CREATING QUALITY JOBS

TRANSFORMING THE ECONOMIC DEVELOPMENT LANDSCAPE

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The Power of
Knowledge and Leadership

CREATING QUALITY JOBS
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TABLE OF CONTENTS

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INTRODUCTION
A NEW FRAMEWORK FOR ECONOMIC DEVELOPMENT

I. Economic Development and Jobs - Past, Present and Future Linkages

Job creation remains a key measure of success for economic development efforts. But the time in which all jobs were "good jobs," to a certain extent, is over. Growth in the economy is becoming increasingly bifurcated, featuring high-tech, high-wage jobs on one hand and low-wage jobs in the service sector on the other. Many "middle class," medium-wage jobs have been downsized, automated or have gone off shore. Economic developers find themselves struggling to create jobs that deliver the kinds of wages and benefits that were standard in the industrial era.

As the role of economic developers has expanded to include everything from technology transfer to attracting retail to expand a community's tax base, the profession must examine the types of jobs it is creating and how well they meet the needs of individuals and communities in a globalized, skill-based economy. In this context, the success of individuals equals the success of business and communities.

Yet relatively little research has gone into exploring the issue of quality job creation from the economic developers' viewpoint; most literature on the subject of quality jobs comes from the fields of workforce development or poverty eradication. This report aims to fill that gap and identify the role of economic developers in creating quality jobs and improving the quality of existing jobs. Equally important, this report also documents how economic development itself is transforming in response to a changing economy. To create quality jobs and rebuild the middle class in a global, knowledge-driven economy requires new strategies, new partners, new goals and new metrics of success. This report is a map to the emerging practice of economic development – which, as the case study research shows, must be more inclusive, strategic, adaptive and system-driven.

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II. The Changing Economy

The practice of economic development has changed dramatically since its inception in the mid-twentieth century. As a field that grew out of industrial development as the primary tool to create jobs, economic development has been challenged to remake itself around fundamental changes in the economy, technology, workforce and global integration.

Technology has automated many jobs in traditional manufacturing, improved productivity, increased communication and enabled the movement of jobs overseas. Business models have changed, with the rise of the global corporation and the decline of local corporate leadership. Workforce quality has become a more urgent concern; a much higher level of skills is required today before

coming onto the job. In addition, retiring baby boomers will be replaced by a much smaller cohort. For multiple reasons, manufacturing jobs have declined and any growth in the field will merely keep employment flat.

This paper considers the challenges of the new economy, especially for workers in industries and jobs whose prospects are directly confronted by the new economic realities of technology and globalization. These are the kind of jobs that have been vulnerable in the past few decades while the economy has transformed.

Changes have not been easy for many American workers. Between 2000 and 2005, wages were mostly flat; the share of workers with employer-provided benefits shrank; job growth has been slow; and many states and communities have faced the loss of entire industries.[1] Middle class families are struggling to pay for mortgages, health insurance, transportation and their children's college education, taking on record amounts of debt.[2]

In response to these trends, the formerly well defined and relatively straightforward profession of economic development has become more complex and unpredictable. The way businesses function in today's economy – and therefore the way jobs are created – has changed at its core, and economic developers have been challenged both to understand these fundamental changes and to devise new tools to respond to them.

In response to the decline in manufacturing jobs and the emergence of new technologies, many economic developers have shifted their focus to the high-growth, high-wage, high-productivity jobs offered by technology-based development. Stimulus for growth of these jobs will remain crucial into the foreseeable future.

In the last 10 to 15 years, jobs have also grown quickly at the low end, particularly in service industries. But amidst growth of high-wage and low-wage jobs, the middle class has suffered. How to create and maintain the kind of middle-tier, medium-skill, quality jobs that have formed the foundation of the American middle class is the new puzzle.

While Americans are increasing their rates of post-college education, in 2005, 14 percent of 25- to 29-year-olds had not completed high school. Of those who graduated from high school, 57 percent had attained at least some college education, but only 29 percent had completed a college degree.[3] Thus, while economic developers must focus on creating the high-skilled jobs that fuel many growth industries, there is still a large portion of the workforce that does not have

entry qualifications for these jobs. Matching this large segment of the population with quality jobs, or workforce training opportunities to help them get those jobs, is a vital part of a comprehensive job creation strategy.

This report is concerned with the creation of quality jobs at the low, middle and high end of the spectrum. It looks at how communities of different sizes are working to transform their economies to meet current economic challenges, while also finding ways to ensure that prosperity is broadly shared among the population. Above all, the report documents the need for communities to create skilled people in order to create quality jobs. Each of the following cases documents greater alignment of economic and workforce development efforts to promote sustainable growth in industries that will thrive in a skill-based, globalizing economy.

III. Defining Quality Jobs

There is no one widely accepted definition of a "quality job." At a minimum, as noted on the Workforce Development page of the Ford Foundation's website, "[g]ood jobs are those that pay sustainable wages and offer career advancements, allowing workers to accumulate financial assets."

In a recent book from the Upjohn Institute for Employment Research, *A Future of Good Jobs? America's Challenge in the Global Economy*, the authors define "good" jobs as "jobs that will ensure a steady improvement in the standard of living for the middle class and that will offer a way out of poverty for low-income Americans." [4]

Good jobs are considered the foundation of "high-road" economic development, a concept that is receiving increasing attention in economic development circles. A 2006 publication by the Corporation for Enterprise Development (CFED), "A Progressive Economic Development Agenda for Shared Prosperity: Taking the High Road and Closing the Low," notes that high-road development strategies are "characterized by firms, industries and clusters that compete on the basis of high quality rather than low cost. High road strategies result in higher productivity, higher wages, improved labor relations, greater business commitments to communities, and better corporate environmental stewardship."

Conversely, "low-road" economic development creates a "low wage, low regulation, low tax environment that minimizes costs for businesses at the expense of workers, infrastructure and, ultimately, economic growth itself." [5] In the new economy, low road jobs also are the most volatile jobs, most likely to be eliminated through productivity improvements or to move off shore.

The Center for Law and Social Policy offers a more detailed definition of job quality, with criteria that include wages and earnings, benefits, job security, advancement opportunities, work schedule, health and safety, and fairness and worker voice.[6]

Not surprisingly, the standards most commonly referenced in literature on quality jobs are those that are most tangible and measurable – wages and benefits. These are the criteria with the most immediate and apparent importance to workers. They are also the standards most commonly used in practical policy decisions – for example, in providing public incentives to employers in exchange for job creation, and in the passage of living-wage ordinances to ensure that workers are adequately compensated.

The goal for economic developers is to provide opportunities across a spectrum of skill levels and industries to build advancement into a community's economic structure.

While wages and benefits are important criteria for defining quality jobs, opportunities for advancement and improvement remain the core components for that definition because ultimately, a quality job must be defined at the point of implementation. In other words, a quality job for someone who lacks a high school degree is not a quality job for someone with advanced vocational training or for a recent college graduate. Thus, the goal for economic developers is to provide opportunities across a spectrum of skill levels and industries to build advancement into a community's economic structure.

Economic developers increasingly must expand their focus in order to create jobs with specific wages and benefits. They must nurture the conditions, relationships and resources to enable and encourage the private sector to do so on a steady and consistent basis. To accomplish this, economic development has had to move from a focus on specific transactions that measure the number of jobs per project to a focus on system-building, nurturing an economic engine to support and sustain industries that generate a spectrum of jobs with opportunities for advancement. It also means prioritizing the alignment of economic development with workforce development and education to ensure that people are being trained to meet industry needs.

IV. What Do Quality Jobs Mean for Economic Development?

Much time and effort has been devoted to documenting the decline of good jobs in the United States. Countless organizations, papers and conferences analyze the trends leading to the loss of these jobs (and the social and economic repercussions) in much greater depth than can be achieved in this report. A summary of the evidence cited includes stagnant or declining real wages and benefits, including the value of the minimum wage;[7] the decline of union influence;[8] the loss of manufacturing jobs (which typically provided good wages

in exchange for relatively low skills and low education levels);[9] the decline in employer-provided benefits such as health insurance and retirement programs;[10] global competition; and the lag between new economic realities and the adjustment to higher-skill work.[11]

Moving beyond the evidence for (and reasons behind) the decline in good jobs, why should economic developers be concerned? Why do good jobs matter?

A. Quality jobs = quality workforce and welfare.

Quality jobs benefit people, companies and places. They are the seeds from which broader prosperity grows, providing workers with the opportunity for self-sufficiency, economic security, and a sense of control over their lives. They allow individuals to raise their standards of living and accumulate assets.

Benefits such as health insurance and paid sick leave improve family security. These benefits help ensure that an illness does not impose a heavy financial burden on an employee or a family because that person can both afford diagnosis and treatment and take paid time off for it. Workers who feel economically secure can spend their time outside of work on activities that strengthen their social networks and their communities.

Many people who work full-time in low-wage jobs are still considered poor and qualify for public assistance such as Medicaid, the Earned Income Tax Credit, food stamps, and housing and utility subsidies.[12] (More than one-fourth of U.S. jobs pay less than poverty level-wages – the amount that would allow a full-time, year-round worker to lift a family of four out of poverty – which was $20,444 in 2006, or $9.38 an hour).[13] There are additional, hidden costs to society beyond those of publicly subsidized health insurance and other welfare programs. For example, when people who do not have access to these services and rely on hospital emergency rooms for routine medical care, the cost of that treatment is reflected in health insurance premiums and tax bills. When workers earn a decent wage, the burden of their well being is taken off the public treasury.

B. Quality jobs = increased business competitiveness.

That quality jobs can be consistent with economic competitiveness is fundamental to the argument behind high road economic development strategies (and that conversely, a low regulation, low tax, low investment strategy will result in low quality jobs). At this point in the 21st century, it has become apparent that a "race to the bottom" is not a winning economic development strategy. Not only is it bad for workers, families, the environment and society, but competing globally on the basis of low costs is a rapidly disappearing advantage for the United States. Job security is low in low quality jobs, as globalization proves that many of these jobs are all too easy to move overseas, or to eliminate through technological or productivity enhancements. Businesses that rely on low costs in order to succeed are unlikely to be competitive in the long run, while successful businesses that compete based on the quality of their products or services, or ability to innovate, will.

In this globalized environment, profits and competitiveness stem from increasing productivity, which can be improved in two ways – technology and labor. A recent study of manufacturing firms in the U.S. and Europe found that "firms that experience higher levels of competition have better management practices and that those with better management practices are more likely to receive good scores on a measure of work-life balance."[14] The case can be made that America's most innovative and competitive companies also provide some of the highest quality jobs, from Cisco Systems to Southwest Airlines and even Starbucks.

The economic development literature today overflows with articles noting that the presence of a strong, skilled workforce has replaced a low-cost business environment as the number one concern of expanding and relocating companies. A subset of that literature focuses on the priorities of young, productive workers, people who won't go just anywhere for a good job.[15] These are workers who value a clean environment and places with amenities that often require public investment (such as a thriving downtown, good parks and good educational opportunities). This represents a seismic shift away from economic development strategies that focus solely on what businesses want, rather than what people and communities want.

A quality job is likely to attract a more valuable employee. A more valuable employee is one whose job tenure is longer, saving money on recruitment and retraining costs; one who is invested in his or her work, feels a sense of loyalty to an employer and is more productive; and who possesses skills that make a company more competitive. High quality, entry-level jobs in larger companies can bring in new workers who will take advantage of opportunities for advancement to

mid-level, higher skilled jobs, working through a succession of increasingly responsible positions and providing value to the company from within.

C. Quality Jobs = Sustainable, Growing Economy

Quality jobs also benefit local economies. Per the definition of a quality job, workers are paid higher wages, which they then spend on housing, goods and services. These wages cycle through the economy in the form of increased tax revenues from sales, property and personal income.

In American society, quality jobs are the foundation of the middle class. As Ronald Pollina notes in a 2003 article in Economic Development Journal, manufacturing jobs have been a typical way for immigrants to enter the middle class.[16] Whether one believes that the middle class is suffering and shrinking or doing just fine has been argued much in the media over the last decade or so, mostly along ideological lines. Regardless of political viewpoint, inequality in wealth and income inarguably is growing.[17] A strong middle class has helped keep the United States politically and economically stable, a balance that could be upset by growing economic disparity in the long term.

An economic development approach that encourages the creation of quality jobs and the improvement of existing jobs is more likely to provide broadly distributed benefits to individuals, society and the economy.

In sum, an economic development approach that encourages the creation of quality jobs and the improvement of existing jobs is more likely to provide broadly distributed benefits to individuals, society and the economy. When individuals and groups do better, communities and society do better as a whole. Such an approach is also more likely to be sustainable in the long run, particularly when it is based on a region's competitive advantages, builds human capital, improves quality of life and protects the environment.

V. Approaches to Creating Quality Jobs: Results from the Literature

While most of the research on quality jobs is concerned first and foremost with the welfare of the worker, it comes from a variety of viewpoints. Workforce development and poverty eradication have driven much of the research to date, but recently, the link between quality jobs and business competitiveness has received increased attention. Given changes in the world economy that call for an increasingly skilled workforce, it is now essential for economic developers to focus on jobs that offer opportunities for individuals, businesses and communities to succeed together.

A survey of the literature reveals three approaches to quality job creation, focusing on 1) the worker (poverty eradication and employment support/social services); 2) regulation and policy fixes to market failures; and 3) employer and industry-focused strategies.

A. Poverty Eradication and Workforce-Centered Approaches to Quality Jobs

Research on providing services to low-skill or hard-to-employ individuals as a means of poverty eradication tends to focus on the following interventions:

- Soft skills training for people whose backgrounds have not provided basic skills and good work habits (such as attendance, dress, conflict resolution and teamwork)
- Hard skills training in sectors such as nursing, manufacturing and information technology
- Providing services to help individuals find jobs, or matching them with employers
- Providing social service interventions to help individuals address barriers to employment that are not related to the job itself, such as transportation, child care and housing
- Place-based strategies, such as neighborhood and community development
- Providing supports or income supplements to individuals whose wages or earnings are low enough that a) they remain in poverty, or b) given opportunity costs, working provides only a marginal improvement in well being over unemployment or no improvement at all (e.g., the Earned Income Tax Credit)[18]

Each of the interventions above has value as a method of helping a person get and keep a job, and making work worthwhile, which is the foundation of poverty eradication. However, as they are less concerned with the specific characteristics of the jobs available to individuals, they are outside the realm of what this report will consider as potential roles for economic developers in the creation of quality jobs or the improvement of existing jobs. Rather, they will be considered as supporting actions by important partners, linked to economic developers around their primary concern of quality job creation.

