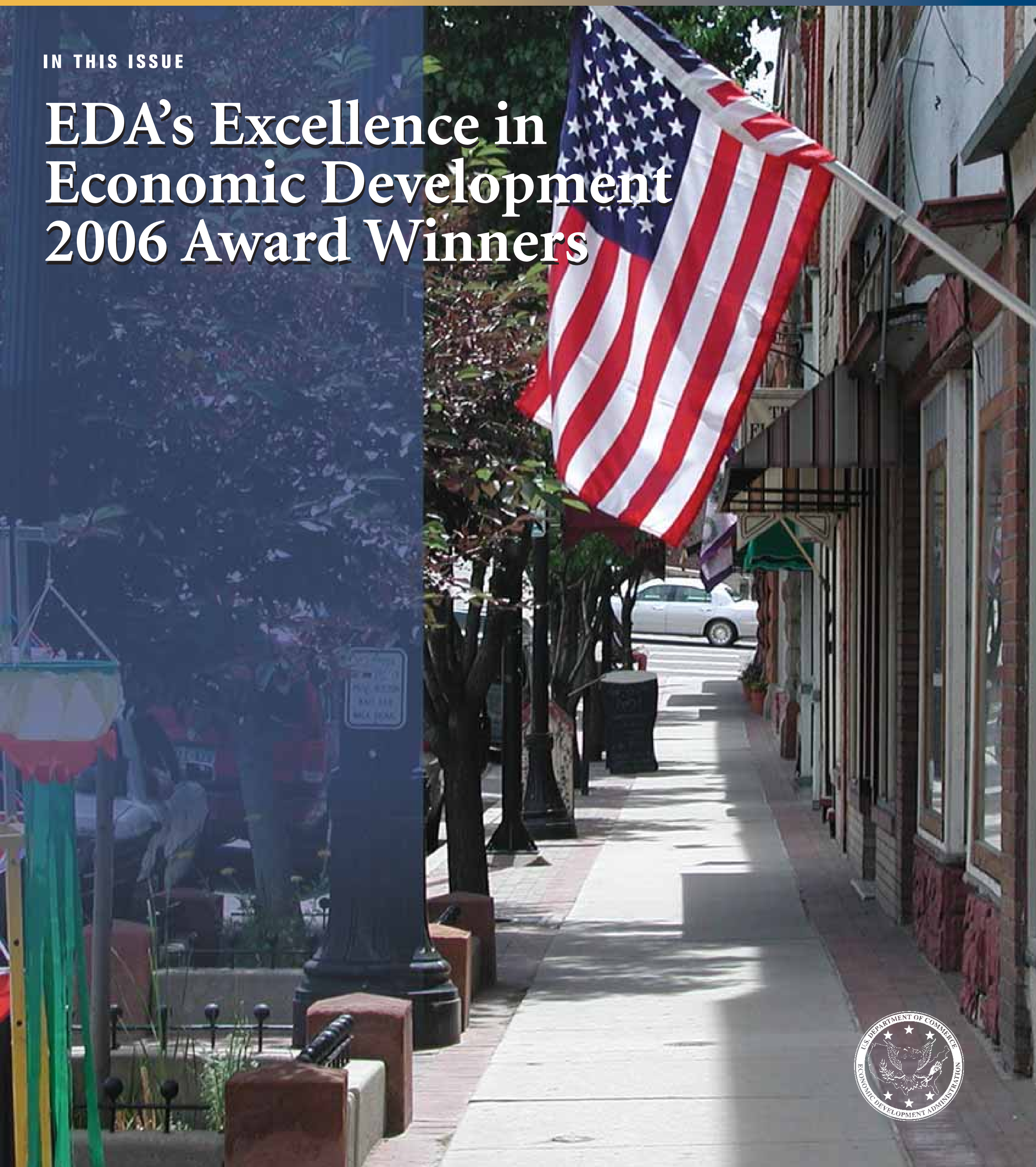
Economic Development America

COMPETING GLOBALLY ★ GROWING REGIONAL ECONOMIES ★ CREATING JOBS

SUMMER 2006

IN THIS ISSUE

EDA's Excellence in Economic Development 2006 Award Winners



U.S. DEPARTMENT OF COMMERCE
Economic Development Administration

Carlos M. Gutierrez
Secretary of Commerce

Sandy K. Baruah
Assistant Secretary of Commerce
for Economic Development

Matt Crow
Director of Communications

Bryan Borlik
Lead Public Affairs Specialist

D. Palmer Gleason
Senior Public Affairs Specialist

Louise Anderson
International Economic Development Council
Editor

Economic Development America is a quarterly production brought to you as a benefit of a partnership among the Economic Development Administration (EDA), the International Economic Development Council (IEDC) and the National Association of Regional Councils (NARC). The partnership is designed to provide information about economic development practices and programs to economic development practitioners who serve distressed communities throughout the United States. It also provides six telecasts and a monthly e-newsletter, EDA Update. For more information, visit the EDA Web site at www.eda.gov.

Story ideas are invited and should be addressed to editor **Louise Anderson, telephone (828) 350-8855, email landerson@iedconline.org.**

Table of Contents

Welcome to the Summer 2006 issue of *Economic Development America.*

President Bush has said, "The role of government is to create conditions in which jobs are created, in which people can find work." The twin goals of his administration are to increase the competitiveness of the American economy and to ensure that all communities share in economic opportunity. To help accomplish this, the President has proposed the American Competitiveness Initiative (ACI) – a bold strategy that mobilizes federal resources and programs in a manner that will spur innovation and speed new ideas to the marketplace.

One of the ways that the Economic Development Administration is supporting the ACI is by spotlighting "best practice" regional strategies for economic development and competitiveness through the EDA Excellence in Economic Development Awards program, and sharing those best practices with economic development practitioners throughout the nation.

The challenge for today's state and local officials and economic development organizations is to fashion action-oriented, market-based strategies to ensure their communities and regions are positioned not just to compete, but to *thrive* in the 21st century's global economy. Some of America's leading economic development practitioners and thinkers have developed innovative strategies for accomplishing this, and have achieved outstanding results. The Excellence in Economic Development Awards 2006 recognize these leaders of American competitiveness.

The Excellence in Economic Development Awards competition is open to nonprofit organizations, local, state and regional government entities, and universities and colleges. Nominations for each category were reviewed by a selection panel of highly qualified and independent economic development practitioners, academics and government representatives, and the winners were announced in early June 2006. I look forward to officially presenting the awards throughout the next month in the respective communities of the following winners:

Category: **Urban or Suburban Economic Development**
Winner: **Tinley Park Economic Development, Tinley Park, Illinois**

Category: **Rural Economic Development**
Winner: **Yuba-Sutter Economic Development Corporation, Yuba City, California**

Category: **Enhancing Regional Competitiveness**
Winner: **Catalyst Connection, Pittsburgh, Pennsylvania**

Category: **Economic Adjustment Strategies**
Winner: **The City of Pueblo, Colorado**

Category: **Technology-led Economic Development**
Winner: **North Dakota State University Research and Technology Park, Inc., Fargo, North Dakota**

Category: **Community and Faith-Based Social Entrepreneurship**
Winner: **St. Patrick Center, St. Louis, Missouri**

Category: **Innovation**
Winner: **ConnectKentucky, Bowling Green, Kentucky**

This issue of *Economic Development America* is dedicated to sharing the innovative thinking, planning and execution that went into each of these award-winning economic development initiatives.

I trust you will find these articles as insightful as I have, and I thank the authors for sharing their experiences with us.

Sandy K. Baruah

Assistant Secretary of Commerce
for Economic Development

The City of Pueblo Rebuilds Its Economic Base

By Jim Munch

Assistant City Manager for Community Development, City of Pueblo

For years, Pueblo, Colorado, was known for – and proud of – its blue-collar background. Among its nicknames were "The Pittsburgh of the West" or simply "The Steel City." Both were nods to the industry that had formed the city's backbone for decades and its dominant employer, CF&I Steel. Pueblo was one of the few cities in Colorado that seemed to identify more with the gritty histories of eastern industrial cities than with neighboring mountain towns.

The Historic Arkansas Riverwalk Project (HARP), a 26-acre urban waterfront that includes trails, sidewalk cafes, commercial and retail development and public spaces for art and entertainment, is a key element in the revitalization of Pueblo's downtown.

For decades, the children and grandchildren of those who had come to Pueblo to work in its steel mills could be sure of one thing: If they chose not to go to college, they didn't have to worry about their futures. As it had been for their fathers and grandfathers, they could always get a job at the steel mill. Not only that, but they could make a good living and raise families who would more than likely continue that legacy.

But in the early 1980s, Pueblo's way of life came to a grinding halt.

In the late 1970s and early 1980s, the troubles that the steel industry was facing in the U.S.'s eastern factories were making their way west. In Pueblo, it was obvious that reliance on steel across the world was certainly decreasing, and that cities whose economic lifestyles were based on that industry were about to change forever.

By the end of 1982, Pueblo's largest employer, CF&I Steel, had cut its workforce by 2,400 employees. A ripple effect among other companies that depended on CF&I to at least partially operate their own businesses added to those numbers, and suddenly the number of unemployed people in Pueblo County had increased by more than 4,400. The decade had barely begun and in total, more than 9,900 persons were out of work, an unemployment rate in the county of 19.7 percent.

Planning to get back on track

In 1985, with funding from the U.S. Economic Development Administration, the City of Pueblo undertook an Economic Dislocation Adjustment Strategy study. The plan articulated long-term economic development strategies that would put the brakes on the city's slide and get its economic fortunes back on track.

The study identified four focus areas: downtown revitalization; expansion and retention of existing firms; employment and training options; and airport industrial park infrastructure. Following a series of meetings and discussions, community leaders chose three economic development strategies that would best respond to these focus areas:

By the late 1970s and early 1980s, it became obvious that cities whose economic lifestyles were based on steel were about to change forever.

1. *To create new employment opportunities* for those 4,400 recently unemployed residents, the city adopted a strategy to immediately attract new manufacturing business to the Airport Industrial Park, located east of the city's metropolitan area. The greatest challenge to accomplishing this was the quality of the existing infrastructure at the park.
2. *To stabilize and diversify* the local economic base from primarily manufacturing to other employment sectors, the city would partner to provide business assistance programs and foster opportunities for businesses to locate both at the Airport Industrial Park and in the city's downtown.
3. *To anticipate and prepare* for future economic change, the city would improve workforce training options. Training and economic development partnerships would be developed and strengthened with a newly created economic development body (the Pueblo Economic Development Corporation), Greater Pueblo Chamber of Commerce, Latino Chamber of Commerce, Pueblo Community College, the University of Southern Colorado, Pueblo School Districts 60 and 70, the City and County of Pueblo and the State of Colorado.

From planning to action

The first step the city took was to create the Pueblo Economic Development Corporation (PEDCO), a public-private entity charged with attracting new industry to the area. Then in 1984, residents passed a ballot measure to increase Pueblo's sales tax by one-half cent. The funds were to be directed entirely toward efforts to create new jobs. (Over the 22 years the special sales tax has been collected, more than $88 million has been raised to support economic development.)

The city used the new funding to match two EDA Public Works grants to develop industrial infrastructure at Memorial Airport. Those actions proved very successful: the improved and revamped infrastructure helped attract new employers such as Sperry, Target Distribution, McDonnell Douglas, Trane Company and B.F. Goodrich.

The next focus area in the revitalization efforts moved back to the city's core. EDA helped fund the development of the Business and Technology Center, a small-business incubator that would help new businesses start up. EDA also funded a planning grant that was used to prepare three plans – Strategic, Economic and Physical Development – which identified a number of revitalization projects for downtown Pueblo.

In 1994, Pueblo voters approved a ballot measure that would allow a portion of the half-cent sales tax to be used to build an $18 million hotel and convention center. In 1995, voters again approved a bond issue for just under $13 million to build the Historic Arkansas Riverwalk Project (HARP). Constructed along the banks of the Arkansas River where it flows through the center of downtown Pueblo, the HARP is now a 26-acre urban waterfront experience that includes trails, sidewalk cafes, commercial and retail development, and public spaces for art and entertainment.

It is becoming more and more clear how essential the convention center and the HARP are to continuing the economic expansion of the city's core. Early in 2006, Professional Bull Riders, Inc. announced that it would construct its headquarters on the HARP. In late May, Cingular Communications broke ground on the HARP for a customer service center that will provide more than 500 jobs paying at least $10 an hour. To build on that success, the community has raised another $2 million for the expansion of the HARP to the convention center.

One of the state's biggest moneymakers has been tourism, but in the past, the city had not sought to tap into that market. With the change of the city's fortunes since the early 1980s, Pueblo realized that heritage tourism could have a significant impact on the redevelopment of its historic downtown. In early 2000, the City of Pueblo and State of Colorado committed $7 million to redevelop the El Pueblo Museum and Plaza in the heart of downtown. Besides holding the city's past within its walls, the museum is a popular setting for many events in the city, including the annual Chile and Frijoles Festival. In 2004, the community applied for and received the Preserve America designation.

