umbrella "NY Loves Technology",

Bringing Tech Valley to the World

the group will continue to develop new programs designed to create a sustainable environment capable of attracting, retaining, and growing an innovation-based economy.

A CLIMATE FOR INNOVATION AND GROWTH

Tech Valley, running from just north of New York City to the Canadian Border, offers proximity to major geographic markets, a highly qualified workforce, outstanding educational and research resources, a stable business environment, and excellent quality of life.

The area called New York's Capital Region, which is in the heart of Tech Valley, is home to more than one million people and encompasses 11 counties in upstate New York. The Capital Region lays claim to Albany, the capital of New York state, as well as the cities of Schenectady and Troy, and the popular resort destinations of Saratoga Springs and Lake George.

The Tech Valley region is fast becoming widely recognized as a premier site for the development of innovative, high-technology companies. Wholly considered, Tech Valley stretches from the Canadian border south to Westchester County and contains more than 1,000 technology companies providing more than 50,000 jobs. The companies of Tech Valley have an economic impact of \$5 billion and an annual payroll of \$2 billion.

Tech Valley boasts 23 colleges and universities with 65,000 students. Rensselaer and Union College have been ranked among the nation's most computer-savvy universities. The University at Albany and RPI are internationally renowned for their research and development and centers for advanced technology. Albany Medical College, Albany Law School, and Albany School of Pharmacy are also highly regarded institutions within their specific educational niches. The region also has strong liberal arts and science colleges, including The College of St. Rose, Siena College, and Skidmore

College, along with strong technical education programs at Hudson Valley and Schenectady Community Colleges.

Location remains a critical factor in today's rapidly changing business environment. The Capital Region and Tech Valley's location facilitates access to a large and affluent market area. The largest population concentration in North America is within one day's shipping time (850 miles) of the Capital Region and represents 132 million people with total personal income of more than \$1.7 trillion; 56 percent of all skilled workers; more than 50 percent of all retail sales and wholesale receipts; 54 percent of all manufacturing facilities; and 60 percent of all the manufacturing products shipped within the United States and Canada.

Its strategic location, where the Mohawk flows into the Hudson River, gave the region its place in history as an early transportation, trade, and



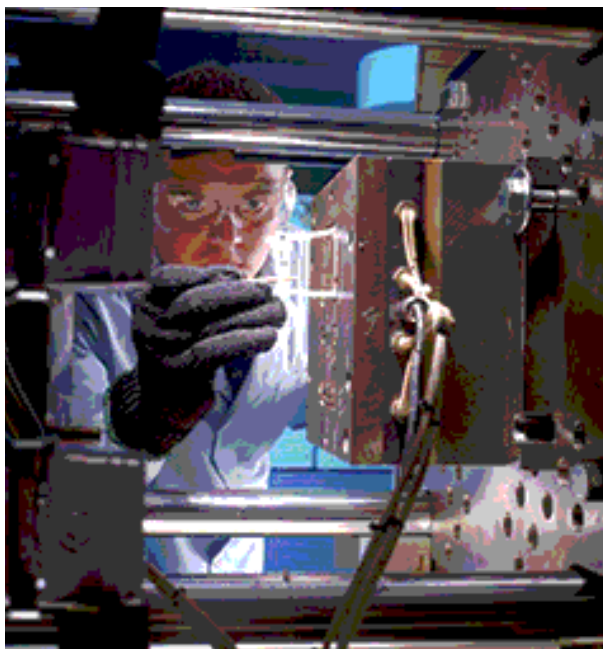
Marketing the region as a place for high tech nationally and internationally has stabilized the area and created new jobs and a renewed identity.

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industrial center. Today, three interstate highways, fast rail service, a year-round deep water port, and a recently re-developed international airport with direct air service to major markets provide convenient and efficient access to the markets of the Northeastern United States and Canada.

The region's lifestyle is complimented by its proximity to the Adirondack Mountains. Both wild and refined, the Adirondack Park is a haven for anyone who appreciates the beauty and peacefulness of the outdoors. The region contains 3,000 ponds and lakes, 2,000 miles of hiking trails, more four-star resorts than any other destination in the state, and plenty of elevation for skiing. A blend of private and public lands where thousands of people live, work, and play, the Adirondacks offers something for everyone – whether it's being pampered at a resort, winding along the scenic roads, spending a week on a secluded lake, or enjoying the plethora of campgrounds.

