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Economic Development America

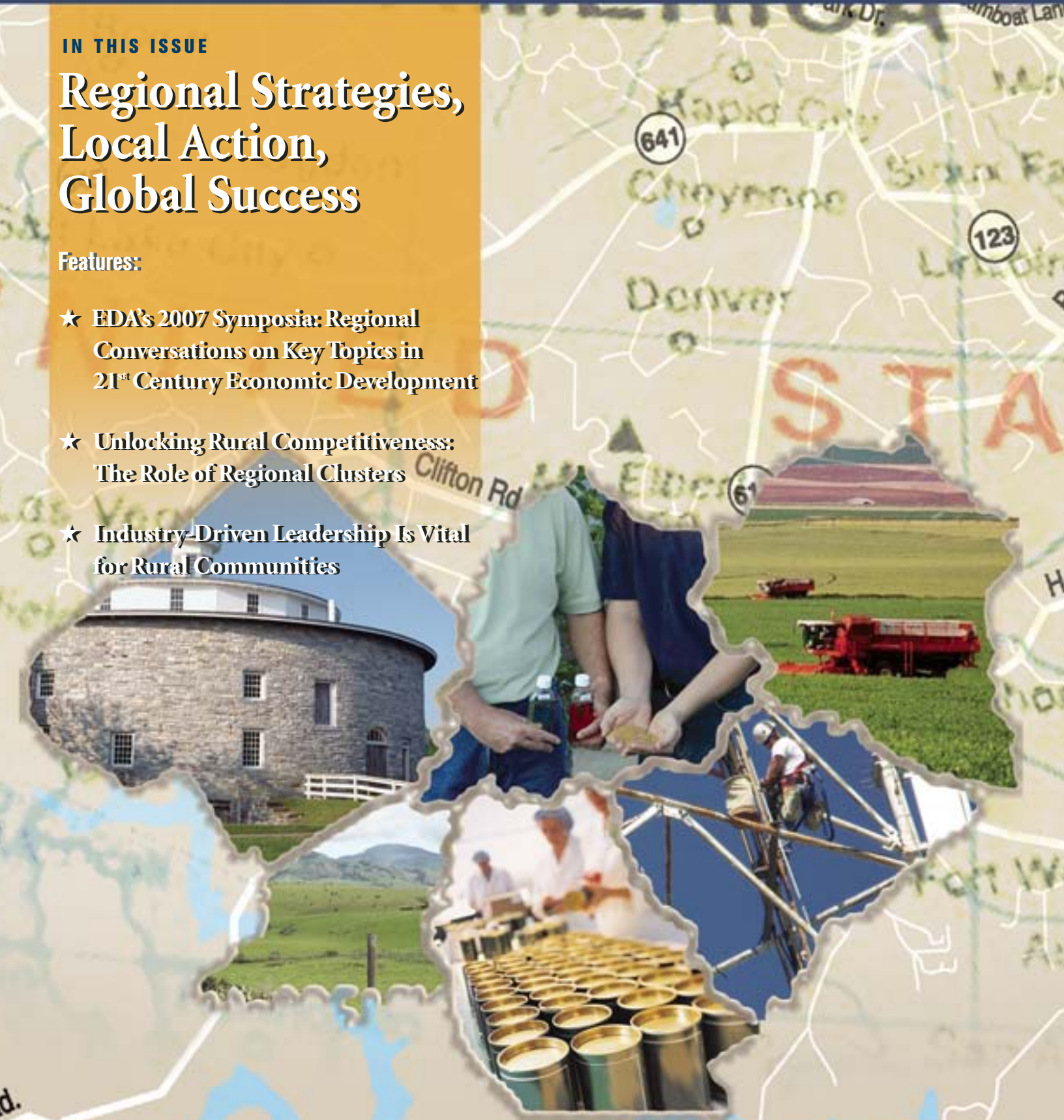
COMPETING GLOBALLY ★ GROWING REGIONAL ECONOMIES ★ CREATING JOBS DECEMBER 2007

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Regional Strategies, Local Action, Global Success

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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.

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Boosting U.S. Exports and Regional Prosperity Through Trade

By **Carlos M. Gutierrez**

U.S. Secretary of Commerce

Despite overwhelming evidence that American consumers, workers and businesses benefit from open markets, we cannot take for granted that three Free Trade Agreements (FTAs) now pending before Congress with Colombia, Panama and South Korea will be put into force. By passing these agreements, we can increase our competitiveness and security and give our nation an economic advantage over competitors.



President Bush recognizes that trade plays an increasingly important role in helping our economy grow. Exports last year were up 12.7 percent to \$1.4 trillion, an all-time record, and we're on track to beat that this year. One of the most effective policy tools we have to keep this momentum going is FTAs.

FTAs contribute to developing sustainable, balanced relationships. Consider the fact that while 7.5 percent of world GDP, excluding the U.S., is generated from countries with

which we have FTAs, more than 42 percent of our merchandise exports go to these same FTA countries.

Two of the remaining FTAs pending before Congress are in our hemisphere, with Colombia and Panama. These agreements will open up these fast-growing economies further for American workers, farmers and small business owners by leveling the playing field.

Although more than 90 percent of imports from these countries enter the U.S. duty-free, U.S. exporters are stuck paying hundreds of millions of dollars in tariffs every year. Passage of these FTAs will give our exporters the same preferences Congress has already given to businesses in these countries. While we're pleased that Congress has passed the Peru FTA, our work is not yet done. We must move forward on Colombia, Panama and Korea.

Our commitment to this hemisphere goes beyond commerce and encompasses the promotion of social justice, democracy and the rule of law. FTAs encourage the regional stability and broad-based growth that contribute to security of the Western Hemisphere.



**Under our watch we must not turn back,
but look forward to a world that we helped create,
one that is interconnected, interdependent and
increasingly free, a world in which America's exports
and the American economy can prosper and grow.**

Cases in point

Consider Colombia, one of our staunchest allies in the region and a partner in the global war on terror. Few have paid as heavy a price standing up to guerrillas and narcotics traffickers as Colombians.

Today, Colombia's democratically elected president has helped create stability and peace in a land that has had far too little of both. The Colombian people have seen real change as a result of these efforts. For example, between 2002 and 2006, violent crime and terrorism dropped by nearly half, and between 2000 and last year, 25 percent of Colombians who were in poverty were lifted out.

I recently traveled to Colombia with members of Congress from both political parties. They saw, as I did, the incredible progress that has been made in Medellin and in democratic reforms and economic progress throughout the country. An FTA would encourage these trends and strengthen Colombia's democracy.

To deny Colombia an FTA would be one of the biggest foreign policy mistakes of our time in our region. We must keep in mind that our democratic ideal of individual liberty and freedom is not the only system being promoted in our hemisphere today. While we seek the empowerment of the individual, there are others who seek to suppress people, ideas and debate. While we encourage the free flow of investment and business, others seek to stifle free enterprise.

There are similar challenges half way around the globe, where South Korea's neighbor to the north continues to seek economic and political destabilization.

Korea and the United States have been steadfast allies in the fight against communism for nearly 60 years. This agreement will allow us to modernize our alliance and diversify our engagement in Asia with a country willing to compete on a level playing field.

While Korea is already our seventh largest trading partner, there is still much more potential. An FTA would remove virtually all of Korea's developing economy protections, providing our exporters a tremendous opportunity for growth.

An economic advantage

These FTAs knock down tariffs and barriers that impede trade and competition. Eliminating the taxes our exporters now pay helps them sell American goods and services to consumers in new global markets, supports higher paying jobs for American workers, and boosts productivity, which drives national prosperity.

Recently, the Peru FTA received overwhelming bipartisan support in Congress. While we are pleased Congress has passed the Peru FTA, it is critical that the remaining three are approved. Each agreement is important in its own right, and all of them together will boost U.S. exports to markets that combined have 126 million consumers and a GDP of more than \$1.1 trillion.

Increased global engagement supports the Administration's objectives of ensuring our security, enhancing our competitiveness and strengthening our economy. This is not a time to retreat – we are at our best when we are leading, open and engaged. Under our watch we must not turn back, but look forward to a world that we helped create, one that is interconnected, interdependent and increasingly free, a world in which America's exports and the American economy can prosper and grow. ★ ★ ★

Please visit tradeagreements.gov for continuous updates on pending Free Trade Agreements.

EDA's 2007 Symposia:

Regional Conversations on Key Topics in 21st Century Economic Development

The 21st century global economy is here. Many U.S. communities are prepared to meet the challenge, but certain elements are required to compete: a regional approach; an environment that fosters innovation and entrepreneurship; an openness to new opportunities, partners and collaborations; strong infrastructure; and the ability to prepare for and bounce back from natural or man-made disasters.

The U. S. Department of Commerce, Economic Development Administration (EDA), in partnership with the International Economic Development Council and the National Association of Regional Councils, hosted a series of economic development symposia in 2007 that focused on these critical elements of competitiveness.

More than 1,100 economic development practitioners and private industry representatives attended the five symposia, which were held across the country. Each event focused on a key topic in 21st century economic development: Innovation; Building Business on the Southwest Border; Global Gateways; Disasters and Economic Dislocations – Building a Disaster-Resistant Economy; and Entrepreneurship.

Assistant Secretary of Commerce for Economic Development Sandy Baruah guided each symposium. Regional and national leaders from the private and public sectors shared their experiences and perspectives, focusing on regional strategies, policies and best practices that create jobs and economic opportunity. The programs also featured an opportunity for participants to meet EDA leadership in town hall-style sessions with Assistant Secretary Baruah and Benjamin Erulkar, Deputy Assistant Secretary of Commerce for Economic Development, and the opportunity for learning, networking, and idea-sharing with other participants.

The following summaries are intended to provide an overview of each symposium's proceedings and the key points that emerged. EDA offers its sincere thanks to the



U.S. Assistant Secretary of Commerce Sandy K. Baruah introduced the agenda for each symposium, which centered around themes of regionalism, innovation and entrepreneurship.

facilitators, keynote speakers, panelists, EDA regional offices and all the other participants who helped make the 2007 symposia a success.

Innovation

Philadelphia, March 13

Innovation is one of the greatest sustainable competitive advantages of the United States. In recognition that success in the global economy results from creating the right environment for innovation, the symposium addressed how communities can use elements such as academic institutions, regional action and industry clusters to leverage job creation.

Keynote speaker John Mullin, Dean of the Graduate School at the University of Massachusetts-Amherst, noted that every twenty years a new industry emerges as the leading engine of economic growth. Now, emerging industry clusters are the most prominent indicators for where

innovation occurs, Mullin said, with today's innovative companies specializing in areas such as genetics, pharmaceuticals, nanotechnology, medical instruments, software and biotechnology. Dr. Russel Kaufman, President and CEO of the Wistar Institute and the symposium's second keynote speaker, illustrated the important role of academic medical and health centers in leading and adapting much of America's innovation.

The first panel of the day addressed the role of regional collaboration in identifying and providing the resources needed to support new business recruitment, grow existing businesses and better enable entrepreneurs. RoseAnn Rosenthal, President and CEO of Ben Franklin Technology Partners, cited several factors that sustain innovation in a region, including engaged and committed leadership; tolerance for risk; sustained financial support; a long-term perspective; and a supportive legislative, regulatory and fiscal environment.

In practical terms, regional groups can build coalitions of like-minded organizations to support public policy initiatives; leverage funds, such as government grants for innovation; and create programs to inspire new ideas, said Robert Santy, President of Connecticut's Regional Growth Partnership. Speaking from his experience as executive director of the Hampton Roads Research Partnership, panelist H. Lee Beach, Jr., said that nonprofit partners can facilitate tech-based economic development by fostering research collaboration among regional players and partnering with research facilities.

The second panel provided practical advice on how communities can create programs to assist companies with commercialization and ensure the market viability of new products and services. Dr. Timothy Franklin, Executive Director of the Institute for Advanced Learning and Research, noted that there are challenges to creating innovation-based jobs in rural areas. He emphasized the importance of partnering with research universities to catalyze regional economic growth, assist with technology commercialization and provide entrepreneur support services.

J. Michael Bowman, Chairman and President of Delaware Technology Park, discussed the role of technology parks as centers of innovation for public-private research and development, featuring world-class scientific talent, interdisciplinary collaboration and unique research instrumentation centers.

David Driver of Team New England and the Hartford-Springfield Economic Partnership stated that individual towns and counties must build on collective strengths, such as workforce skills and cost advantages inherent to a region, in addition to courting important industry sectors and capitalizing on the knowledge generated in colleges and universities and the human capital of their graduates.

Jack Gido, Director of Economic and Workforce Development at Pennsylvania State University and the symposium's facilitator, closed the event with a summary of critical factors for sustaining a regional innovation economy:

- A long-term view, commitment by multiple stakeholders, and strong leadership;
- A focus on clusters and strategic sectors, capitalizing on intellectual property and regional assets;
- Incentives for universities to engage in technology transfer and commercialization; and
- Adequate human capital, risk capital and entrepreneurial support services.

Building Business on the Southwest Border

Austin, April 12

Market trends and public policies are creating jobs and economic opportunity along the U.S.-Mexico border. The symposium's theme centered on opportunities presented under NAFTA and the potential for the Southwest to become a hub for commerce in the western hemisphere.