B. Regulatory and Policy Approaches to Quality Jobs

A second approach to improving the welfare of individuals through employment focuses on regulatory or policy interventions that correct market failures, or require concessions from developers or employers in exchange for government subsidies or assistance. Examples of these interventions include:

- ***Living wage laws.*** A proliferation of living wage ordinances, which require employers to pay wages that exceed federal or state minimum wage levels, has been passed by local governments in recent years. These typically affect only certain groups of workers, such as public employees, and workers whose employers have government contracts or are receiving economic development subsidies. The wage is usually equivalent to what a full-time worker would need to earn to support a family above the federal poverty line, ranging from 100 percent to 130 percent of the poverty measurement and depending on a locality's cost of living.[19]
- ***Community benefits agreements (CBA).*** A CBA can be either a voluntary agreement or a legally enforceable contract between community groups and a developer that sets forth a range of community benefits that the developer agrees to provide as part of a development project. The range of benefits that may be specified is broad. This paper is concerned with job creation and training opportunities, but other benefits may include affordable housing units, green building practices, parks, childcare centers and more.[20]
- ***Incentive criteria.*** The practice of providing tax incentives and other subsidies to encourage employers to locate in a community, to expand there or simply not to move away, is condemned by most policy analysts – and many economic developers as well – as a low-road economic development strategy that does not increase overall productivity and investment but simply shifts it from place to place. In practice, however, their use is widespread. As long as any one state or community can improve its competitiveness by offering incentives, other places would view themselves at a disadvantage by not engaging in the same practice, simply becoming less competitive. In recent years, however, increasing numbers of state and local governments have begun attaching job quality requirements to incentive packages offered to companies. This illustrates growing acknowledgement that not just any job is worthy of public investment. Wage standards are the measure of quality most typically used, with healthcare benefits on the rise as well.[21]
- ***Hire locally provisions.*** Requirements to hire a certain number of workers from the existing population may be included as part of both CBAs and incentive criteria.
- ***Trade or labor unions.*** Unions are able to bargain with employers on behalf of their members for better wages, benefits and working conditions. Those who oppose unions argue that they are inefficient and decrease productivity, while proponents hold that unions provide an umbrella effect in which all workers benefit.

Again, each of these interventions has value as a method for improving wages and standards of living, improving accountability and the return on public investment. However, each is concerned more with securing a level of benefit for individuals or for the community than with the business case for such an arrangement – the degree to which it makes economic sense for the employer. While each intervention addresses job quality, the concern is that by emphasizing regulation and legal avenues rather than business competitiveness, they may not be sustainable economically in the long run.

Equally, if not more important, each remedy applies only to a specific set of circumstances or an individual transaction – such as incentives for a major investment or mandated wages for a certain contract or project (or with unions, perhaps an industry) – but does not address systemic changes. While these tools do work to create quality jobs under specific conditions, they do not create sustainable frameworks that transform communities, economies or neighborhoods. Thus, the conclusion of this report is that for quality job creation to occur in scale and scope, rather than job by job, the approach must be system-driven and strategic.

C. Employer and Industry-focused Approaches to Quality Jobs

A third approach to creating quality jobs or improving the quality of existing jobs focuses on employers and industries. At the heart of this approach is the enlightened self-interest of the employer, which also benefits the worker. Interventions tend to focus on increasing efficiency, productivity, innovation and competitiveness through industry partnerships and other sector or cluster-based strategies, and establishing career ladders, skill standards, and other initiatives that help improve workers skills and ensure the availability of an appropriate workforce.

The Center on Wisconsin Strategy is a leader in this area, having instigated or implemented research and projects that seek to improve industry competitiveness (particularly in terms of manufacturing plant modernization), upgrade training systems for new and incumbent workers, and develop employee and public sector connections to industry. Many other groups have done work in this area, including Corporation for Enterprise Development (CFED), Regional Technology Strategies, the National Network of Sector Partners, Corporation for a Skilled Workforce, the Aspen Institute, the Mott Foundation and others. Local, regional and state groups and initiatives exist such as WIRE-Net in Cleveland; Wisconsin Regional Training Partnership; the Chicago Manufacturing Renaissance Council; the Manufacturing Extension Partnership; and multiple participants of the Department of Labor's Workforce Innovation in Regional Economic Development (WIRED) Initiative (see case highlight on North Central Indiana).

Industry sector or cluster-based initiatives create natural career ladders and a range of jobs. The Sector Strategies Knowledge Exchange, a joint project of the National Governors Association Center for Best Practices, the Corporation for a Skilled Workforce and the National Network of Sector Partners, attributes four characteristics to sector strategies:

- They **focus intensively on a specific industry** over a sustained time period, customizing solutions for multiple employers in a region.
- They **strengthen economic growth and industry competitiveness, benefit low-income individuals** by creating new pathways into the industry and up to good jobs and careers, and sustain or increase middle-class jobs.
- They are **led by a strategic partner** with deep industry knowledge.
- They **promote systemic change** that achieves benefits for the industry, workers, and the community.[22]

Examples of sector/cluster activities include:

- Information collection and dissemination to support cluster competitiveness (monitoring cluster trends and assessing needs; conducting global benchmarking; providing cluster information portals; participating on cluster councils)
- Workforce development to support sector or cluster competitiveness (developing new curricula using industry input; creating skill standards; facilitating workplace learning; advancing cooperation among all levels of the education system; building regional skills alliances; creating career pathways)[23]
- The development of incubators, revolving loan funds and venture capital funds; improving supply chains; and other initiatives to strengthen industry competitiveness
- Business retention and modernization, which focuses on upgrading companies and strengthening their competitiveness to make existing jobs better. While modernization has often focused on manufacturing, it is not limited to this.

Sector or cluster-based strategies are a natural linkage between economic and workforce development, and it is here that evidence of alignment between the two is most keenly visible and the common goal of creating quality jobs shared.

Sector or cluster-based strategies are a natural linkage between economic and workforce development, and it is here that evidence of alignment between the two is most keenly visible and the common goal of creating quality jobs shared. Its potential is evident in a February 2008 paper from the Economic Policy Institute on renewing U.S. manufacturing, which concludes:

> …through coordination with highly skilled workers and suppliers, firms achieve high rates of innovation, quality, and fast response to unexpected situations. The resulting high productivity allows firms to pay fair wages to workers and fair prices to suppliers while still earning fair profits.[24]

While the case study research demonstrates that communities are indeed focusing on sectors and clusters as a core component of their economic development strategies, there are some nuances and limits to this approach that require review. First, there can be economic development and job creation differences between competitive clusters and those with steady job demand. In the current economic climate, growth and jobs do not always come hand-in-hand. For example, a focus on biotechnology may not yield many middle-class jobs, but a focus on the health care sector will. From a workforce perspective, the sectors generating more job opportunities are arguably more crucial targets. From an economic development point of view, it is necessary to invest in both. The economic engines enable diversification, wealth and investment, providing necessary support to the steady-demand sectors.

Second, a focus on industry skills versus occupational skills leaves a host of community jobs out of consideration. Not all communities have a set of sectors strong enough on which to base a strategy, or an existing sector may be facing long-term decline. There is also the danger of overlooking emerging jobs that are not part of an existing sector, and the potential inflexibility of a sector-based approach to adapt to these unforeseen opportunities. For example, many incentives now on the books focus on manufacturing or capital investment, but in the knowledge-based economy, economic developers' tools must be more innovative and responsive. Adaptability is now a core need to capitalize on different types of jobs that are emerging quickly.

Finally, sector or cluster approaches underplay the importance of entrepreneurs and small businesses as the driving force behind job creation. In the last decade, small businesses have generated 60 to 80 percent of new jobs annually.[25] According to the Small Business Administration, small businesses (defined as having fewer than 500 workers) employ 45 percent of all private-sector employees. Firms with fewer than 100 employees employ 36 percent and those with fewer than 20 employees comprise 18 percent of all workers..

Entrepreneurship programs spearheaded by economic developers, in partnership with workforce development personnel, play a vital role in the local environment that fosters small business growth. Some communities have adopted entrepreneurship as their core strategy. Known as economic gardening, this approach focuses economic development investments in home-grown start-ups and existing small business owners to create jobs and wealth in the community. While this strategy may grow quality jobs more slowly and more incrementally than traditional, transaction-driven strategies, it also can transform the local economy through the creation of new types of businesses and industries, and usually creates a range of opportunities for various skill and education levels. Entrepreneurship often works specifically because it does not target sectors, but offers opportunities across them.

In sum, a review of the literature reveals several important conclusions about quality job creation from an economic development viewpoint. Specifically, that quality job creation must include:

- Targeting both competitive clusters and steady-demand sectors,
- Support for entrepreneurship and small businesses, and
- Aligning economic and workforce development to connect job creation with human capital development.

This study explores these ideas more fully, examining what economic developers are doing out in the field to create quality jobs with the goal of developing a set of guidelines to inform other communities on how to do it.

VI. Study Methodology

To understand how economic development professionals are working to create quality jobs in this dynamic, often volatile globalizing economy, the research for this report was based on in-depth case studies. Case study research allows a deep probe into the practice of economic development to see what is happening, how it is happening, common characteristics and what is replicable for other communities. Cases were selected using the following criteria:

- To include regions that represent a range of demographic, economic (industry mixes and strengths) and geographic (urban, rural, suburban) characteristics from different parts of the country.
- To offer a variety of approaches – programs, policies, or significant individual events that emphasize long-run benefits over short-term costs.
- To represent various development trajectories – including communities from declining industrial regions which had been battling economic challenges for decades; dynamic but volatile regions; and those which were only recently hit with significant economic hardships.
- To include examples that indicate greater inclusion or a rebuilding of the middle class as central tenets of economic development strategies.

These criteria were chosen to demonstrate a diversity of circumstances and approaches. To draw lessons that would be applicable to a range of communities across the country, the cases had to cover a great breadth of challenges, opportunities, and assets, to illustrate how economic development practice is adapting to these new conditions to create quality jobs and rebuild the middle class. Moreover, due to significant differences among communities, strategies that work in one place will not necessarily work in another. For example, not all places have clusters, or a cluster-based strategy may not make sense if jobs are declining to the extent that the loss cannot be reversed. Thus, this report sought to investigate the full spectrum of community types.

Using economic data, interviews, and an expert committee composed of economic development practitioners, the following cases were selected.

- **Ponca City, Oklahoma.** Recovering from the downsizing of Conoco Oil, its primary employer, this region dug deep and wide to expand its labor force as part of a long-term economic diversification strategy.
- **San Jose, California.** An urban center in the heart of Silicon Valley, San Jose has a strong history of innovation but is still recovering from the dot-com bust. The region has made clean tech and the rebuilding the middle class central tenets of its economic strategy.
- **Newton, Iowa.** This rural area initiated an inclusive, regional process based on partnerships between economic and workforce development to bounce back from the 2006 closure of Maytag, its dominant employer.
- **Albuquerque, New Mexico.** Albuquerque has been working to overcome its historic dependence on two industries (the military and agriculture) and a dearth of developable land. It has managed to turn those challenges into assets, and its historically strong relationships between workforce and economic development have helped.
- **Tupelo, Mississippi.** This rural region, dependent on furniture manufacturing, pursued workforce development and education as its central economic development strategy; its per capita income is significantly above the state average.
- **Pittsburgh, Pennsylvania.** This major city has been working for over 30 years to transform from dependence on steel to a diversified, knowledge-driven economy, and recreate the middle-class jobs it lost as its manufacturing industry declined.
- **Akron, Ohio.** This region has painstakingly transformed its economy from rubber to polymers and beyond, using a regional framework, bold leadership and innovation.

For each case, we developed a quantitative picture of the local or regional economy.[26] We then conducted a series of in-depth interviews with a variety of economic development organizations and stakeholders to understand what the challenges were, what assets were available at the time, how they developed their strategies and partners, and what they learned over time. Creating quality jobs is a process as well as an outcome, and the interviews provided insight into that process.

While researching the cases, we also came across two targeted strategies that deserved specific attention. Shorter case highlights look at these two strategies in detail: the Workforce Innovation in Regional Economic Development (WIRED) initiatives and economic gardening. The Department of Labor's WIRED initiative

was a significant federal attempt to align workforce and economic development in a regional framework. Although it did not reach its potential for various reasons, the effort provides useful lessons for understanding the challenges and opportunities in this alignment. Some of the full cases in this report won WIRED grants as part of their overall investment portfolio.

Economic gardening also has caught the attention of many economic developers. Given its strong focus on creating jobs in existing local companies, it is relevant to and merits attention in this study. These case highlights include:

- **North Central Indiana.** This region was one of the first WIRED grant recipients, which used the funding to improve workforce skills, target three competitive clusters, and foster entrepreneurship.
- **Littleton, Colorado.** This city conceived and implemented economic gardening, enabling it to double its job base across a range of industries.

VII. Creating Quality Jobs: A Framework

The cases, taken together, reveal an emerging framework for economic development – one based on systems of relations and alignments across organizations within the public, private and community sectors; built around common goals; and driven by common research and information, all aimed at creating broad-based prosperity through the transformation of both the regional economy and the institutions that support it. While each case represents a different variant of this new framework, their common goal is a more systemic approach to job creation, with the objective of creating sustainable, quality jobs in a more resilient, more diverse economy. The framework has seven components:

- Alignment in a Regional Context
- Engaged Local Leadership
- Incorporating Inclusion
- Building Capacity
- Building on Existing Assets
- Basing Plans on Solid Research
- Innovation and Entrepreneurship

Other characteristics mark the cases: private sector engagement and targeting clusters or sectors for development. These characteristics functioned more as tools or strategies that were used across components. While they are critical inputs to creating quality jobs, they will be discussed within the different components of the framework.

A. Wealth Building Is a Team Sport: Alignment in a Regional Context

In all cases, economic development professionals exited their silos, created solid and enduring partnerships with other actors, and aligned their work with other key activities within a regional context. Alignment is more than partnership, alliances or just working together on a common project; it is more strategic and more encompassing than that. Alignment refers to the common acceptance of regional goals and the movement of resources individually and jointly to achieve those goals. Agencies that achieve alignment do more than just work together on common projects, but find themselves in regular, dynamic communication with each other.

In the systemic creation of quality jobs, alignment rests on several factors: economic and workforce-related relationships, regionalism, and private-sector involvement.

In every case, economic development groups partnered with institutions of higher education, school systems and workforce development boards; they also worked with local industry, entrepreneurship support groups, foundations and many others.

The Economic and Workforce Development Nexus

The most critical area of alignment for economic development is workforce development, but it is not limited to this. In every case, economic development groups partnered with institution of higher education, school systems and workforce development boards; they also worked with local industry, entrepreneurship support groups, foundations and many others. For example, San Jose brought the Workforce Investment Board (WIB) into its Office of Economic Development, whose deputy director also heads the WIB. In Tupelo, the Community Development Foundation brings economic development, community development, workforce development and the chamber of commerce under one roof. Pittsburgh placed its institutions of higher education center-stage in its economic development strategy.

Regions Required

Partnerships were formed and alignment achieved across political jurisdictions to gain resources or serve businesses or workers when it benefitted the regional economy. Akron lobbied the state to implement its first Joint Economic Development District, which created a regional revenue-sharing arrangement to dampen competition and enable a regional approach to business retention and growth. In Pittsburgh, the major regional agencies (Allegheny Conference on Community Development, the Greater Pittsburgh Chamber of Commerce, the Economy League of Southwestern Pennsylvania and the Pittsburgh Regional Alliance) entered into a strategic affiliation to align their efforts. In Tupelo, a regional community college consortium was created to support workforce skill development.

Private-Sector Teammates Essential

Private-sector partners are critical in many ways. Their leadership and resources are often catalytic in moving strategies forward. One example is Conoco's contribution of $3.1 million toward the development of the University Multispectral Lab, to support an emerging new industry in the Ponca City region. Other examples include leveraging jobs for newly-skilled workers through the co-location of a consortium of solar energy companies and the International Association of Nanotechnology at one-stop centers in San Jose; or leveraging management skills by matching seasoned entrepreneurs to new business start-ups in Pittsburgh.

B. Engaged Local Leadership

In all cases, strong local leadership was critical to build relationships, broker systems and ultimately create and align quality jobs and the skills of people to staff them. Whether spearheaded by an individual (such as the mayor in Akron) or an organization (such as the Ponca City Economic Development Corporation, or the ad hoc Newton Transformation Council), successful economic strategies in each community were developed and pushed forward by visionary, collaborative leadership. Leaders in these cases understood the long-term, risky nature of some of the investments required to transform their economies.