Partnerships

As with any major plan, it takes more than one person or group to ensure success. While city government was partnering with EDA on various plans and projects, community partners moved forward with their own projects to further the city's economic adjustment strategy:

As with any major plan, it takes more than one person or group to ensure success.

- **Pueblo Economic Development Corporation:** Since 1984, the Pueblo Economic Development Corporation has assisted in attracting 67 businesses that provide primary jobs in the community. The net gain in employment over the 20-year period is approximately 7,000 jobs, with an additional 810 jobs that are expected to be in place in the next 12 months.
- **Greater Pueblo Chamber of Commerce:** Due to efforts of the Chamber and the expansion of local venues, the number of major, community-wide events held in Pueblo has grown from three in 1985 to eight in 2005. In 1998, the Pueblo Convention Center hosted 411 events with total revenue of more than $920,000; business has grown so that in 2005, the convention center hosted 612 events with total revenue of $1.28 million. The impact of attendee spending on the local economy in 2003 was estimated to be $3.4 million. Two spinoff organizations have been created as a result of tourism development, the Pueblo Lodging Association and Destination Pueblo.

  The Chamber is also a partner in the Pueblo Education Consortium (PEC), which brings together Colorado State University at Pueblo, Pueblo Community College, School Districts 60 and 70, and local business leaders to identify the workforce needs of the local business community.
- **Latino Chamber of Commerce:** The Latino Chamber created the El Pueblo Interdevelopment Corporation (EPIC), a program that provides loans to existing and startup businesses that don't meet conventional banking underwriting criteria. It created the Pueblo Hispanic Education Foundation (PHEF) originally to raise money for scholarships and support services for Hispanic students, but now includes anyone of low- to moderate-income. The Latino Chamber also was instrumental in creating the Pueblo Technology Alliance, a group started to help southern Colorado organizations, businesses and community members understand and use technology to its full potential.
- **Colorado State University – Pueblo:** Opened the Malik & Seeme Hasan School of Business, partially funded by a local businessman, in the early 1990s.
- **Pueblo Community College:** Pueblo Community College (PCC) has been a leader in providing customized training for local business. In 1994, it constructed the Gorsich Advanced Technology Center to provide highly technical training. PCC also houses a Small Business Development Center.
- **Pueblo School District 60:** In 2002, a $100 million bond issue passed to fund technology upgrades in all the schools throughout the district.
- **Pueblo School District 70:** Created the Tech Academy for high school students, now housed in the Gorsich Center at PCC.

Results

The Pueblo community has achieved significant results over the past 20 years not by dwelling on its losses but by developing strategies, forming partnerships and taking action. As shown in the table on the next page, over the past 20 years Pueblo's unemployment rate has dropped from 10.5 percent to 6.8 percent, jobs increased by 43 percent and population has grown by 24 percent.

Though progress seemed slow at times, the city stuck to a steady course and continues to prosper today. Pueblo's accomplishments were recognized in early 2000 when Partners for Livable Communities designated the City of Pueblo – which in 1983 had an unemployment rate near 20 percent – as one of America's Most Livable Communities.

Ironically, the long-term success of Pueblo's strategy may be best exhibited by the historic bellwether of the Pueblo economy, Rocky Mountain Steel (formerly CF&I Steel). Today, Rocky Mountain Steel is again a healthy and significant contributor to the city's economy. The new company has made significant investments in the mill, and employment has grown from a low of 603 employees in the fourth quarter of 1999 to just under 900 workers as of March 2006.

Pueblo looks to the future with confidence. Regardless of any economic challenges that may arise, Pueblo knows that with the right planning, action and partnerships, it will not just survive, but thrive. ★★★

For more information, visit the City of Pueblo's Web site at http://www.pueblo.us/.

The HARP attracts residents and tourists to play, and businesses to locate alongside.

Measuring the Change in Pueblo's Economy, 1985 - 2005

	1980	Percent change, 1980-85	1985	Percent change, 1985-05	2005
(1) Total Jobs	46,682	-4.1	44,761	43.2	64,089
(2) Unemployment Rate (%)	10.3	1.9	10.5	-35.2	6.8
(3) Population Growth	125,972	-3.2	121,907	24.1	151,322
(4) Per Capita Income as % of U.S. average	86%	-10.5	77%	2.6	79%
(5) Avge. Annual Wage (Current $)	N/A	N/A	$16,611	83.4	$30,463
Annual Wage (Constant 2004 $)	N/A	N/A	$28,630	6.4	$30,463
(6) Annual Housing Starts	283	6.4	301	301.0	1,207
(7) Building Permits (Total Value, $ mil.)	$26.1	114.9	$56.1	316.2	233.5
(8) Assessed Property Value (Curr. $ mil.)	$468.0	-2.0	$458.6	130.9	$1,058.9
(9) Retail Sales - Pueblo (Curr. $ bil.)	$1.4	-14.3	$1.2	141.7	$2.9

Data Sources

(1) Center for Business and Economic Forecasting for 1980, 1985; Colo. Dept. of Labor & Employment for 2005

(2) Ibid.

(3) U.S. Bureau of the Census for 1980; Colo. Division of Local Government, Demography Section for 1985; U.S. Census Bureau for 2005 estimate

(4) U.S. Bureau of Economic Analysis. Note: 2005 is actually 2003 (latest available)

(5) U.S. Bureau of Labor Statistics. Note: 1985 is actually 1986; 2005 is actually 2003 (latest available)

(6) Pueblo Regional Building Department

(7) Ibid.

(8) Pueblo County Assessor's Office, Abstract of Assessment

(9) Colo. Department of Revenue

Fields of Green:

North Dakota State University Research & Technology Park

By Tony Grindberg and Carol Renner

Executive Director, NDSU Research & Technology Park; NDSU Office of Research

For more than 100 years, acres of agricultural test plots surrounding the North Dakota State University campus in Fargo were a common sight. As a land-grant institution, NDSU has a strong heritage based in agricultural research. But by the 1980s, the institution and the state it serves faced obstacles. A farm economy crisis forced many farmers out of business, affecting families, farmers, Main streets and state institutions. Everyone wondered: Just where did the state's economic future lie?

NDSU's Center for Nanoscale Science & Engineering, part of the university's research and technology park, includes "clean rooms" for development of electronic sensors and microchips for business, industry and government applications.

Stemming the out-migration of young people from North Dakota, creating good-paying jobs and boosting per capita income were just some of the challenges facing the state's leaders. It took several catalysts and a team dedicated to measured change to develop long-term solutions.

Evaluating assets and forging partnerships

The state's assets included an extensive higher education system and two major research universities, as well as a favorable tax and regulatory climate for business. State leaders established a Higher Education Roundtable in 1999 to examine North Dakota's university system and make recommendations to improve its role in education, research and economic development.

The 60-member advisory group included members of business and industry, state lawmakers, higher education board members, college presidents, faculty, and representatives from state government and American Indian tribes. The group's report pointed out that without action, the state would continue losing population, particularly young people in their prime career years. The state Legislature and Board of Higher Education listened to the suggestions and adopted a doctrine of flexibility and accountability that gave campuses such as NDSU the opportunity to pursue new initiatives while demanding measurable results.

Catalysts and convergence

When Dr. Joseph A. Chapman arrived as president of NDSU in 1999, research expenditures were $44 million, student enrollment was 9,700 and 150 doctoral students were on campus. "My first impressions of NDSU were that this was a tremendous university but that it did not have the academic and research portfolios of our land-grant peers," said Chapman.

NDSU did, however, have expertise in a number of growing technology fields. An early feasibility study on the viability of a research park at NDSU focused on four regional industry clusters that were showing rapid growth: biosciences, advanced manufacturing, materials science and information technology. The study also noted that there was virtually no competition from other economic development organizations in the region. Chapman championed the Research & Technology Park concept as a place where university researchers and private industry could combine their talents to develop new technologies, methods and systems. The state's Board of Higher Education approved the idea and groundbreaking for the park took place in May 2000.

Chapman's early decision to pursue rapid development of a technology park coincided with his challenge to faculty, staff and students to move the entire university to the next level by increasing research activity, enrollment and doctoral programs, as well as moving NDSU athletics to NCAA Division I. Faculty and staff saw the challenge – increasing annual research expenditures to more than $100 million, boosting enrollment to more than 12,000 students and increasing doctoral student enrollment to more than 500 in six years – as opportunity.

Barry Batcheller, a North Dakota entrepreneur who started an electronics manufacturing company later sold to equipment manufacturer John Deere & Company, was initially skeptical that the tech park could be accomplished. Batcheller, an NDSU graduate (and now a member of the NDSU Research & Technology Park board), told President Chapman, "If you can lay the foundation to get it done, I'll build a building." Phoenix International, at the time headed by Batcheller, became the Park's cornerstone tenant.

In six years, the NDSU Research and Technology Park has evolved from agricultural acres to six buildings in which high-tech research and manufacturing occurs.

Partners in growth

The rapid early success of the NDSU Research & Technology Park has depended upon bipartisan and nonpartisan work by leaders who understand what is at stake for North Dakota's economic future. Fortunately, that includes the state's Republican governor and its Democratic congressional delegation.

As options were discussed at the state level, North Dakota's congressional delegation – including Senator Byron Dorgan, Senator Kent Conrad and Representative Earl Pomeroy – sought additional opportunities to spur development. Senator Dorgan worked with government entities and businesses to create the Red River Valley Research Corridor in 2002, with the goal of attracting new companies and high-paying jobs to the state by maximizing the world-class research underway at the state's universities. More than $300 million has been secured for Research Corridor development.

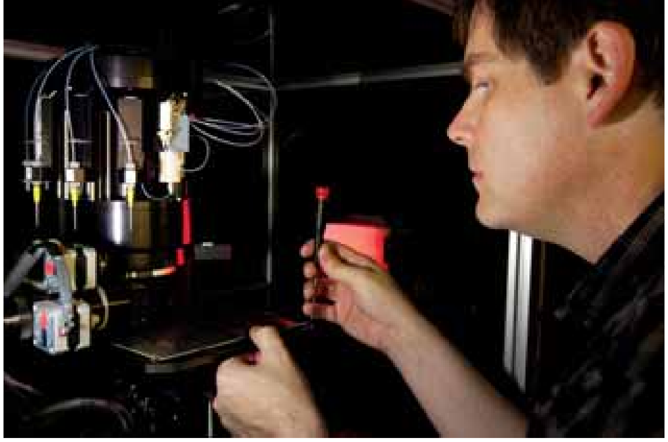
In addition, Senator Dorgan's annual Upper Great Plains Technology Conference and Action Summits bring in tech heavyweights such as CEOs from satellite radio, medical technology corporations, telecommunication companies, Silicon Valley companies and others to see what the state has to offer. Senator Dorgan also initiated an introduction between NDSU and Alien Technology of Morgan Hill, Calif., a leading manufacturer of radio frequency identification (RFID) tags.

Governor John Hoeven, previously a banking executive who participated in the Higher Education Roundtable, also pushed to develop programs to spur the state's economy from one based solely on agriculture, energy and tourism to a more diverse mix that includes technology-based businesses.

During the 2003 legislative session, the North Dakota Legislature, acting on Governor Hoeven's proposal, created "Centers of Excellence" within North Dakota's university system. The Centers of Excellence initiative provides up to $50 million for research and commercialization of new products and services that will create higher-paying jobs and new business opportunities. Dollars leveraged with private and federal matching funds are helping make the state's campuses active partners in building North Dakota's economy.

The NDSU Research & Technology Park project was declared a Center of Excellence and was awarded a $1.25 million grant to develop a technology incubator, the NDSU Center for Technology Enterprise. More than $6.9 million in state, private and federal funds have been secured to develop the incubator, including $3 million from local governments and businesses in the region and $1.75 million from the U.S. Economic Development Administration for construction. (NDSU also has received $7 million in Centers of Excellence funding for projects in advanced electronics, polymers, coatings and agriculture biotechnology. Earlier awards included a Center of Excellence in Beef Systems and a Center for Genetic Research.)

To accomplish its goals, NDSU Research & Technology Park leaders collaborated with the chamber of commerce and local, regional and state economic development groups. In a state where business leaders can call elected office holders and talk with them directly, such communication fosters collaboration.



Researchers in coatings and polymeric materials conduct hundreds of experiments simultaneously in the NDSU Combinatorial Materials Research Lab at the Center for Nanoscale Science & Engineering.