Assistant Secretary Baruah set the stage for the day, outlining five steps for improving cooperation with Mexico and other countries:

1. Reduce trade and commerce delays at the border;
2. Enhance product standards through improved certification and testing;
3. Enforce the rule of law for fair use of intellectual property;
4. Break down barriers to investment and trade; and
5. Enact immigration policy that fosters the attraction and assimilation of a successful immigrant workforce.

The morning featured two keynote speakers: Jim Wiseman, Vice President of Corporate Affairs for Toyota Motor Engineering & Manufacturing North America, and David Spencer, Chairman of the Texas Emerging Technology Fund and President of Mandelbrot Ventures, Inc. The Southwest has seen a recent surge in international corporations relocating or expanding in the region, noted Wiseman. Toyota chose San Antonio for its newest facility due to the market (one out of five trucks bought in the U.S. is sold in Texas), proximity to Mexico and a vast, bi-national supply chain, and a welcoming business community. Spencer discussed how communities must prime the pump for startup companies with tools such as enterprise funds, emergency technology funds, research matching funds, and grants for commercialization.

The day's first panel addressed how business operations, resources and customers are no longer based solely in a single community, especially along the border. Cross-border collaboration can link American and Mexican efforts to attract and develop new technology businesses, said Guillermo Fernandez, Executive Director of the U.S.-Mexico Foundation for Science (FUMEC). Fernandez spoke about how his organization works to catalyze business growth by fostering partnerships around research and development, financing, logistics and infrastructure. Jorge Canavati, Director of Marketing for the Port of San Antonio, discussed the port's role as a multi-modal platform for international trade, its growth plans and how it helps keep the region competitive.

The day's second panel focused on the challenges that communities face in preparing a skilled workforce to meet



Presenters at the San Antonio symposium included, from left to right, Norma Noble, Oklahoma Department of Commerce; Peggy Walton, National Association of Manufacturers; Yvonne Gonzales, WorkFORCE Solutions; and Robert McKinley, Associate Vice President for Economic Development, University of Texas-San Antonio.

businesses' needs. Norma Noble, Oklahoma's Deputy Secretary of Commerce for Workforce Development, discussed worker and skill shortages in her state, which require high-level collaboration among many entities to address. Oklahoma is employing a variety of programs, policies and strategies to meet the needs.

Yvonne Gonzales, President and CEO of WorkFORCE Solutions, a workforce investment board serving the Lower Rio Grande Valley, discussed how her group developed a strategy to guide regional workforce investments. It first conducted an industry cluster analysis, then used the results to realign programs to anticipate and respond to demand occupations based on the industry clusters. Peggy Walton, Director of Workforce Initiatives at the National Association of Manufacturers' Center for Workforce Success, talked about the changing nature of manufacturing jobs and the impending shortage of 13 to 15 million skilled workers. The key to meeting this shortage, she said, is providing young manufacturing workers with challenges, retraining and opportunities for creative growth.

Anil Kumar, Ph.D., an economist with the Federal Reserve Bank, gave the last presentation of the day on the benefits of NAFTA. He pointed to evidence of minimal adverse impact on the U.S. labor market and net trade creation among member countries, concluding that the role of economic developers is to help vulnerable groups cope with trade-related dislocations.

Facilitator Robert McKinley, Associate Vice President for Economic Development, University of Texas-San Antonio, summarized the day's themes, noting that U.S.-Mexico interdependence creates both challenges and opportunities for industrial attraction and growing startup enterprises. Businesses are being built through cross-border collaboration and links in R&D, financing and infrastructure. Rural regions in the southwest can become more competitive by connecting with urban centers. Equally important is the preparation of a skilled workforce, stakeholder engagement and regional cooperation.

Global Gateways

Long Beach, Calif., May 16

Global gateways – created by the combination of international transportation infrastructure and free trade agreements such as NAFTA – present economic development opportunities for private businesses and the U.S. economy as a whole. Assistant Secretary Baruah opened the program by noting that day's purpose was to discuss the sustainable competitive advantages of the United States for international commerce.

Keynote speaker Dr. John Husing, Vice President of Economics and Politics, Inc. gave an overview of issues that arise with international trade. Tracing the flow of goods from China to California ports and then to the inland U.S., he noted that as trade volumes increase, activity will become more geographically dispersed and opportunities will spread from the coast to inland U.S. regions. With that increased activity, however, will come the challenges that California now faces, such as traffic congestion and air pollution, he added. He addressed the importance of adequate infrastructure to accommodate trade growth, stating that the current need for infrastructure



At the Long Beach symposium: EDA Assistant Secretary Sandy K. Baruah; Julie Meier Wright, San Diego Regional Economic Development Corporation; and David Crane, Office of California Gov. Arnold Schwarzenegger.

improvements nationally may be as high as \$36 billion. Therefore, regional institutions should facilitate the long-term, multi-county process of infrastructure upgrades and management, in addition to helping determine how regions should grow, he recommended. He concluded that federal and state legislation should provide tools, support and funding.

Following Dr. Husing's remarks, a panel focused on the role of infrastructure as the backbone of successful regional development. Paul Bingham, an economist with Global Insight, discussed how trade growth will continue to provide new business opportunities related to the globalization of production and logistics, and the infrastructure that facilitates that growth. James Hankla, President of the Long Beach Harbor Commission, noted that regions should take advantage of neighboring ports of commerce by investing in transportation corridors.

The next session's panelists spoke about the opportunities that both large and small companies can find to link to the global marketplace. For example, Michael Fatigati, Vice President of Engineering with World Waste Technologies, Inc., discussed his company's work developing processes to recycle municipal solid waste into beneficial products such as electricity and fuel. Larta Institute CEO Rohit Shukla spoke about how organizations such as his can help businesses access the global economy by providing a marketplace for buyers and sellers of innovative technology products and services, and providing entrepreneur training, technology transfer and commercialization services. Shukla and Fatigati urged emerging companies to establish a global context, finding allies, markets and points of innovation around the world; to employ locally; and to focus on non-degree occupations where skills are critical and vocations are built.

Facilitating partnerships and financing small business growth are key roles played by the institutions represented on the following panel. Barry Sedlik, Chief Administrative Officer of Titan Group, focused his comments on California's prospects for leveraging infrastructure investment. He noted the state's infrastructure needs, the limits of bonding, and the pros and cons of user fees and smart growth principles as solutions. He concluded that aligning local projects with regional efforts is the most effective approach. David Josephson, Director of the western regional office of the U.S.



Louisiana Economic Development Secretary Michael Olivier discussed the impact of Hurricane Katrina on his state and shared lessons for business recovery.

Export-Import Bank, reviewed how the bank's trade financing support can help increase export sales and minimize risk. Richard Swanson, Jr., Network Director with the U.S. and Foreign Commercial Service of the U. S. Department of Commerce, gave an overview of services the Commercial Service provides, including help with locating international buyers, distributors and agents; expertise at every stage of the export process; and helping businesses to enter new markets faster and more profitably.

The symposium's last panel focused on the diversity of the American population and how it both offers new business opportunities and requires tailored strategies for fostering entrepreneurship. Three cases were presented:

- Dr. Failautusi Avegalio, Jr., Director of the Pacific Business Center at the University of Hawaii, stated that his organization collaborates with government, institutions of higher education and other service providers to offer technical assistance to clients. He also emphasized the importance of recognizing regional uniqueness and working with traditional leaders and cultural institutions.
- Dr. Michael Lizarraga, President and CEO of TELACU Industries, one of the nation's first community development corporations, recommended that economic development organizations focus on core businesses that build revenue, assets and long-term relationships, and leverage resources and partnerships that build professional competencies and capacity.
- Bill Tovey, Economic Development Director for the Confederated Tribes of the Umatilla Indian Reservation, detailed the group's participation in a venture to provide U.S. companies with services that otherwise would be outsourced overseas, such as software development, call centers, image and document processing, storage and retrieval, and finance and accounting support.

The day's last keynote speaker, David Crane, Special Advisor for Jobs and Economic Growth with the Office of California Governor Arnold Schwarzenegger, gave final comments on the state's strategies and successes in international trade. Facilitator Julie Meier Wright, President and CEO, San

Diego Regional Economic Development Corporation, closed the symposium with the day's key points, noting that infrastructure is a key issue to be addressed regionally; that communities and companies from across the country can participate in the global economy; and that services that promote the growth of small business are available at the regional, state and national levels.

Disasters and Economic Dislocations: Building a Disaster-Resistant Economy

Atlanta, June 14

Both natural and man-made impacts can seriously shock local, regional and national economies. The symposium's goal, said facilitator Dr. Pamella Dana, Senior Advisor for Strategic Initiatives with the Institute for Human and Machine Cognition, was to bring together the public and private sectors to discuss ways to ensure a secure environment, business continuation and economic growth in the face of severe economic dislocations.

The day's first keynote speaker, Michael Olivier, Secretary of Louisiana Economic Development, discussed Hurricane Katrina's impact on the state and lessons learned. He outlined three stages to economic recovery:

- Basic needs of residents and businesses must be met first – workforce housing; call centers that provide financial and technical assistance to re-establish business operations; procurement and contracting workshops; other business retention resources and marketing to encourage investor confidence.
- The second stage should stress information collection, analysis and dissemination; interagency cooperation; business counseling centers; and innovative financial resources for business recovery grants and loans.
- The last stage focuses on the rebuilding and redevelopment of the region and business retention, expansion and recruitment.

The day's first panel discussed how the private sector and local governments can work together to aid disaster recovery. Panelists included Steve Kolski, Senior Vice President for Operations at AirTran Airways; Charles McSwain, Associate Vice President of Regional Development with CSX Transportation, Inc.; and Dave Murphy, Vice President at Waste Management.

Kolski noted the costs that businesses such as AirTran face when operations stall, such as ongoing outlays in rent and wages, yet the importance of helping restore public confidence by providing assistance such as emergency flights without charge. Public-private partnerships are necessary to the continuation of services such as freight rail and waste collection in the time of a disaster, which are key to helping communities recover, said McSwain. Murphy stated that tighter communications links are needed between government and transportation and utility companies to ensure access to energy and other resources that will help rapidly restore damaged infrastructure.

Entrepreneurship

Kansas City, September 26

Risk-takers, serial entrepreneurs and innovative startups play a critical role in driving the U.S. economy. Economic development in the 21st century must recognize and support the innovation process as a key factor in maintaining competitiveness. Symposium facilitator Dr. Mark Drabenstott, Director of the Rural Policy Research Institute's Center for Regional Competitiveness at the University of Missouri-Columbia, stated that the day's program would focus on regional collaboration to foster entrepreneur support networks and access to resources such as early-stage investments, and to help companies bring innovative products and services to market.

Carl Schramm, President and CEO of the Ewing Marion Kauffman Foundation, spoke about the foundation's role in fostering entrepreneurship through programs that inspire students; help move university innovations into the marketplace; create better-qualified angel investors as a critical source of seed capital; and engage economists to study the impact of entrepreneurship. He noted that the role of regions is to ensure the right conditions for entrepreneurship are in place, including openness to new ideas and people, and support networks.

The day's first panel discussed specific regional actions that support entrepreneurial growth. Entrepreneurs require support networks that foster collaboration and provide access to resources such as technical know-how, business planning, market research, management expertise and financing. Thomas Lyons, Ph.D., a professor of entrepreneurship at Baruch College/CUNY, noted that "entrepreneurial systems" must be designed to include a mix of services tailored to the needs of the existing marketplace. A regional enterprise development system also should include a balance of service delivery and the development of highly skilled entrepreneurs.



At the Atlanta symposium, from left to right, are Charles McSwain, CSX Transportation; Steven Kolski, AirTran Airways; Pamela J. Dana, Ph.D., Florida Institute for Human & Machine Cognition; Michael Olivier, Louisiana Economic Development; EDA Assistant Secretary Sandy Baruah; and Dave Murphy, Waste Management.

The next panel addressed how effective partnerships can be formed to build stronger and safer economies. Panelist David Witschi, Associate Director of the Department of Defense's Economic Adjustment Division, cited three steps to building effective regional partnerships: identify the appropriate decision makers and champions; define the reasons for involvement; and determine how to surmount barriers such as culture, ego, conflicting missions, politics and time. Bob Farley, President of Economic Development with AngelouEconomics, added that partnerships are affected by the ability to focus on a singular mission; the political will of the partners; the stability of an organization's staff and board of directors; and appropriate funding. Ronnie Bryant, President and CEO of the Charlotte Regional Partnership, closed the panel by discussing his organization as an example of such a collaborative.

In the second keynote address of the day, Susan Story, President and CEO of Gulf Power, discussed her company's experience dealing with three hurricanes – Ivan, Dennis and Katrina – and the recovery that followed. She emphasized the importance of businesses having effective preparedness plans and maintaining communication with customers and employees before and after a storm.

The day's final panel addressed risk management issues. Panelists included Chip White, Ph.D., a professor of transportation and logistics at Georgia Tech; Rob Manning, Vice President of Field Operations-Carolinas with Duke Energy; and Stephen Jordan, Senior Vice President and Executive Director of the Business Civic Leadership Center at the U.S. Chamber of Commerce. Panelists related how businesses and governments must view risk differently today, recognizing new ways in which acts of terrorism, pandemics, computer viruses, storms and other disasters can impact business continuity and public order.