Additionally, all the cases indicated that economic developers must assume leadership roles in their regions. Economic developers in nearly every case found themselves engaging with partners and in activities that are considered outside the typical realm of economic development. Many adopted long-term strategies such as educational improvement, soft skill development and other workforce improvements that do not lend themselves to traditional short-term, quantitative performance measures of jobs created and dollars invested. In Albuquerque, for example, the economic development organization helped found the vocational school which became the regional community college.

C. Incorporating Inclusion: Quality Jobs Creation Goes Hand in Hand with Human Capital Development

Quality job creation comes hand-in-hand with skills creation. The role for economic developers, seen in all the cases, was to generate not just high-wage, high-tech opportunities but middle-skill, middle-income and entry-level jobs as well. Reaching both potential and marginalized workers to build their hard and soft skills brings equity into the economic development system and expands both the region's middle class and its labor pool. This, combined with continually upgrading existing workers' skills, helps communities have the workforce they

Quality job creation comes hand-in-hand with skills creation.

need to support and enable quality job creation. Common methods these regions used to foster inclusion include working with new partners and specific industry targets.

New Partners

Economic developers across these cases created new relationships to reach atypical groups of potential workers. In Ponca City, for example, the economic development corporation, with the workforce system, made connections to high school dropouts, graduates of foster care programs and alternative schools, and veterans as potential workers for local companies. Albuquerque recruited ACCION International to support entrepreneurship in its disadvantaged neighborhoods and provide a wider range of employment options. Economic developers and their partners had to learn to use a variety of media and strategies to reach different populations.

Industry Targeting

The cases show that communities targeted both competitive industries and sectors with steady job growth in their economic development efforts. Using training incentives and opportunities, Albuquerque engages minorities in its burgeoning film industry and also uses construction workers for set production. Newton and San Jose, among others, targeted the clean tech sector (which creates a range of job types) and made concrete connections between economic and workforce systems to marry job creation and training.

In all cases, communities focused on strengthening their local economic base through business retention and expansion strategies. Tupelo and Northeast Indiana exemplify how business retention and expansion is also an inclusion strategy. By building the skills of the incumbent workforce, the communities not only invest in the competitiveness of their existing business, but also improve the competitive position of the region and the quality of life for residents.

Taken together, the case studies indicate that transforming a region requires not just creating new industries and new job opportunities, but also requires proactively broadening those opportunities to a wider population.

D. Capacity Building

To work in a regional framework with new partners to achieve more ambitious, more complex goals requires economic development professionals to build new capacity. Capacity efforts include creating new tools, new programs, new institutions, and adapting existing ones to meet new exigencies. In Ponca City and

Newton, new economic development organizations were created to manage the sudden, severe challenges of factory closure and industrial decline. In Pittsburgh, a string of commercialization intermediaries were created to support regional innovation, entrepreneurship and quality job creation goals. San Jose implemented an equity fund to invest in companies that employ minority workers or provide work in low-income neighborhoods, and a program to connect migrant farm workers to social service and job training opportunities, both as ways to meet its inclusion goals. Tupelo partnered with various regional and local governments from Pontotoc, Union, and Lee counties to form Mississippi's first regional economic development alliance.

Multiple other institutions evolved to meet the economic challenges facing their communities. The University of Akron evolved from a commuter campus to become global player in research and development. In Albuquerque, Sandia Labs added competences and activities to engage with the community in workforce, education, entrepreneurship and commercialization efforts.

E. Building on Existing Assets

While the need to build on existing assets is not a new lesson, the cases drive home how important this is for economic transformation. Across the communities, successful economic and workforce development strategies were built on a clear understanding of existing assets – particularly in businesses and sectors, but also land and infrastructure to a lesser degree.

Businesses and sectors

Retaining and strengthening existing businesses was a key strategy in nearly every case. Communities with strong histories in manufacturing, such as Tupelo, Newton and Akron, focused on strengthening those assets to better weather the volatile global economy. Several communities chose to focus on emerging green industries as promising job generators for the future (Newton, Pittsburgh, San Jose, Albuquerque) because they evolved naturally from existing local skills and knowledge, offered jobs across a range of skills, and provided opportunities for quality job advancement within the industries. Alternatively, Albuquerque chose to grow the relatively small film industry because it made good use of the region's highly skilled construction workforce. Finally, industries such as retail and hospitality, which offer lower wages, were not written off but recognized for their value in providing steady demand and potentially, benefits and upward mobility.

Land and Infrastructure

Developing and revitalizing land and infrastructure assets was a critical component of a economic development strategies in several cases. Pittsburgh has focused its redevelopment efforts in distressed neighborhoods with the expressed goal of helping lower-income individuals reside near employment opportunities. Akron and San Jose have made downtown revitalization city priorities. Albuquerque, which lacks developable real estate, launched the Mesa del Sol project to provide commercial opportunities while meeting multiple additional goals. The project also is located adjacent to a distressed urban neighborhood in the hopes of stimulating wider development.

F. Basing Plans on Solid Research

Development strategies and targets were based on both research into occupational demand and growth industries, and on research identifying less obvious paths or niches that leverage existing assets to take a more focused, albeit riskier strategy. Examples of this latter approach include Ponca City's Multispectral Lab and Akron's shift to polymers. In Newton, the Newton Transformation Council collected and analyzed data on the transferable skills of former Maytag employees to help understand their training needs and match them to new employers. In sum, common data and information helped to create a shared understanding of each region's assets, challenges and potential. With common data, partners were more easily able agree on strategies moving forward.

G. Innovation and Entrepreneurship Are Central Strategies

Many of these cases used entrepreneurship and innovation as core tools for economic transformation and quality job creation, but also used them as levers to widen opportunities for a larger population.

Incorporating strategies related to technology, innovation and entrepreneurship is essential to regional competitiveness in the global economy, even in areas where the industry and skill base is rooted in traditional sectors such as manufacturing and agriculture. Universities, hospitals, research institutes and technology-based industries (or high-tech aspects of low-tech industries) were leveraged or founded in each case to build high-wage, high-skill jobs and strengthen the overall economic capacity of the region.

In every case, entrepreneurship was a strategy, demonstrating universal recognition of the importance of new business development as a catalyst for regional economic transformation. All communities incorporated business development training, access to capital and incubator facilities; some also offered specialized incubators, mentoring and networking.

Notably, these strategies are about the creation of wealth, in the wide sense of the term. Many of these cases used entrepreneurship and innovation as core tools for economic transformation and quality job creation, but also used them as levers to widen opportunities for a larger population. San Jose, for example, established Business Service Centers at each of its one-stops to help small businesses and entrepreneurs, and an equity fund for minority business development. Akron established the first incubator in Ohio to help former rubber industry employees find new opportunities, then later transformed that incubator into a global accelerator focused on technology companies to help Akron transition to a knowledge drive economy.

To support entrepreneurship efforts, e-tools were often employed to provide greater flexibility for entrepreneurs and reach a wider audience in both rural and urban environments. Newton and San Jose relied on on-line entrepreneurship support to manage challenges of peripherality and lack of access.

What follows in the rest of this report are the in-depth and focused case studies, showing how dissimilar regions are managing a variety of economic challenges with different resources and assets. Yet in all cases, we see the evolution of a new framework of system-based, more inclusive economic development.

Notes:

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[5] Schweke, Bill. “A Progressive Economic Development Agenda for Shared Prosperity: Taking the High Road and Closing the Low.” CFED, 2006.

[6] Lower-Basch, Elizabeth. “Opportunity at Work: Improving Job Quality.” Policy paper, Center for Law and Social Policy, September 2007.

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[9] Pollina, Ronald. “Can We Maintain the American Dream?” *Economic Development Journal* (IEDC), Summer 2003.

[10] Wiatrowski, William. “Medical and Retirement Plan Coverage: Exploring the Decline in Recent Years.” *Monthly Labor Review*, August 2004.

[11] Atkinson, Robert. “Understanding the Offshoring Challenge.” *Policy Report* (Progressive Policy Institute), 2004.

[12] Purinton, Anna. “The Policy Shift to Good Jobs.” Good Jobs First, November 2003.

[13] Boushey, Heather, et al. “Understanding Low-Wage Work in the United States.” Inclusion and CEPR, 2007 (as cited in Lower-Basch 2007).

[14] Lower-Basch 2007.

[15] The best-known author in this area is Richard Florida, whose 2002 book, *The Rise of the Creative Class*, has spawned much follow-up research by different groups (see multiple articles in the February 2008 edition of *Economic Development Quarterly*), as well as "creative class" approaches to economic development at the local level in cities from Memphis to Tampa, Dayton, Fort Wayne, Michigan's "Cool Cities" program and many more.

[16] "Can We Maintain the American Dream?" by Ronald Pollina. http://www.iedconline.org/EDJournal/Summer_03/Maintain_Dream.pdf

[17] Krugman, Paul. "For Richer." *The New York Times*, October 20, 2002.

[18] In the course of this literature review, numerous research papers, policy briefs, newsletter and journal articles, and conference proceedings from multiple organizations were reviewed. The information in this section was accessed primarily through The Upjohn Institute; The Urban Institute; The Center for Law and Social Policy; MDC, Inc.; The Economic Policy Institute; The Center for Community Change; The Initiative for a Competitive Inner City; and The Center on Wisconsin Strategy.

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[26] Given the differing sizes of the communities covered, it was necessary to use different data sources for the analysis.

REGIONAL CASE STUDIES

1.0 PONCA CITY, OKLAHOMA

The successful creation of quality jobs in Ponca City lies in the nimble and proactive response by the Ponca City Development Authority, the local economic development agency, to a major economic setback. In 2003, the city lost close to 3,500 jobs following the merger of its biggest employer, Conoco Inc., with Phillips Petroleum Company, creating Conoco Phillips. Rather than trying to attract the next big business to replace lost jobs, Ponca City embarked on a path of economic diversification, making significant investments to develop high-tech, knowledge-based jobs that are also higher-paying. Workforce development and worker training were integral components of the economic development strategy.

The Ponca City Development Authority (PCDA) was created in 2003, following the merger, specifically to develop and implement an economic development strategy for the city. With an economy as heavily dependent on the oil industry as Ponca City's, the loss of its biggest employer was a huge economic and social setback for the community. PCDA was charged with replacing the jobs lost at Conoco not just with any jobs, but with ones that would offer good wages and benefits in steady-demand or growth industries. The emphasis on quality jobs marked a shift in the economic development strategy of the community.

Ponca City was at a critical crossroads. Prevalent practice suggested that the community should recover from the loss of Conoco by attracting businesses from other communities, offering the best incentives possible. Instead, Ponca City adopted a strategy of building a quality workforce by working with those at the top, the bottom and everyone in between. PCDA built on the existing resources and strengths of the community – the newly unemployed but skilled workforce, strong vocational training programs and close ties with the workforce system – to strengthen and grow its economy. From working with veterans and high school students to incumbent workers and others, PCDA left no population untapped.

From working with veterans and high school students to incumbent workers and others, PCDA left no population untapped.

At the same time, PCDA worked with existing businesses, many of which were a part of the oil industry supply chain and served Conoco. The downsizing at Conoco would deeply impact small businesses around the city, so PCDA actively worked with these business owners to retain and expand their businesses into diverse industries.

PCDA's emphasis on quality jobs in knowledge-based industries has positively impacted the local and regional economy. Companies locating in Ponca City have produced a higher percent of knowledge-based jobs and higher average pay since the creation of PCDA in 2003. Ponca City also has won awards for retaining and expanding businesses. In May 2008, it received an award for the best business retention program in North America (of communities under 50,000) from Business Retention and Expansion International; it also won an award from the International Economic Development Council for Economic Development

Excellence in the Partnership category for its University Multispectral Lab, which is adding to the high-tech base of the economy. The main reason that businesses have been able to expand and PCDA has been able to win funding and clients for the Multispectral Lab is because of its proven record of recruiting, training and matching workers with business.

Local and Regional Snapshot

Ponca City (population approximately 25,000 in 2008) is located in north central Oklahoma, 90 minutes from three major cities: Tulsa, Wichita and Oklahoma City. Some might say it is in the middle of nowhere; on the contrary, Ponca City has marketed itself based on its central location, which allows it to serve as an effective hub for distribution and for manufacturing, research and corporate facilities. Ponca City also has small-town advantages such as low crime, a low cost of living and a close-knit community.

Population Characteristics

Ponca City's population has been declining over the past couple of decades. The decline over the past decade can be attributed in part to the loss of thousands of jobs from the Conoco Phillips merger in 2002, not all of which have been replaced yet. Kay County, home to Ponca City, also has seen a decline in population during the same time.

Table 1.1: Population Characteristics

	Ponca City		Kay County		Oklahoma		United States	
	Population	% Change	Population	% Change	Population	% Change	Population	% Change
1980	26,238		49,852		3,025,290		226,545,805	
1990	26,637	1.52	48,056	-3.60	3,145,585	3.98	248,709,873	9.78
2000	25,919	-2.70	48,080	0.05	3,450,654	9.70	281,421,906	13.15
2008	24,507	-5.45	45,632	-5.09	3,617,316	4.83	303,824,640	7.96

Source: U.S. Bureau of Census

Ethnicity

The ethnic mix in Ponca City is very similar to Kay County, with a large majority of whites; the next-largest group is American Indian and Alaska Natives, which is significantly larger in this region than the U.S as a whole. Racial diversity is a little higher in the state than in Ponca City and Kay County.

Table 1.2: Ethnicity, 2000

	Ponca City	Kay County	Oklahoma	United States
White alone	84.18%	84.16%	76.17%	75.14%
Black or African American alone	2.99%	1.79%	7.56%	12.32%
American Indian and Alaska Native alone	6.27%	7.53%	7.92%	0.88%
Asian alone	0.70%	0.53%	1.36%	3.64%
Native Hawaiian and Other Pacific Islander alone	0.03%	0.02%	0.07%	0.14%
Some other race alone	2.08%	1.98%	2.40%	5.46%
Two or more races	3.75%	4.00%	4.52%	2.43%

Source: U.S. Bureau of Census

Table 1.3: Ethnicity, 2008

	Ponca City	Kay County	Oklahoma	United States
White alone	80.76%	81.96%	75.35%	74.35%
Black or African American alone	3.15%	1.83%	7.31%	12.33%
American Indian and Alaska Native alone	8.28%	8.36%	6.71%	0.80%
Asian alone	1.19%	0.85%	1.62%	4.37%
Native Hawaiian and Other Pacific Islander alone	0.00%	0.00%	0.10%	0.15%
Some other race alone	3.14%	2.81%	2.61%	5.82%
Two or more races	3.48%	4.19%	6.30%	2.18%

Source: U.S. Bureau of Census

Educational Attainment

According to 2000 Census data, educational attainment rates in Ponca City and Kay County were either in line with or higher than state and national averages. However, the proportion of people with college education and higher degrees decreased in Ponca City in 2008 when the proportion increased for Kay County, Oklahoma and the United States. Although it is hard to know what has caused these changes, we can hypothesize that the Conoco merger and pursuant loss of skilled jobs may be influencing the decline in the percentage of population with a BA and above. On a more promising note, we do see a significant

increase (49.44%) in the percentage of people with an Associate's degree, exceeding county, state and national proportions. Given the region's focus on reaching out to and including a wider population of potential workers, and proactively delivering training as part of their economic development efforts, these numbers indicate that they are succeeding.