The company we keep

In six years, the NDSU Research & Technology Park evolved from agricultural acres to six buildings in which high-tech research and manufacturing occurs. It includes the following facilities:

- **Research 1:** Completed in 2001, this 40,000-square-foot building houses NDSU's Department of Coatings and Polymeric Materials, which is one of only six programs in the U.S. that specializes in plastics, paint and coatings research. It also holds 13 laboratories and houses the NDSU Research Foundation and Office of Technology Transfer, which works to transfer university technologies to the market. In addition, a Product Design & Commercialization Center facilitates commercialization of technology and intellectual property developed at NDSU.
- **Research 2:** Completed in 2004, Research 2 (76,000 square feet) includes the NDSU Center for Nanoscale Science and Engineering (CNSE), three "Class 10,000" clean rooms and three "Class 100" clean rooms to maintain a dust-free environment when developing electronic sensors and chips for business, industry and government applications. In partnership with Tessera Technologies, Inc. of San Jose, Calif., it includes surface-mount technology and chip-scale packaging lines where prototypes of electronics can be manufactured. Research 2 also contains a unique combinatorial science lab where coatings and polymeric materials researchers conduct hundreds of experiments simultaneously, reducing discovery time from months to days.
- **Phoenix International Corporation:** Phoenix develops highly ruggedized electronics and systems as a division of John Deere Corporation, with 75,000 square feet for its New Product Introduction Center.
- **Alien Technology:** The Morgan Hill, Calif., company constructed a 50,000-square-foot research center and manufacturing facility, capable of producing billions of RFID tags annually.
- **Center for Technology Enterprise:** This is a 50,000-square-foot business incubator under construction to enhance the success of technology start-ups. Four companies currently in other NDSU buildings will relocate to the center that is anchored by Bobcat Company, a division of Ingersoll-Rand, which is locating an R&D facility in the NDSU Park. Appareo Systems and Pedigree Technologies are two recent start-up companies that will also be housed in the new incubator.
- **Candlewood Suites:** A 72-suite hotel serves as a real-world learning environment for NDSU hospitality and tourism management program students.

Leadership that encourages entrepreneurship

The NDSU Park was incorporated with the goal of achieving maximum flexibility with an entrepreneurial spirit and acceptance of risk. In recognition that this type of initiative requires significant investment, patience and community support, the NDSU Research & Technology Park board of directors includes an eclectic mix of representatives from industry, regional banking institutions, education, law, manufacturing and biotechnology. Another 14-member advisory committee with a broad range of expertise oversees the NDSU Center for Technology Enterprise, the business incubator under construction.

Beyond leadership, quarterly "5:01 Entrepreneur Society" meetings provide an opportunity for investors, entrepreneurs, students and faculty to exchange ideas. In addition, a local entrepreneur annually donates $2,000 each for scholarships to five incoming freshman at NDSU to support students' entrepreneurial pursuits. (Those same students continue to receive a $2,000 scholarships each year if they maintain a certain academic standing.)

Additional goals

Among the NDSU Research & Technology Park's goals, besides creating jobs, are increasing incomes and attracting North Dakota natives back to the state. Figures from the U.S. Census Bureau show out-migration is down slightly from the 1990s, but continues to be a major concern. Good job opportunities are the key: NDSU's Center for Nanoscale Science & Engineering includes native North Dakota engineers and technicians with more than 150 years of combined industry experience with companies such as Intel, Micron, Motorola, Honeywell, Imation, Texas Instruments, Hutchinson Technologies, Rockwell Collins and Lucent. And incomes are improving: North Dakota's 6.4 percent growth in personal income was the second highest in the nation in 2005, due to a variety of factors. Average wages in the state grew 17.4 percent from 2000 to 2004, although still lag the national average.

The Research & Technology Park also works with the state's Commerce Department officials as they seek economic development opportunities. Continually sharing information and successes with the community, its leaders and larger audiences is crucial to the park's success. The Park, NDSU and Fargo have been mentioned in publications such as Wired magazine, Financial Times, USA Today, National Public Radio and others.

Measurable results

During the first five years of existence, $75 million has been invested in facilities and equipment at the NDSU Research & Technology Park. According to a study by Dr. Larry Leistritz, professor of agribusiness and applied economics at NDSU, the total economic impact of construction at the park is estimated at $81.9 million. And of the $100 million annual research budget at NDSU, $78.4 million is spent within the state; another $234.9 million is generated in direct or secondary impacts.

NDSU is currently classified as a university with "high research activity" under the Carnegie classification system. NDSU's specialty areas include visual neuroscience, spintronics, sensor technology, protease research, pharmaceutical sciences, nanotechnology, microelectronics, life sciences, engineering, coatings and polymeric materials, as well as agriculture. Expertise includes specialty coatings for planes, ships, medical devices, statues and artwork. An active licensing program for intellectual property brings $1 million in royalties to NDSU annually.

The National Science Foundation ranks NDSU number 57 among the top 100 U.S. research universities and colleges for federally financed research expenditures for physical sciences. In science and engineering fields, NDSU ranks eighty-fifth in total research expenditures at U.S. public colleges and universities. The university also has been named one of the best places to work in 2006 for individuals pursuing postdoctoral positions, according to *The Scientist* magazine, which places NDSU in the top 35 research institutions in North America.

Assistant U.S. Secretary of Economic Development Sandy Baruah, pictured second from left, receives a plaque from North Dakota Governor John Hoeven noting EDA's $1.75 million grant to fund construction of NDSU's Center for Technology Enterprise. Pictured left to right: NDSU President Joseph A. Chapman, EDA Assistant Secretary Baruah, Gov. John Hoeven, Research & Technology Park Executive Director Tony Grindberg and Dr. Philip Boudjouk, NDSU Vice President for Research.

"The dynamic mix of faculty and students are key to the success of NDSU's Research & Technology Park," says Philip Boudjouk, PhD, vice president for research, creative activites and technology transfer at NDSU. The Park's success is aligned with NDSU's core competencies. As those areas expand, they contribute to the Park's growth. "It's not necessarily a smooth ride," Boudjouk points out. "But we're in the mix. Our challenge is to stay on that pony."

NDSU's growth also fuels research park success. The university has met its goals of growing student enrollment from 9,700 to more than 12,000; increasing annual research expenditures from $44 million to more than $100 million; and growing the number of doctoral students from 150 to more than 500.

NDSU, North Dakota leaders, its university system and economic development officials have made strides to diversify the state's economy. What was once 55 acres of sunflower field test plots on the northwest edge of campus is now the NDSU Research & Technology Park, where 400 people come to work daily. Another 200 jobs are expected to be created over the next year. Since its groundbreaking in 2001, both educational and business leaders have been excited about the possibilities for collaboration that the park presents. ★ ★ ★

For more information about the NDSU Research & Technology Park, visit the Web at http://www.ndsuresearchpark.com/.

Sunflower fields to tech park

The process:

- Engage leaders in vision & develop strategy
- Approach alumni
- Assess assets and evaluate opportunities
- Eliminate barriers
- Forge partnerships
- Seek cross-section of funding mechanisms
- Place right people in right positions at right time
- Engage leaders in program development
- Evangelize successes
- Measure results

Catalyst Connection:

Yielding Positive Results in Southwestern Pennsylvania

President and CEO, Catalyst Connection

By Steven Zylstra

Business retention and expansion are the cornerstones of effective economic development. Yet in most communities, they are activities that typically get more lip service than results-oriented action; business attraction remains king.

Likewise is the importance of partnering. Everyone talks about it, but far fewer are committed to doing it effectively. Partnering to enhance the competitiveness of companies in southwestern Pennsylvania is precisely the mission of Pittsburgh-based Catalyst Connection, a Pennsylvania Industrial Resource Center and National Institute of Standards and Technology Manufacturing Extension Partnership network affiliate.

Since its founding in 1988, more than 1,100 small- and medium-sized manufacturing companies across 13 counties in southwestern Pennsylvania have relied on Catalyst Connection to help grow their businesses and improve productivity. In 2005, Catalyst Connection helped 154 southwestern Pennsylvania manufacturers advance their companies through market growth, financial assistance, productivity improvement and workforce development services, contributing to more than $47 million in sales growth for those clients in one year alone.

While these companies represent a diverse array of industry sectors, each has found Catalyst Connection to be both a highly effective partner in supporting their companies' growth and an exceptionally cost-effective resource. The average return on investment reported by Catalyst Connection's clients was $600,000.

In addition to the direct business assistance that Catalyst Connection provides its clients, it also is committed to ensuring that southwestern Pennsylvania continues to develop, attract and retain a workforce that helps build strong industries. To that end, Catalyst Connection works in close collaboration with its affiliate, the Pittsburgh Technology Council, and is engaged in a wide variety of education initiatives in primary and secondary schools, as well as colleges, universities and technical schools throughout the region. Catalyst Connection also works closely with its clients to identify and deliver an array of training programs that help incumbent workers hone their skills and job performance.

Partnering for productivity and enhanced profitability comes in other forms as well. At the state and regional level, Catalyst Connection works with other nonprofit economic development groups to help them achieve their missions. Catalyst also collaborates with other Industrial Resource Centers throughout Pennsylvania on valuable research detailing marketplace needs, documenting and disseminating best practices, standardizing and developing new service offerings and leveraging the capabilities of each center.

In 2005, Catalyst Connection provided financial assistance, productivity improvement and workforce development services to 154 southwestern Pennsylvania manufacturers, contributing to more than $47 million in sales growth.

Documented impact

Each year, the U.S. Department of Commerce National Institute of Standards and Technology (NIST) evaluates the impact that Manufacturing Extension Partnership (MEP) Centers have on the clients they serve. This assessment documented the following impact of Catalyst Connection's work during 2005:

Sales Increased	$ 47,600,000
Sales Retained	$153,975,000
Cost Savings	$7,629,300
Investments Made	
Plant & Equipment	$ 18,815,500
Information Systems	$ 1,216,500
Workforce Practices	$ 1,068,350
Other	$ 2,438,000
Unnecessary Investments Avoided	$ 3,531,600
Jobs Created	246
Jobs Retained	89

Important as these statistics are, they are only part of the picture. Catalyst's achievements can best be understood by sharing individual client success stories in which Catalyst helped companies enhance their businesses on all dimensions, top- through bottom-line.

Engaging employees as partners in profitability: Miller Centrifugal Casting Company

Miller Centrifugal Casting Company (MCC), in Cecil, Penn., specializes in designing, casting and finishing high-grade, centrifugally cast ferrous and nonferrous products. For more than 40 years, MCC has served a variety of industries, including those involved in power transmission equipment, elevators, commercial and military aircraft, and marine and naval vessels.

MCC, once a thriving family-owned business, was sold to a corporation that subsequently entered Chapter 11 bankruptcy. One of the consequences of the bankruptcy for MCC was a lack of ongoing investment in plant, equipment and personnel by its parent company.

In 2002, two private investment companies, Birchmere Capital and Wilder-Deem, bought MCC through a bankruptcy auction, brought in new senior management to restore the company to profitability and began investing in MCC's redevelopment. Since then, Catalyst Connection assisted MCC with two initiatives that contributed significantly to the company's turnaround: leadership training and the introduction of lean manufacturing methods.

After MCC sent its management team to a leadership course conducted by Catalyst, MCC management continued to work with Catalyst to introduce new performance appraisal and gainsharing programs. MCC understood the critical role that good communication would play in motivating its employees and in getting the new pay-for-performance system accepted, and Catalyst provided training to support that process.

Along with the investments made in leadership training, the new owners also invested in new machinery, equipment and operational improvements. MCC engaged Catalyst Connection to train its workforce in lean manufacturing and work with the company's teams to support the implementation of those techniques throughout the company.

"Change is the most difficult thing that people have to deal with," observed Ian Sadler, president of MCC. That was certainly true for MCC's workforce. "But change was critical to the company's survival. We face global competition, and without the measures that we've introduced, we would have been unable to become a successful world-class player."

MCC and its employees are beginning to see tangible results from their efforts. Manufacturing productivity across several measures improved significantly and the company's backlog of orders is at an all-time high – not just domestically, but also from export business.

"We believe we can now compete with anybody in the world on a level playing field. We're actively hiring. We're experiencing growth in sales. Our revenue this year will be up about 30 percent over last year," Sadler noted.

Catalyst Connection worked with Miller Centrifugal Casting Company on leadership training and the introduction of lean manufacturing methods, assisting with the company's turnaround.

In 2005, productivity, quality and safety improvements enabled MCC to reward its employees by paying out $48,000+ in gainsharing – a yearly average of $1,000 paid per employee – demonstrating to MCC's workforce the benefit of embracing change and keeping motivation high.

Transforming suppliers into partners in productivity: Respironics, Inc.

Respironics, Inc., in Murrysville, Penn., is a leading developer, manufacturer and distributor of products and programs that serve the global sleep and respiratory markets. Respironics markets its products in more than 125 countries and employs 4,100 associates worldwide.

"We believe strongly in the value of strategic supplier relationships," emphasizes David Butler, Respironics' Director of Global Sourcing. "We invest a lot of our time and resources in building those relationships. One of the ways in which we do that is through supplier development. We work with our suppliers to improve their efforts in productivity, quality, cost and safety."