Dr. White noted that as supply chains become more complex and globalized, regional leaders and planners must focus on mitigating disruptions. Manning stated that his company's risk management policies include high-level communication, shared responsibility within the energy industry, advanced planning and government support. Jordan stressed the importance of disaster preparedness for all businesses, not just utility or transportation companies. The U.S. Chamber's disaster resilience program focuses on knowledge-sharing, long-term resilience strategies, event preparedness and mitigation tactics.

Dr. Dana concluded the symposium by summarizing the day's key points. Communities must anticipate potential problems and solutions, proactively creating actions plans and responding quickly to meet the needs of citizens and businesses. Regional organizations play an important role during and after disasters, providing information and data, working on business retention and attraction, and coordinating other activities required for economic recovery. Neither disasters nor the marketplace recognize political boundaries, so communities must prepare and support cross-border strategies for emergency response.

Entrepreneurship is the engine that drives regional development. To compete, regions need both a world-class entrepreneurial climate and a regional strategy with participation from the public and private sectors.

As part of the same panel, Dr. Joel Wiggins, Chairman of the National Business Incubation Association and President & CEO of the Enterprise Center of Johnson County in Lenexa, Kansas, talked about his organization's mission to identify and fund the most promising, high-growth business in the region, and the important role that a regional network of angel investors plays. Ray Leach, CEO of JumpStart, Inc., based in northeast Ohio, discussed how his organization accelerates the growth of innovative early-stage businesses and ideas into venture-ready companies by providing a continuum of resources.

Next, Dr. Samuel Cordes, Co-Director of the Center for Regional Development at Purdue University, discussed the findings of an EDA-funded report he co-authored, "Unlocking Rural Competitiveness: The Role of Regional Clusters." The development of a cluster framework for understanding a regional economy can provide counties with a reason for working together, he said, but requires an educational component up front. The report also elaborates on how urban and rural areas can cooperate for economic growth.

In the day's second keynote address, North Dakota Governor John Hoeven spoke about how the state has expanded and diversified its economy in recent years. Focusing on six pillars of growth – education, economic development, agriculture, energy, technology and quality

of life – North Dakota has added many new jobs and businesses, and in 2003 led the nation in personal income and wage growth.

The panel following Gov. Hoeven addressed the importance of access to capital, particularly early-stage investment. Drawing on his own experience as an entrepreneur, F. Nicholas Franano, M.D., founder and Chief Scientific Officer of Proteon Therapeutics, stressed the importance of networking and learning from other entrepreneurs and finance experts. Maria Meyers, Network Builder with KCSOURCELINK, talked about how KCSOURCELINK connects small businesses and aspiring entrepreneurs with funders and other service providers in the Kansas City region. Jon Gregory, President and CEO of Golden Capital Network, discussed how angel investors can leverage their expertise and affinities to significantly catalyze a region's economic growth.

The final panel of the day focused on innovative products and practices – medical, technological or service-related – that are at the heart of an entrepreneurial economy. Panelists provided three cases:

- Stephan Lake, Manager of Business Development and Marketing at Argonne National Laboratory in Illinois, discussed how Argonne conducts research on energy and national security needs and partners with industry, other federal agencies and academia to increase U.S. competitiveness in science and technology fields.
- Bradley Kramer, Ph.D., Director of the Advanced Manufacturing Institute at Kansas State University, addressed how his organization engages in collaborative engineering and business partnerships that advance technologies, people and companies.
- Olga Koper, Ph.D., Chief Technology Officer of NanoScale Corporation, concluded the session with a discussion of the Kansas Technology Enterprise Corporation's PIPELINE program, which offers training in fundamentals of technology entrepreneurship, networking and access to mentors.

Dr. Drabenstott concluded the symposium by noting that entrepreneurship is the engine that drives regional development. To compete, regions need both a world-class entrepreneurial climate and a regional strategy with participation from the public and private sectors.



At the Kansas City symposium: Dr. Mark Drabenstott, RUPRI Center for Regional Competitiveness, University of Missouri-Columbia; Kelly O'Brien, EDA; EDA Assistant Secretary Sandy Baruah; and Carl Schramm of the Ewing Marion Kauffman Foundation.

What is Rural America's Place in an Innovation-Based Economy?

Viewing Rural Economies as Competitive Nodes of Innovation, Entrepreneurship & Economic Growth

By **Richard S. Seline**, **Ethan J. Byler** & **Steven M. Miller**
New Economy Strategies, LLC

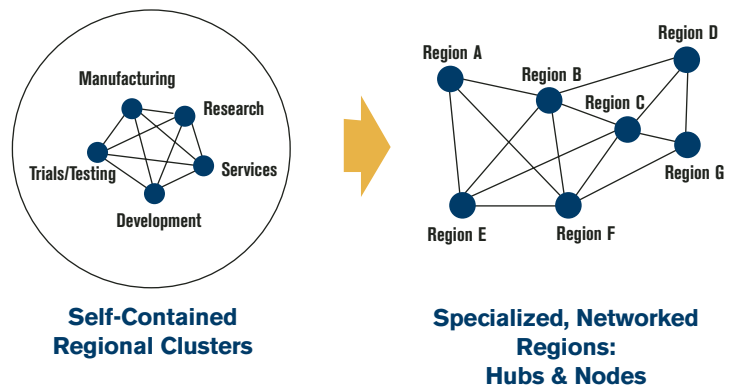
Approximately 50 million Americans, nearly twice the population of our 15 largest cities, live and work in rural America. However, only two million live and work on farms today, with about ten million in other agribusiness jobs.¹ To be sure, rural America is transforming.

The nation's agriculture sector is adding fuel to its traditional business of food and fiber due to the development of new renewable energy sources including biodiesel, cellulosic ethanol and even wind and solar power. As Tom Dorr, Under Secretary for Rural Development at the United States Department of Agriculture, states, "renewable energy... is probably the greatest new opportunity for wealth creation in rural America in our lifetimes... the first major new industry to arise in rural America in the broadband era."²

Under Secretary Dorr is leading the transformation discussion at the federal policy level by directing his agency to assist regions in responding to opportunities of the innovation-based economy with investments in businesses, technology, housing, infrastructure and utilities. The Rural Development Administration has invested more than \$445 million in over 1,000 renewable energy and energy efficiency projects since 2001.

New Economy Strategies, LLC, a technology-based economic development consulting firm in Washington D.C., has sought through its engagements and data analysis to recast the future of rural regions through strategies of innovation, entrepreneurship and economic growth. We embrace USDA's transformational agenda, but also believe that renewable energy is only the tip of the iceberg for new opportunities in rural America, with innovation occurring in manufacturing, distribution and natural resource-based sectors. Land-grant institutions and research enterprises, typically located in rural communities, have been evolving historical extension services and models of technology adoption to more innova-

Figure 1. Global Hubs and Nodes Model



Source: *New Economy Strategies, LLC*

tion-inclined, networked outreach. These trends have led to the identification of our "global hubs and nodes" model as one approach for redefining rural America's place in the innovation-based economy.

The transformation to global hubs and nodes

The 21st century U.S. innovation economy is primarily focused around urban regions, with many rural economies focused on local-serving (non-export) industries in public education, healthcare and social services, resulting in rural households rapidly growing poorer than metropolitan and

Successful companies and industries are now defined by distributed, networked business models in which geographic location is less important as a functional requirement.

suburban households. The recent decline in rural manufacturing jobs is the biggest seen in 50 years.

However, new industries, technologies, corporate models and workforce preferences are leading rural regions in potentially more positive directions. The notion that all the assets, value chains, and even skills must be contained within a proximate location to each other has been viewed as critical to the success of a specific industry sector. Harvard's Michael Porter described these industry agglomerations as clusters, and regional economies and their policies have been viewed through this lens for decades. Taking their cues from this model, rural economies have toiled to build their own clusters – often with limited results, or by limiting their focus on a select few manufacturing-driven industries.

We believe the global economic landscape has changed in such a way that research and development, testing and evaluation, commercialization and manufacturing can be spread across thousands of miles, organized in a model of global hubs and nodes. As long as a particular location has sufficient critical mass to drive development – a hub – or can significantly support development with complementary processes – a node – it can easily participate in this new industry paradigm, no matter its location. Few regions in the future will 'own' all the assets and attributes of one industry sector. We offer this model as a new lens on economic development and a starting point to view rural economic transformation.

Successful companies and industries are now defined by distributed, networked business models in which geographic location is less important as a functional requirement. For instance, the impact of outsourcing as a permanent business model indicates that larger, fully integrated corporate settings are more and more divested operationally and geographically. A large pharmaceutical or defense company appears like a network of smaller enterprises, divisions and suppliers. Sourcing strategies by companies are no longer only about finding the lowest-cost input that can be quickly plugged into a production model. Rather, global sourcing is viewed by CEOs as a critical piece of their entire corporate strategy, and flexibility and just-in-time responsiveness has become the top benefit of a distributed business model, not cost reduction or resource acquisition.

Simply put, U.S. firms and sectors are becoming like the independent film industry. The so-called studio handles the financing, production and overall project management while all the other elements – competencies – are outsourced and organized around a network that actually creates the final product. One firm does the music, another does the script writing, while still another does the graphics and computational designs for the 'whiz-bang' backdrops. Therefore, the film industry in the U.S. is no longer a fully integrated enterprise but rather a network of loosely connected individuals and competencies tied by a common purpose of a project and a deliverable. More and more, these sector and knowledge networks are global – and work 24/7 on contributing their piece of the virtual value chain. Some of these networks remain intact after the project, while others disband until the next project.

If operations are being created around hubs and nodes, and placement of the entrepreneurial firms of the future is less loyal to proximity, then how do we determine what factors are most important in driving local and regional prosperity? The challenge for regions is to inventory local assets and networks and then determine what combination is best suited to global collaboration or alignment. Given the shift to business models that are constantly transforming because of the distributed nature of their operations and access to broadband information tools, we believe that concentrations of skills, knowledge and competencies are now more valuable to measure and support across a region than boosting the local supplier chains of a particular industry cluster.

What is needed today is a shift in regional thinking from simply measuring size and concentration of local production along a traditional value chain to now looking at capabilities and capacity distributed across multiple regions and countries in a way that maximizes responsiveness to markets and reduces cycle times from idea to consumer. Since the creation of intellectual property might occur in one location, and production, manufacturing, sales and distribution in others while corporate headquarters reside in still another, it is becoming more difficult to measure the regional economic impact using only traditional means.

Non-traditional measures of economic impact can include strengths of partnerships and collaborations, as well as the connections among key participants; adoption and use of intellectual property from nearby academic institutions; use of newly acquired technologies; improvement in business processes; and the ties between incentives and public policy interventions that support the realities of globalization.

A model based on "clusters of knowledge and competency" allows us to identify new opportunities in clusters that may not be easily found in a region but have strong potential due to the presence of a unique competency. Since we know the competency requirements of national clusters, we can now quickly identify which additional clusters could be served by a region's existing competencies. Cross-cutting between clusters and developing new clusters from existing ones should become the next step in building innovation-based economies in rural America.

What can rural communities do to develop an innovation-based strategy?

Through our work, we have identified a six-step strategy for developing a competitive innovation economy for rural America.

1. Identify and promote the core competencies of your region.

The innovation-based economy harnesses knowledge for new applications from the value-producing assets of a region. It is difficult to determine where to start in rural regions, although each region has some level of economic-value generation in the form of a process, technology, skill or competency. Often, core competencies are overlooked by the region as a whole. Mapping a region's core competencies and then communicating the regional value proposition must occur. This often involves a region-wide assessment, asset mapping, a positioning statement, and ultimately recommendations on how to use the regional know-how to target new economic opportunities. One aspect of that know-how may be recently relocated retirees, creative individuals leaving urban cities for quality-of-life reasons, and alumni of adjacent academic institutions with a rekindled spirit for the campus and community.

2. Network the innovation focus throughout the region and become a “community of innovation.”

Rural regions traditionally have not focused on innovation, and contributing players are generally located at a distance from each other, with a lack of understanding about shared capabilities and opportunities to collaborate regionally. An important consideration

for rural regions is that they do not need to have every skill and process available locally. Nodes, with strong capabilities in one process, skill or technology, have the ability to link to businesses in other regions to fill gaps in the value chain. However, developing a community of innovation to connect the key entrepreneurs, researchers, technological innovators, businesses, and economic and workforce developers around the regional strengths and core competencies is an important step. What seems to be missing are active and experienced “innovation intermediaries” that connect and usher relationships, resources and ideas through an accelerated process of economic growth.

3) Commercialize rural technologies.

NISTAC is one example of a state-sponsored program that has worked in Kansas to accelerate commercialization (see text box below). Many other states have developed grant and equity programs and have strong desires and pressures to spend these monies in rural regions. In the absence of public dollars, the availability of rural capital in foundations, real estate trusts, and other forms of equity are understated and undervalued. According to the Farm Balance Sheet, a tool of the Economic Research Service at the U.S. Department of Agriculture, farm assets in this country are in excess of \$1.9 trillion and net farm equity is greater than \$1.7 trillion. As Under Secretary Dorr has stated, “if all of us can just connect the assets – the financial resources that are already in rural America, rural entrepreneurs, technical support where it's needed and new technology and new markets – we can get the job done.”³

Case Studies: Transitioning Rural Regions into Innovation-Based Economies

North Central Pennsylvania: Identifying and promoting core competencies. The North Central Pennsylvania region remains a heavy supplier of automotive and machining production through its niche cluster in metal powder and manufactured parts. With the change of manufacturing business models, the North Central Pennsylvania region must direct its intelligence in pressed metals and manufacturing processes to new markets and applications. These companies, their industrial processes and the workforce of metal workers and craftsmen comprise the overall “know-how” of the region (its core competencies) and should be positioned as the unique value proposition in the region's innovation economy.