Table 1.4: Educational Attainment, 2000

	Ponca City	Kay County	Oklahoma	United States
Population 25 years and over	16,908	31,106	2,203,173	182,211,639
Less than high school diploma	14.10%	19.10%	19.40%	19.60%
High school graduate (including equivalency)	32.20%	33.20%	31.50%	28.60%
Some college, no degree	22.60%	22.20%	23.50%	21.10%
Associate degree	6.80%	7.30%	5.40%	6.30%
Bachelor's degree	15.30%	13.10%	13.50%	15.50%
Graduate or professional degree	6.30%	5.20%	6.80%	8.90%

Source: U.S. Bureau of Census

Table 1.5: Educational Attainment, 2008

	Ponca City	Kay County	Oklahoma	United States
Population 25 years and over	16,238	30,007	2,336,187	197,794,576
Less than high school diploma	13.96%	14.29%	15.11%	15.47%
High school graduate (including equivalency)	36.75%	38.07%	32.98%	29.57%
Some college, no degree	18.78%	19.31%	22.82%	20.10%
Associate degree	10.65%	9.23%	6.68%	7.44%
Bachelor's degree	14.00%	13.17%	15.05%	17.34%
Graduate or professional degree	5.86%	5.92%	7.35%	10.07%

Source: U.S. Bureau of Census

Income

Per capita income, as well as median household income, have been steadily improving in Ponca City and Kay County since the 1980s; the rate of increase has been higher since 2003.

While the growth rate in per capita income nationally has been declining since 1980s, it has been increasing in Oklahoma and in Ponca City. Similar trends are seen for household incomes, with national growth rates declining every decade while Ponca City and Oklahoma experienced higher growth rates.

Although Ponca City has historically lagged national and state income levels, its median household income grew much more significantly between 1999-2007 than it did at the county, state or national levels, and in 2008, median household income for Ponca City ($43,253) was higher than county ($40,442) and state averages ($42,541). These numbers provide some evidence of economic transformation occurring in the region.

Table 1.6: Per Capita Income

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
Ponca City	$13,532	$13,776	$17,732	$22,029	1.80%	28.72%	24.23%
Kay County	$26,717	$27,625	$27,506	$33,621	3.40%	-0.43%	22.23%
Oklahoma	$22,774	$24,894	$29,390	$34,997	9.31%	18.06%	19.08%
United States	$24,254	$29,965	$35,917	$38,615	23.55%	19.86%	7.51%
Ratio - City / US	55.79%	45.97%	49.37%	57.05%			
Ratio - County / US	110.16%	92.19%	76.58%	87.07%			
Ratio - County / State	117.31%	110.97%	93.59%	96.07%			

Source: US Bureau of Economic Analysis, 2009. Income is adjusted for 2007 CPI-U-RS

Table 1.7: Median Household Income

	1979	1989	1999	2007	1979-1989	1989-1999	1999-2007
Ponca City	$28,611	$26,405	$31,406	$38,003	-7.71%	18.94%	21.01%
Kay County	$41,238	$39,225	$38,280	$37,294	-4.88%	-2.41%	-2.58%
Oklahoma	$39,260	$38,066	$41,562	$40,371	-3.04%	9.18%	-2.87%
United States	$44,826	$48,526	$52,257	$50,007	8.25%	7.69%	-4.31%
Ratio - City / US	63.83%	54.41%	60.10%	76.00%			
Ratio - County / US	92.00%	80.83%	73.25%	74.58%			
Ratio - County / State	105.04%	103.04%	92.10%	92.38%			

Source: U.S. Census Bureau. Income is adjusted for 2007 CPI-U-RS

Poverty Rates

While household and per capita incomes have improved in Ponca City and Kay County, poverty rates also increased between 2000 and 2008. The same has happened at state and national levels, and is perhaps related to the national and global recession and a reflection of the current tough economic times, making the data hard to analyze.

Table 1.8: Poverty Rates

	2000	2008
Ponca City	16.0%	17.8%
Kay County	16.0%	17.2%
Oklahoma	14.7%	16.2%
United States	12.4%	13.2%

Source: U.S. Census Bureau, 2006 – 2008 American Community Survey 3-Year Estimates

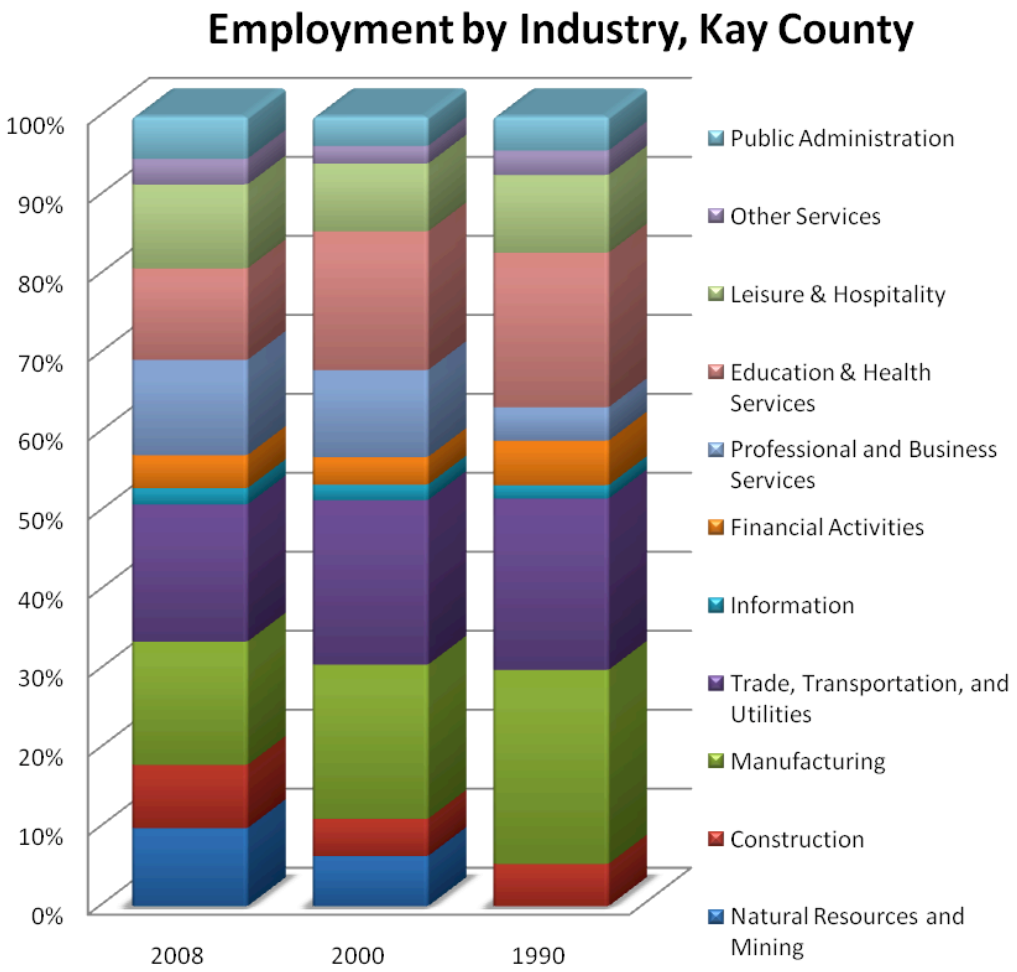
Employment and Economy

Manufacturing, trade and transportation, and education and health services have been major economic drivers for the Ponca City Micropolitan Area (Kay County) economy during the last two decades.[27] While manufacturing continues to be a significant portion of the economy, there has been a spike in employment in professional and business services in recent years, due in part to the efforts of PCDA to grow quality jobs in high-tech businesses. The leisure and hospitality industry also has seen a marked increase in employment between 1990 and 2008.

Location Quotients

Location quotients are a useful tool to understand the relative specialization of an area's industry sectors in reference to another area. Employment data for Kay County was compared to the U.S. for 2000 to 2008. Sectors with location quotients (LQ) greater than 1.0 indicate a higher concentration of employment in those sectors compared to the reference area. LQs greater than 2.0 indicate a high degree of industrial specialization in the local area versus the reference area. As seen in the table provided at the end of this chapter (LQs greater than 1.0 are highlighted in green, LQs greater than 2 are highlighted in red), certain industries have maintained their competitiveness in the county over the past two decades, such as natural resources and mining; manufacturing; administrative, support and waste management service; and arts and entertainment. Industries such as retail trade show local competitiveness in the earlier part of the decade

only. Some of this may be attributed to PCDA's emphasis on high-tech jobs and businesses and an overall diversification of the economy, as well as the national economic recession. Other industries such as construction and arts and entertainment have build competitiveness in recent years.



Source: Bureau of Labor Statistics

It should be noted that while certain industries (such as finance and insurance; professional, scientific and technical services; management of companies and enterprises; and educational services) do not have LQs greater than one, they have been growing at a much faster rate in Ponca City as compared to the nation.

Ponca City/Kay County being a small community in comparison to the state, LQs are insufficient to fully understand the local economy and its relationships to the regional economy. Shift-share analysis can help with getting that deeper understanding. The shift share data, also found at the end of the chapter, indicates that, given its growth trends, the region has local strengths in arts, entertainment and recreation, educational services, construction and professional, scientific and technical.

Unemployment

Ponca City's unemployment rate has traditionally being lower than the state and the nation. Even at the start of the current recession, Ponca City's annual unemployment rate remained low (3.5 percent) as compared to the state's at 3.8 percent and nation's at 5.8 percent in 2008. But the recession hit harder in 2009, with Ponca City's unemployment rate growing to 7.1 percent, the state to 7.3 percent and nation to 10 percent in October 2009.

Transformation: Dethroning Oil

Oil has been king in Ponca City since it was first drilled in 1911. For most of its 100-year history, the city had been a one-company town as the headquarters for the Conoco Oil Company. At its height in the 1980s, Conoco employed over 5,000 people in research and development, refining, human resources, management and more. Ponca City was not only a one-company town but a one-industry town, with the local economy 80 percent oil-dependent and totally invested in the success of Conoco.

Ponca City was first hit by major downsizing at Conoco in 1993 when approximately 1,400 jobs were cut, resulting in an annual payroll reduction of $40 million. This precipitated an economic slowdown at the city and county levels in 1993 and 1994. The unemployment rate, which had always been well below the national average of 6 percent, jumped to 12 percent and unemployment compensation claims more than doubled from the previous year.

This downsizing exposed the vulnerability of the local economy to the hiring swings of its biggest employer. With the need for economic diversification away from the oil and gas industry highlighted, Ponca City established the Economic Development Advisory Board (EDAB) as part of the Ponca City Chamber of Commerce in 1994. Its explicit mission was to diversify the Ponca City economy away from oil and natural gas.

In conjunction with the establishment of EDAB, Ponca City adopted a half-cent sales tax measure for economic development. EDAB used this funding to attract two major employers to replace the jobs lost at Conoco – Tyson (formerly Thorn Apple Valley), a meat processing facility, and Sykes, an in-bound call center.[28] Attraction of these businesses to Ponca City saved the community from downward economic momentum. EDAB also supported approximately 20 other smaller businesses through economic development funding incentives.

Fast forward to 2002, when Conoco merged with the Phillips Petroleum Company and laid more than 3,500 workers. While Conoco once accounted for 50 percent of the jobs in Ponca City, Conoco-Phillips now accounts for just 7 percent, or

1,400 jobs. The town's psychology and identity was rocked by the downsizing of its one major employer. But Ponca City needed to become more than it had been in order to attract, retain or expand businesses and reinvigorate the economy after the downsizing of Conoco Phillips.

In the wake of the merger and downsizing, Ponca City made significant changes to its economic development delivery system, creating the Ponca City Development Authority (PCDA) in 2003 out of EDAB. As noted above, PCDA was created with the mission of replacing jobs lost from Conoco with jobs that offered good wages and benefits in steady-demand or growth industries.

PCDA started with an evaluation of community assets. Among those were many newly unemployed energy industry workers with technical training and expertise. From there, a few key goals were agreed upon:

- To expand and reinforce the existing business base;
- Train knowledge workers and attract knowledge industries; and
- Dig deep and wide into the workforce to build a competitive base.

PCDA decided to reconstruct the economy on a stronger, more sustainable foundation. In a departure from traditional economic development practice, the new economic development strategy for Ponca City was to be built on a partnership between the workforce and economic development communities. The cornerstone of this strategy was collaboration with the local career training program, Pioneer Technology Center, while building strategic alliances with others in the education system.

Expanding and Reinforcing the Base

Ponca City realized that its steadiest suppliers of new jobs were existing businesses and that it should work aggressively not only to retain these businesses, especially in the wake of major layoffs, but to help them expand. In addition to creating new jobs, expanding existing businesses and creating new ones would also help diversify the Ponca City economy. PCDA directed its efforts to expand business development by enhancing local business competitiveness and worker training.

PCDA setup a business retention and expansion (BRE) program to understand and address the needs of existing employers in the community. The BRE program addressed three issues: Understanding the needs of the businesses; providing business and industry intelligence to help them become more competitive; and providing worker training.

PCDA staff called these "doughnut runs" – literally showing up at the doorsteps of businesses with a box of doughnuts in the morning and talking to them about their needs. Not all employers were welcoming at first.

Regular visits to businesses in order to develop and strengthen relationships became the cornerstone of the BRE program. PCDA staff called these "doughnut runs" – literally showing up at the doorsteps of businesses with a box of doughnuts in the morning and talking to them about their needs. Not all employers were welcoming at first. Many were skeptical of a renewed interest from the local government about business needs, and PCDA felt some pushback from the business community. "Where does it hurt" and "what's your point of pain" were typical conversation starters for PCDA staff to learn about a variety of issues facing local businesses, not all of them within the traditional economic development realm. The most valuable part of the program was PCDA staff linking businesses with the appropriate resources for issues beyond their realm of control. This helped them develop trust and intimacy with the business community.

Building trust and relationships with local businesses became the sole mission of PCDA during the first 18 to 24 months. The one and only purpose of the BRE program was to figure out ways to help local businesses grow and how public funding could help with that growth and expansion. This continues to be the core mission of the BRE program; regular business visits continue in Ponca City and are now an integral part of the economic development strategy.

In 2005, PCDA started providing business intelligence and market data to businesses to enhance their competitiveness and help with growth. Timely information about certain business trends and needs has helped a number of Ponca City companies win contracts and create or retain local jobs. For example, PCDA helped Precision Metal Fabrication, a metal fabrication company, research and develop a methodology for manufacturing components for the wind energy industry. Further, PCDA helped Precision Metal develop a list of potential clients for marketing purposes. PCDA has provided other companies with business intelligence such as industry profiles, lists of potential clients, research on emerging technologies in certain industries, and much more, helping Ponca City businesses gain an edge over their competitors.

As a major component of improving the competitiveness of Ponca City businesses, PCDA collaborates with the Pioneer Technology Center to deliver workforce training services. Pioneer Tech, a public career and technology education center located in Ponca City, is part of Oklahoma's statewide vocational education system, run out of its Department of Career and Technology. Programs at Pioneer Tech are designed with the single aim of advancing its students' careers, whether they are high school students who need advanced calculus training or workers who need a new skill to move up the value chain.

In addition to the vocational education system, Oklahoma's Department of Career and Technology has a Training for Industry Program (TIP) that provides training funds to new and existing businesses. (In general, Oklahoma is known for its business incentives, including its Quality Jobs program, which gives companies that create new jobs cash rebates of up to 5 percent of taxable wages for up to 10 years.[29]) While companies receive funds through state programs, students may receive scholarship money from the private Pioneer Tech Foundation, in addition to financial aid from public sources, to cover costs.

Pioneer Tech's Business and Industry Services Center, which develops custom training and technical assistance for businesses, was a key partner in PCDA's economic diversification approach. The program is staffed with two industry coordinators, one small business management consultant, one soft skills training expert, one federal contracting consultant, an agricultural extension expert, and one self-employment consultant.