When Respironics needed to address improvements with some of its local suppliers, it chose Catalyst Connection for its expertise in lean manufacturing, specifically 5S, value stream mapping and team problem-solving, according to Butler.

Catalyst Connection worked on-site at two of Respironics' local suppliers, conducting training and facilitating the implementation of lean manufacturing methods that would improve product cycle times, facility layout and organization.

In one project, Catalyst Connection helped the supplier open 2,500 square feet of floor space, and reduce machine setup times by approximately 50 percent and machine downtime to less than five percent of available hours. At the same time, process yield improved by 10 percent.

In the other project, the supplier was able to reduce product lead-time from 36 to 19 days and its manufacturing lot size from 500 to 300 pieces. This improvement is vital to Respironics because the company does not hold a lot of inventory and, in some cases, expects suppliers to be able to deliver on a daily basis. This project also opened approximately 2,300 square feet of floor space and reduced work-in-process inventory by 35 percent.

Butler believes Catalyst's work will help position the suppliers to serve Respironics' long-term growth requirements. With Respironics' recent growth of 20 percent per year, that's key.

Selecting the technology partner that best facilitates growth: Solid State Measurements, Inc.

Founded in 1970 to commercialize technology developed at Westinghouse Research Center, Pittsburgh-based Solid State Measurements, Inc. (SSM) is an industry leader in the design and manufacture of equipment for semiconductor materials characterization and process control. The past 10 years saw SSM grow at a rate in excess of industry averages, with a customer base that includes all the major manufacturers of semiconductor materials worldwide.

Because their complex products involve thousands of electronic and mechanical components, SSM was an early adopter of manufacturing resource planning (MRP) and enterprise resource planning (ERP) for integrated management of its business. In 2005, recognizing that its ERP system had become obsolete, SSM turned to Catalyst Connection to help evaluate and select a new system that would meet the company's current and future needs.

"We believe our business can't be run without a good ERP system, and can be severely damaged by choosing the wrong ERP system," said William J. Alexander, vice president of SSM. "When we decided to replace our ERP system, we recognized that we did not have the breadth of knowledge in-house that we needed to evaluate the major offerings in the marketplace." Through a formal and rigorous process, Catalyst Connection was able to help SSM evaluate its options and find the best fit.

Producing positive change

Engaging employees, suppliers, technology vendors and consultants to partner for results is helping individual businesses flourish and fostering economic growth in southwestern Pennsylvania. Catalyst Connection is proud to be part of building a strong, vibrant and resilient regional economy. ★★★

For more information, contact Steven Zylstra, president and CEO, at szylstra@catalystconnection.org or Petra Mitchell, vice president, operations, at pmitchell@catalystconnection.org; call 412.687.0200 or toll free 1.888.887.7472; or visit the Web site at www.catalystconnection.org.

St. Patrick Center Programs Build Permanent, Positive Change

By Dan Buck

Chief Executive Officer, St. Patrick Center

Working with homeless and impoverished populations to provide opportunities for success, independence and financial stability requires innovation. As Missouri's largest provider of homeless services, St. Patrick Center sees innovation as part of its ongoing formula for success.

St. Patrick Center, located in downtown St. Louis, helps more than 8,000 individuals annually with mental health, employment and housing programs.

Since 1983, St. Patrick Center has served nearly 100,000 impoverished and homeless people in the St. Louis metropolitan area. In 1991, President George H.W Bush designated St. Patrick Center as Point 545 in the 1,000 Points of Light.

Through programs including innovative outreach, mental health and substance abuse treatment, health care, education, employment and housing, people of any faith and background can find a new start. The agency's Five-Year Strategic Plan (for fiscal years 2007-2011) calls for a more proactive approach in including its clients in the St. Louis economy.

St. Louis's diversified economy

During most of the 20th century, St. Louis was a major part of the national manufacturing economy. Today, local manufacturers who produce goods ranging from trucks and aircraft to beer and pharmaceuticals are still a vital part of the region's economy. But that economy is more diverse than in the past, as St. Louis develops an economic base that is tied to sophisticated service and research industries.

The city's employment is broad-based and diverse. The share of the region's workers employed in manufacturing, 11 percent, is almost exactly the same as the U.S. average. That remains true for most of the major industrial classifications, such as transport, utilities, finance and construction. No more than 20 percent of the region's employment is concentrated in any one sector of the economy.

McMurphy's Grill gives St. Patrick Center clients the opportunity to learn food-industry skills while serving lunch to the public.

This diversity keeps the region's economy relatively stable and helps St. Louis weather the vagaries of business cycles and long-term structural changes in the U.S. economy. The most recent national recession and recovery are a valid example: Between March 2001 and March 2004, employment in St. Louis declined by 1.2 percent – a slightly larger decline than the United States experienced as a whole, but a smaller decline than experienced by Kansas City (-2.6 percent), Chicago (-4.8 percent), Boston (-7.4 percent), or San Francisco (-9.1 percent).

According to the U.S. Department of Labor, 37,500 jobs were created in Missouri from February 2005 to February 2006. Ranking high on lists of the most competitive locations to do business, St. Louis stands poised to advance on this economic good news. Low cost of living, wages that are higher than the national average, impressive educational resources and a diverse economy are all positive factors contributing to economic growth in St. Louis.

Innovation meets entrepreneurship: Project BEGIN

St. Patrick Center is working on an innovative program to capitalize on St. Louis's steady economic growth. This concept, as part of the vision of St. Patrick Center to combat chronic homelessness through employment, is Project BEGIN (Businesses, Employment, Growth, Incomes, and Neighborhoods).

Project BEGIN calls for the creation of a small business incubator and trades training center as part of the programs offered at the agency. It is anticipated that this model, which pairs St. Patrick Center with Ranken Technical College, will enhance the local economy by creating opportunity for the disenfranchised and training the currently unemployable to become permanently employed. This small business incubator will be housed alongside St. Patrick Center and its partner agencies at its headquarters, the Partnership Center.

The brainchild for this program came in response to numerous interviews with local union leaders and construction business owners who stated that they cannot find enough "laborer" employees with the basic job knowledge and skills necessary to carry out the work that is below the journeymen in their respective trades. Downtown St. Louis is currently experiencing a residential boom, and many estimate that over 2,000 new construction jobs will be created in the next three to five years to handle this redevelopment surge.

As a part of Project BEGIN, the trades training center will create introductory trades programs to give low-income homeless individuals and ex-offenders the necessary skills to attain entry-level construction and automotive jobs. These 10- to 12-week courses will include instruction on carpentry, plumbing, drywall, interior painting and light automotive repair training, with the goal of moving 200 unemployed and underemployed individuals annually into better-paying, high-demand jobs in local unions and specialized automotive shops.

The average salary range for these types of positions is from $10 to $13 an hour. Assuming that the trades training center moves 150 individuals per year into full-time employment and another 50 into seasonal, part-time positions, the center will create over $3.2 million annually in new, taxable income.

The small business incubator will allow start-up and small companies to operate with little or no overhead cost. With commercial rents escalating in St. Louis's downtown area, the low-rent, centrally located facility (also housed at the Partnership Center) would have incredible appeal to new and small businesses.

In addition to affordable rent and location, each company will have a built-in incentive for hiring and promoting clients of St. Patrick Center, through an in-house employment services department (St. Patrick Center Employment) that can provide a steady pool of candidates.

With a projected seven to 10 small businesses housed in the small business incubator, this new development has the potential of creating between 35 and 50 full-time jobs for currently unemployed and underemployed individuals. At an estimate of 43 workers earning an average of $21,000 per year, this would generate nearly $1 million annually of taxable earnings, in addition to removing these individuals from the rolls of taxpayer programs such as welfare, TANF and Section 8.

The long-term impact of Project BEGIN is potentially far-reaching. The trades training center will prepare homeless and impoverished individuals for higher-wage, higher-skill jobs, moving them from tax burden to taxpayer and

The small business incubator and trades training center may create as much as $4.2 million of new, taxable annual income for the St. Louis area.

lowering area unemployment rates. The cost of prison recidivism for our criminal justice system would be offset by successful reentry into society by ex-offenders. And the economic impact of the small business incubator and the trades training center may amount to as much as $4.2 million of new, taxable annual income for the St. Louis area.

St. Patrick Center: A model of success

In the 23-year history of St. Patrick Center, a program has never been discontinued for lack of funding or personnel. During that time, the agency has created a range of innovative and successful programs.

A New Day: Shamrock Club Day Program

In 1983, the Missouri Department of Mental Health and St. Patrick Center launched the Shamrock Club Day Program, the nation's first day treatment program for homeless and mentally ill individuals.

The Shamrock Club program helps members address their needs for education, job readiness skills, job training, employment, living skills and housing. Partnering agencies located within the Partnership Center also provide legal, medical, dental, chiropractic and housing services.

Opportunity through experience: McMurphy's Grill

Initiated in 1990, McMurphy's Grill was the first restaurant-training program for mentally ill homeless clients in the nation. Located in the heart of downtown St. Louis, McMurphy's Grill gives St. Patrick Center clients the opportunity to learn food-industry skills while serving lunch to the public.

The St. Louis community has embraced McMurphy's Grill wholeheartedly. St. Patrick Center's Celebrity Host Program exemplifies this excitement: Every Wednesday, distinguished St. Louis business and civic leaders, sports heroes and noteworthy entertainers volunteer to greet customers and promote awareness of this one-of-a kind training program.

In the last fiscal year, 68 people received training at McMurphy's Grill and 34 of those individuals were placed in full-time jobs. As clients hone valuable food-service skills, they also develop important work habits such as proper grooming and punctuality, and meet with counselors to work on housing needs, substance abuse problems and mental-health issues.

By the numbers: Client tracking system

The continual increase in the volume of services provided by St. Patrick Center has required the development of accountability systems and procedures. The Client Tracking System (CTS) has been the "central nervous system" for St. Patrick Center staff.

On a client's first visit to the Partnership Center, an intake counselor performs a comprehensive assessment of the client's needs, capturing vital information regarding sources of income, level of education, number of children, medical issues, current address or location of where they are staying, and duration of their homelessness. The CTS is the first tool of its kind in its ability to then identify client needs, track client progress in areas of employment, housing and mental health, and monitor the quality of staff follow-up support and program outcomes.

One-stop caring center: The Partnership Center

In 1997, the Sverdrup Corporation donated a five-story, 100,000-square-foot building in downtown St. Louis to St. Patrick Center. Three years later, the St. Patrick Partnership Center opened with the goal of creating a one-stop caring center for homeless individuals.

Today, the Partnership Center houses 10 partner agencies and 22 programs as part of one-of-a-kind joint venture to combat chronic homelessness. The latest renovations to the Partnership Center include a revamped healthcare wing to address clients' medical, dental and pediatric needs, and a newly renovated housing department area which will serve as the center of a renewed commitment to providing permanent, supportive housing for St. Patrick Center clients.

Innovation through partnership: The future of St. Patrick Center

St. Patrick Center's mission is to provide opportunities for self-sufficiency and dignity to persons who are homeless or at risk of becoming homeless, to effect permanent, positive change in their lives. Employment programs such as Project BEGIN are a key part of providing these opportunities to St. Louis residents searching for a second chance. ★★★

For more information on St. Patrick Center and its programs, contact (314) 802-0700 or visit the St. Patrick Center Web site at http://www.stpatrickcenter.org.

Extreme Economic Makeover,

Rural Edition: Yuba-Sutter EDC

By Tim Johnson

Executive Director, The Yuba-Sutter Economic Development Corporation

The northern California counties of Sutter and Yuba for years have faced challenges typical of other rural areas – but have taken additional hits from both Mother Nature and the media.

Members of the Yuba-Sutter community welcome the Global Hawk unmanned aircraft - and new autonomous technology workers - to the region.

The Yuba-Sutter region, 1,250 square miles in size with a population of 150,000, has long suffered from double-digit unemployment rates (consistently one of the top ten highest rates in the nation) and low incomes (the incomes of 80 percent of the population are below the state median). This is due partly to the seasonal nature of our agricultural economic base. But in addition, multiple natural disasters have occurred over a 20-year period: Two major floods (one in 1986 and another in 1997) and nine wildfires have forced community efforts to focus on 'putting back together,' rather than growing the economy.

Adding insult to injury, Rand McNally and *Money* magazine named the region the worst place to live in the nation, not once, but twice. This label did not help the community's morale, but it did spur a committed, results-driven economic development program to sustain, diversify and grow the economy.

The community response

Although there had been several previous community-based economic development efforts over the years, these attempts failed to gain traction for a variety of reasons: the lack of either public or private-sector support; weak financial resources; no strong business model; or lack of experienced staff. But in 1994, efforts restarted in earnest with the formation of the Yuba-Sutter Economic Development Corporation (YSEDC), a partnership comprising local and state elected officials coupled with private-sector stakeholders from key businesses and industries.