The Tech Valley corridor contains valuable advantages that support its growing technology economy. From shovel-ready sites and financial incentives to world-renowned universities and exciting lifestyle components, Tech Valley is well positioned to offer companies and investors an enabled environment to grow technology-based ventures.



Technician holds a computer wafer. Nanotechnology has changed the face of manufacturing and opened up opportunity in New York.

CEG,
with its
headquarters in the
center of
Tech Valley,
is a



private, not-for-profit, membership-based economic and business development organization committed to visionary, regional economic expansion throughout New York State's Capital Region and Tech Valley. CEG operates a \$3.5 million budget with 19 staff members and many programs.

CEG'S ROLE IN TECH VALLEY

CEG, with its headquarters in the center of Tech Valley, is a private, not-for-profit, membership-based economic and business development organization committed to visionary, regional economic expansion throughout New York State's Capital Region and Tech Valley. CEG operates a \$3.5 million budget with 19 staff members and many programs. CEG was created in 1987 to provide a forum to discuss issues of regional concern, to identify opportunities for transformational change, and to provide a focus to work with others to bring those opportunities to completion. CEG implements strategic initiatives to enhance the region's competitiveness within the three-pronged framework of growing local companies, attracting new investment, and preparing local communities for future opportunities.

Grow

Committed to promoting Tech Valley as a thriving center for innovation and accelerated business growth, CEG recognizes that regional economic vitality depends in large part on the strength of local companies. Thus, CEG offers business acceleration and support services for companies throughout Tech Valley. CEG also supports several industry-focused groups that capitalize on the value of networks and the collective strength of companies sharing resources and ideas.

Business Accelerator – The Business Accelerator offers targeted, high-impact business improvement services to technology companies in New York State's Tech Valley. Clients are selected for participation based on an in-depth review focusing on the following characteristics:

- Committed to staying and growing in Tech Valley;
- Established companies pursuing expansion strategies, usually with revenue greater than \$1 million and revenue goals in excess of \$10 million; and
- Open to new ideas and changes to realize growth goals.

Selected participants undergo a thorough needs assessment so that the Accelerator team can help provide the right services at the right time.

Watervliet Innovation Center – The Watervliet Innovation Center is a state-of-the-art accelerator for homeland security technology ventures focused on the rapid growth of emerging homeland and national security technology companies. In support of this mission, the Center is within the Watervliet Arsenal campus, co-located with the U.S. Army's Benét Labs and an Army Material Command (AMC) manufacturing center.

It provides a “demand-pull infrastructure”, where client companies gain insight into the technology needs of the industry through a national network of academic, industrial, and government stakeholders. The Center helps companies strategically align technology development efforts with the needs of their security and defense customers, enhancing opportunities for joint venturing, financing, and market acceptance.

Industry Networks – CEG facilitates several industry-focused networks that enable companies to share resources and ideas. Networks in biotechnology, manufacturing, and information technology include:

- *Bioconnex* is a partnership among private companies, higher education institutions, and research organizations dedicated to the development and growth of the biotechnology community, as well as to strengthening the competitiveness of the Capital Region and Tech Valley as the premier global location for biotechnology research, education and industry.
- *The Chief Executives Network for Manufacturing* (CEN) of the Capital Region, Inc., a CEG affiliate, is a not-for-profit member organization comprised of more than 75 chief executive officers of small- and medium-sized manufacturing businesses in the Capital Region.
- *TechConnex* is a catalyst organization for growth, bringing together a variety of elements to promote and enhance business development in the Capital Region's information technology sector.

Technology Roadmap – An online resource that highlights the technical assets in Tech Valley, the Technology Roadmap provides an informal network and hub to connect to these assets and a gateway to learn more about regional technology and related service organizations. Specifically, the Roadmap enables technology stakeholders to communicate strengths and areas of interest; learn about each other; make connections and generate ideas; identify potential business, collaboration and commercialization partners; and uncover unexpected ways that regional resources can be connected to create mutual benefit.

Focusing on the five industry clusters, the Roadmap also enables people across all levels and functions to identify opportunities for their organizations and themselves. This creates a network much broader and deeper than most because of its accessibility and efficiency in helping users identify opportunities of interest.