Pioneer Tech emphasizes its flexibility in assisting business. For example, Mertz Manufacturing LLC, a metal works company and manufacturer of heavy metal equipment, had a need stemming from a particular contract for a specialized welding skill. PCDA worked with Pioneer Technology Center to design a training course for 40 workers, allowing Mertz to win the contract and add 100 good jobs to the local economy.

Another example of successful partnership between PCDA and Pioneer Tech was to serve Sykes, an inbound call center. Pioneer Tech provided in-house computer training for retired senior citizens to make them comfortable with computer terminals in order to meet the needs arising from a contract. The company won the contract and added 200 jobs to the local economy. Many other such examples exist of PCDA and Pioneer Tech working together to meet worker training needs for businesses. In addition, PCDA and Pioneer Tech have worked together to assist businesses in other ways beyond training, such as improving business operations and designing and implementing internship programs for high school students, who then are better prepared for future full-time employment.

One of Pioneer Tech's signature advertising and training devices is Skills on Wheels, a 53-foot trailer which serves as a mobile demonstration and training facility. Decorated in the style of a NASCAR car, the trailer has created interest among high school students for manufacturing and other careers.

One of Pioneer Tech's signature advertising and training devices is Skills on Wheels, a 53-foot trailer which serves as a mobile demonstration and training facility. Decorated in the style of a NASCAR car, the trailer has created interest among high school students for manufacturing and other careers. The trailer currently is fitted with welding equipment, auto repair equipment, a 3-D scanner and printer, laptop computers and other high-tech equipment. The trailer is designed in a way that it can be retrofitted for any major industry within a short amount of time, as all the equipment is on wheels and can be changed out on

short notice. During the first full year of operation (2008), the trailer logged over 10,000 miles traveling to middle and high schools, trade shows and conventions, and also to companies to train workers.

Anointing Knowledge

As PCDA was committed to building a workforce with higher incomes, higher skills and higher knowledge, partnering with the workforce system and investing in worker training were the foundation of Ponca City's economic development strategy.

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PCDA realized that its biggest asset was its newly jobless workforce from Conoco, which was also highly skilled. PCDA launched a campaign to further build up its workforce by retraining incumbent workers, making long-term education and training investments in incoming workers, and recruiting from the outside when needed. The end result would position Ponca City as an ideal location for knowledge-based, high-tech industries.

One of PCDA's efforts in this area involved teaming with Pioneer Tech to establish the Manufacturing Excellence Training System (METS), a program to offer training based on an existing menu of courses at Pioneer Tech that would help recruit and prepare incoming workers for local businesses. The METS program worked with private industry to learn about its workforce needs and to coach interns on the skills needed for that industry. Students in the METS program completed 90-day internships at local businesses that also offered opportunities for full-time employment upon completion of the program. Oklahoma State University, 40 miles away, also was tapped as a workforce pipeline for local industry, providing scientists, engineers and other highly trained individuals.

One of the biggest successes in Ponca City's efforts to develop knowledge-based jobs is the University Multispectral Lab (UML). As part of a study done in 2003 by PCDA and the Oklahoma State University on the region's industries, Ponca City discovered a possible niche in the field of sensor technology, a $10 billion industry annually in the United States. Ponca City, through a partnership among PCDA, the Oklahoma State University and ConocoPhillips, embarked on the development of a national sensor testing and evaluation center that would allow military, commercial and university researchers to work on sensor technology in a single location. UML opened in June 2008 and currently has 52 employees; it is projected to employ at least 120 at full capacity. This has resulted in the creation and attraction of a number of other businesses that want to locate close to UML.

The promising technology, its commercial potential and projected local economic impact attracted multiple investors to the partnership. Ponca City invested $2 million in the facility; an economic impact analysis projected that the city could see a $143 million net positive impact over the next 10 years, including indirect employment and salaries, increased tax collections, and other benefits. ConocoPhillips provided $2 million to the project and donated a 70,000-square-foot facility that was no longer in use. Congress appropriated $3.1 million and the state of Oklahoma appropriated more than $6.6 million.

This early success in developing knowledge-based jobs further helped PCDA attract and develop businesses in technology and professional services. Companies such as Continental Technologies (which designs, fabricates, and installs plants for the petrochemical, refining and chemical industries), Northrop Grumman (a division that monitors national petroleum reserves for the U.S. Department of Energy), Quick Silver and Nantero (both in sensor R&D), among others, located in Ponca City to be close to UML. These companies are either working with UML staff in the development of proprietary products or taking advantage of the UML lab space and assets for further research and development. At the same time, Ponca City continues to build on its traditional assets in manufacturing. It is now focused on advanced manufacturing, diversifying from the oil and gas industry into aviation, niche products and consumer goods.

PCDA's emphasis on quality jobs is having measurable impacts on the region's workers. Since 2004, jobs at new companies in Ponca City have an average annual wage of $41,250, which is 40 percent above the wages paid by firms attracted between 1997 and 2003 and more than twice that of firms arriving in 1995 and 1996. The new jobs also pay 28 percent above the average wage and salary for the Ponca City area.[30] The economy is being measurably lifted as a result of the shift in focus to higher-skilled jobs.

Building from Within and Entrepreneurship

Pioneer Tech is also home to an incubator for small businesses. The Pioneer Tech Business Incubator was established in 1991. It is operated through partnership agreements with PCDA, the chamber of commerce and Workforce Oklahoma (the state unemployment office). A majority of the businesses locating in and graduating from the incubator are engaged in light manufacturing. The incubator also provides some space for offices.

The Pioneer Tech Business Incubator offer typical incubation services, providing workspace at discounted rates as well as shared services and technical assistance to fledgling businesses. However, it also offers entrepreneurship and

skills training (such as assistance with developing business plans, loan proposals or feasibility studies), management development, OSHA compliance, help with recruitment of workers, and both soft and hard skills training, all in one location. By locating in a certified incubator like Pioneer Tech's, business owners also can access tax incentives from the state.

In its almost two decades of operation, the incubator has had many successes. A total of 40 businesses have graduated from the program, with 86 percent still in operation and a total of 120 jobs created by those businesses. The incubator helped grow Seismic Source, a seismic engineering company, from two to 21 employees, and Centerline, a company that repairs parts for the aviation industry, from one person to 40 employees. The owner of Seismic Source has spun off a new company, iSeis, which also is located in the Pioneer Tech incubator and will provide complementary seismic engineering products. Many of the businesses graduating from the incubator feed into the supply chains for the petrochemical, science and technical research, and service industries.

The emerging generated by the incubator businesses are across the skill spectrum since Pioneer Tech does not focus on any particular industry, technology or wage level. While the incubator faces challenges in gathering wage data from existing and graduating companies due to confidentiality issues, anecdotal estimates range from $8 to $20 per hour as starting wages at existing and graduating businesses.

Pioneer Tech feels that its biggest contribution to the economic development of Ponca City is growing locally based businesses. It believes that this is a much more sustainable approach than attracting businesses from other places, since homegrown businesses are more likely stay in Ponca City than relocate elsewhere.

Building a Competitive Worker Base and Inclusion

PCDA realized that it needed to tap into and train atypical populations to ensure an adequate, skilled workforce.

The typical unemployment rate is 3 to 4 percent in Kay County, which is far below national unemployment rates. Even in the current national and global recession, the unemployment rate in Ponca City as of October 2009 was 7.1 percent, compared to a national average of over 10 percent. With these low unemployment rates, a declining population and ongoing demand for skilled workers among local companies, PCDA realized that it needed to tap into and train atypical populations to ensure an adequate, skilled workforce. These include veterans, students from alternative schools, children graduating from the foster care, and high school students as well as high school dropouts. Developing partnerships with the workforce development system was the most promising option.

Veteran Recruitment

Veterans have become an essential part of the workforce solution in Ponca City. Ponca City has a veteran's outreach program, as mandated by the Department of Labor's Veterans Services and the Jobs for Veterans Act. As part of that program, one veterans representative is located at the Ponca City Career One-Stop Center (the local job center mandated by the Workforce Investment Act) to respond to veterans' inquiries about employment.

But the program is not just responsive, it is proactive. Through an alliance between PCDA and the veterans' program, one PCDA staff member works part-time on veteran recruitment and PCDA provides funds to advertise to vets as well as to area companies that are interested in hiring them. The Business Services Unit from Pioneer Tech also works closely with the veterans' outreach program.

Although Ponca City has just one full-time recruiter, compared to four in Tulsa and seven in Oklahoma City, it is competitive with those regions in the number of veterans it attracts to the area. In 2008, the recruiter communicated with 650 veterans and placed about 285 of them in jobs in Ponca City. The referral-to-placement ratio is about 50 percent.

Veterans are in demand in Ponca City. They are a group with industry-ready hard and soft skills, including leadership, a strong work ethic and specialized technical skills. Because of their leadership skills, many have gone into management positions. Veterans also are considered highly trainable, having spent about one third of their military service time either receiving or conducting training.

High School, Foster Care and Alternative School Recruitment

As mentioned earlier, Ponca City faces challenging demographics – baby boomers are leaving the workforce and there is a dearth of skilled employees in the pipeline to fill those jobs. The younger generation doesn't have adequate numbers to replace the baby boomer demographic, and in addition, often lacks the skills, or leaves the region to find opportunities in bigger cities.

PCDA is reaching out to the younger population to develop its skills and stimulate interest in the community and local companies. By getting young people engaged early with the community college and exposing them to local industries and employers through mentoring and internships, PCDA is focusing on building a skilled workforce that is more likely to stay in town and contribute to the Ponca City economy.

PCDA also works with the school system to implement science and technology and pre-engineering curricula for talented high school students. The Skills on Wheels trailer has visited several high schools to generate interest in STEM industries (science, technology, engineering and math) by demonstrating application of theory to real-life problems. In addition, the Manufacturing Excellence Training System (METS) program links high school students with manufacturing companies for internships and mentoring relationships that can lead to jobs. A mix of high-tech and low-tech companies have participated, in fields ranging from manufacturing to food processing and agribusiness. The program, which started in 2005, has 36 students enrolled in internships at 21 companies this year.

PCDA also has a program that reaches out to young adults who have recently graduated from the foster care system. In Oklahoma, 12,000 to 15,000 young people leave the system each year, many of whom end up not finishing school or finding gainful employment. Project MOVES (Manufacturing for Oklahoma's Viable Economic Sustainability) is a state initiative that had its first pilot program in Ponca City in November 2005. Under the project, at-risk youth (including children leaving the foster care system) participate in 150 to 180 hours of entry-level training at Pioneer Tech to be machinists, followed by a 240-hour work site learning component. The state subsidizes wages offered to participants. Of 11 students in the first round, over half graduated into jobs with entry pay in the $11 to $14 per hour range. Some of the success stories from the program have attracted media attention.

Additionally, for students who may not be headed for careers with advanced education requirements, the Advanced Construction Training System (ACTS) introduces students to potential career paths in the trades by bringing in members of the business community to serve as mentors and coordinating with Pioneer Tech to introduce students to the educational or training path to that trade.

Four years ago, PCDA, in conjunction with Pioneer Tech, also began reaching out to students at a local alternative school (high school that serve students with challenges in areas such as behavior or attention). This population generally is not viewed as promising workforce material. PCDA brought mentors to the school and organized visits by the Skills on Wheels trailer. Students also are introduced to building trades through ACTS.

PCDA is also seeking to work with high school dropouts to help them finish their GEDs and enter the workforce. PCDA has worked to identify and reach out to these individuals with the goal of placing them in programs at Pioneer Tech or

into the workforce. PCDA developed a toll-free number and dedicated a portion of its website to this program. Sixty-five referrals were made in the first six months of the program.

Given the rise in unemployment and freezes on hiring by most companies during the recession, PCDA is not pursuing some of these programs at the time of this report's publication. It hopes to reestablish them once the economy recovers.

Programming the Future, Not Retrofitting the Past

Ponca City has established innovative programs to expand job opportunities for its citizens, from veteran recruitment to helping train former foster children to establishing a scientific lab with national expertise in sensor technology. It reflects the city's ability to think outside the box and toward the future.

Ponca City could have tried to replace the jobs it lost from Conoco using the one-company, one-industry model that was the local economy's historic base. It could have tried to recover in the quickest, cheapest way possible by attracting a large manufacturer with a package of local and state incentives. Instead, PCDA took the opportunity to transform the city's economic base to significantly reduce its dependence on oil and develop high-tech, knowledge-based jobs that are paying higher wages. It also has been loyal to its existing companies and nurtured their expansion.

Ponca City's economic development strategy was to build a strong workforce that could fuel the growth of start-up companies, the expansion of existing ones and the attraction of new companies. To that end, Ponca City has dug deep into its population, invested heavily in training its existing workforce as well as attracting highly skilled workers from outside, including veterans and students from four-year universities outside Ponca City. It also took the creative and resourceful step of instigating its own scientific research lab. Ponca City has shown that it's not just interested in filling vacancies; it is investing in the full range of potential and existing workforce talent as the foundation of an economically competitive, equitable future for the city and its residents.

Sector	Kay County		United States		LQ		Emp. Change		Shift Share Analysis			
	2000	2008	2000	2008	2000	2008	Kay	National	Economic Growth Factor	Industrial Mix Component	Competitive Share	Total Econ Growth Component
Natural Resources & Mining	1,228	1,873	1,713,055	1,889,708	4.596	6.167	52.52%	10.31%	3.79%	6.52%	42.21%	52.52%
Construction	911	1,519	6,848,386	7,315,195	0.853	1.292	66.74%	6.82%	3.79%	3.02%	59.92%	66.74%
Manufacturing	3,775	2,960	17,363,496	13,425,573	1.394	1.372	-21.59%	-22.68%	3.79%	-26.47%	1.09%	-21.59%
Trade, Transportation, & Utilities	3,801	3,292	27,319,597	27,508,980	0.892	0.745	-13.39%	0.69%	3.79%	-3.10%	-14.08%	-13.39%
Wholesale Trade	416	579	5,741,228	5,955,341	0.465	0.605	39.18%	3.73%	3.79%	-0.06%	35.45%	39.18%
Retail Trade	2,495	2,209	15,344,490	15,374,115	1.043	0.894	-11.46%	0.19%	3.79%	-3.60%	-11.66%	-11.46%
Transportation & Warehousing	831	436	5,386,807	5,357,858	0.989	0.506	-47.53%	-0.54%	3.79%	-4.33%	-47.00%	-47.53%
Utilities	59	68	847,075	816,560	0.447	0.518	15.25%	-3.60%	3.79%	-7.40%	18.86%	15.25%
Information	380	392	3,757,053	3,139,585	0.649	0.777	3.16%	-16.43%	3.79%	-20.23%	19.59%	3.16%
Financial Activities	675	793	7,652,657	8,044,590	0.566	0.613	17.48%	5.12%	3.79%	1.33%	12.36%	17.48%
Finance & Insurance	502	617	5,578,028	5,887,222	0.577	0.652	22.91%	5.54%	3.79%	1.75%	17.37%	22.91%
Real Estate, Rental & Leasing	173	176	2,074,629	2,157,368	0.535	0.508	1.73%	3.99%	3.79%	0.20%	-2.25%	1.73%
Professional Business Services	2,115	2,285	16,828,605	17,892,894	0.806	0.795	8.04%	6.32%	3.79%	2.53%	1.71%	8.04%
Professional, Scientific & Technical	471	755	6,919,298	7,918,296	0.436	0.593	60.30%	14.44%	3.79%	10.65%	45.86%	60.30%
Mgt. of Companies & Enterprises	65	99	1,783,807	1,895,417	0.234	0.325	52.31%	6.26%	3.79%	2.46%	46.05%	52.31%
Admin., Support, & Waste Mgt.	1,579	1,432	8,125,498	8,079,181	1.246	1.103	-9.31%	-0.57%	3.79%	-4.36%	-8.74%	-9.31%