Like so many organizations, YSEDC's early progress was slowed by a variety of growing pains, besides having to respond to natural disasters. Thus its efforts did not excel until late 1999 with the formulation of a new economic development strategy, "Blueprint for Success," along with the introduction of new management. Together, YSEDC's board and staff, along with the region's businesses and residents, embarked on an effort that has made us the "little rural region that could" achieve economic development success.

The strategy

YSEDC's strategy included new mission and vision statements, goals and objectives and corresponding budget requirements. The strategy was completed in less than 90 days through a series of community outreach meetings in which residents and businesses were asked to help identify the region's strengths, weaknesses, opportunities and threats through a series of exercises. This information helped identify new programs, projects and services that would catalyze market-driven efforts to attract business, create jobs and enhance the tax base in an environmentally friendly way.

The strategy then was formulated and presented to the public in a major community presentation and broadcast on the local cable network. From this presentation came further community input, yielding subsequent refinements and a completed strategy. The region's stakeholders affirmed "Blueprint for Success" and implementation began shortly thereafter.

The strategy embraced innovative, entrepreneurial activities that also were effective and efficient in their deployment. For example, to immediately mobilize the community, YSEDC initiated a program it named "Operation Landlord." YSEDC brought together an estimated 1,400 owners of commercial and industrial properties in the region to express the intent of the economic strategy and to get the owners' buy-in. YSEDC promised to provide regular updates on changes in the economy and to help owners market their properties, while the owners, in turn, would help market the region as a great place to do business. This program helped mobilize 1,400 economic development ambassadors for the region at no cost, and continues today as a major component of the region's economic progress.

Another early strategy responded to a key issue uncovered during the formulation of "Blueprint": The region lacked both industrial-zoned property and spec building space for the kind of development that would create primary-wage jobs for the region. In response, YSEDC initiated "Yuba-Sutter Uplift," a program to spur the private development of 100,000 square feet of retail, office or industrial buildings annually in the region. Working with local property owners and then builders, developers and bankers from northern California, this benchmark has been achieved four times in the five years since its inception. The strategy has proven to be a key element of the region's success in business retention, expansion and recruitment.

Gaining momentum

YSEDC was having some early successes, but still needed to reverse the public relations fiasco created by being named the worst place to live in the nation. Hence it developed "Yuba-Sutter Showcase," an annual presentation that brings together the city and county administrators from the region to present business and development opportunities to an audience (comprising real estate brokers and agents, developers, builders, financiers, site location consultants, business owners, engineers, land use planners, consultants and other development contacts) in a short choreographed presentation.

First delivered in Sacramento and San Francisco, the Showcase is expanding this year to San Jose and Los Angeles. After four years, the Showcase has reached hundreds of participants from the business and development communities in California and Nevada and has yielded tremendous returns. It has attracted a variety of businesses to the region, including Sysco Distribution, Lowe's Home Improvement, and most recently three new banks.

Additionally, after attending a San Francisco Showcase, Federal Reserve and U.S. Treasury representatives suggested that YSEDC work with a New Markets Tax Credit provider from southern California, Clearinghouse CDFI. This partnership has brought an innovative and very successful loan program to the region.

YSEDC now has an extensive revolving loan fund program that today loans more than $12 million annually to support business growth. More than 100 businesses have received loans, resulting in the creation of over 300 new jobs.

An "autonomous" future?

YSEDC sees even greater economic opportunities on the horizon. One such opportunity is the impact from a new mission – the Global Hawk, the new unmanned aircraft – at the local military installation, Beale Air Force Base.

Autonomous robotics technology has a variety of commercial applications that lends it to helping diversify and sustain the local economy. For example, agriculture is one of the key economic clusters of the region. Unmanned systems could be used in commercial agriculture to reduce overhead and improve productivity. This opportunity is just now being understood, but as of December 2003, over 2,000 people in and around the region were working in autonomous technology.

In response to this, YSEDC has been working on an initiative to bring industry, academia and government together to support and enhance California's autonomous technology community. The initiative includes the proposed California Center for Autonomous Research and Technology (CAL-CART). In addition to acting as an interpretive center to tell the story of autonomous technology, this facility will serve as California's first autonomous technology industry park and include a business incubator and science complex for technology transfer. By 2011, there could be as many as 10,000 workers in the field of autonomous technology in the Yuba-Sutter region.

From "worst" to "best"

The results from YSEDC's economic development efforts have been staggering. Since 2000:

- Unemployment has fallen nearly 10 percent, from a high of 19.3 percent in March of 2000 to 9.8 percent in March of 2006.
- Private investment in the area has climbed to nearly $3 billion due to new commercial, industrial and housing developments.
- Nearly 5,000 jobs have been created and over 5,000 have been retained.
- *Forbes* magazine has recognized the region not once, but twice, as one of the top ten best rural places to do business in the nation.

Yuba-Sutter's future looks bright, given the proactive programs, projects and services of YSEDC and its community's ability to overcome economic obstacles. ★★★

For further information, contact YSEDC at 530-751-8555, ysedc@ysedc.org or on the Web at www.ysedc.org.

ConnectKentucky:

Kentucky's Technology Transformation

President and CEO, ConnectKentucky

By Brian Mefford

For the last 100 years, Kentucky's economy was built on the backs of farmers, miners and factory workers. Economic development meant finding ways to improve farm yields, increase mining output and provide lower-cost factory production. However, in the 21st century, economic development has been redefined. No longer can Kentucky depend on its economic history to provide the economic future we desire.

In recent decades, Kentucky consistently ranked low among states in terms of technology availability and usage, as well as the number of high-tech companies and jobs within our borders. These disappointing statistics, combined with the decline of traditional industry and agriculture, brought the Commonwealth to an economic crossroads.

Kentucky has turned aggressively to technology to ensure that its communities thrive in this new economic landscape. From this commitment, ConnectKentucky, the state's technology-based economic development alliance, was born. ConnectKentucky is both an independent, nonprofit partnership and an alignment of public and private interests unprecedented in the state, comprising leaders in private industry, government and education.

These leaders work together to develop effective strategies for technology deployment, use and literacy in Kentucky. ConnectKentucky creates both the forum and the incentive for interaction among a variety of entities that otherwise would not unite behind common goals and a shared vision. This level of teamwork is making Kentucky a better place for business and a better place to live.

Prescription for Innovation

ConnectKentucky's primary initiative, "Prescription for Innovation," is an intensive effort launched by Governor Ernie Fletcher to achieve full broadband deployment by 2007, improve technology literacy and increase high-tech job growth.

With the strong support of Kentucky's Congressional delegation, bipartisan support of state legislators, local engagement and participation from businesses and academia, ConnectKentucky has achieved remarkable success in the last two years:

- Broadband availability has grown by 36 percent, meaning that an estimated 352,000 previously unserved households in Kentucky can now access broadband. Private sector investment in telecommunications infrastructure has reached an unprecedented level.
- Broadband adoption in Kentucky (the number of households subscribing to broadband service) has increased by 45 percent.
- Home-computer ownership has grown by 17 percent.
- More than 100 of Kentucky's 120 counties are actively engaged in ConnectKentucky's local leadership committees to establish nine-sector plans for accelerating the use of technology.
- The rate of Kentucky's high-tech job growth is outpacing the national average.

It is estimated that full broadband deployment will add 14,000 jobs in Kentucky and $5 billion to the gross state product.

Moving Kentucky forward

Effective economic development today requires unprecedented levels of collaboration among business leaders, local and state government, education, healthcare, agriculture, tourism and community leaders. For example, attracting business means providing attractive communities for employees, with access to the best in education and healthcare. It also means providing prospective employers with a well-educated workforce that can manage today's technologically intensive equipment and processes.

Acknowledging that technology is the key to successfully addressing these needs and that broadband infrastructure is a must, Prescription for Innovation was launched in October of 2004. Today, more than 25 ConnectKentucky employees are based in four regional offices across the state, hard at work to ensure that every community can realize the promise of technology expansion.

Prescription for Innovation focuses on four primary goals:

- Full broadband deployment by the end of 2007;
- The formation of eCommunity Leadership Teams in every county – local leaders who assemble to develop and implement technology growth strategies for nine sectors: local government, business and industry, education, healthcare, agriculture, libraries, tourism, and community-based organizations;
- Dramatically improved use of computers and the Internet by all Kentuckians; and
- A meaningful online presence for all Kentucky communities, to improve citizen services and promote economic development through e-government, virtual education and online healthcare.

Realizing the challenge of implementing such an ambitious economic development plan in all of Kentucky's 120 counties, ConnectKentucky formulated a grassroots plan for technology acceleration at the local level. Instead of taking a top-down approach, the implementation of Prescription for Innovation hinges on a sense of ownership and excitement in each individual county.

Each county's eCommunity Leadership Team includes representatives from the nine sectors mentioned above. Each team benchmarks and scores its community's current use of technology and sets two-year goals for improvement. After much brainstorming and collaboration with local leaders, ConnectKentucky then formulates a business plan to accelerate technology among each of the community's nine sectors.

Representing a national first, ConnectKentucky created broadband service maps that illustrate current broadband coverage – or lack thereof – across the state, by all types of providers and technologies. The broadband inventory, which is updated regularly, is then combined with data regarding population density and number of households. The detailed maps further develop a case for broadband deployment in unserved areas. Numerous broadband providers use the maps as a tool for extending existing service or for developing plans to offer new services.

Having broadband service available across the state is expected to have a significant impact on the lives of Kentuckians. It is estimated that full broadband deployment will add 14,000 jobs in Kentucky and $5 billion to the gross state product. In addition, the average wage of information technology workers in Kentucky is 50 percent more than the statewide average. Given these possibilities, communities across the state tend to welcome ConnectKentucky with open arms and aggressively establish eCommunity Leadership Teams to lay the groundwork for their cities and counties.

Technology has a new home in Kentucky

Over the past two years, Kentucky has witnessed unprecedented growth in information-based jobs and opportunities as the emphasis on technology and education expands. The positive benefits are realized across the spectrum of the economy, from startups and small businesses to Kentucky's largest employers.

Entrepreneur Kamren Colson returned from a career in Boston to locate a creative design firm in a former tobacco field on his family's Williamstown, Kentucky farm. This past year, Colson's firm was selected to design the souvenir programs and other promotional materials for the 76th Annual

Members of Kentucky's Legislative Broadband Taskforce - including legislative officials, service providers, and government agencies - meet to discuss broadband expansion across the Commonwealth.

Barriers to Broadband Access in Kentucky

Availability a key obstacle outside North Central Kentucky.

- The fifth annual *UKeComm®* survey finds 24% of adults in Kentucky have broadband Internet access in their own home and another 31% have dial-up access. The remaining 45% of adult residents have no Internet access at home. **(See figure 1.)**
- Among the 45% of residents without Internet access at home...
  - 77% do not have a personal computer at home.
  - Just 34% have Internet access at locations outside the home, mainly through an employer (16%), a library (9%) or the home of a friend or family member (9%).
- Cost or affordability is the leading reason Internet users with dial-up connections at home do not subscribe to broadband services.
- Availability of broadband services is significantly more likely to be a barrier to residents outside of the North Central/ Urban Triangle area (which includes the region bounded Louisville, Lexington and northern Kentucky near Cincinnati).
- Dial-up users in the North Central region are more likely to say they have no need or interest in obtaining broadband. **(See figure 2.)**
- There are often larger demographic differences between residents with dial-up access at home and those without any access compared to residents with dial-up vs. broadband access at home.
- Convincing citizens without home Internet access today to become broadband Internet users will require more than simply making the service available everywhere. Demographic factors need to be addressed as well, including...
  - *Affordability* of services for a population with a median household income of $22,600,
  - Education levels, including basic *keyboard literacy*,
  - *Accessibility* for a population that is primarily over age 55 and more than twice as likely as consumers already online at home to have a disability. **(See figure 3.)**

Data Sources: Unless otherwise noted, data herein is derived from the fifth annual (2005) UK ecomm survey of 1,102 Kentucky residents age 18 or older. U.S. Census Bureau sources are used with the survey results to develop market sizing estimates.