TECHNOLOGY-BASED ECONOMIC DEVELOPMENT INITIATIVES

Semico Economic Impact Study

“NY Loves Nanotech” with partners National Grid, CEG, and Mohawk Valley EDGE, commissioned Semico Research Corporation to conduct a study to assess the economic impact of attracting a chip fabrication facility to upstate New York. The year-long study estimates that the arrival of a single chip fabrication facility will lead to more than 5,500 direct and indirect jobs, including plant employment, support services, and additional jobs created in the community. Further, the return on investment for the state will be nearly 500 percent after five years and more than 600 percent after a decade. The full study and associated presentation is available online at www.nylovesnanotech.com.

AMD to Build Its Next 300 mm Fab at Luther Forest Technology Campus in Malta, NY

Regional partners worked collaboratively with New York state to attract Advanced Micro Devices (AMD) to Luther Forest Technology Park, representing the largest economic development deal in New York state history. This \$3.2 billion project was given “The Economic Development Deal of the Year Award” from Business Facilities magazine, and it promises the creation of thousands of jobs, development of countless ancillary businesses and services, and enrichment of local and state economies.

To secure AMD's commitment, Tech Valley competed with sites around the world and was able to deliver above and beyond the conditions necessary for such a facility. Critical elements included top-notch research institutions like the University at Albany and Rensselaer Polytechnic Institute and a ready-made pipeline to deliver a qualified workforce through these and other area colleges and universities.

SmartStart Venture Program

SmartStart UNYTECH is the premier upstate New York venture forum where venture capital firms and other investors see the best that the state has to offer for deal flow. Now in its eighth year, SmartStart UNYTECH has to date highlighted 140 high-quality companies from throughout the state and beyond to the venture capital community. Of these 140 companies, 52 (or 37 percent of them) have raised more than \$330 million in equity financing, including more than \$58 million directly attributable to their participation in the forum. In 2007, SmartStart merged with UNYTECH, the upstate university sponsored forum highlighting early-stage university spin-outs.

The 2007 forum showcased 19 companies and had representatives from 25 funding firms in attendance from such firms as High Peaks, FA Technology Ventures, Rand Capital, Greenhill SAVP, Excell Partners, Cayuga Venture Fund, New Jersey Angels Network, Brook Venture Fund, and Boston Financial & Equity. Additionally, this forum is marketed and recognized by many east coast and mid-Atlantic venture funds as the place to get upstate New York technology deal flow. More information can be found at www.smartstartvf.com.

Initiatives continued on the next page.

Venture Programs – The Center provides a suite of funding forums and services designed to cover the needs of many of its high growth-potential technology companies. These forums and services also enable interested investors of time and money to become exposed to regional early-stage companies, hear these companies' business presentations, ask questions, and get to know the entrepreneurs behind the companies. Programs include the Pre-Seed Workshops, Venture Bplan, Tech Valley Angel Network (TVAN), and SmartStart UNYTECH Venture Program.

Technical Services Group (TSG) – CEG-sponsored programs can help companies increase revenue and cut costs, providing assistance to manufacturing and technology companies that want to increase sales and productivity, as well as streamline costs and obtain capital investment.

CEG receives significant financial support from the National Institute of Standards and Technology (NIST) and the Manufacturing Extension Partnership (MEP). In addition, it receives support from the New York State Foundation for Science, Technology and Innovation (NYSTAR), a public benefit corporation that helps grow New York's innovation economy with its support of high technology development and commercialization through academic and business partnerships

The Center serves as NYSTAR's designated Regional Technology Development Center for Tech Valley, one of nearly 350 MEP locations across the country, assisting local manufacturing and technology companies with generating new sales, creating stronger operational infrastructure, and overcoming barriers to growth.

The Center helps companies realize increased profit goals by:

- Developing new strategies for increased sales and planning for future growth;
- Cutting costs and lowering expenses with sales and marketing, financial, information technology, and e-business planning;
- Increasing market share and revenue in existing or new markets through sales and marketing activities;
- Increasing productivity and cutting process costs with efficiency training, such as 'Lean Manufacturing,' and Quality Programs, such as ISO9000 and ISO14000; and



NY Loves Technology: branding the industry attraction program to create awareness and identity for the opportunities for technology industries in NY.

TECHNOLOGY-BASED ECONOMIC DEVELOPMENT INITIATIVES (CONTINUED)

CEG's Technology Roadmap – Feature Story - Video game industry poised to be a big player in New York economy

Menands-based Vicarious Visions is playing a significant role in the burgeoning New York video game industry, which last year pumped nearly \$280 million into the state's economy. The company has significantly expanded from its first office in the Rensselaer Polytechnic Institute Incubator to its current headquarters in a revitalized Montgomery Ward building with 150 full-time employees. New York ranked fourth nationally in terms of the number of computer and video related jobs, which grew by 14 percent in 2007, according to a recent study by the Entertainment Software Association. For more information on the Technology Roadmap, visit www.technologyroadmap.org.