To promote and position new market and business development, the region must facilitate a process to capture these lines of expertise that have accrued over decades, but also integrate new technology to digitize and transfer the skill base. Finally, North Central Pennsylvania can connect to other regions to build out any missing components to value chains needed for new products and markets.

Western Kentucky: Networking the innovation focus throughout the region to become a “community of innovation.” Rural Kentucky is known for its agricultural roots, from growing corn, soybeans, and tobacco to raising livestock and distilling bourbon. This traditional sector is now converging with research statewide to focus Kentucky on developing a 21st century bio-based economy. The city of Owensboro in western Kentucky is connecting its core know-how in growing tobacco to research in new market applications. Owensboro-based Kentucky Bioprocessing, LLC, is growing tobacco and other plants to manufacture biopharmaceuticals. This operation has relied heavily on collaborative engagement among University of Kentucky and University of Louisville researchers.

Owensboro also is getting involved in alternative energy with efforts to convert local soybean production into biodiesel through the construction of a 50-million-gallon biodiesel plant. Statewide strategies are connecting these efforts to make Kentucky a community of innovation for the bio-based economy, along with strengthening science, technology, engineering and math education throughout the state.

Northeast Kansas: Commercializing rural technologies. Located 120 miles west of Kansas City, Manhattan, Kansas, has traditionally been a college and military town, home of Kansas State University (KSU) and Fort Riley army barracks. KSU and the Manhattan community share core competencies in agriculture and food processing industries and have strategically tapped these sectors for enterprise development and innovation with the assistance of programs sponsored by the Kansas Technology Enterprise Corporation (KTEC).

One of these initiatives, the National Institute for Strategic Technology Acquisition and Commercialization (NISTAC), was established to acquire unused corporate technologies for the benefit of researchers at KSU and then commercialize the technologies with other stakeholder expertise in the region. NISTAC's impact has brought millions of dollars into Manhattan via its licensing activities – particularly those that enable regional startup companies to attract private investment, or awards under the federal government's Small Business Innovation Research programs – as well as revenues from product sales. One success story stems from intellectual property donated by Procter & Gamble, technology that allows for increased manufacturing efficiency in the production of shelf-stable smoothie beverages.

Trends Transforming Rural America

New Business Models

- Lowered broadband communications costs are increasing rural business efficiency
- E-commerce and the movement of centralized business models to decentralized models allows rural firms to market products in places they could not reach before
- Professional and business service firms are “homeshoring” high-skilled services to rural regions as an alternative to outsourcing
- Distributed computing and information technology opens the door to a distributed franchise model, allowing plants to use remote monitoring and process controls

Agriculture & Technology

- Growth in renewable and alternative energy industries is creating new markets throughout natural resource-based and agriculture-based economies
- Plant- and animal-based sectors are identifying new opportunities in agricultural biotechnology and finding new applications in biopharmaceuticals and manufacturing of bio-based products
- Instant access to legal, financial, and technical resources (such as real-time arbitrating of feedstock sourcing)
- Manufacturing and affiliated supply-chain industries are integrating technologies and identifying points of value-generation and innovation

Social Trends

- Baby boomers from knowledge industries are migrating from metropolitan areas to rural regions for cheaper land and less congestion
- Governments remain committed to directing resources toward rural economic development
- Land-grant academic research is a vital contributor to the regional expansion and field testing of new intellectual property
- Integrated technology provides first-rate schools, medical facilities and other services in rural areas
- Educational investments in science, technology, engineering and math are equipping human capital for the new economy
- Rural areas offer a much-improved ability to live locally and compete globally

4) Build the region's capacity for entrepreneurship and growth-oriented enterprises.

The notion that the best solution is for everyone in rural America to simply start new business ventures is shortsighted. Rural regions are known to be risk-averse, to suffer from the reality or perception of capital inaccessibility, and to be generally under-populated with individuals seeking to start or grow new enterprises. There is also a great challenge in getting older populations to vote to make investments in growth activities. However, rural regions also are known to have active entrepreneurs. The challenge and calling for economic developers is to focus existing entrepreneurs on new economic opportunities, and also to educate a new class of entrepreneurs by building the region's capacity.

Entrepreneurship is too often associated with startups. We believe that creating an environment and expertise for assisting \$10-30 million-valued firms to become \$75-100 million national or global competitors is just as critical, and quite simply overlooked.

5) Nurture current opportunities to build an innovation-based environment.

An innovation economy ultimately requires knowledge generation, collaboration, market incentives, and an entrepreneurial culture to be nurtured over time. The economic and workforce development communities must play a significant role in nurturing this environment through communication, networking and capacity-building – in other words, what good developers do best. State and federal resources, and even alternative networks, must be used to build new infrastructure; provide new policies, programs and incentives; and provide sophisticated

information about regional economies. With ever-increasing resources available for rural development, unique scenarios are unfolding for a more coordinated and aligned rural economic development strategy.

6) Respond to the '70 by 70 by 70' culture with a new mindset.

Inevitably, every developer must contend with situations that are often viewed as insurmountable. For rural communities, dynamics in which 70 percent of the population is over the age of 70 and votes against growth-oriented investments and public policies 70 percent of the time can challenge any strategy's implementation. Building a constituency that is informed about the legacies of its actions and the failure to construct a viable alternative for the next generation – as well as the opportunities for creating a new economic future – can be politically difficult. Forming a partnership with the part of the population that recognizes the need for transformation can only be achieved if a new value proposition is developed that is fact-driven and easily communicated.

★★★

For more information, visit www.new-econ.com.

¹ United States Census Bureau, The Federal State Cooperative Program for Population Estimates, 2005, United States Department of Agriculture Economic Research Services, & United States Bureau of Economic Analysis.

² Thomas C. Dorr, Looking Beyond the Farm Bill, Remarks at the U.S. State Legislative Agricultural Chairs Meeting, January 26, 2007

³ Thomas C. Dorr, Remarks at the Arkansas Land & Farm Development Corporation's Annual Meeting, January 19, 2007.

Unlocking Rural Competitiveness:

The Role of Regional Clusters

By Sam M. Cordes, Christine Nolan, Brigitte Waldorf, Jerry Conover, Carol Rogers and Thayr Richey

Rural areas face new realities and opportunities in today's global economy. A successful strategy recognizes the importance of a regional frame-

work and linkages between rural and urban America. Key to navigating this new environment is an understanding of industry clusters.

In recognition of these challenges and opportunities, the U.S. Economic Development Administration released a major report in 2004, "Competitiveness in Rural U.S. Regions: Learning and Research Agenda." This project was led by Professor Michael Porter and the Institute for Strategy and Competitiveness at Harvard Business School. As noted in the March 2004 EDA Update:

The Porter research is particularly helpful in outlining some clear strategies for rural regions to be successful, detailing the flaws in current understanding of rural economies, and dismissing the myth that every rural region is the same.

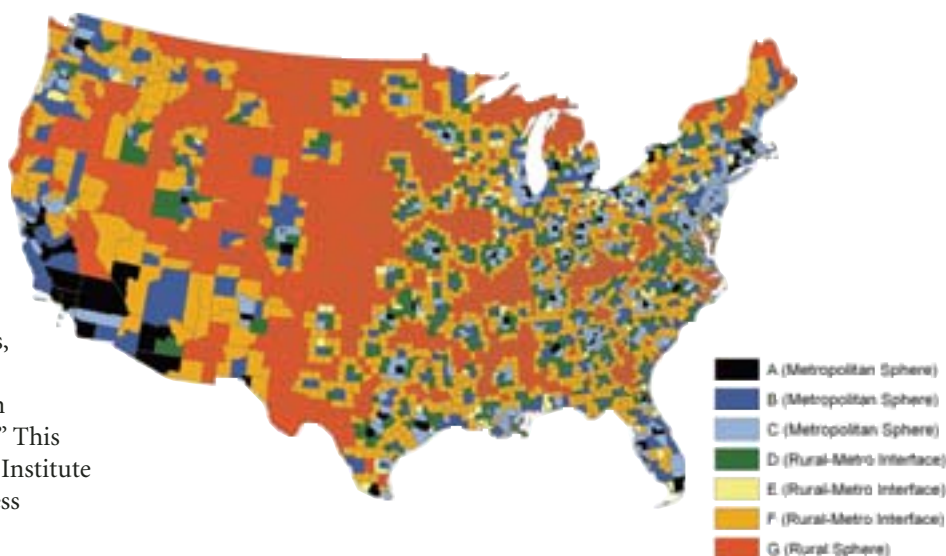
The research also suggests that America's rural regions have tremendous potential that past efforts have failed to unlock, and that a fresh and collaborative approach – based on new thinking about regional economies – is needed.

In keeping with Porter's observation, EDA commissioned a follow-up project led by Purdue University's Center for Regional Development, in partnership with Indiana Business Research Center at Indiana University and Strategic Development Group, Inc. The project included the following components: analysis to provide insights into several important rural research and policy issues; development of web-based data and analytics on all U.S. counties for use by economic development practitioners; and a pilot application of these data and analytics.

The research component

The three broad themes EDA asked the research team to address were:

1. The linkages among cluster structure, degree of rurality and economic performance;



The Relative Rurality of U.S. Counties

2. The spatial clustering of industrial clusters and the interface between rural and metropolitan regions in emerging agglomeration economies; and
3. Growth trajectories for counties that are differentiated by cluster makeup, degree of rurality and distance to metropolitan areas.

One of the new constructs developed was an Index of Relative Rurality (IRR). Most contemporary approaches to "defining" rurality use discrete categories, e.g., classifying counties as either metropolitan or non-metropolitan. In contrast, the IRR is a continuous measure or scale (with values ranging from 0 to 1) that is responsive to the multi-faceted nature of rurality, namely population density and size, and remoteness. As such, it is sensitive even to small changes in one or several of the defining variables. Values on the IRR then were used to classify counties into seven categories, with three of those categories representing the "metropolitan sphere" of influence; three categories representing the "rural-metropolitan interface;" and the seventh category labeled as the "rural sphere" of influence.

Another prerequisite for the analysis was the development of a meaningful and manageable set of business and industry clusters. Much effort went into this important task, basing the cluster construction upon the North American Industry Classification System (NAICS). The final product was an array of 17 clusters, with the manufacturing “supercluster” disaggregated into six sub-clusters. Table 1 shows the full array of clusters used throughout the project.

The unit of analysis for the research was the county, with data readily available for 3,108 of the nation’s counties.¹ Key findings from the extensive research and analysis include the following:

- Different clusters are distributed in very different ways across the nation’s geography. For example, fewer than 100 counties have a significant concentration in the business and financial services cluster. In contrast, well over 1,000 counties have significant specialization in the agribusiness, food processing and technology cluster. However, contrary to traditional thinking, most rural economies are not dependent upon agriculture.
- The overall location patterns of the 17 clusters support the common perception of regional variation in economic activity, e.g., manufacturing specialization in the Midwest and the concentration of the textile industry in the Southeast.
- There is considerable co-location of clusters, contrary to the conventional wisdom of a single dominant cluster in any given region. Hence, categorizing a region around a single cluster or type of economic activity is too simplistic; it is better to think in terms of how clusters interrelate.
- Most of the 17 clusters tend to be concentrated in urban counties. The three clusters with the strongest rural orientation are: agribusiness, food processing and technology; forest and wood products; and mining. Both the manufacturing supercluster and the chemical and chemical-based products cluster generally have an urban orientation. However, non-metropolitan counties adjacent to a metropolitan county are the most specialized in these two clusters. Finally, remote rural counties are generally the most

AgriBusiness, Food Processing and Technology Cluster



● Location Quotient >1.2

Geographic distribution of cluster concentration by U.S. county, 2004 – location quotient “hot spots”

disadvantaged with respect to all 17 clusters, although these counties did fare reasonably well with respect to mining and the agribusiness, food processing and technology cluster.

- About 12 percent of U.S. counties do not specialize in any of the clusters.
- There is evidence, albeit quite tentative, that the long-standing disparity between the economic performance of urban and rural areas is narrowing.
- Regardless of a county’s degree of rurality, the percentage of college graduates has a strong positive correlation with income growth, reinforcing the need for rural counties to invest in education.

The web-based data and tools

One of the important products from this project is a web-based set of information, data and analytics that can be accessed from either of the following URLs:

<http://www.ibrc.indiana.edu/innovation/>

<http://www.purdue.edu/dp/pcrd/innovation>

Although these sites contain the EDA report in its entirety, the following county-based data are likely to be of even greater interest to economic development practitioners:

- Definitions of each of the 17 clusters, using six-digit NAICS codes;
- The number of establishments, employment and wages for each of the 17 business and industry clusters;
- Variables for population, income, housing and education;
- The Index of Relative Rurality (IRR); and
- Distance to the nearest metropolitan area.

Additionally, the website includes a large number of maps, each of which shows the county-based dimensions of a particular variable. For example, one series of maps highlights U.S. counties that specialize in each of the 17 clusters. Another series displays the county-based values of the IRR.