Sector	Kay County		United States		LQ		Emp. Change		Shift Share Analysis			
	2000	2008	2000	2008	2000	2008	Kay	National	Economic Growth Factor	Industrial Mix Component	Competitive Share	Total Econ Growth Component
Education & Health Services	1,883	2,199	24,788,003	29,536,680	0.487	0.463	16.78%	19.16%	3.79%	15.36%	-2.38%	16.78%
Educational Services	20	38	10,554,237	12,103,006	0.012	0.020	90.00%	14.67%	3.79%	10.88%	75.33%	90.00%
Health Care & Social Assistance	1,863	2,161	14,233,766	17,433,674	0.839	0.771	16.00%	22.48%	3.79%	18.69%	-6.49%	16.00%
Leisure & Hospitality	1,663	2,014	12,127,148	13,872,571	0.879	0.903	21.11%	14.39%	3.79%	10.60%	6.71%	21.11%
Arts, Entertainment & Recreation	199	594	2,071,818	2,380,659	0.616	1.552	198.49%	14.91%	3.79%	11.11%	183.59%	198.49%
Accomodation & Food Services	1,463	1,419	10,055,329	11,491,913	0.933	0.768	-3.01%	14.29%	3.79%	10.49%	-17.29%	-3.01%
Other Services	436	617	4,200,336	4,541,233	0.666	0.845	41.51%	8.12%	3.79%	4.32%	33.40%	41.51%
Total Government	3,089	3,721	6,961,574	7,429,907	2.845	3.116	20.46%	6.73%	3.79%	2.93%	13.73%	20.46%
Federal Government	204	146	1,453,022	1,441,173	0.900	0.630	-28.43%	-0.82%	3.79%	-4.61%	-27.62%	-28.43%
State & Local Government	2,885	3,575	5,508,552	5,988,734	3.358	3.714	23.92%	8.72%	3.79%	4.92%	15.20%	23.92%
Unclassified Industries	300	2					-99.33%		3.79%			
TOTAL	**20,256**	**21,667**	**129,879,584**	**134,805,659**			6.97%	3.79%	3.79%	0.00%	3.17%	6.97%

Source: Bureau of Labor Statistics

Notes:

[27] Data for years prior to 1990 are available by SIC industry classification, whereas data from 1990 to the present are available by NAICS code. Comparisons across the two industry classifications are difficult to make and therefore it was decided to use data starting in 1990 only.

[28] Mark C. Snead and Suzette Barta, "Ponca City Development Authority: Economic Impact Update 1994 – 2007," Oklahoma State University, May 2008.

[29] While the program does not provide a definition of quality jobs, program guidelines outline industries by NAICS codes that qualify for the incentive. These include certain types of manufacturing companies, research and development, and certain service industries among others.

[30] Mark C. Snead and Suzette Barta, "Ponca City Development Authority: Economic Impact Update 1994 – 2007," Oklahoma State University, May 2008.

2.0 SAN JOSE, CALIFORNIA

The world-renowned brand of Silicon Valley is associated with unrivaled success. This region, centered around San Jose, California, owns that success because of the high productivity, advanced skill set and innovation of its workforce. As a result, economic developers in the region understand the importance of nurturing workforce talent.

San Jose is the tenth largest city in the United States and the residential and commercial center of Santa Clara County and Silicon Valley. While the city is the original locus of high-skilled, technology-based business growth, the story told less often about Silicon Valley is of its adversity and diversity. San Jose faces many of the urban challenges that come with any big city, including a decimated middle class.

There are other challenges as well. The economy is vulnerable to its own shocks and recessions, such as the dot-com bust in the early 2000s, when Silicon Valley lost 200,000 jobs and unemployment in South Santa Clara County reached a peak of 9.1 percent. Many of the workers who found jobs after the dot-com crash did so at a 20 percent wage drop, so its economic development strategy had to consider not just the unemployed but the underemployed who were struggling to make ends meet. In addition, the cost of living in the Bay Area is among the highest in the nation.

The region is one of the most diverse in the country in terms of industry and demographics. It is home to software programmers with high salaries and farm workers. It also has large immigrant populations, including many Vietnamese and Mexican-Americans that may face barriers to entry in the workplace. Over one third of San Jose residents were born outside the United States.

As a result of these factors, economic and workforce developers in the region have had to be creative and flexible in their strategies to ensure opportunities for a range of residents.

This case study profiles the diversity of industries, demographics and challenges of San Jose and South Santa Clara County. Just as there is no one single narrative for its economy, there is no single solution or program for economic developers in the region. Rather, the focus is on diversified strategies, continuing quality improvement, and using market data to stay responsive to the business and workforce communities. Being information-driven and customer-driven is the best way economic developers in San Jose have found to grease the wheels of their economy and help its workers and businesses thrive.

San Jose has responded effectively to its economic challenges with an organizational model that aligns economic development with workforce

Over the past several decades, the City of San Jose has been functioning primarily as an hourglass economy, with sizeable upper and lower classes but virtually no middle class. However, the emergence of the green economy, specifically the city's Green Vision and within that its clean tech cluster strategy (discussed below), is seen as having great potential for middle class job growth in the region.

development goals. This case study profiles the area jointly served by the City of San Jose Office of Economic Development (OED) and the Work2Future Workforce Investment Board (previously known as the Silicon Valley Investment Board). Work2Future serves the larger and more challenged labor force in the county, including the cities of San Jose, Campbell, Morgan Hill and Gilroy, as well as unincorporated sections. (The NOVA Workforce Board covers the rest of Santa Clara County, including the cities of Cupertino, Los Altos, Milpitas, Mountain View, Palo Alto, Santa Clara and Sunnyvale.)

Over the past several decades, the City of San Jose has been functioning primarily as an hourglass economy, with sizeable upper and lower classes but virtually no middle class. However, the emergence of the green economy, specifically the city's Green Vision and within that its clean tech cluster strategy (discussed below), is seen as having great potential for middle class job growth in the region. San Jose's clean tech strategy breaks from traditional economic development strategies in that it focuses on helping existing and emerging companies grow, rather than focusing most energy on attraction efforts.

Unlike many other cities, San Jose is not beholden to specific, quantitative measurements of success for its clean tech strategy; rather, its objective is the ongoing creation of a comprehensive ecosystem within each industry. The city is fully on board with the fact that this approach, while more time-intensive, will be more fruitful in the long run. Focusing on diversifying across technologies and ensuring that both supply chains and a competent workforce are available are viewed as foundational elements of its economic development strategy. However, that is not to say that there have not been both tangible and tacit results thus far.

Local and Regional Snapshot

San Jose (pop. 948,279) is the tenth largest city in the United States and the residential and commercial center of Santa Clara County and Silicon Valley. San Jose is the original locus of high-skilled, technology-based growth – home to Silicon Valley which thrived during the 1990s. Santa Clara County is home to San Jose State University and in the northern part of the County, Stanford University.

San Jose has experienced rapid population growth over the past thirty years, though this growth has slowed more over the past decade. However, the overall growth was extensive enough that it demanded its own metropolitan statistical area.

Table 2.1: City of San Jose, San Jose MSA, State of California and U.S. Population Changes from 1980-Present by Decade

	1980	1990	2000	2008	1980-1990	1990-2000	2000-2008
City of San Jose	629,442	782,225	893,889	948,279	20%	12%	6%
San Jose MSA	NA	NA	NA	1,819,198	NA	NA	NA
California	23,667,902	29,760,021	33,871,648	36,756,666	20.47%	12.14%	7.85%
United States	226,545,805	248,709,873	281,421,906				

Source: US Bureau of Census

San Jose is home to a diverse population, with over one-third of its population being represented by persons of Hispanic or Latino ethnicity. Further, over one third of the population is Asian, which is represented by a myriad of different national and ethnic identities. While the Hispanic and Latino population is slightly less than the State of California average, both the Asian and Hispanic/Latino populations far exceed U.S. averages.

The region's talent is dynamic with 35 percent of the region's residents being born in another country. Further, 44 percent of residents over age 25 have a college degree (compared to 27 percent nationally), 68 percent have had some college (professional certification, associates degree), and 32 percent has no more than a high school diploma (compared to 46 percent nationally). The number of science and engineering degrees conferred by universities in the region increased 25 percent between 1995 and 2005, which is telling of the region's path dependence in technology fields.[31]

Table 2.2: Ethnicity in City of San Jose, San Jose MSA, California, and the United States

	City of San Jose	San Jose MSA	California	United States
White alone	48.6%	52.5%	60.9%	74.3%
Black or African American alone	3.0%	2.5%	6.2%	12.3%
Hispanic or Latino	31.5%	26.5%	36.1%	15.1%
American Indian and Alaska Native alone	0.6%	0.5%	0.1%	0.8%
Asian alone	31.2%	29.4%	0.8%	4.4%
Native Hawaiian and Other Pacific Islander alone	0.4%	0.4%	12.3%	0.1%
Some other race alone	12.8%	11.1%	16%	5.8%
Two or more races	3.4%	3.5%	3.4%	2.2%

Source: US Bureau of Census, American Community Survey, 2008

Table 2.3: San Jose MSA, Change in Employment 1990 – Current by Decade

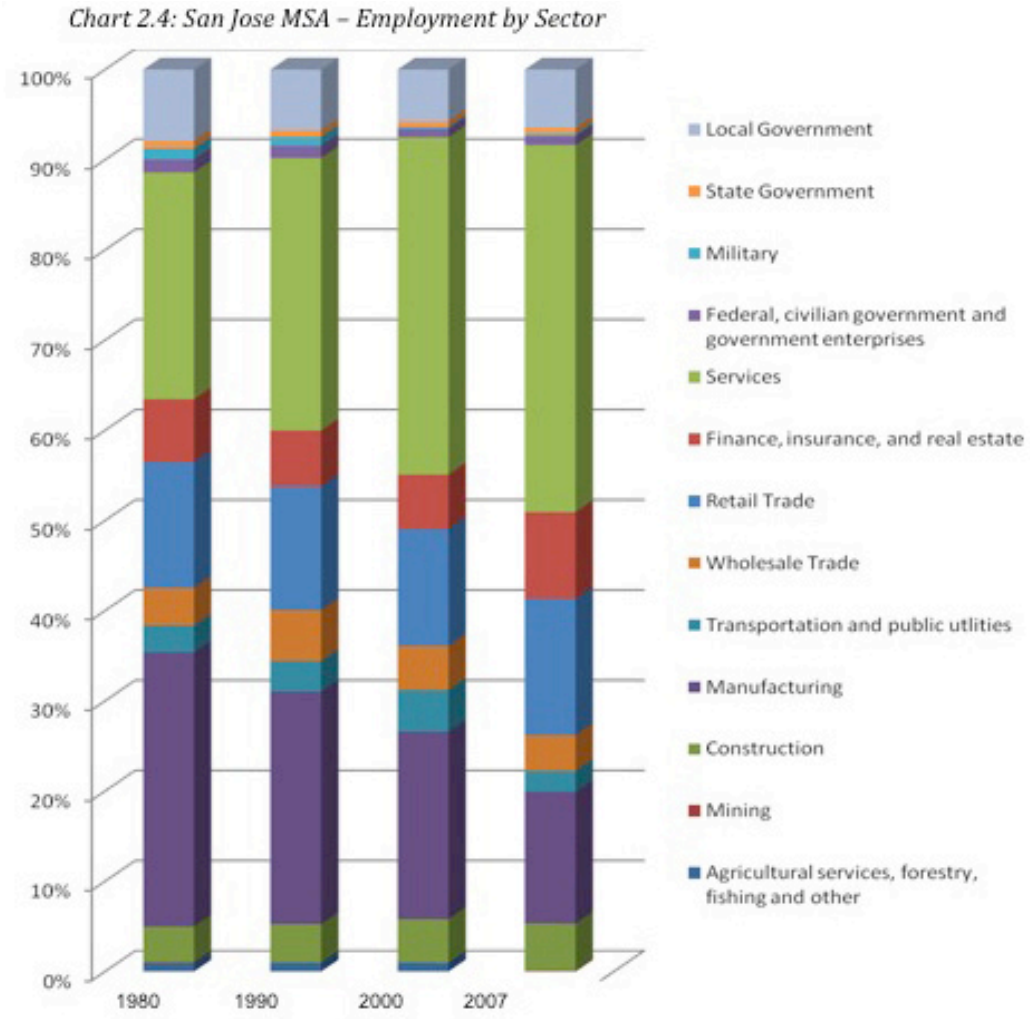
Year	Labor Force	Employment	Total Employment Change	% Change	Unemployment Rate
1990	873,717	837,261			4.2%
2000	968,182	937,379	100,118	11.9%	3.2%
2008	905,239	850,121	-84,648	-9.0%	6.1%

Source: US Bureau of Labor Statistics

San Jose experienced rapid employment gains during the dot com era of the late nineties, as evidenced by the near 12 percent change from 1990 to 2000 data. The dot com bust and the beginnings of the 2008 recession become highly visible as employment underwent a 9 percent loss from 2000. Further unemployment almost doubled from 3.2 to 6.1 during those same years.

Chart 2.4 represents employment by sector in the San Jose MSA from 1980 to 2007. Significant trends are instantly apparent. For example, the services industry has steadily increased from 1980, while the agricultural industry has nearly disappeared. Manufacturing has decreased, though it still represents a sizable sector of the San Jose economy.

Chart 2.4: San Jose MSA – Employment by Sector



Looking at the location quotients to understand the region's economic advantage, we see that the San Jose MSA has remained fairly consistent over the past three decades in maintaining specializations in manufacturing and the service sector. Both of these sectors now represent significant areas of focus as San Jose looks to grow clean tech production and jobs within the region. Finance, insurance and real estate sectors have grown over the past three decades to represent a solid level of specialization. Agriculture on the other hand went from being a strong specialization in 1980 to being almost nonexistent in 2007.

Table 2.5: Location Quotient by Employment Per Decade: 1980, 1990, 2000, 2007 San Jose MSA

Industries	1980	1990	2000	2007
Agricultural services, forestry, fishing and other	1.155712	0.9493	0.777284	0
Mining	0.089428	0	0	0.014202
Construction	0.793984	0.818659	0.855668	0.801424
Manufacturing	1.657502	1.82592	1.828731	1.794672
Transportation and Public Utilities	0.594787	0.547447	0.592366	0.439108
Wholesale Trade	0.82195	1.177221	1.080655	1.062847
Retail Trade	0.884267	0.834145	0.799011	0.853428
Finance, Insurance, and Real Estate	0.901503	0.805877	0.771486	1.037226
Services	1.140594	1.089823	1.18616	1.223116
Federal, Civilian Government and Government Enterprises	0.54814	0.575834	0.542148	0.598589
Military	0.549876	0.499511	0.170741	0.238631
State Government	0.248224	0.231928	0.219672	0.239674
Local Government	0.940609	0.864353	0.737221	0.820322

Source: U.S Bureau of Economic Analysis

Table 2.6: Per Capita Income by Decade: 1980, 1990, 2000, 2007

	1980	1990	2000	2007
San Jose MSA	$32,309	$39,780	$64,318	$59,338
California	$28,632	$33,277	$39,091	$41,805
United States	$24,231	$29,953	$35,937	$38,615

Source: US Bureau of Economic Analysis, 2009. Income is adjusted for 2007 CPI-U-RS

As the leading indicator of an economic transformation, per capita income serves as a good overall measure of wage growth in a region. San Jose's per capita personal income levels have consistently ranked above those of the state of CA and the U.S. as a whole. Further the gap that separates San Jose per capita income levels from those of the CA and the U.S. have continued to widen over time. From table 4 below, one can also see that per capita personal income change decreased within San Jose from 2000 to 2007 by 7 percent.