CEG's Watervliet Innovation Center - Spotlight Company

Assured Information Security gained attention as #299 on the Inc. 5000 list of fastest growing private companies in America, based on an 859 percent growth in revenue for the 2003 through 2006 period. Assured is one of the technical startup companies in Watervliet Innovation Center. Additional information on the Watervliet Innovation Center can be found at <http://www.ceg.org/wic/index.htm>.

- Accelerating businesses through the next phase of development with Acceleration Services, strategic planning, and venture capital access.

Attract

The Technology Industry Attraction initiative, "NY Loves Technology", enhances the competitiveness of New York's Tech Valley by providing a global audience with a better understanding of the area's capabilities and existing resources. The "NY Loves Technology" initiative is an aggressive global industry attraction campaign, which includes trade show participation, industry-specific marketing collateral, sales calls, prospect generation, and hosting special events – all targeted at key industry decision makers.

CEG has partnered with National Grid; economic development agencies; chambers of commerce; small, medium, and large businesses; government agencies; and research and development and academic institutions in a long-term commitment to increase the economic self-sufficiency of the region by developing Tech Valley as a global technology powerhouse. The successes to date are a compelling testament to the power of this collaborative model in fostering technology-oriented economic growth.

In 2007, for example, the "NY Loves Technology" team attended six tradeshow across the nanoelectronics, clean energy technology, and biotechnology industries under the "NY Loves Nanotech", "NY Loves Clean Tech" and "NY Loves Bio" marketing brands, with participants from more than 100 organizations from across New York and representing interests from industry, government,

and academia. These activities resulted in more than 2,500 direct interactions with strategic decision makers regarding opportunities in New York State, as well as more than 500 qualified leads for partner companies, ultimately resulting in significant revenue increases. Shows included SEMICON China, SEMICON Europa, SEMICON West, Bio International, Materials Research Society Fall Meeting and POWER-GEN Renewable Energy & Fuels.

Also in 2007, participants presented Tech Valley's assets through one-on-one sales calls to more than 100 high-potential nanotechnology manufacturing prospects; companies specializing in site location and construction for high technology industries; and major suppliers throughout the United States, Europe, and Asia.

The group also facilitated a tour of Tech Valley for a delegation of economic development officials from the Xi'an Hi-Tech Industries Zone, a technology park located in central China housing more than 7,000 companies. Officials from Xi'an were provided opportunities to network with local companies, resulting in ongoing discussions with CEG and other partner companies and organizations.

Along with the International Economic Development Council and Empire State Development Corporation, "NY Loves Technology" coordinated a similar tour for a second Chinese delegation. Twelve high-level representatives from companies and organizations such as China Railway Erju Group Corporation, Shangdon Zhongtie City Development Ltd., and The People's Government of Feicheng City participated in this tour, which highlighted the region's assets and set the stage for future collaboration.

The group also attended or sponsored more than 20 global industry events to interface with key decision makers, advance the Tech Valley message, and attain cutting-edge industry updates. For the sixth year in a row, "NY Loves Nanotech" sponsored the Semiconductor Industry Association (SIA) Dinner, where 10 representatives from New York State networked and interfaced with hundreds of CEOs from the industry. Other events and conferences included ISS, Clean Tech Investing Forum, Nanotech Investing Forum, SEMI New England Breakfast Forums, SEMI President's reception at SEMICON West, Fab Owners Association (FOA) Forum, ConFab 2007, Invest in Germany luncheon, Discover Innovation in France, Fab of the Future, Forbes Telecosm Conference, and various receptions.

As another key component of the "NY Loves Technology" program, CEG co-developed a series of promotional and marketing materials outlining the region's assets, including print brochures and print ads, marketing e-mails, trade show graphics, and comprehensive web sites for each industry specialization. CEG also co-hosted with the University at Albany's College of Nanoscale Science and Engineering for five consecutive years the Albany Symposium, which addressed salient issues facing the nanoelectronics industry in the immediate and near future. The event attracts experienced leaders from within industry, academia, finance, and

government who provide Tech Valley leaders with insights to help formulate strategies to engage the global nanotechnology and semiconductor industries.