These data, maps and analytics can be very useful to local economic development practitioners and others who wish to

TABLE 1: List of Study Clusters

1. Advanced Materials	13. Transportation and Logistics
2. Agribusiness, Food Processing and Technology	14. Manufacturing Super-cluster (6 sub-clusters)
3. Arts, Entertainment, Recreation and Visitor Industries	• Primary Metal Manufacturing
4. Biomedical/Biotechnical (Life Sciences)	• Fabricated Metal Product Manufacturing
5. Business and Financial Services	• Machinery Manufacturing
6. Chemicals and Chemical-Based Products	• Computer and Electronic Products Manufacturing
7. Defense and Security	• Electrical Equipment, Appliance and Component Manufacturing
8. Education and Knowledge Creation	• Transportation Equipment Manufacturing
9. Energy (Fossil and Renewable)	15. Mining
10. Forest and Wood Products	16. Apparel and Textiles
11. Glass and Ceramics	17. Printing and Publishing
12. Information Technology and Telecommunications	

understand the structure of their local economies and how they fit into the larger regional and national economies. The data and maps will be updated continually by the Indiana Business Research Center.

The pilot application

The research team chose an eight-county area in southern Indiana to determine how well the data and tools developed for EDA can work in “the real world,” and what insights and refinements are important when taking this type of approach to economic development. The region is one of 11 Economic Growth Regions delineated by the Indiana Department of Workforce Development and is referred to as EGR 8. EGR 8 includes four metropolitan and four non-metropolitan counties.

The research team was quite deliberate and strategic in laying the groundwork to introduce the project into EGR 8. The key organizational component was the establishment of a Regional Advisory Committee (RAC) with 25 members from across the eight-county region. The lead economic development official from each of the eight counties served on the committee, as did a Purdue Extension educator from each of the counties. Other RAC members included representatives from business, government and the nonprofit sector.

In engaging the RAC and other stakeholders, the research team made extensive use of the data on clusters and other secondary information. Additionally, the team generated primary data through surveys, focus groups and interviews with existing businesses, local economic development organizations, local and regional plan commissions, and other knowledgeable stakeholders in the eight counties. These data provided insights into the quality of the region’s business environment and generated an inventory of regional assets and liabilities.

Many of the key assets in this region are located in Monroe County, the county with the largest population and the home of Indiana University. Analysis was done with and without Monroe County. Results suggest the need for an integrated, two-pronged development strategy: One component would attempt to take advantage of existing cluster strengths in the more rural areas of the region, while the other would attempt to build stronger connections between the more rural counties in EGR 8 and the metropolitan assets and capacity in Monroe County.

Based on the information generated, the RAC agreed on two specific priorities:

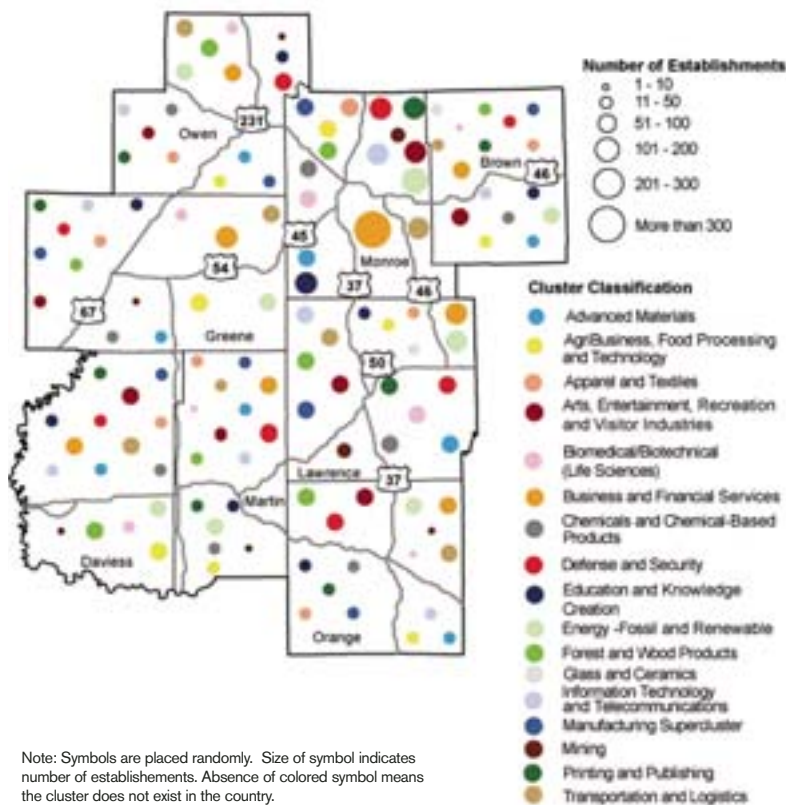
- Exploiting potential synergy among the following three clusters: energy; forest and wood products; and agribusiness, food processing and technology. Biomass development was identified as one specific tactic or project that could build on the strengths of all three clusters.
- Exploiting potential synergy between the advanced materials and biomedical/biotechnology clusters. One tactic or project identified was to activate a hospital/healthcare roundtable to help small local healthcare groups survive and thrive in a difficult rural environment. Another initiative identified was to help small advanced materials and manufacturing firms retool to supply the rapid growth in the biotechnology sector under way in two of the region’s metropolitan counties.

Other strategies, tactics and projects were identified in relation to four other clusters.

Putting insights to work

This work sets the stage for the development and implementation of regional initiatives to stimulate new investment and job creation in rural America. The findings and insights generated are important in helping to guide future policy deliberations, and the web-based data, tools and analytics have practical utility for local stakeholders, including local economic development practitioners.

Cluster Establishment Distribution in the Counties of EGR 8



One of the most important insights from our work in EGR 8 is that the concepts and techniques of cluster analysis appear to be a useful tool for regional leadership. When cluster analysis is combined with other data (including primary data from within the region on assets, liabilities and other factors), a robust understanding of the regional economy and intra-regional linkages and dynamics emerges. This type of understanding and the conversations it generates helps rural stakeholders become more comfortable with regional frameworks and rural-urban interdependencies – realities that otherwise may be difficult to embrace. ★★

This article was written by staff of Purdue University’s Center for Regional Development, the Indiana Business Research Center at Indiana University, and Strategic Development Group, Inc. For more information, visit <http://www.purdue.edu/dp/pcrd>, <http://www.ibrc.indiana.edu> or <http://www.sdg.us>.

¹ Hawaii and Alaska were omitted from the study due to issues of comparability with other U.S. counties.

The Berkshires:

A Deliberate Destiny Created by Many

President,
Berkshire
Economic
Development
Corporation

By Tyler Fairbank The story of recent economic development of the Berkshires in western Massachusetts is a lesson in cooperation, collaboration and perseverance, and the result of many years of deliberate planning and action by a wide variety of organizations. It is an example of how, in a very short period of time, the region went from down and nearly out to capitalizing on its assets and creating its own upswing.

A brief history of the Berkshires

Berkshire County extends north to south across the entire western end of Massachusetts. The large, mountainous region, dotted by nearly three dozen small cities and towns, is home to a total population of approximately 135,000.

For many years – generations, even – employment in the Berkshires meant working either at General Electric (GE) in Pittsfield or Sprague Electric in North Adams. Workers at these two companies represented nearly 20 percent of the total workforce in Berkshire County. Although these positions required little advanced education, the jobs were high paying, with all the benefits of unionization.

But in the period of the late 1980s through the 1990s, and Sprague began laying off workers. The region lost approximately 10,000 jobs in a three-year period, and unemployment was at an all-time high.

For a time, the community anxiously awaited a large employer to emerge and return the region to its past prosperity. In 1997, the Environmental Protection Agency proposed to declare GE land and the surrounding area a Superfund site due to PCB contamination in the Housatonic River. In response, members of the community began to come together to support the effort and to create a new future for the Berkshires. Local economic development and grassroots organizations came out of their silos and began to work together to make the region a better place to live, raise a family and grow a business.

The Berkshire Blueprint

After collaborating for several years to promote the benefits of doing business in the Berkshires, a group of local leaders concluded that a separate entity was needed to play a leader-



ship role in pulling together the resources of the county. In 2005, the Berkshire Economic Development Corporation (BEDC) was created to develop a strategic plan to attract new business to the area and to help existing Berkshire County businesses expand and thrive.

In March 2007, the BEDC unveiled its comprehensive action plan for economic growth, the Berkshire Blueprint. The plan represents a fresh, cluster-based approach to economic development in the Berkshires, designed to increase the prosperity of the region's residents.

Hundreds of business, government and community leaders participated in the development of the Berkshire Blueprint through one-on-one interviews and planning sessions. Thousands of survey responses also were used to develop the Blueprint. Today, more than 100 volunteers are working in groups and on committees to further the plan.

The vision advanced in the Blueprint is for a dynamic, creative, competitive region that is:

- A magnet for entrepreneurs and business leaders.
- A vibrant, well-connected community supporting growth across industries.
- A nexus for a variety of firms and industries.
- Linked to metro areas that provide a source of suppliers, capital and customers.
- Connected by a high-quality communications infrastructure to global business partners.

The Berkshire Blueprint provides new strategies and actions under the following six goals:

1. Support entrepreneurship and innovation.
2. Launch internal and external marketing plans.
3. Develop regional and cluster institutions for collaboration.
4. Align education and training programs with cluster needs.
5. Invest in high-quality infrastructure.
6. Stabilize and reverse population loss.

The culmination of a two-year, million-dollar initiative, the Blueprint blends two major economic development projects – the Berkshire Strategy Project and the Berkshire Creative Economy Project.

The Berkshire Strategy Project provides an evaluation of the entire regional economy, with a baseline of current metrics and detailed analysis of selected industry clusters. Although the priorities outlined in the Berkshire Blueprint will affect all industry clusters, initial efforts will be focused on three areas: the “creative cluster,” plastics, and hospitality and tourism. The project also addresses health care, financial services, energy technology, forest products (including paper), publishing/printing and other clusters, in addition to improvements to the county’s business climate.

The study was funded through a grant of more than \$450,000 from the Economic Development Administration, a \$300,000 grant from the John Adams Innovation Institute and \$100,000 in donations from public and private contributors.

The creative cluster

The Berkshire Creative Economy Project (BCEP) focuses specifically on the creative cluster and identifies how the region can leverage its creative and artistic assets to help the regional economy grow. The creative cluster includes groups such as cultural organizations, commercial businesses and nonprofit institutions, as well as individual artists and people involved in the production and distribution of goods and services in which the aesthetic, intellectual and emotional engagement of the consumer gives the product value in the marketplace. The creative cluster is not only an important economic cluster, but as a significant part of the Berkshires’ identity is a driving force of the region’s overall prosperity.

The Berkshires are, in fact, one of the nation’s premiere cultural destinations, with more than a dozen world-class arts and cultural institutions, including the Clark Art Institute, MASS MoCA, Williams College Museum of Art, Tanglewood, Hancock Shaker Village, Berkshire Museum, Norman Rockwell Museum, Barrington Stage, Berkshire and Williamstown Theatre Festivals, and Shakespeare & Company, among many others.

Art means business in the Berkshires, but until now, the impact of the creative cluster on the region hasn’t been fully understood. Workers in the creative cluster are estimated to represent about 10 percent of the workforce in the Berkshires, or about 6,100 workers, and the exports of those workers represent significant dollars coming back to our region.

The Berkshire Creative Economy Council, known as Berkshire Creative, has begun implementation of the BCEP. Working groups are actively exploring the creation of a Berkshire Biennale and a “Design It Here, Make It Here” campaign. The BEDC is supporting Berkshire Creative’s efforts and serving as fiscal agent for its grant funding. Other actions identified to advance the creative cluster include development of a Berkshire Design Center (interior design center/incubator), development of a creative product directory and recruitment of creative cluster businesses.

The creative cluster not only contributes to the region’s economic strength and to the high quality of life enjoyed in the Berkshires, but also attracts new visitors, residents and businesses. Indeed, the creative cluster drives the competitiveness of other Berkshire clusters. The combination of these factors makes it an important economic force in the region, one that is now officially recognized and organized.

Berkshire Compact for Higher Education

A key draw for prospective companies is the education level of the available workforce. The Berkshire Compact for Higher Education, a countywide strategy development group, was formed in 2005 to assess the higher education needs of Berkshire County residents and employers. The compact is a collaboration of educators, business and community leaders, as well as representatives from the nonprofit, health care and cultural sectors. Its mission is to ensure that every resident of Berkshire County receives at least 16 years of education and training. The Compact aims to:

- Challenge students to obtain a degree beyond a high school diploma.
- Improve access to education, training and lifelong learning.
- Make Berkshire County a competitive location for the new



The Berkshires is home to many cultural sites and institutions. Shown above is the stone barn at Hancock Shaker Village, a national historic landmark.

The creative cluster not only contributes to the region's economic strength and to the high quality of life enjoyed in the Berkshires, but also attracts new visitors, residents and businesses.

technology and knowledge-based economy by assuring that residents are among the most technologically educated population in New England.

- Develop a new “social contract” among employers, employees and educational institutions that encourages and promotes learning, earning and civic engagement.

Among the strategies developed to address these concerns, the Berkshire Compact proposes a higher education “Passport,” which creates a pathway to success from pre-K through college for all students. Under this proposal, students could achieve credits on their Passport, for example, for attending summer enrichment programs, maintaining an excellent attendance record, achieving improved test scores, and participating in dual high school-college enrollment courses. Linking the Passport credits to financial incentives for attending college is part of the long-term vision.