Overall, the region has a much higher proportion of households earning $100,000 or more (39%) compared to either California (25%) or the nation as a whole (18%). The region also has a much lower share of households making less than $35,000 (21%) than the State (31%) or the nation (36%). The distribution of household income is trending upwards, as it is in both California and the United States as a whole. San Jose's peak was in 1999, during the dot com peak, but even with an almost 11 percent dip from 1999 to 2007 it still exceeds CA and U.S. benchmarks by over 40 percent.

While median household income increased and then decreased following the dot com boom and bust, median household incomes in the City of San Jose as well as the San Jose MSA have consistently exceeded those of the state and national averages by well over 100 percent. This trend highlights the region's strong history of higher level salaries.

Table 2.7: Median Household Income Change 1979-2007 (broken by decade)

	1979	1989	1999	2007
City of San Jose	$60,915	$74,600	$87,409	$76,354
San Jose MSA	$62,202	$77,683	$92,501	$82,664
California	$48,558	$57,797	$59,099	$58,361
United States	$44,826	$48,526	$52,257	$50,007
Ratio - City / US	135%	153%	167%	152%
Ratio - MSA / State	128%	134%	157%	142%
Ratio - MSA / US	139%	160%	177%	165%

Source: US Bureau of Census. Income is adjusted for 2007 CPI-U-RS

Poverty Rates

Poverty rates in San Jose have increased between 2000 and 2008 at a higher rate than for the state of California as a whole. Yet, San Jose poverty rates remain below those of the state of California and the U.S. averages.

Table 2.8: Poverty Rates

	2000	2008
City of San Jose	7.0%	9.7%
San Jose MSA	NA	8.3%
California	12.2%	12.9%
United States	12.4%	13.2%

Source: U.S. Census Bureau, 2006 – 2008 American Community Survey 3-Year Estimates

Educational Attainment

According to 2006-2008 American Community Survey data, educational attainment rates in San Jose follow an interesting trend geared towards advanced education. Both bachelor's degrees as well as graduate or professional degree rates in the City and the MSA exceed State of California and US averages.

Table 2.9: Educational Rates of Population 25 years and Over 2006-2008

	City of San Jose	San Jose MSA	California	United States
Less than high school diploma	18.3%	14.6%	19.2%	15.5%
High school graduate (including equivalency)	20.3%	17.4%	22.4%	29.6%
Some college, no degree	18.0%	16.9%	20.8%	20.1%
Associate's degree	7.9%	7.5%	7.6%	7.4%
Bachelor's degree	22.2%	24.6%	18.8%	17.3%
Graduate or professional degree	13.2%	19.0%	10.6%	10.1%

Source: US Bureau of Census, American Community Survey 3-Year Estimates, 2006-2008

Transformation: Economic Shock and Awe

San Jose's economy is an envy of the world, inspiring awe for hosting the world's leading companies in software and technology, top universities and a steady stream of entrepreneurship and innovation. Yet severe economic shocks have hit the area, costing the loss of thousands of jobs at a time. Even in times of prosperity, the diversity of the population, the industry makeup of the area and the cost of living mean that many residents remain poor and lack access to quality jobs.

After the dot-com bust, unemployment peaked at 9.1 percent for the South Santa Clara area in 2003. The ripple effects squeezed many businesses; as operating margins became narrower, many businesses found that the cost of operating in the Bay Area was just too high. Computer and communications hardware manufacturers, other industries and production centers for those industries downsized or moved to lower-cost areas. Workers felt the squeeze too. While most of those who lost jobs in the early 2000s found employment again, many are earning considerably lower wages. Thus many of the job seekers in the Bay Area are not necessarily unemployed, but underemployed. OED/Work2Future has found it important to serve these workers – those who have jobs but don't earn the wages and benefits needed to support themselves and their families.

After the dot-com bust, unemployment peaked at 9.1 percent for the South Santa Clara area in 2003. The ripple effects squeezed many businesses; as operating margins became narrower, many businesses found that the cost of operating in the Bay Area was just too high.

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The city of San Jose has defined a "living wage" as $12 per hour and mandates employers on contract with the city to pay it, but that wage is unenforceable beyond a small segment of the economy. In any case, it can be hard for some to find jobs even at that wage, and hard for those who earn that minimum to live on it.

The recent nationwide economic downturn has also had effects on San Jose and South Santa Clara County. After stabilizing to a low of 4.9 percent in 2006, unemployment rose to 13.3 percent in August 2009, 34 percent higher than the statewide rate and higher than for Silicon Valley as a whole. While nearly all sectors have been impacted in the recession, slowdowns have been particularly acute in the financial sector and construction industry.

Also part of the story is San Jose's downtown revitalization, which began in the 1980s and 1990s with the construction of a new convention center, major hotels, new office buildings, refurbished parks, museums, housing, a major sports arena and a new home for the San Jose Repertory Theatre.[32] Light rail was completed in the late 1980s. High technology companies such as Adobe have located their headquarters and campuses in downtown high-rises. When revitalization efforts began, nearly all projects required public subsidies; by the first decade of 2000, many private projects were able to develop successfully without aid from the city. While redevelopment has slowed due to the global economic crisis, San Jose has laid the groundwork for retail, entertainment, business, and residential development to continue downtown.

The economy in the Bay Area is churning – some sectors up, some sectors down. There has been a rebirth of advanced manufacturing in the area, in sectors such as computers and electronic products. The health sector continues to produce jobs; skill shortages remain among nurses and other health care professionals. Retail and hospitality also generate a substantial number of entry-level, entry-wage jobs. However, construction work has been on a steady decline, due in large part to the decline in residential building. Areas with substantial recent construction, such as the cities of Morgan Hill and Gilroy in southern Santa Clara, have been particularly hard-hit.

Economic developers in San Jose are constantly challenged to adapt to the changing economy. In collaboration with workforce professionals, they must constantly monitor industrial and economic trends to help workers develop durable skills for the local economy and to help entrepreneurs seize opportunities. While venture capital is not as available as it was in the 1990s, there is still a favorable climate and culture in the valley for investment. Lower real estate prices may help attract or retain some industry and workers to the region. While prices in the region are still far above those in the rest of

the country, real estate costs in San Jose are now below 1997 levels, according to the city.

In addition, San Jose is home to immigrant populations who can both face barriers to employment and also be remarkably hard-working employees and sources of many of new small businesses. In many cases, the challenge is to reach them through ethnic chambers, community groups and local media to help engage them in the economy. Work2Future manages partnerships with all of the ethnic chambers in the region.

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Faced with developing a multi-sector, multi-demographic strategy, economic developers in South Santa Clara have adopted a number of initiatives to meet the diverse demands of the community, which can be framed around a few basic tenets:

- An organizational model that aligns economic development and workforce development;
- Industry and skill-based initiatives that are efficiency-driven but also concerned with equity;
- Entrepreneurial spirit and known-how in both innovation and commercialization in the valley must continue to be tapped; and
- Different populations must be targeted.

The San Jose region has been able to rely on innovation to reinvent and transform itself before. That story is still unfolding, as the city and the region once again aim to transform themselves into the preeminent home of clean tech research, development and deployment. The dynamic, cutting-edge efforts currently under way to reach that goal are explored below.

Aligning Economic and Workforce Development

In 2000, San Jose decided to locate its Workforce Investment Board (WIB), Work2Future, within the city's Office of Economic Development in order to coordinate the needs of industry with the qualifications of the workforce. While most other WIBs were formed out of their precursors (Private Industry Councils, or PICs), Work2Future was formed after the previous Silicon Valley PIC, the County of Santa Clara and other groups met to establish a blueprint for the new entity. The City of San Jose became the fiscal agent for the WIB, which located within the Office of Economic Development (OED); the Deputy Director of OED now serves as the head of the Work2Future. As a result of the prominent role of OED, the composition and often the programming of Work2Future is unique among WIBs.

The city has a strong dual-customer focus. Work2Future has built up credibility with its clients because of its high job placement rates and because of its fast response times to business queries. Ninety-five percent of business requests are responded to within 24 hours. In addition, OED/Work2Future are engaged in continual outreach to both workers and industry, using consultants to help them improve measures for responsiveness and quality control. Workers who use computerized kiosks at one-stop centers are prompted to fill out surveys, available in both Spanish and English.

In April 2008, Work2Future served a labor force of 592,000. (In contrast, the NOVA Workforce Board serves a labor force of 271,000.) The Work2Future area provides an interesting snapshot of the diversity of occupations and industries in the Bay Area since it covers San Jose, the heart of Silicon Valley, as well as more rural areas to the south.

Building on Existing Assets

In order to channel workers up the pipeline, OED identifies areas of occupational demand and growth industries. Growth industries in San Jose for high-skilled and semi-skilled workers include software; bioscience; nanotechnology; clean tech (especially solar) and other green industries; and private educational and health services. Also discussed here are steady-demand industries of retail and hospitality, because they provide jobs that often offer benefits and for some job-seekers are a step up from their current employment. The OED/Work2Future goal has been to match workers with jobs in these industries, and help prospective workers obtain the skills they need to be competitive for those jobs.

In addition, Work2Future has ensured that the one-stop centers mandated by the Workforce Investment Act serve not just job seekers and industry, but entrepreneurs as well. The one-stop centers have direct participation of the private sector, which communicates its workforce needs through Work2Future, the city's redevelopment agency and OED. In some cases, private industry is located at the one-stop centers. For example, SolarTech, a consortium of solar energy companies, moved into one of the centers in 2008, providing an easier link between employers and jobseekers.

San Jose's workforce efforts also have a data-driven component, a real-time mapping tool that enables users to break down local business data by industry sector and geographic level (city, zip code, census track). It also has a time-series feature that allows users to track local job and industry trends that have taken place over the past 18 years. The tool is currently geared toward the local workforce investment boards. Businesses and jobseekers also can use it at the one-stop for free.

Clean Tech Strategy

The Clean Tech Strategy is aimed at advancing sustainability-based opportunities in the local economy. It is part of San Jose's larger "Green Vision" to create 25,000 clean tech jobs in the next 15 years. The Green Vision encompasses the dual purpose and promise of clean technology as an opportunity to drive economic development and job creation while curbing carbon emissions. The strategy, developed by the city and the San Jose Redevelopment Agency, is based on three core ideas:

1. Environmental sustainability is good for the economy and will create more jobs and prosperity than is displaced.
2. Clean technology is not simply an emerging industry sector, but rather a mechanism to transform the entire global economy.
3. The worldwide competition for clean technology jobs will be intense and success will require innovative policies and partnerships.[33]

As noted above, this strategy contrasts with traditional economic development strategies by focusing on helping existing and emerging companies grow, rather than primarily on attracting businesses from elsewhere. Further, it capitalizes on San Jose's path of innovation and leadership in emerging technologies. To determine what types of clean tech industries should be targeted, a cluster analysis was conducted to shed light on the region's competitive advantages. Based on the strengths and weaknesses identified in the cluster analysis, the city focused its efforts on industry areas that demand expertise in bioscience, informatics, and nanotechnology, specifically in these three areas:

1. Renewable energy – particularly solar and fuel cells
2. Green building – energy efficiency, control systems, LED lighting, materials
3. Transportation – alternative fuels, mass transit, smart infrastructure

Clean technology commercialization is often more capital-intensive and difficult to implement than other technologies. As such, the city sees its role as supporting companies at every stage of the commercialization process, which it refers to as the "integrated model for clean technology development" (see figure 2.10). While the city and the San Jose Redevelopment Agency have a strong history in incubation and facilitating development, the integrated model goes beyond this by forming long-term relationships with local companies to help them through other phases of development. The integrated model was developed in a partnership among the city, the San Jose Redevelopment Agency and the Environmental Business Cluster (a business incubator, discussed in detail below) and ties together the traditional strengths of Silicon Valley, as well as areas of opportunity.

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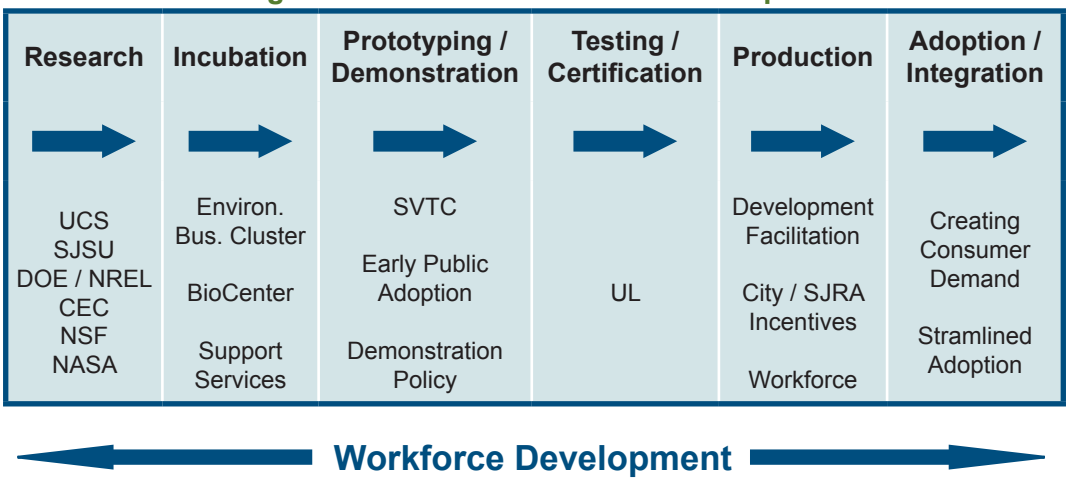
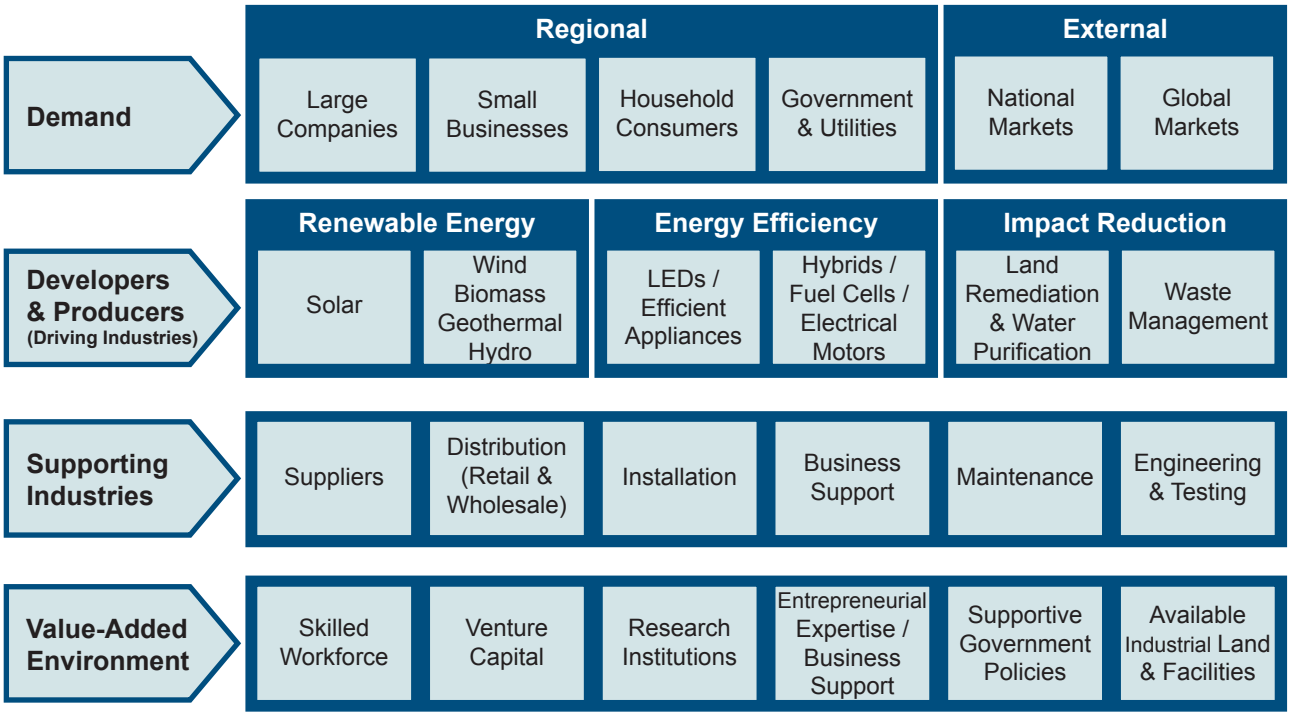
Figure 2.10: San Jose
Integrated Model for Clean Tech Development



Part of the strategy is the city's Clean Tech Demonstration Center, which will be a facility for clean tech development and demonstration for solar energy, green fleet vehicle, and green building/energy efficiency technologies emerging from the region's incubators and from across Silicon Valley. It will also be a community environmental training and incubation center that will provide entrepreneurship training opportunities and prototype manufacturing jobs for low- and moderate-income residents. Successful demonstration projects will further drive investment and venture capital in San Jose's clean tech sector.