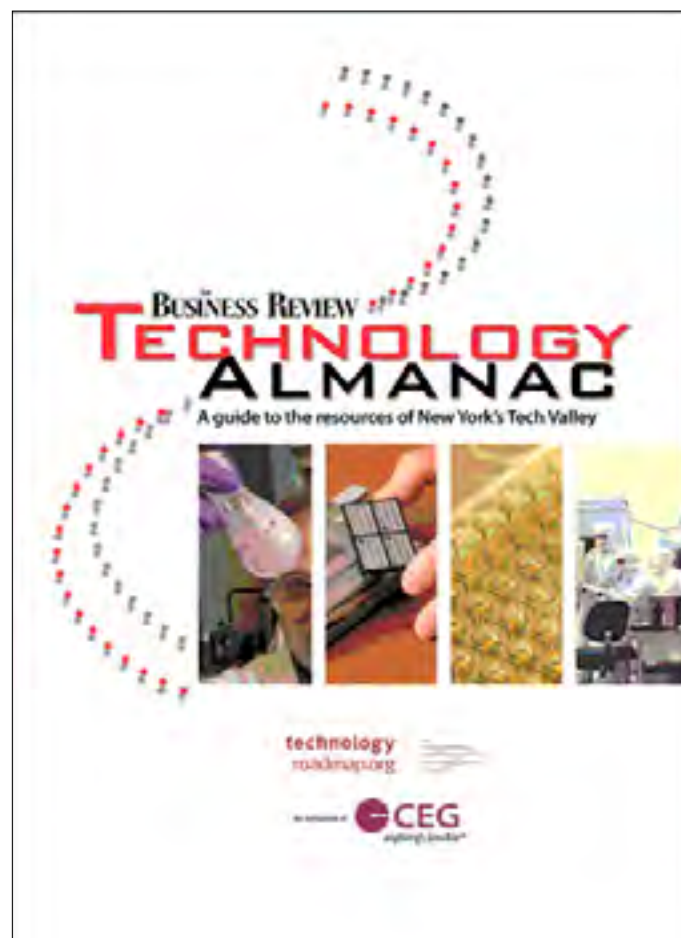
Prepare

CEG is also helping to attract and retain skilled workers and high-potential companies, in part, by leveraging the region's social, cultural, and lifestyle assets. Long-range planning and strategic infrastructure investments help preserve and promote the region's quality of life, which is crucial to regional growth.

Regional Development Strategy – CEG's Regional Development projects facilitate regional growth through intergovernmental cooperation, public-private partnerships, technical assistance, and support for projects of significant regional impact. In addition, CEG provides information to the public about economic development and industry attraction efforts in the Capital Region.

The Regional Development Coordinating Council (RDCC) – The RDCC fosters coordination, cooperation, and collaboration among regional stakeholders to pursue intelligent, planned, sustainable economic expansion across Tech Valley.

Capital Region Local Government Council – The Capital Region Local Government Council (LGC) is comprised of the chief elected officials from the region's



The Tech Roadmap was created to promote high tech companies in the region. The Tech Almanac is the print version which is distributed annually by the regional business journal based on the website.


villages, towns, cities, and county governments. The LGC was founded in 1997 to give local government leaders a forum to identify issues of importance to local governments, discuss opportunities for regional cooperation, and foster working relationships among local leaders. LGC members meet in roundtable discussions and with outside speakers, helping to develop and execute CEG's "Prepare" agenda.

THE PROMISE OF A BRIGHTER FUTURE

This unique regional approach to sustaining innovation and growth in Tech Valley includes enhancing the capabilities of our existing companies; globally marketing the strength of the region's many academic resources, industry clusters, and quality of life attributes; and preparing each community for smart, collaborative economic development.

Through collaborative efforts among business, academia, government, and education communities, Tech Valley is undergoing its most exhilarating period of growth to date. Compelling examples of the region's rise as a world-class technology hub include International

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Sematech's relocation of its headquarters to the University of Albany's College of Nanoscale Science and Engineering, and General Electric's decisions to greatly expand its energy division in Schenectady and to build a cutting-edge imaging manufacturing facility at the Rensselaer Technology Park. Other examples include the ongoing development of the Luther Forest Technology Campus in Saratoga County and the creation of the Harriman Research and Technology Park near the University at Albany's main campus. All of these instances are indicative of both the great strides that Tech Valley has made in the fields of nanotechnology, biotechnology, clean energy, advanced materials, and information technology – and in the region's potential to continue its impressive technology-based economic development. 



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