Figure 1: Internet Access at Home

(Percent of Adult Residents)

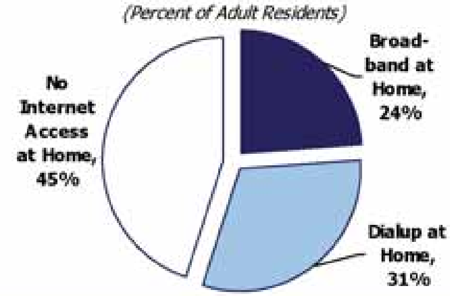


Figure 2: Barriers Among Dialup Users

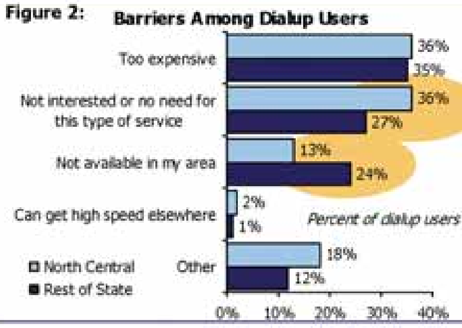


Figure 3:

Demographic Characteristics	Broad-band at Home	Dial-up at Home	No Home Access to Internet
Share of Kentucky adults	24%	31%	45%
Estimated number of adult residents, 2005	765,000	980,000	1,425,000
Reside in North Central Kentucky	52%	43%	34%
Gender ratio (Male:Female)	37%:63%	39%:61%	28%:72%
Have a disability or disabling condition	10%	15%	38%
Median age (years)	44	47	57
Currently married	69%	69%	44%
Single person household	9%	13%	31%
Children under age 18 in household	45%	38%	23%
African-American	3%	4%	6%
Employed full or part time	69%	66%	41%
Retired	15%	17%	34%
No education beyond high school	28%	41%	66%
College graduate (bachelor's or higher)	42%	32%	10%
Median household income, 2004	$62,200	$45,500	$22,600

Academy Awards in California. Colson has remarked that with broadband and related technology, "the playing field has been leveled and we can compete with companies everywhere, based on our skills and talents."

In Horse Branch, Kentucky, entrepreneur Burl Morris, president of HTI, Inc., turned to broadband to help his family-owned business compete. Without broadband, Morris had to send workers to the sites of his customers' businesses to fix problems with the electronic control systems his company creates and installs. With broadband, those issues can be resolved remotely, saving the company time and money.

In Louisville, UPS has announced a $1 billion expansion while healthcare giant Humana recently created 1,100 jobs and credited these jobs, in part, to the state's priority on technology growth. Magna International (dba Bowling Green Metal Forming) has created 1,200 high-quality jobs in Bowling Green, citing the availability of technology and a tech-savvy workforce as deciding factors for locating there. In Ashland, the EastPark business park was able to attract a Cingular Wireless call center with 1,100 jobs because of the digital switching, fiber optic and copper cable services available in the park. And in Williamsburg, U.S. Representative Hal Rogers recently announced that Datatrac Information Services, Inc. intends to open a new facility, which will employ more than 225 people. That's a major employment impact in an eastern Kentucky city with a total population of about 5,000 people.

Then there is the impact of technology on the youth that represent Kentucky's future. Like most people his age, 17-year-old Jarad Fugate loves to ride four-wheelers and play video games. The Breathitt County native sees possibility in his eastern Kentucky community – enough so that he eagerly contacted ConnectKentucky's East Region project manager hoping to participate on the eCommunity Leadership Team.

Fugate launched a successful Web site design company, Viper Communications, in 2004 after noticing that most local business did not have a Web presence. "I wanted to help businesses get more business and get a world presence," Fugate said. Fugate actually dug a ditch to help extend broadband service to his house, and now successfully operates his business from home (after finishing his homework, of course).

ConnectKentucky urges Kentuckians to dream big and plan for ways to compete – and excel – in the knowledge-based economy. As ConnectKentucky works across the state, we not only envision providing world-class technology for Kentucky's citizens and businesses, but that individuals and companies around the globe will come to recognize Kentucky as a center for technological and economic prosperity. ★★★

For more information about ConnectKentucky, visit http://connectkentucky.org/.

Tinley Park Builds on 35-Year Plan for Success

By Ivan Baker

CEcD, Director of Economic Development, Village of Tinley Park

How does a metro Chicago community of 57,000 achieve national recognition for economic development? The suburb of Tinley Park, located 25 miles from Chicago's downtown loop, earned this honor through extraordinary leadership and sound planning. Tinley Park's consistent approach to economic development includes five key elements: planning for economic diversity; promoting strong leadership; insisting on quality development; broadening the tax base; and demanding financial accountability.

Settled in 1845 as a farming and railroad community, the Village of Tinley Park today is one of the top 20 employment centers in the metro Chicago region and a prime example of diverse suburban economic development. In the early years, the community's business growth came primarily from innovative egg production methods, manufacturing (washing machines, butter churns, and Ironite waterproof cement) and varied retail. The railroad is still important, with 46 daily commuter trains plus freight train service. But the farming is gone and the primary manufacturers now produce satellite navigation systems, network wiring, fiber cable, electronic circuit boards, putty, brooms, automotive components, plastic molds and coffee products. In addition, a range of other industries now call Tinley Park home.

Good leaders stick to a good plan

For decades, Tinley Park residents have elected leaders that promote good policy instead of playing politics. Elected officials – with an average tenure of over 15 years – have followed an aggressive economic development plan that originated in 1971 and has been updated regularly ever since. The result is a commitment to a strong and sustainable economic development program that is coordinated by the local government.

Village Trustee Patrick Rea, with a nationally recognized background of corporate banking and economics, has led the village's Finance and Economic Development Committee for over 35 years. Mayor Ed Zabrocki, who has been in office for 25 years, recently was selected as one of 10 U.S. mayors honored as a finalist for the World Mayor award. Much of the basis behind Tinley Park's diverse economy, low property tax rates and excellent credit rating can be attributed to their team-oriented leadership and the efforts of a progressive Board of Trustees.

This consistency in leadership extends to Tinley Park's tax policy. The village has not increased its tax rate in 35 years and has a credit rating in the top 8 percent in the nation. In addition, Tinley Park has provided some level of tax abatement to both homeowners and business owners every year for over 25 years – significantly adding to its attractiveness as a place to live, work, and operate a business.

Goals and programs

The primary goal of Tinley Park Economic Development is to expand the tax base for the benefit of all of our citizens, property owners and employers. While many of the 267 cities in metropolitan Chicago are either bedroom communities or dependent on one economic sector, Tinley Park has attracted and supported a diverse range of industries, including manufacturing, health care, office, education, distribution, retail, service, transportation, communications, entertainment and hospitality.

In addition to a commitment to economic diversity, Tinley Park has more specific goals that include encouraging the location of more corporate headquarters; helping existing businesses expand; ensuring responsiveness to developers and business owners; and promoting increased mixed-use investment as part of downtown redevelopment. Some of the programs in place to achieve these goals include:

- Linked deposit/interest buy-down programs to aid banks in serving local businesses;
- Promotions that encourage businesses to use SBA and state financial assistance programs;
- Marketing assistance to promote the development of local real estate;
- Façade matching-grant programs to encourage building rehabilitation; and
- Incentive programs tied to business performance and specified guidelines for capital investment, property enhancement, jobs creation and tax revenue.

Tinley Park also strives to be responsive to the needs of area real estate executives, developers and business leaders. As a result of this private-sector input, Tinley Park instigated a unified, customer service-oriented approach to business development. The effort is coordinated jointly between the Economic Development and Planning departments, providing a one-stop shop approach at the village hall to quickly and effectively communicate and respond to permitting, licensing and other business needs.

The development community has responded well to Tinley Park's approach. "The community has high standards, and does a phenomenal job of creating incentives," says Steve Vernon, president of Vernon Development Company. "Tinley Park leaders appreciate business and understand development," echoes Aristotle Halikias, president of Inter-Continental Development Company. "This community has a can-do attitude, and the government works with business leaders to get the job done right."

The Tinley Park Economic Development Web site (www.TinleyParkBiz.biz) also was designed to respond to the specific requests of the private sector. The site, which the community considers its prime marketing tool, is user-friendly and provides comprehensive information in National Data Standards format. (The site also won the International Economic Development Council's 2005 award for "Best Economic Development Web site" for cities 50,000 to 200,000.)

Significant results

This past year, with a team of local, regional, and state officials, Tinley Park Economic Development coordinated the location of three new corporate headquarters (Japanese automotive supplier UGN, Italian tile company Avantile and rubber manufacturer AeroRubber) and a new State Farm Regional Claims Office.

Also in 2005, Tinley Park used a combination of incentives including tax-increment financing (TIF), tax abatements, landscaping and infrastructure assistance to encourage over 1.2 million square feet of new commercial and industrial development. These projects included two new manufacturers, a 600,000-square-foot retail center, a cancer treatment center, two retail strip centers, two automobile dealers and a full-service hotel.

Five years ago, no convention and hospitality industry existed in the south and southwest regions of metro Chicago. That was before Tinley Park leaders established a TIF district and constructed the region's first convention center. Today, the 64,000-square-foot Tinley Park Convention Center services 565,000 attendees annually and has been the catalyst for eight new hotel developments with a total of 979 hotel rooms. As a result, Tinley Park is the only community in the south/southwest regions of Chicago with a fully developed hospitality sector – a local annual impact of $143 million.

Tinley Park also has made major progress in recent years on redeveloping its downtown; it has been recognized by *The Chicago Tribune* as one of the top six best-planned downtown redevelopments in metro Chicago. To encourage high-quality, transit-oriented development, village leaders invested over $6.5 million to make the new prairie-style Downtown Tinley Park Metra Rail Station an architectural focal point for the city. Aided by TIF and infrastructure assistance, four new mixed-use projects are under development in downtown Tinley, including 200 new condominiums, a new 11-screen movie theatre and 90,000 square feet of new commercial space. Today, downtown boasts 186 businesses, including 22 restaurants, plus village sponsorship of 20 arts and recreation events that attract both residents and visitors.

Progress continues

Thirty new businesses opened in the village in the first half of this year, almost a 50 percent increase over the previous period a year ago. Thirty percent of those businesses are located in the historic district, where the vacancy rate is less than four percent – that's half the vacancy rate in suburban Chicago and one-quarter of the commercial vacancy rate in downtown Chicago. This activity created 1,600 new jobs, generated nearly a $90 million impact for the area, and resulted in $210 million in capital investment in our community by businesses.

Tinley Park's economic development program is receiving recognition for its accomplishments from all corners of the field. The village recently was recognized as one of 12 finalists for the 2006 National Economic Development Leadership and Innovation Award from CoreNet Global, the world's largest association of real estate executives.

As progress continues, the tasks of promoting community-friendly growth, quality development and stable tax rates remain among the most important objectives of Tinley Park.

★★★

Ivan Baker, CEcD, an economic developer for the past 26 years, has been Director of Economic Development in Tinley Park for the past three years. He can be contacted at 708-444-5000 or by e-mail at ibaker@tinleypark.org.

Regional Innovation: National Prosperity

Summary Report of the Council on Competitiveness Regional Competitiveness Initiative

Prepared for the U.S. Economic Development Administration

A Global Challenge

In the modern global economy, U.S. regions face a new economic development challenge. Traditionally, the regional economic development endeavor has been focused on attracting large industrial operations or headquarters using tax incentives and access to inexpensive labor as the primary promotional tools. During the past few decades, however, the U.S. industrial landscape has transformed dramatically. Many labor-intensive industries in the U.S. have either shifted production to other parts of the world or disappeared altogether. In their place, the American economy has developed a large number of industries where intellectual capital drives growth.

The U.S. is not unique in building a knowledge-based economy. In addition to other advanced economies, many formerly "underdeveloped" countries are now competing in knowledge-intensive industries previously considered to be safe from international competition. America now faces intensifying competition at both ends of the jobs spectrum: low-wage/low-skill and high-wage/high-skill.

At the spectrum's low end, U.S. regions must face the reality that there are fewer and fewer industries in which American firms can compete globally using a low-cost strategy. On the high end, U.S.-based firms can and do win. In many industries, firms operating in the United States have been able to adjust to new global business conditions and develop international leadership. Economic development strategies, however, have not always kept pace with the changing global economy; communities are still pursuing the old, incentive-based strategies. These strategies don't work in a world in which firm success depends ever more on the quality of ideas and talent, and ever less on traditional infrastructure. In a knowledge-based economy, new strategies are required to support the prosperity of American workers.

The Answer: Innovation

We already know that innovation is the key to driving growth and prosperity. Economists calculate that nearly 50 percent of U.S. annual GDP growth is attributed to increases in innovation. For the past two centuries, the United States has been the world leader in developing innovative products and services. While we have utilized our natural resources, it is our national ability to generate and apply new knowledge that has allowed us to become the world's economic engine, and has supported consistent increases in well-being for our citizens.

The Changing Nature of Innovation

While innovation remains the answer, the nature of innovation is changing, and so are the ways in which we need to compete. The 2005 National Innovation Initiative, the Council's two-year study of America's innovation system, concluded that innovation has become:

- **Faster:** Technology advances are diffusing at ever-increasing rates. It took 55 years for the automobile to spread to a quarter of the country, 35 years for the telephone, 22 years for the radio, 16 years for the personal computer, 13 years for the cell phone, and only seven years for the Internet.[1]

- **Multidisciplinary:** The most valuable innovations often arise from the intersections of different fields or spheres of activity. Fields like bioinformatics or nanotechnology did not even exist a few decades ago. Today, many economists believe they will become major drivers of the U.S. economy of the future.

The Regional Competitiveness Initiative

Launched in 2003 with funding from the Economic Development Administration, the Council on Competitiveness Regional Competitiveness Initiative was designed to help regional leaders build innovation-based strategies.