The Compact also calls for investment in the region's technology infrastructure and networks, and for providing K-12 students with more intensive technology-oriented learning experiences. It looks to expand linkages between new technology-oriented firms and schools, creating internships for high school and college students and externships for teachers.

Investment in area colleges, universities and local public schools has increased over the past few years. Williams College has invested \$410 million in new campus buildings and improvements, and the Massachusetts College of Liberal Arts (MCLA) is planning a \$36 million Science and Innovation Center (MCLA already has spent \$11 million in capital improvements since 2004). Pittsfield City Schools plans a \$59 million renovation to seven schools in the city.

Recent figures indicate some progress. In 2006, 32 percent of the Berkshire County population age 25 and older held a four-year degree, compared to 21 percent in 1990. In addition, the average yearly wage has increased to approximately \$35,000 from \$32,000.

Progress on the strategy

Since the launch of the Berkshire Blueprint in spring of 2007, a number of strategies already are under way to implement the plan. The Berkshire Angel Network is being formed, and several ventures have already received investment commitments. Several groups are working together to restructure the region's entrepreneur support system. The BEDC has undertaken an extensive marketing campaign in local, regional, national and international media to attract both investment and talent. The BEDC also is spearheading an effort to evaluate branding best practices from other

regions and establish a re-branding process. The BEDC also has facilitated a gathering of regional plastics firms and explored the steps needed to revive the Berkshires Plastics Network.

A survey conducted by BEDC over the summer of 2007 details some of the growth:

- \$1.4 billion has been invested in capital improvement projects over the past 10 years.
- Berkshire County is experiencing some of the highest employment levels ever recorded, with more than 73,000 jobs filled.
- Over the past two years, nearly 900 jobs were created by 24 new and expanding businesses; half of those jobs are in technology or manufacturing.

There are several critical areas, including the county's transportation infrastructure, that still need improvement if Berkshire County is to attract world-class companies. A \$35 million expansion project at the Pittsfield Municipal Airport will get under way in the next few months. Expansion of wireless broadband access throughout the county is an additional challenge. A proposal pending in the Massachusetts state legislature would begin to address the issue with a suggested \$25 million bond bill.

The near future

The realization that community leaders came to in 1997 is still true today – if we are isolated, we will fail, but through collaboration we can each bring our strengths to the table and offer a comprehensive package to attract investors to the Berkshires.

The traditional manufacturing jobs of yesterday are rapidly becoming a thing of the past, but Berkshire County is preparing its residents and infrastructure for the future. The shift from reliance on large employers to confidence in small and mid-sized businesses is under way. Local projects encompassing more than \$250 million are planned between now and 2011. Much has been accomplished in 10 short years, and the next 10 are sure to bring more challenges and opportunities. Just as the Berkshires are well known for rolling mountainsides and fine cultural institutions, the region is becoming well regarded for its business-friendly climate, technological strength and highly skilled workforce. ★★ ★

For more information, visit www.berkshireedc.com.

Industry-Driven Leadership Is Vital for Rural Communities

By **David Zepponi and Rick Fisch**

*President, Northwest Food Processors Association
and Managing Director, Northwest Food Processors
Innovation Productivity Center*

Food processing is a \$20 billion industry in the Pacific Northwest. Together with its suppliers, including farms, equipment, packaging, trucking and warehousing, the entire cluster generates

\$42.5 billion in output annually.
Over 75,000 people are employed in food processing in Oregon, Washington and Idaho.

But over the last decade, scores of Northwest food processing plants have closed their doors and thousands of employees have lost their jobs. Many of these plants were located in rural communities where a food processing plant was the major employer.

The U.S. food processing industry as a whole is facing unprecedented threats to its economic competitiveness in the world marketplace. Traditional competitive cost advantages such as energy and labor are eroding or have been lost. Regional assets are threatened by competition from many countries as well as from federal and state public policy. Profit margins are being squeezed due to the dual challenge of consolidation of buyers (retailers, distributors, food service and re-manufacturers) and the increasing costs of labor, energy, transportation and logistics, water treatment and regulatory compliance. The crisis intensifies as food manufacturing facilities leave the region and internal consolidation continues.

In response, the industry is adopting leaner manufacturing processes and shedding excess capital and labor. For instance, between 2002 and 2004, total U.S. food processing employment declined from 1.5 million employees to 1.44 million, while at the same time total shipments increased from \$563.7 billion to \$623.7 billion.

Northwest Food Processing Fast Facts

- Total Regional Economic Impact: \$42.5 billion
- Total Employment Impact: 283,000 jobs
- Total Payroll: \$2.4 billion
- Average Wage: \$32,000



But food processing is an industry under siege, which must re-invent itself if it is to improve its competitive position in the international marketplace.

The response

With help from supportive state and federal organizations, Northwest Food Processors Association (NWFPA) has addressed the regional crisis by initiating in 2003 the nation's first comprehensive, multi-state competitive assessment of a food manufacturing cluster. Support for this visionary program came from three governors, state and regional governments, members of Congress, the U.S. Economic Development Administration, industry, education and other organizations. NWFPA coordinated the project, partnered with agencies and provided sustaining support.

The association's "big hairy audacious goal" is to reposition the three-state food processing industry to compete globally through dramatically increased productivity and innovation. The model is simple: Innovation leads to productivity gains, which lead to global competitiveness, which leads to increased profitability. As value-added products emerge and profits increase, companies have the ability to invest in research and development, hire more talented workers and continue the cycle of innovation.

This innovative regional approach of “bundling clusters to share knowledge” contends that economic boundaries are not the same as political boundaries, and that spatial challenges can be resolved by technological and traditional means. Rural communities are key beneficiaries.

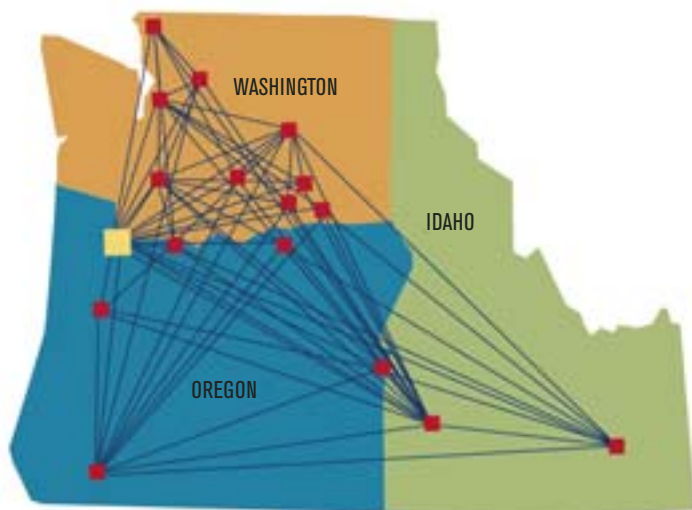
After a nationwide request for proposals was issued, a private-public selection committee chose the consultant team of Applied Development Economics (ADE) and Advanced Research Technologies (ART) to conduct the assessment. Nearly \$280,000 was raised for economic analysis, cluster infrastructure development and communications.

The cluster consultants analyzed the industry’s structure and competitive dynamics; cluster intelligence; linkages, assets and connectivity. During the 18-month contract, NWFPA gave 136 presentations to more than 4,000 people to ensure that stakeholders stayed informed and involved.

A Cluster Assessment Strategy Team (CAST) was formed to develop recommendations from the assessment. Recognizing that significant activities were already underway in government affairs, energy, environment, food safety and human resources, CAST developed objectives and strategies in five additional focus areas:

1. Increase the capacity of the Northwest’s innovation infrastructure;
2. Improve transportation infrastructure and services;
3. Develop a robust workforce pipeline;
4. Form strategic alliances to improve the food processing industry’s competitiveness; and
5. Increase the industry’s operational productivity.

Included in the three-state cluster initiative are strategies to reach scores of rural communities in the 250,000-square-mile area that comprises the region. There are at least 135 food manufacturing plants operating in 58 rural towns in Idaho, Oregon, and Washington with populations under 10,000.



The food processing industry comprises interconnected economic activity among many small towns and bigger cities in the Pacific Northwest.



In repositioning the three-state food processing industry to compete globally, NWFPA followed a simple model: Innovation leads to productivity gains, which lead to global competitiveness, which leads to increased profitability.

In addition to the cluster initiative, over the past several years energy and workforce partnerships aimed at food processors have been formed with the Northwest Energy Efficiency Alliance and Northwest Manufacturing Extension Partnerships, providing \$9 million in assistance.

These initiatives, coupled with aggressive industry leadership, continue to drive food processors toward greater efficiency by adopting new practices in marketing, product development, manufacturing, supply chain management and workforce training. The cluster initiative is encouraging these effective practices to be shared with smaller value-added processors in an attempt to retain jobs in rural areas.

Encouraging economic news

The 2006 Northwest food processing industry benchmark report by Globalwise, Inc., contained some encouraging news:

“In the last 12 to 24 months, the industry has again shown signs of strength and stability. The region’s processors report only minor instances of plant closures, mergers or acquisitions in 2005–2006 compared to the 2002–2004 period. However, the industry is only slowly recovering and there is still little new plant construction or expansion in plant capacity in the [Pacific Northwest] region. These benchmarks show that it is premature to report that the region’s food processors are on a growth path.

Plant and equipment efficiency upgrades and workforce training are the primary focus of the industry. The region’s food processors are still reducing employment, which is necessary in order to remain competitive. However, total payrolls are rising, which means that pay rates are growing faster than the cutbacks in jobs.”

This was good news, but a bold response still was needed to increase the industry’s global competitiveness.

Innovation Productivity Center

Concurrent with the cluster initiative came the idea for a new, industry-driven public-private partnership, the Northwest Food Processors Innovation Productivity Center (IPC). NWFPA proposed the idea to the Oregon Innovation Council (OregonInC) in 2006, in response to an RFP to “identify top innovation-driven growth opportunities, maximize the state’s competitive advantages and establish Oregon’s niche in the global economy.” In July 2007, the IPC received \$3.4 in funding as part of the Oregon State Innovation Plan.

“The food processing industry is a core component of Oregon’s economy,” said Governor Ted Kulongoski. “Funding the development of the Innovation Productivity Center will help this important industry succeed in an increasingly global economy. In addition, this funding will be used – through the IPC – to create new opportunities and sustainable advantages for food processors and the industries that serve them in areas such as workforce development, research and development and technical advancements.”

As the IPC is envisioned, professional staff and contractors will work directly with food processing companies at the plant level to help shape a culture of continuous improvement throughout the region, and performance measurements and metrics will track progress toward ambitious goals. Productivity interventions in particular are expected to yield between \$3 million and \$9 million in aggregate productivity enhancement for participating companies after the second year, depending upon IPC staffing and industry participation levels. Also, the IPC will act as a knowledge hub, using a robust website with connecting spokes to existing and potential organizational relationships.

One of the IPC’s targets is to overcome spatial and resource challenges faced by rural food processing plants. Technology is a great equalizer. Web-based best practice knowledge portals bring world-class solutions to companies of any size that seek energy and industrial efficiencies. In 2006, NWFPA conducted a national satellite teleconference on industrial efficiency. Many of the downlink sites were within easy driving distance of rural communities. In addition, plans are underway for technology transfers and innovation commercialization to small as well as large processors through work with two Northwest national laboratories.

A roadmap for success

The Northwest Food Processing Cluster Assessment & Roadmap was recognized for excellence in 2007 by the International Economic Development Council, which noted that: “The cluster assessment is innovative in its use of benchmarks to compare the region’s performance against that of the rest of the United States and other nations. The report benchmarks on such measures as sales, exports, patents, and engineering and science degrees. In addition, the Northwest was benchmarked against the U.S. on 15 measures of financial competitiveness, including return on assets and profit per employee.”

As the Innovation Productivity Center is envisioned, professional staff and contractors will work directly with food processing companies at the plant level to help shape a culture of continuous improvement throughout the region.



The future looks bright for this cluster sector because leadership is industry-driven. Northwest food manufacturers, through NWFPA and the IPC, along with established public and private cluster partners, are collaborating so that all stakeholders regardless of location or size may benefit. Cluster-related solutions will continue to revitalize the industry, including rural communities, in their quest for improved global competitiveness. ★★★

Established in Portland, Oregon in 1914, Northwest Food Processors Association is a non-profit trade association, which represents the \$42.5 billion food and beverage manufacturing cluster in Oregon, Washington and Idaho. Members include 450 food processors and suppliers, which employ more than 60,000 workers in the region. For more information, contact David Zepponi at dzepponi@nwfpa.org or (503) 327-2200.

Green Energy – Montana's New Cash Cow

Commissioner's
Office,
Montana
Department of
Labor and
Industry

By **Michelle Robinson**

Montana is blessed with many natural resources that provide the opportunity to produce clean, green energy and products. However, as the fourth largest U.S. state, with a small, dispersed population, the state historically has focused its economy on producing agriculture and forestry products for export.

In January of 2006, Montana received one of the U.S. Department of Labor's three-year, \$15 million Workforce Innovation in Regional Economic Development (WIRED) grants. In an initiative branded as Montana's Agro-Energy Plan, or MAP, the funding will be used to nurture an innovative, value-added bioproducts industry that will create globally competitive enterprises and high-paying jobs across 32 rural counties and six Indian reservations in eastern Montana.

Today, much of the production of farmers and ranchers in central and eastern Montana is commodity-based. Montana is a leader in producing goods such as wheat, barley, alfalfa and cattle, and has always been a large exporter of these products to other states and countries. Value typically is added and captured outside of the state.

Government and industry leaders realize that in order to become globally competitive, Montana must embark on an aggressive effort to manufacture more value-added products derived from its rich agricultural resources. MAP is the spark needed to ignite the fires of prosperity and partnerships in the biofuels industry.

"We have the nation's largest reserves of coal, some of its best wind resources and the capacity for a strong biofuels industry," says Montana Governor Brian Schweitzer. "Proper development of Montana's resources can play a vital role in helping the nation meet the target of 25 percent renewable energy by the year 2025," he said, referring to a vision set by the 25x'25 Alliance and endorsed by Montana and many other states.

Planting the seeds of economic prosperity

The state, with assistance from consultants New Economy Strategies and Goodfellow Agricola, is currently focusing its efforts on bioproducts and biofuels as components of a new "carbohydrate-based, bio-agriculture" economy. In this strat-



From seed to shelf: Montana produces a variety of crops that are being converted to fuels, lubricants, animal feed and many other uses.

egy, plants are used as the primary materials in the production of chemicals, construction materials and energy.

Sometimes touted as a modern phenomenon, bioproducts actually have a long history. The carbohydrate basis for production of materials proliferated well into the 20th century, but declining access to raw materials (e.g., Japanese control of Asian rubber plantations in World War II) and inexpensive oil prices in the mid 1900s led to a shift from carbohydrates to hydrocarbons (such as petroleum-based plastics) as the primary raw material of manufactured goods. Modern technology certainly has impacted the economic viability and technological possibilities of carbohydrate-based manufacturing. However, many modern and familiar materials, such as diesel fuel and even plastic, now can be produced economically from plant sources.

One of the greatest benefits of Montana's geography is its ability to produce feedstock for the biofuel and bioproduct industry. Bioproduct and biofuel development requires a special understanding of individual feedstocks, technologies and other practical considerations. Unique characteristics of each crop dictate applications for which it is best suited. Those applications impact technical and economic aspects of

Bioproduct and biofuel development requires a special understanding of individual feedstocks, technologies and other practical considerations.

bioproduct and biofuel production and sales. In addition, the byproducts emerging from waste streams in the process are important to the economic viability of bioproduct and biofuel production.

To bridge the gap between typical workforce development training and economic development, the Montana Department of Labor and Industry has allocated MAP funds to the Department of Commerce, the Office of the Commissioner of Higher Education and the Department of Agriculture for re-granting. Grants are used to fund bioproduct business training assistance, job training programs and curriculum development.

Miles City Community College (MCC) has developed a first-of-its-kind community college bioproduct curriculum in partnership with Native American tribal colleges, including Stone Child College (Chippewa Cree), Fort Belknap College (Gros Ventre and Assiniboine), Fort Peck Community College (Sioux and Assiniboine), and Chief Dull Knife College (Northern Cheyenne).

“Our collective goal is to provide skilled laborers for the fields of bioproducts,” says Kristin Gustad, MAP grant project director at MCC.

Another grant recipient is Sustainable Systems, LLC of Montana, which currently produces oil for sale in food-based markets. “We are networked with approximately 400 agricultural producers who rely on us as a market for their oilseed crops,” says company president Paul Miller. Sustainable Systems is currently expanding its oilseed crushing plant capabilities to 600 tons per day and doubling its workforce over the next 12 months just to keep up with the growing demand. “We are working with educational institutions and our farming communities to identify workers that wish to pursue a sustainable economic model of agricultural processing,” said Miller.

Fuel of possibility

Montana also has abundant forest resources that can be converted into bioproducts and biofuels, and coal and gas resources that can be mixed with biofuels or other bioproducts. Montana is particularly well positioned to participate in the growing market for biodiesel, which can be readily substituted for common diesel in trains, trucks, farm equipment, generators and cars with diesel engines.

Montana State University-Northern is a leader in the biodiesel industry. MSU Northern has the only four-year diesel program in the nation with an extensive diesel engine testing suite capable of monitoring performance changes in

real time. In addition, the program boasts that each of its forty students gets ten job offers on average upon graduation. Future efforts aim to strengthen linkages with industry, expand the biodiesel program, and explore new partnerships with national leaders such as the National Renewable Energy Laboratory in Denver.

Montana is focused on biodiesel because of the many advantages it holds over ethanol. Biodiesel has a less complicated manufacturing process, does not require engine retrofitting, and can be transported in existing petroleum tank trucks and pipelines. (In contrast, ethanol has special handling requirements and cannot be transported in pipelines.) The market for biodiesel is growing and even making inroads for fleet-wide adoptions by the federal government. Yellowstone National Park is adopting 100 percent biodiesel in all its vehicles and generators, and other national parks are following the trend.

Farmers Brett Earl and Logan Fisher envisioned a business to manufacture biodiesel from oilseeds grown near their hometown of Chester, Montana. Earl earned a degree in chemical engineering, while Fisher holds a degree in business administration. Their combination of lifelong farm experience and advanced education fueled the vision.

For technical assistance, they approached Bear Paw Development Corporation in Havre, the site of one of four newly created Bio-Product Innovation Centers. Bioproduct Innovation Centers are co-located within four regional economic and community development organizations – Bear Paw Development Corporation, Great Northern Development Corporation, Beartooth RC&D and Snowy Mountain Development Corporation – to provide customized training and technical assistance to owners of existing businesses, entrepreneurs evaluating new business opportunities and cooperatives pursuing bioproduct and related value-added agriculture business opportunities.

Bear Paw’s Brandi Beecher helped develop the Earl-Fisher Bio-Fuels business plan and funding proposal for the Montana Department of Agriculture’s Growth Through Agriculture funding program. Earl-Fisher Bio-Fuels started up in April 2007 with production capacity of 100,000 gallons per year and expansion plans for 1 million gallons of capacity and 10 full-time employees.

“We feel that growing oilseed crops locally, producing biofuel locally and consuming biofuels locally will be a key component to enhance Montana’s rural economy and create sustainable jobs,” says Earl.



Farmers Brett Earl and Logan Fisher envisioned a business to manufacture biodiesel from oilseeds grown near their hometown of Chester. They received technical assistance from one of the state's Bioproduct Innovation Centers, and started up in April 2007 with capacity to produce 100,000 gallons per year.

Despite the promising outlook, hurdles remain before biodiesel production becomes a major component of the Montana economy. Studies have shown that biodiesel has different cold flow performance depending on the feedstock used. To address this, researchers at MSU-Northern are currently testing the cold flow properties of fuels from different feedstocks and the effects of various additives.

Gearing up Montana's economic engine

Beyond biodiesel, biolubricants may prove an even greater opportunity for Montana, as they are higher-value products that are less sensitive to the higher distribution costs associated with remote areas. Bio-based lubricants and hydraulic fluids have superior performance relative to petroleum-based alternatives in many applications and are favored for their biodegradability, making them the product of choice in sensitive environments.

Several research efforts are under way to develop bio-based hydraulic fluids and lubricants (such as crank case oil and a spray lubricant similar to WD-40), and a number of companies are selling these products. Apart from these, the following bioproducts or techniques currently are in research and development or being sold by companies:

- Development of TKS (Russian dandelion) for bio-based rubber and products
- Glycerin as a compost accelerator
- Camelina as a source for biodiesel and oil production, food for both animals and humans, and limitless byproduct opportunities
- Gluten-free crops
- Plant-based pharmaceuticals
- Development of bacillus-based biological agents for controlling plant disease

- Research on new equine products and feeds
- Bio-based products for highway anti-icing operations
- Omega-3 products from goats and dairy cows
- Bio-based coating systems to protect metals from corrosion
- Evaluation of multiple oilseed genetic lines for value-added oil yield and quality characteristics
- Parameters critical to ethanol production from Montana small grains

A range of support

Montana has numerous additional programs and assets that support bio-based businesses:

- The Montana Biotechnology Center at the University of Montana fosters biotech-related research and development within the university, and technology transfer to public and private institutions across the state.
- Montana Manufacturing Extension Center (MMEC) provides technical, business management and engineering assistance and training to the value-added agricultural business community. MMEC plans to launch BQ-9000 certification training, a quality assurance program for biodiesel producers and distributors. "Not only will this be extremely valuable to biodiesel producers, it will fill the void of quality systems training in this field," says MMEC field engineer Jim Haider.
- Montana State University's Biobased Institute conducts research to improve the profitability of Montana agriculture through enhancement of current production and development of new value-added applications and products.
- The Montana Extension agriculture and natural resources programs apply university research and resources to help Montana growers and landowners increase profits, reduce loss, protect our food supply and sustain future resources.
- The TechRanch in Bozeman is an incubator for high-technology companies at Montana State University.
- The Montana Bioscience Alliance in Billings focuses on promoting research, building and supporting professional networks, extending education and training in bioscience disciplines, and creating pathways for biotechnology commercialization.

"Montana has multiple advantages aside from being the last best place. We have a multitude of available natural resources," says Montana Labor Commissioner Keith Kelly. "By developing our energy resources, we are well positioned to become a national player in sustainable energy production and a model for rural energy development."

★★★

For more information, visit <http://dli.mt.gov/wired/wired.asp>, or contact Adam de Yong, WIRED MAP Project Director, Montana Department of Labor and Industry, at (406) 444-3662 or adeyong2@mt.gov.

Leadership, Change and the New Economy:

Transforming Northwest North Carolina Through Cluster-Based Economic Development

By John D. Hauser

Dean, Industrial, Engineering & CIT Division, Wilkes Community College and Executive Director, NWNC Advanced Materials Cluster

Isolated in the rural northwest corner of North Carolina, Alleghany, Ashe and Wilkes counties have been hit hard by the decline of the area's historically strong industries – textiles, furniture and tobacco. Facing the increasingly globalized economy with

alarmingly high unemployment rates, significantly lower income per capita than the state average and low rates of job creation, these three counties were in search of a spark to rekindle the fires of prosperity.

In response to its plight, the region sought an answer from within. Using recommendations presented in the region's Comprehensive Economic Development Strategy, plus support from the workforce-training program at Wilkes Community College and industry champion Martin Marietta Composites, the region is implementing an economic development strategy focused on high-technology advanced materials manufacturing (high-performance plastics, metals and composites).

The Northwest North Carolina Advanced Materials Cluster Initiative is unique – a high-tech strategy in a rural region that is targeting an emerging industry cluster. Transforming Northwest North Carolina's image from a "textile-furniture-tobacco belt" to a center of technological innovation takes a collaborative commitment among governmental, industry and academic entities to enhancing the region's research, education and economic infrastructure.

A new way of thinking

The cluster initiative was formed in January 2004, when the managers of Wilkes, Ashe and Alleghany counties, recognizing their collective strengths, joined Wilkes Community College (WCC) and committed financial resources to try a new approach to economic development.

"Collaborating with surrounding counties makes the local economic developer's job somewhat easier," says Dr. Patricia Mitchell, director of economic development for Ashe County. "When one of our counties brings in a new industry, the labor pool does not stop at the county line. All of us benefit from

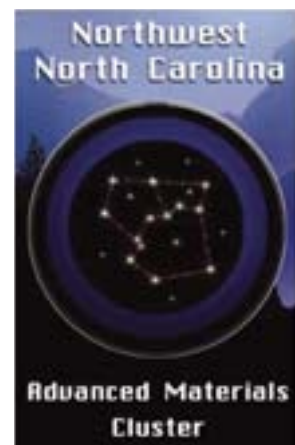
the employment opportunities and capital investment within the region." This cooperative competitiveness already has fostered the growth of a new start-up company that will help build momentum for additional recruitment and expansion opportunities.

A unique aspect of the cluster initiative is the leadership provided by WCC. Using part of a \$120,000 Duke Endowment grant, WCC introduced and led this collaborative way of thinking based on training from the Economic Competitiveness Group in Berkeley, California. WCC is recognized regionally and statewide as a leader in workforce and economic development, which made it a natural choice to lead the cluster initiative for the region.

Under the direction of WCC, partnerships have been formed among a number of companies, educational institutions and governmental agencies. Together, these collaborations are working on innovative workforce development programs, policies for entrepreneurship development, and the creation of a regional hub for advanced materials technology. The cluster initiative's executive committee uses a strategic plan to make decisions regarding programs, organizational structure and partnerships.

Industry champions

According to several noted cluster experts, clusters are only successful with industry "champions." Martin Marietta Composites (MMC) in Sparta, North Carolina, came forward



early on with its vision and strategies for assisting in developing the cluster. MMC has provided critical support by sharing technology, research, and vendor/supplier relationships with other industries throughout the region and state.

The industry perspective and visionary applications that MMC president Grant Godwin provides make him a model champion for cluster-based economic development. “Martin Marietta Composites views cluster-based development as a critical element for growth of new technologies, especially those without a historical regional base of support,” Godwin says. “Cluster initiatives can create energy and provide regional branding, which enables greater leveraging of resources and supply chain development and serves as a magnet for related industry.”

Additional industry champions have emerged. Louisiana-Pacific in Roaring River, GE Aviation in West Jefferson, and VX Aerospace in Morganton are several of the advanced materials companies leading the region’s transformation. These companies and industries are interconnected by vendors, suppliers, human resources, technology, equipment and ideas.