Over a two-year period, the Council implemented regional initiatives with local partners in seven areas: Central New Mexico, Greater Rochester, New York, the Inland Northwest (Spokane–Couer d'Alene area), Northeast Ohio, St. Louis, West Michigan, and Wilmington, Delaware.

In each region, the Council worked with local partners to implement a regional innovation assessment that evaluated regional strengths and weaknesses. Using a variety of analytical methods, including a specially designed regional innovation survey, the Council-led team completed the assessment. Including all seven regions, more than 1,250 business leaders responded to the survey and over 180 community leaders were interviewed.

Guided by local steering committees of business, academic, labor, and nonprofit leaders, each team selected three core priorities to address in each region. Existing local organizations or new leadership groups were recruited to take responsibility for implementing recommendations related to each core issue. These local leaders joined with Council representatives and national experts to share the findings of the regional innovation assessment at a regional competitiveness summit. Aimed at a broad array of community leaders, the summits served to disseminate findings and attract interest of from regional stakeholders in the core-issue action initiatives. In every region, groups are presently working to address the core issues identified by the initiative.

Two reports were completed as part of the project. The excerpt reprinted here comes from "Regional Innovation: National Prosperity," which presents five key cross-cutting issues faced by regions and suggests potential solutions to the challenges. A second publication, "Measuring Regional Innovation: A Guidebook for Conducting Regional Innovation Assessments," provides a framework and step-by-step instructions for conducting a regional innovation assessment.

Both documents are available in full at www.compete.org/nri in the Innovation Tools section.

- **Collaborative:** As innovations become more technologically complex, they require active cooperation and communication among scientists and engineers and between creators and users.
- **Democratized:** Innovation used to be the domain of research and development departments. Today, more workers and even customers are involved in the innovation process. Firms in industries as diverse as software and food flavoring are providing tools to customers to design their own products.
- **Global:** Innovation can originate anywhere. Increased education and economic growth have improved the capacity of developing countries to offer new products and services. Modern communications and transportation technologies allow these countries to share advances with consumers across the globe. As a result, great ideas - regardless of where they originate – are less likely to be lost in our increasingly interconnected world.

However, great ideas are also more likely to be developed and commercialized in countries outside of the United States. Throughout the world, competition is intensifying. Consider the following facts:

- Foreign-owned companies and foreign-born inventors account for nearly half of all U.S. patents; Japan, Korea, and Taiwan account for more than one-quarter of this subgroup.[2]
- Sweden, Finland, Israel, Japan, and South Korea each spend more on R&D as a share of GDP than the United States.[3]
- In 2004 China overtook the United States to become the world's leading exporter of information and communications technology (ICT) goods such as mobile phones, laptop computers and digital cameras.[4]
- Only six of the world's 25 most competitive information technology companies are based in the United States; 14 are based in Asia.[5]

In summary, the changing nature of innovation and accelerating global competition means that the U.S. can no longer rest on its past success. Our innovation leadership is not guaranteed and neither is our history of a rising living standard. To sustain our growth, we must innovate more, innovate better, and innovate faster. As the National Innovation Initiative report, "Innovate America," concludes, "the capacity for innovation is going global – and we must pick up the pace…today, the forces of global economic integration and advances in technology are creating a different and more complex challenge. Sustaining competitive advantage will require moving beyond efficiency and quality toward creating new markets, increasing choice and value to customers, and innovating continuously on a global basis."

Regional Innovation

Paradoxically, even as innovation has globalized, the role of regions as the critical nexus for innovation-based economic growth has increased.

Although national and state policies create a platform for innovation, the locus of innovative activities is at the regional level, where workers, companies, universities, research

Every region in the country has the capacity to become an innovation hub, at least in some industries - but only a handful of areas have developed solid platforms to support innovation-based growth.

institutions and government interface most directly. True innovation "hot spots" emerge regionally. Regions are the building blocks of national innovation capacity because they offer proximity and can provide specialized assets that foster firm-level differentiation.

Proximity: Despite the virtual closeness enabled by information technology advances, innovation remains a "contact sport" that is best pursued through personal interactions at every stage in the game. In the initial stage of knowledge creation, collaborative research and development efforts are easier when one can interact on a personal basis. Tacit knowledge is more easily accumulated and shared within a small geographic area. As the emphasis on multi-disciplinary projects grows, direct interaction becomes even more important to ensuring the free flow of ideas and to avoiding misunderstandings among participants from different academic fields. The application of knowledge occurs faster when industry and universities maintain close working relationships in the real world, not the virtual one. Being close to suppliers and customers promotes faster responses to changes in market demand. The relative proximity of institutions within a metro region enables close interaction on a consistent basis and thus creates the ability to break down traditional functional barriers between developers, funders, and users of ideas. Proximity also supports the development of strongly linked industry clusters.

Diversification and Differentiation: Success in the global economy requires both diversification and differentiation. At a macro level, our economy must support a *diverse* set of businesses to provide safety from sector-specific economic shocks. At a micro level, firms need to differentiate their offerings in order to gain competitive advantage. A regional economic strategy supports both these requirements. Regions – as opposed to individual cities or towns– offer the diversity of people, land types, and services to support a variety of businesses. As opposed to states, regions provide an environment in which firms can easily access and influence the development of specialized infrastructure, educational institutions and a workforce that support differentiation.

Every region in the country has the capacity to become an innovation hub, at least in some industries. But only a handful of areas have developed solid platforms to support innovation-based growth. For those regions that have not developed a strong innovation environment, it is critical for leaders to assess the strengths and weaknesses of their regional innovation ecosystem and understand the potential drivers of future innovation-based regional growth. More importantly, leaders must act on this information to improve their region's innovation platform.

Five Common Challenges to Regional Innovation

The Regional Competitiveness Initiative revealed five important issues commonly faced by regions that endeavor to develop innovation-based economies: promoting regionalism; building and retaining talent; transitioning to advanced manufacturing; networking knowledge assets; and energizing the entrepreneurial economy.

Promoting Regionalism

A fundamental problem confronts many regions across the country: They aren't acting as regions. Economic development professionals increasingly recognize that multi-county areas are the appropriate unit for economic analysis and planning. However, there is still significant resistance to regional action. Much of the hesitancy comes from a structural challenge created by historically drawn political boundaries. (Throughout much of the country, county lines were originally drawn to ensure all residents were within a day's mule ride to the county seat.) In recent years, new town boundaries and other taxing entities have only added to the number of political jurisdictions within regions. At a time when greater partnership is necessary, these political boundaries tend to hinder economic collaboration, particularly among public-sector entities. The views of one Spokane business leader express the common challenge: "Lack of collaboration among numerous overlapping community organizations is dividing our leadership and our dollars."

However, there are successful examples of regional collaboration. Often led by private-sector entities, stakeholder groups are developing regional institutions. For example, in Northeast Ohio, leaders have created Team Northeast Ohio, a partnership of economic development organizations from thirteen counties. The philanthropic community has followed suit in creating the Fund for our Economic Future, to "advance a common and highly-focused regional economic development agenda." Nearly 70 Northeast Ohio philanthropic organizations contributed to the fund, which will only support economic development initiatives with a regional scope.

Team NEO's Regional View

Another example is the St. Louis region, where all of the major regional economic development entities have signed on to a "no-poaching" agreement to stop the practice of trying to relocate existing businesses to different cities within the same region. In West Michigan, the West Michigan Strategic Alliance has used innovative geographic information system technologies to create a "common framework" document that clearly depicts how the communities in the region are connected.

Building and Retaining Talent

In a knowledge-based economy, the most important form of capital is human capital. People, not computers or firms, innovate. But many regions are having a hard time retaining an educated workforce. There are at least two elements to this challenge. First, as the economy relies less on low-skilled workers, a great need arises to develop retention programs for displaced workers with skills relevant to growth industries. Second, many communities are losing younger, educated citizens to more attractive regions. According to a recent Census report, 243 U.S. metropolitan areas showed a net loss in migration of young college graduates, while only 75 showed a net gain.[6] (See Figure I on page 29.) Even fewer rural areas have been able to maintain next-generation workers, as they are increasingly attracted to urban areas. One West Michigan business leader summarized the challenge well: "We have the workforce for the industries of today, but not for the industries of tomorrow."

Regions are responding. Throughout the country, regional workforce boards are partnering with educational institutions and the private sector to create programs that are more responsive to the needs of both employers and workers. In the Jacksonville, Florida area, WorkSource, a six-county regional workforce development organization has developed a tiered, targeted service model that provides support to businesses based on size, industry, and specific workforce needs. Implementing this market-segmentation approach has allowed WorkSource to more effectively allocate limited resources and drive increases in both employer and employee satisfaction. Their strategy is aligned with the regional economic development strategy, as they work closely with and share the same service area as the Jacksonville Regional Chamber of Commerce, the regional economic development organization.

Focusing on regional talent at an even earlier stage is Futures, Inc., a non-profit based in North Carolina. Futures, Inc. has developed a Web-based program to help high school students evaluate potential careers based on their interests, and then introduces them to local businesses offering internships or special training programs in their fields of interest. Community colleges work with companies to design training programs that will allow the firms to fill specific job openings.

In Northeast Ohio, Philadelphia, Pittsburgh, Oklahoma City and other regions, leaders have coalesced to develop "brain gain" strategies to attract and retain talented workers. Like the College 360 Program in Northeast Ohio, most of these programs focus on integrating college students into the local business and civic communities while they are still in school, as a method for turning out graduates with established connections to the region. Through internships and mentoring programs that lead to job placement, these efforts aim to keep students in the area after they graduate.

Transitioning to Advanced Manufacturing

American manufacturing production is losing share to international competitors. Over the past five years, other countries, especially in Asia, have posted double-digit growth in manufacturing while the U.S. has stalled. U.S. firms have been shedding domestic jobs – particularly in traditional industries, such as textiles and garments – choosing instead to locate operations in lower-cost countries. Communities with manufacturing-based economies have been confronted with the increasingly urgent need to respond to this trend. The answer is *not* to abandon manufacturing. Instead, regions should develop programs to help firms transition to advanced manufacturing strategies.

In the United States, there are few manufacturers that can compete in a global market based on low-cost labor or commodity products. To thrive, manufacturers must find some way to differentiate their products. Many options for differentiation exist; businesses can derive unique advantage from product design, production speed, logistics, the end-user experience, or superior marketing. But business cannot proceed as usual.

Forward-thinking manufacturers already understand this. In West Michigan, Herman Miller has partnered with Cascade Engineering, a plastics company, in the production of their newest chair, the Mirra. The office chair is designed to take advantage of two market trends – an appreciation for design and the growing environmental movement. The Mirra is both stylish and environmentally conscious – the chair is 98 percent recyclable and constructed of 42 percent recycled content.

Manufacturing Extension Partnerships, technical assistance organizations funded by the National Institute for Standards and Technology and state and local contributions, are playing an important role in helping small and medium manufacturers develop differentiated products. A Northeast

Ohio extension center, CAMP, has developed a new set of programs specifically around product innovation to help local businesses improve the impact and speed of new product development. In Greater Rochester, leaders have built the Infotonics Technology Center, a unique shared facility that offers technical support and specialized manufacturing facilities to help local optics firms make the transition from concept to prototype. Infotonics has been designed to help firms continually innovate by spurring cross-institutional collaboration and reducing the cost of experimenting with emerging technology.

Networking Knowledge Assets

The Infotonics collaboration suggests a response to another of the common challenges faced by regions throughout the country: underutilization of regional innovation assets. Excellent research universities fail at commercialization because they are disconnected from local business communities. Entrepreneurs with great potential go unfunded because they cannot find – or do not have access to – venture capital providers. Workforce training institutions work diligently to help displaced workers, but fail to fully leverage their resources because employers find it cumbersome to work with the system or because they lack information about emerging industry needs. In sum, we often find deep knowledge assets unlinked; smart people not communicating; and strong institutions not sharing ideas and resources. In our regional innovation survey, only 18 percent of the 1,250 business leaders said university technology transfer offices had contributed to their business success. Only 33 percent believed that the quality of R&D collaboration between business and universities had contributed to regional business success.

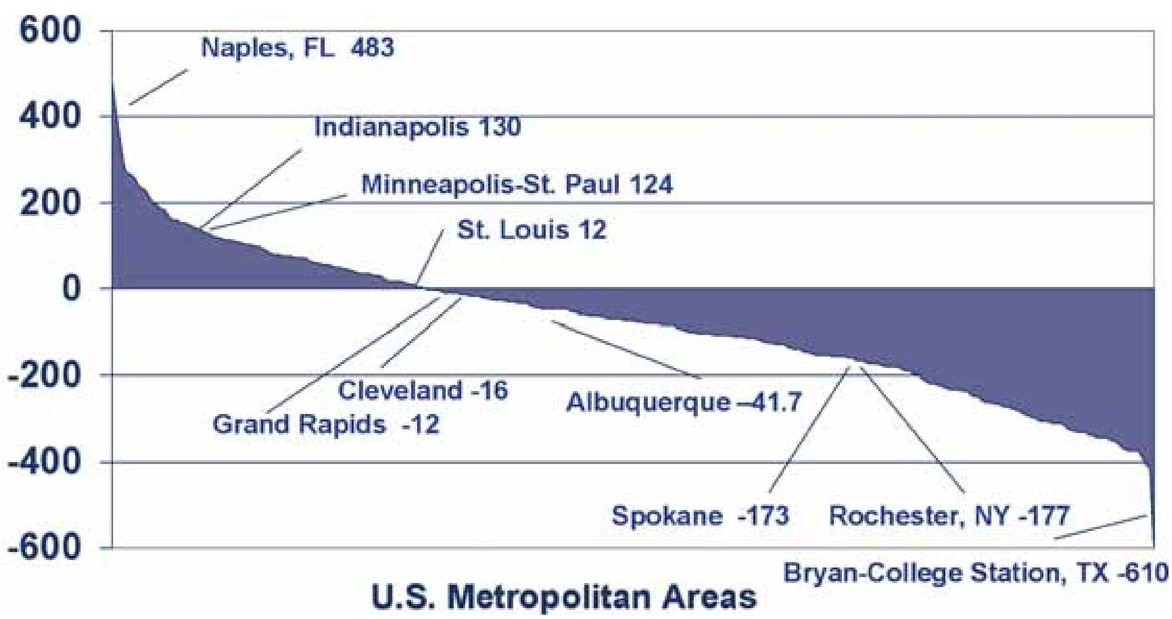
Regional business, civic, and political leaders have recognized the need to strengthen connections and collaboration. Following the model designed at UC-San Diego, leaders in the Inland Northwest have launched ConnectNorthwest, a program designed to serve as "neutral broker" by providing coordinated access to the entrepreneurial resources needed for businesses to develop, grow, and become sustainable. As in Spokane, leaders in Central New Mexico and St. Louis have developed programs to make sure all the players in innovation-based businesses and institutions have a forum where they can meet and develop relationships. The leadership network and cross-fertilization of ideas and information across all elements of the local innovation eco-system is a critical success factor.

In Northeast Ohio, 23 regional universities and colleges have joined to form the Northeast Council on Higher Education, or NOCHE. Among other activities, NOCHE helps link universities to businesses interested in partnering with those schools, and facilitates collaborative research projects and technology transfer in the region. In Spokane, the major colleges and universities, the medical health service and research centers, biotechnology research and development institutions, and economic development organizations have created the Spokane Alliance for Medical Research (SAMR). SAMR was created to bring additional research dollars to the region and has targeted sleep research as its primary focus for funding.

Energizing the Entrepreneurial Economy

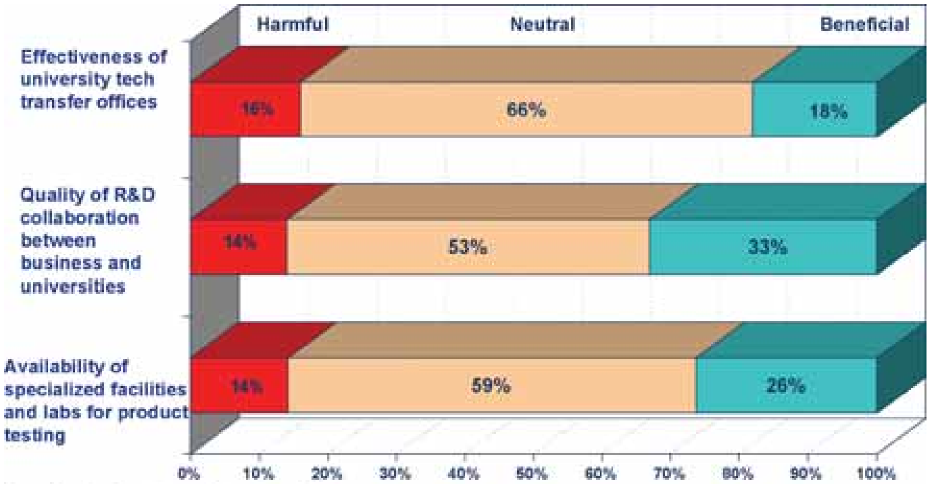
Jobs being created in the U.S. today are overwhelmingly coming from small and medium-sized businesses.[7] For many regions, supporting entrepreneurship has become the best option for replacing jobs lost as larger firms downsize. However, in the regions we studied, there was still significant room for improvement in building entrepreneurial support services. One consistent concern voiced in the study regions was a lack of venture capital funds. However, the more urgent problem that emerged was a lack of deals and strong entrepreneurs that merit venture funding. While programs

Figure I: Net Migration of Young, Single, and College-Educated People 1995-2000



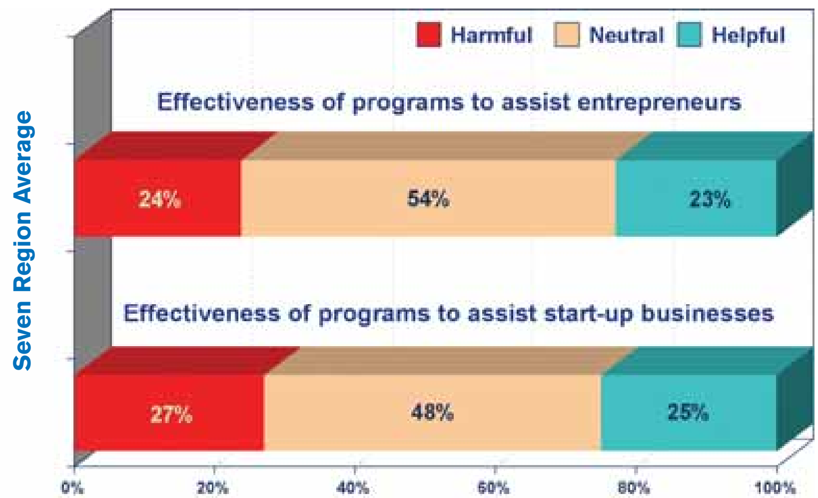
Source: U.S. Census Bureau.
Note: Rate calculated on a per thousand population basis, using 1995 as base year. Based on data from 318 MSAs.

Figure II: Summary of Regional Survey Measures of Innovation Linkages



Source: Council on Competitiveness Regional Survey, 2003-4.
Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas.
Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.

Figure III: Summary of Regional Survey Measures of Entrepreneurial Support



Source: Council on Competitiveness Regional Survey, 2003-4.
Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas.
Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.

exist in most regions to improve the level of entrepreneurship, only 23 percent of our survey respondents felt that programs aimed at assisting entrepreneurs were highly effective and only 25 percent felt that programs aimed at supporting start-up businesses were highly effective. Part of the explanation for these low levels of satisfaction was simply an unawareness of existing programs. Further, many business leaders explained that they did not see these programs as very important because there is a dearth of entrepreneurs (or people interested in becoming entrepreneurs) in their regions.

This raises perhaps the most fundamental challenge facing regions hoping to foster more entrepreneurial efforts: the lack of an entrepreneurial culture. Work by the National Commission on Entrepreneurship and the Council on Competitiveness has identified a variety of attitudes that are important to support a vibrant entrepreneurial culture: appreciation for difference and diversity, willingness to collaborate, and appreciation for risk-taking. Communities that support innovators and innovation embrace people with diverse backgrounds, understand that failure is part of the business process, and encourage businesses – even in the same industry – to collaborate when possible.

Throughout the U.S., many, if not most communities do not meet this description. Across the seven study regions, only 26 percent of the survey respondents felt their "regional business culture understands failure as part of the innovation and learning process." The same percentage felt that business leaders "proactively share information and resources when possible."

Increasingly, regions are addressing this cultural and institutional challenge in hopes of attracting and retaining entrepreneurial firms. Through mentorship programs and annual entrepreneurial award contests, many communities have developed programs to provide private support and public recognition to entrepreneurs.

In St. Louis, the Regional Chamber and Growth Association has been actively involved in supporting these sorts of programs, and has taken a step further by playing a key role in forming the Arch Angels, the largest angel capital group in the region. Washington University in St. Louis was one of eight universities selected in 2004 by the Kauffman Foundation to participate in its Kauffman Campus Initiative. The Kauffman initiative is an effort to spread entrepreneurship beyond its traditional domain of the business and engineering schools to the entire university and its community partners. In response to our project, business leaders in the state of Delaware have created the Delaware Entrepreneurial Action Group to better integrate disparate entrepreneurial programs and promote coordinated efforts by both large and small companies to support entrepreneurs in the region.

Conclusion

Today, innovation is occurring at an accelerated rate across the globe. To maintain the United States' position as global economic leader – and thereby ensure national prosperity – U.S. regions must develop new strategies. It is no longer possible to expect traditional advantages like location, natural resources or low-skilled labor to drive economic growth. In order to continue building our knowledge-driven economy, our regions must develop fertile environments for firms and people to innovate.

National and state policies that impact economic development should be designed to reflect this reality and support regional action. Regional leaders should respond by breaking

Figure IV: Summary of Regional Survey Measures of Business Culture

down old political and cultural barriers to cooperation. Investments in innovation assets – starting with human capital – should be integrated into comprehensive strategies to fully leverage the collective strengths of regional communities. Instead of accepting the decline of U.S. manufacturing, national, state, and regional actors should encourage the development and commercialization of more innovative products and services. Entrepreneurship, both in existing companies and start-up ventures, must be embraced as attitudes that discourage risk-taking are abandoned.

Overcoming these challenges to regional innovation will not be easy, but the global success of U.S. regions like Raleigh-Durham, San Diego, and Austin show that it is achievable. The efforts of the seven project regions show that even areas challenged by economic downturns can successfully pursue the opportunities offered by innovation-based growth strategies. Our hope is that the Council's Regional Competitiveness Initiative will inform and assist regions throughout the U.S. as they work to strengthen their own innovation capacity and support our nation's collective prosperity. ★★★

To maintain the United States' position as global economic leader – and thereby ensure national prosperity – our regions must develop fertile environments for firms and people to innovate.

1. Federal Reserve Bank of Dallas, Annual Report, 1996. http://www.dallasfed.org/ fed/annual/1999p/ar96.html.

2. OECD, Patent Database, May 2003. http://www1.oecd.org/publications/e-book/ 92-2001-04-1-2987/PDF%5CA43.pdf.

3. OECD, Science, Technology and Industry Scoreboard, 2003, R&D Database. http: //www1.oecd.org/publications/e-book/92-2003-04-1-7294/.

4. OECD, "China overtakes U.S. as world's leading exporter of information technology goods" (December 12, 2005)

5. BusinessWeek, "The Information Technology 100 Scoreboard," June 21, 2004.

http://www.businessweek.com/pdfs/2004/0425_it100.pdf.

6. United States Cenus Bureau, Migration of the Young, Single, and College Educated: 1995 to 2000, Nov. 2003.
http://www.census.gov/prod/2003pubs/censr-12.pdf

7. According to the Center for Economic Studies, in the decade of the 1990s and early 2000s, small businesses created, on average, 60-80% of net new jobs every year. (Center for Economic Studies, Endogenous Growth and Entrepreneurial Activities, Jan. 2003.
http://webserver01.ces.census.gov/index.php/ces/1.00/cespapers?down_key=101665)

About EDA Information Clearinghouse Partners

Part of the United States Department of Commerce, the mission of the **Economic Development Administration (EDA)** is to lead the federal economic development agenda by promoting innovation and competitiveness, preparing American regions for growth and success in the worldwide economy.

EDA was established to generate jobs, help retain existing jobs, and stimulate industrial and commercial growth in economically distressed areas of the United States. EDA assistance is available to rural and urban areas of the nation experiencing high unemployment, low income, or other severe economic distress.

The **International Economic Development Council (IEDC)** is the premiere organization for the economic development profession. Serving close to 4,000 members, IEDC is the world's largest professional membership organization providing a diversity of economic development services, including research and advisory services, conferences, professional development and legislative tracking. Visit IEDC's website at www.iedconline.org to learn more about membership, upcoming events and IEDC services.

INTERNATIONAL
ECONOMIC DEVELOPMENT
COUNCIL

The **National Association of Regional Councils (NARC)** is the preeminent alliance for fostering regional cooperation and building regional communities. For more than three decades, NARC has represented multipurpose regional councils of government that assist community leaders and citizens in developing common strategies for addressing cross-cutting transportation, economic development, air and water quality, social equity, growth, and other challenges, through advocacy, training, technical assistance and research. For more information, visit www.narc.org.

NARC
Building Regional Communities

International Economic Development Council
734 15th Street, NW, Suite 900
Washington, DC 20005

For back issues of Economic Development America and to learn more about EDA's information resources, follow the "Information Clearinghouse" link at the bottom of EDA's home page, www.eda.gov.