Investing in talent and workforce

Developing a pool of workers with advanced skills is critical to a region’s ability to compete and succeed in a technology-driven economy. The cluster initiative recognizes that gaps exist between educational and industry sectors and is developing a number of programs to bring them together.

Through the Golden LEAF Foundation, the N.C. Rural Economic Development Center and the Appalachian Regional Commission, a plan for developing a regional and statewide technical advisory group is now being created to work with advanced materials companies to identify skills currently deficient in high school graduates. Together, they are developing a demand-driven approach to teaching 21st century skill sets to youth and adults, focused on lifelong-learning principles.

WCC has developed partnerships with the region’s middle and high schools to foster applied technologies curricula. The Industrial, Engineering, and Customized Industry Training Division at WCC is developing “1+1” degrees in which high school students attend college classes in their junior and senior years, then transition into WCC’s engineering technology programs to complete their associate degrees. Additionally, the seamless system for educational attainment will allow graduates with associate of applied science degrees the opportunity to transfer into the North Carolina University System as juniors in the “2+2” program (two years at the community college and two years in the university system).

Also as part of the cluster initiative’s strategic plan, Appalachian State University, North Carolina State University, UNC-Chapel Hill School of Government, Western Carolina University, North Carolina A&T State University, Wilkes Community College and the High Country Council of Government Workforce Development Board have created a

plan to develop and deliver higher education and training that will meet the needs of cluster industries.

In addition to technical education, the initiative recognized early on the importance of providing entrepreneurs and small businesses with technical assistance, capital access, training, research and civic infrastructure. The WCC Small Business Center and the Center for Rural Entrepreneurship at the N.C. Rural Economic Development Center have partnered to develop entrepreneurial capabilities for the cluster. WCC, Wilkes County School System and N.C. REAL Enterprises will begin providing integrated entrepreneur training targeting the advanced materials cluster to middle and high school students this year.

The cluster initiative has not limited its focus to north-west North Carolina, but is spreading across the state. WCC is forming a partnership with Craven Community College in New Bern, on the coast, to position the state to attract and grow advanced materials companies with a statewide network.

Leveraging funding sources

In addition to initial support from the Duke Endowment, the initiative has secured funding from other sources, including \$50,000 from the N.C. Rural Economic Development Center; \$21,000 from the Wilkes, Ashe and Alleghany county governments; and \$200,000 from the Appalachian Regional Commission.

The most significant commitment, however, is \$1.2 million awarded by the Golden LEAF Foundation (which provides tobacco settlement money to help the state transition from a tobacco-dependent economy) in November 2006 for the development of a regional Advanced Materials Training Center.

“The cluster initiative at Wilkes Community College falls dead in-line with Golden LEAF’s efforts to develop advanced manufacturing capabilities in North Carolina,” said Mark Sorrells, senior vice president of Golden LEAF. “The Foundation started the Aerospace Alliance in 2005 to assist with the development of manufacturing capabilities that complement and support our military installations and their need for replacement parts for aging aircraft. We quickly learned that, in addition to aviation, growth opportunities using new technologies and materials exist across a broad platform, including transportation, construction, marine trades and others.”

The benefits

Creating an effective, cluster-based regional economy can generate valuable benefits for rural regions. With leadership and collaboration among neighboring jurisdictions, it’s an approach that can provide real growth opportunities, generating new businesses and jobs and an improved quality of life overall. ★★

For more information, visit www.advancedmaterialsnc.org or contact the author at (336) 838-6149, or john.hauser@wilkescc.edu.

ConnectGRADD Goes Online:

Connecting Rural Communities Regionally and Globally

By Jiten Shah

Executive Director, Green River Area Development District

In early 2006, the chief executive officials of two western Kentucky counties sat in their respective offices individually contemplating ambitious projects. Daviess County Judge/Executive Reid Haire and Webster County Judge/Executive James Townsend both wanted to find a way to extend

affordable Internet access to the rural residents in their jurisdictions. Leadership of the Green River Area Development District, based in Owensboro, had a suggestion: Why not explore the feasibility of a region-wide broadband Internet initiative?

Eighteen months later, the result is more ambitious than Haire or Townsend could have imagined. Seven counties have partnered to launch ConnectGRADD, Inc., a collaborative venture to offer affordable, high-speed Internet access across a vast rural region.

About the region

The Green River Area Development District (GRADD) is a regional planning agency serving the western Kentucky counties of Daviess, Hancock, Henderson, McLean, Ohio, Union and Webster. The GRADD region encompasses an area larger than the state of Delaware, but with just one quarter of the population (approx. 212,000).

Like most rural areas in America, opportunities for economic development in the district are limited. Communities within GRADD struggle to attract and retain industry because the infrastructure cannot compete with that of larger metropolitan areas. No federal interstate highways traverse the region, and many local governments expend the bulk of their annual revenues simply to maintain their water and sewer systems.

However, it has been said that the Internet is our era's great equalizer. The same technology that allows tribesmen in sub-Saharan Africa access to the most current theories of astrophysics also allows small, geographically isolated communities in the United States to compete for global industry. The same technology that allows many companies to locate



Technicians install antennae on existing towers throughout the GRADD region, which will bring high-speed wireless Internet service to residents of the predominantly rural region.

their facilities outside of major metropolises also provides educational and entrepreneurial opportunities for rural residents.

It is with this principle in mind that ConnectGRADD, Inc. was formed. Local officials in each of the GRADD counties recognized that this unique partnership would provide their citizens with opportunities that typically had been available only in larger cities. In addition to leveling the economic development playing field, ConnectGRADD would allow rural residents to have unprecedented opportunities for education, self-employment and entertainment.

Prior to the inception of ConnectGRADD, the majority of residents in GRADD's two largest cities, Owensboro (pop. 55,000) and Henderson (pop. 27,000), had affordable, high-speed Internet access through private providers. However, none of the other cities in the district have more than 4,000 residents. Rural households subscribing to DSL or cable Internet services paid on average more than \$60 per month. ConnectGRADD aimed to offer comparable service for under \$30 per month to a minimum of 93 percent of residents in the seven-county area by the end of 2007.

ConnectGRADD was greatly influenced by Kentucky's statewide technology initiative, ConnectKentucky.

ConnectKentucky was instituted by Governor Ernie Fletcher in 2004 to accelerate the growth of technology in support of community and economic development, improved health-care, enhanced education and more effective government. The initiative has four key goals: full statewide broadband coverage; dramatically increased use of computers and the Internet by all Kentuckians; a meaningful online presence for all Kentucky communities; and the formation of eCommunity leadership teams in all 120 counties, to bring local leaders together to plan technology growth strategies for every sector of the community. ConnectKentucky has become a model for the nation, receiving the U.S. Economic Development Administration's prestigious Excellence in Innovation Award in 2006.

Partnerships and challenges

ConnectGRADD's business partners – technology installation firm Digital Connections, Inc. (DCI) from Hendersonville, Tennessee, and Internet service provider Cinergy Communications Company (CCC) from Evansville, Indiana – have enthusiastically embraced the project's mission. Officials at both companies have pledged their desire not only to meet but to exceed the 93 percent minimum threshold of coverage. ConnectGRADD has become an incredible success story of public-private cooperation.

This summer, DCI technicians began installing wireless antennas on 28 existing towers across the region that will transmit the Internet signal. If installation and testing go as expected, the vast majority of GRADD's residents will be able to connect to the Internet by the end of 2007.

The ConnectGRADD project has not been without challenges. Like any major undertaking involving multiple jurisdictions, voices have not always spoken in unison. One early obstacle was educating the public on the benefits of wireless Internet service. A handful of rural residents objected to their county governments spending money on "invisible infrastructure." To them, taxpayer funds could be used more wisely for tangible, traditional improvements, e.g., asphalt for roads and water line extensions. Through a series of public meetings, elected officials were able to convince constituents of the desirability – and necessity – of broadband access to their community's viability.



Cooperative funding and communication

Cooperation between local leaders and state legislators also has been a key factor in ConnectGRADD's success. The senators and representatives of the GRADD area worked closely with the region's judge/executives to secure funding for the project. When local officials discovered that the price tag for ConnectGRADD would be an estimated \$2.3 million, they appealed to the Kentucky General Assembly for help. Legislators delivered with a \$1.3 million Local Government Economic Development Fund Coal Severance grant to ConnectGRADD, Inc. (GRADD lies within the Western Kentucky Coal Field region of the state; the Coal Severance program is an attempt to help coal-producing counties diversify their economies and offset the impact of the mining industry's decline.)

ConnectGRADD, Inc. also secured a \$1 million Kentucky Infrastructure Authority loan as the second major source of financing for the project. This low-interest loan will be repaid by the individual counties as the project goes online. Counties will be able to use grant funding, such as annual Area Development Fund dollars, to help pay off this loan.

The final funding component was a \$150,000 Delta Regional Authority (DRA) grant received through the Webster County Fiscal Court. DRA money is intended to assist the counties of the largely impoverished Mississippi River Valley in achieving economic parity with the rest of the nation.

The ConnectGRADD, Inc. partnership strives to promote public awareness about this groundbreaking project. In an effort to keep citizens informed of progress, a website (www.connectgradd.net) was developed to provide citizens with frequent updates of specific developments in their county. A toll-free telephone number (1-877-GRADD-411) also was established to allow customers to sign up for Internet service.

A reason for optimism

In addition to impacting residential subscribers, enhanced Internet availability will allow local governments to improve their efficiency. Seven county fiscal courts and 27 cities will be able to offer e-government services such as online registration and bill payment. Countless other agencies will benefit as well, from health care providers utilizing tele-health technologies to educational institutions expanding their long-distance course offerings.

We also hope ConnectGRADD will encourage rural entrepreneurship. Last year we created the Green River Entrepreneur Club to help local citizens start and grow small businesses. This group meets monthly to provide tips and networking opportunities to entrepreneurs in our seven-county area.

In an era of government territorialism and divisive political partisanship, collaborative ventures like ConnectGRADD are a welcome development. The innovative judge/executives of the GRADD region are proving that the commonwealth of Kentucky's motto is more than words: "United We Stand, Divided We Fall." ★★★

For more information, visit www.connectgradd.net, or contact the author at jitenshah@gradd.com.

Small Community, Big-Picture Perspective

by **Don Holbrook, CEcD**

President, Holbrook Development Company

Tourism has been overlooked by many economic development traditionalists as a strategy for growing and sustaining local economies. Yet in some rural and small

communities, tourism can help to create a brand and an image that attracts people, money and cultural amenities. These place-based strategies also can vastly expand and diversify small town economies, making them less dependent on traditional resource-driven industries or manufacturing.

Small communities that are winning success in attracting or building major tourism-related assets today tend to have several things in common. Their leaders are united through a common determination to succeed that transcends size and location, and they emphasize strengths such as consensus, rapid decision-making and out-of-the-box thinking. But perhaps most importantly, they are taking a sophisticated approach to making the case for private investment and designing targeted incentives to attract it.

New Caney, Texas, is an example where leaders' direction and purpose are transforming the community into an attractive investment opportunity.

Creative leadership

An unincorporated area in southeastern Montgomery County, New Caney grew rapidly during the 1980s and 1990s, more than doubling its population of 8,000 in 1980 to nearly 17,200 by 2000. The primary factor driving population growth is its proximity to the Houston metropolitan area. In 1997, New Caney's community leaders established the East Montgomery County Improvement District (EMCID), charged with carving out a niche for economic development within the encroaching high-growth sprawl of greater Houston.

After initiating several community-based projects, EMCID's board decided to extend its development commitments to EarthQuest, a private-sector-driven theme park, and to designate it as EMCID's primary investment project. When complete, the new 500-acre complex will house a "green," dinosaur-themed entertainment and education venture styled along the lines of a modern paleontological research center. The project is expected to bring 10,000 jobs and attract more than 2.5 million visitors a year when it opens in 2012.

EMCID's board applied to the Texas Legislature in 2007 for permission to levy an additional half-cent sales tax to use for the project – but it also went a step further, successfully lobbying the legislature for passage of a unique hybrid ver-

sion of the enabling legislation. This bill allows EMCID to create a special tax zone in which additional food and beverage, hotel occupancy, ticket admission and property taxes can be imposed to fund development projects such as EarthQuest.

EMCID's board members then authorized the funding of a warranted investment study, which uses language familiar to financial professionals to outline the incentives and risk-reduction inducements of the project in order to attract investor attention. The study cost \$500,000 and was conducted by the Baker Leisure Group (BLG) of Orlando, Florida, a firm with long experience in the themed-attractions industry.

EMCID now had a business proposal for potential investors, specific to EMCID's locale and written employing language familiar to the financial community. In addition to BLG, EMCID hired design experts to do the blue-sky conceptual designs, master land-use plan overview and visitor experience narrative.

Potential investors now could study a multi-layered design model to help them more fully appreciate the concept behind the numbers. Finally, EMCID co-marketed all the background work on the project (in partnership with EarthQuest's initial principal sponsor) to find a firm to underwrite the financing and for the prospectus for the initial investor solicitation.

EMCID'S last steps were to option and gain site control of highway frontage property. At this point, EMCID had market intelligence, a unique sales tool in its warranted investment study, site control, and incentives to offer prospective investors. It has done its homework to secure investment in an attraction with regional, national and international appeal, capitalizing on the community's proximity to Houston and taking the lead to create a project that will define the region and its economic future. ★★

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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.

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