The integrated model for clean technology development also uniquely incorporates workforce development as a key element to ensure that workforce competencies are aligned with the demands of business. The city has been working directly with existing companies, in conjunction with local community colleges, to develop curricula that will build skills for in-demand occupations.

Figure 2.11: San Jose Clean Technology Cluster Analysis



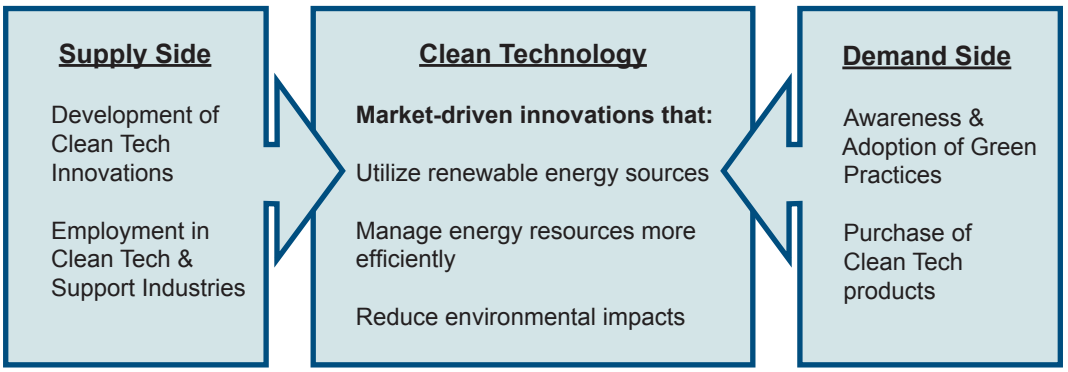
In addition to the components of the integrated model, San Jose is aggressively promoting changes in consumer behavior and pursuing partnerships and legislative policy changes that are necessary to ensure long-term economic growth. The clean technology supply and demand model shows the importance of integrating these two pieces; often the demand side is an afterthought in economic development, as it is seen as difficult and time-intensive to develop.

However, the city views the long-term investment in demand-side policies as critical to its overall success. For example, requiring that all buildings achieve LEED Silver status ensures a built-in market for many of the innovations and skills related to clean tech that are being developed in the region. The demand side is also addressed through policies and programs that encourage consumers to purchase and use green technologies and products. Demonstration of green building practices on city buildings, along with the Mayor's Solar Challenge (which called on solar companies to develop ways for San Jose residents to install solar energy systems on their homes at no cost), further accelerate this change in consumer culture.

To further its green vision and address issues of affordability and equity, the city is addressing green building practices in its affordable housing projects.

The Green Building Ordinance (adopted in June 2009)not only establishes the U.S. Green Building Council's LEED and Build it Green's Green Point Rated rating systems as the mandatory green building standards for the City, but it also requires that affordable housing projects receiving funding from the City will be subject to green building requirements. In fact, there are already shining examples of Green affordable housing in San Jose. Gish Apartments, a multifamily affordable housing development, serving very low-income and developmentally disabled residents, received the 2009 California Redevelopment Agency (CRA) Award of Excellence for Design. The project achieved GOLD ratings in both LEED programs.

Figure 2.12: City of San Jose
Clean Technology Supply and Demand Conceptual Model



Partnerships

Part of San Jose's recent success in fostering a dynamic green economy has come through its ability to bring in a network of key institutions as partners. One of those key institutions is Underwriters Laboratories' (UL) Photovoltaic Technology Center of Excellence. City government and the local solar industry worked to attract UL to San Jose to accelerate its specialization in the solar industry. Local solar companies benefit from having their products tested and certified in close proximity. Further, the requirement that photovoltaic modules comply with UL standards in both U.S. and Canadian markets has increased demand for product testing and certification services. With 70 of the approximately 200 solar-related firms in the U.S. located within a few hours' drive of San Jose, having UL in San Jose helps to drive the cluster forward.

One of the critical pieces of the San Jose clean tech ecosystem is the Environmental Business Cluster (EBC). The EBC is one of the preeminent clean technology incubators in the nation, providing support for start-up companies (such as entrepreneurial expertise, access to financial and legal services, and administrative support) as they commercialize technologies. The national

reputation of the EBC provides opportunities to attract and retain top entrepreneurs from around the country. The EBC has helped more clean tech start-up companies commercialize their technologies than any other incubator in the country.[34]

Further deepening the clean tech ecosystem of the region is the San Jose BioCenter, as the applications of advanced life science research have linkages to innovative clean technologies. To spur innovation in clean transportation, the Redevelopment Agency has invested in establishing an Electronic Transportation Development Center, which focuses on integrating Silicon Valley technologies into mass-transit vehicles and is establishing key private partnerships to ensure the initiative's success.[35]

San Jose's partnership with the California Cleantech Open, a business plan competition that supports the growth of clean technology companies, also has proven to be an important element of clean tech job growth in the region. Since its beginning in 2006, 125 teams have participated in the program, taking advantage of Cleantech Open's workforce development and funding programs. As a result, Cleantech Open alumni have raised over $130 million in private capital, 80 percent remain economically viable today, and 500 new clean technology jobs have been created.

Many of the winners of the Cleantech Open have come out of the EBC. Participating in this premier event connects San Jose with many of the leading clean technology entrepreneurs in the nation, creating substantial recruitment opportunities. In 2009, San Jose supported the Cleantech Open by providing the San Jose Prize for Green Vision Innovation, which funded incubation space and services at the EBC.

Solar Energy

Silicon Valley is at the center of the burgeoning solar industry. San Jose's efforts to stimulate this new cluster demonstrate how to create an economic advantage while generating a range of quality job opportunities for a wide spectrum of people. Over the last decade, the solar energy market has had 30 percent annual growth rates. California is the leading adopter of solar power in the U.S., with 75 percent of market share. There is increased demand in Silicon Valley from companies such as Google and eBay that have very large solar installations and an increasing number of solar power companies who need skilled workers, from engineers for R&D to solar panel installers, who often come from the construction trades.

In developing this cluster, Work2Future/OED secured the location of SolarTech at the San Jose one-stop center in July 2008. SolarTech is a consortium of solar energy companies that will serve the industry as protocols and standards develop, and serve job-seekers interested in entering the industry.

In developing this cluster, Work2Future/OED secured the location of SolarTech at the San Jose one-stop center in July 2008. SolarTech is a consortium of solar energy companies that will serve the industry as protocols and standards develop, and serve job-seekers interested in entering the industry. The industry group is working together to identify and resolve technical and adoption barriers to solar technology by addressing issues of performance, process, standards and workforce.

The consortium has recognized several impediments to the widespread adoption of solar technology, most notably high equipment costs and an overly long cycle from installation to interconnection. The consortium seeks to improve the industry by establishing universal standards for the installation and certification of solar technology, and also by developing handbooks to better inform both consumers and installers about solar equipment. Additionally, it has plans to work with manufacturers to standardize ratings of solar panel performance and to assist economic development organizations by instituting a solar curriculum for worker training. Finally, the consortium has developed an innovative financing plan to reduce the upfront cost of solar equipment, a central barrier to consumers adopting the technology.

There are about 2,000 workers in the solar energy industry currently in the San Jose area, and the industry is projected to grow to a workforce of 10,000 to 20,000 in the region within the next 10 years. Jobs in solar energy require a range of skills and education levels: Roughly 20 percent of the workforce is engineers, 20 percent is in sales and marketing, and 60 percent is in manufacturing and installation – jobs that have relatively low educational requirements but demand specialized skills.

Installation jobs typically pay in the $25 to $30 per hour range with benefits. Many current installation workers are former construction workers who have obtained the electrical skills necessary to do solar installations on their own. Work2Future has begun a training program (offering a one-semester certificate) that prepares prospective workers for a qualification exam to demonstrate proficiency. San Jose City College and Cabrillo Community College have enrolled about 150 students, 100 of whom have already graduated. In addition, the program has funds to help provide company-specific, on-site training for solar companies that locate in the valley.

San Jose's Clean Tech Growth in Summary

As of 2008, over 3,250 jobs had been created from the Clean Tech Strategy alone, and venture capital investment in clean technology in the region reached almost $1.9 billion (representing nearly one third of all clean tech investments in

the U.S.). Further, since 2005, 9 percent of all solar technology-related patents in the U.S. were registered within the region. New venture-backed firms have also been created in the region, including Nanosolar and Miasole, both thin film solar developers; Bloom Energy, which develops fuel cells to enable homes to generate their own electricity; Tesla Motors, which is developing an electric car to be manufactured within the region; and Better Place and Coulomb, both of which are building infrastructure that will support the widespread use of electric cars.

Economic and workforce developers emphasize a few key lessons from this quick success. First, partnering with industries to inform the workforce development process is key. Whether industries are emerging, such as clean tech, or mature, economic forces require that companies constantly evolve in order to compete, and workforce development practices must remain aligned during this evolution. Anticipating change outside of the realities of business can produce a misalignment of worker skills with industry needs. San Jose has successfully kept the lines of communication with businesses open and worked directly local education institutions to support them.

Second, in San Jose, sustainability and economic development initiatives are integral to one another. While San Jose had an existing economic development strategy from 2003, it revised that strategy upon seeing that sustainability could be a driving force in economic development, rather than an afterthought. By viewing economic development and sustainability as a beneficial marriage, San Jose has been able to develop a progressive and feasible plan with wide and meaningful support from local and regional stakeholders.

Other Sector Initiatives

While the region is knee-deep in its Green Vision, the city also continues to focus on developing other strong areas that are key to the diversity of the local economy, including nanotechnology and retail and hospitality.

The International Association of Nanotechnology is located at the Work2Future center and offers forums and advanced education and training in the emerging field of nanotechnology and clean technology. San Jose leads the nation in the number of companies, universities, government labs and organizations operating in the field of nanotechnology.

As a financial and high-tech center, San Jose has a strong hotel and conference center sector. Retail also continues to thrive throughout the area, with strong growth in satellite communities such as Gilroy, which developed as a low-cost retail center after serving as home to a popular outlet mall for many years. Between 2001 and 2005, Gilroy added 3 million square feet to it retail

base, which provided construction jobs and then retail jobs.

While average starting wages are below median wages for the county, the year-round employment and benefits that these industries provide can be a step up for the unemployed or seasonably employed. These jobs may assist a family, for example, if one worker in a two-worker household is in a contract position or starting a business and has no access to benefits. These steady-demand industries also offer important fall-back employment opportunities. Additionally, there is advancement potential in the food and beverage and hospitality industries in particular, and at the upper levels, compensation can be high.

After surveying the retail and hospitality industry in the area, Work2Future found that many local low-skilled workers (with high school educations or less) needed training in order to be attractive hires for local employers. At one-stop centers, staff and partners have assisted job-seekers with basic soft skills such as how to dress and prepare for interviews, and in some cases have provided funds for clothing, books, gas, or uniforms for interviews or the first weeks of work.

Training sessions organized by Work2Future have focused on helping workers learn customer service and other skills for retail and hospitality work. In one case, hospitality classes were provided to existing hotel employees using a curriculum partially designed by the union to help employees learn skills to work in other parts of the hotel (e.g., to move from housekeeping to the front desk). In another case, retail classes for prospective employees at outlet malls helped them learn the basics of retail technology and customer service. Training has sometimes been built into site selection agreements, as in the case of Wal-Mart, which agreed to invest in a training program upon locating in Gilroy.

Small Business and Entrepreneurship Programs

There are 130,000 small businesses in Silicon Valley. Recognizing the importance of supporting them, Work2Future surveyed about 1,000 businesses in the community to determine their needs. One thing they determined was that small businesses had questions outside of typical business hours. As a result, OED/Work2Future created an on-line resource, www.businessownerspace.com (BOS), a collaboration among more than two dozen public, private and non-profit agencies and businesses.

BOS assists the region's businesses and entrepreneurs in multiple ways. It helps assess entrepreneurs' readiness to start a business, helps them identify and follow the steps to a successful launch and connects them with local business services to help them launch and grow. It also provides information on industry job fairs and seminars, as well as basic information and links to further assistance

on topics such as business taxes, licenses and permits; employment law compliance; workers compensation; unemployment insurance and more.

Since it was established in October 2007, nearly 20,000 small businesses have been served by the BOS initiative. Focusing on BOS as a primary tool to serve the small business community enabled Work2Future to serve many more clients during a time of high demand.

In addition to BOS, the one-stop centers all have Business Service Centers to assist emerging entrepreneurs and small businesses. Small businesses can take advantage of no-cost training programs on topics as diverse as ethics or advanced emergency training, or advice on a singular question, such as signing a lease. The Business Service Centers also provide an important first point of contact for many entrepreneurs into the wide network of services available in the valley, some of which are described above.

These small business services supplement a network of incubators that are located in downtown San Jose and run by the city and the redevelopment agency in collaboration with private partners. These include the EBC; the San Jose BioCenter, which serves life sciences companies; the Software Business Cluster, to help with mentoring, funding and networking opportunities for start-ups; the Entrepreneur Center (eCenter), which provides entrepreneurs with a full range of business services; the Software Development Forum; the Silicon Valley Small Business Development Center and the Small Business Opportunity Program.

Inclusion the San Jose Style: The Catalyst Fund

In 2007, the OED shifted from a business revolving loan program to an equity fund, creating the Catalyst Fund to invest in companies that employ low-income residents. (The fund is administered out of the same office as Work2Future but out of separate funds.) The city partnered with Pacific Community Ventures (PCV), which has supplemented city investments at a ratio of at least 7:1.

In 2007, the OED shifted from a business revolving loan program to an equity fund, creating the Catalyst Fund to invest in companies that employ low-income residents.

So far, the fund has invested $350,000 in Mercados Suvianda, an ethnic supermarket with two stores in San Jose. That investment was supplemented by $2.6 million from PCV and its affiliates. With the money, the supermarket was able to open two stores and produce 200 jobs, mostly for workers with a high school education or less. Many of the employees received specialized training as butchers, a skill in demand particularly at area ethnic grocers. In line with the criteria of the city and PCV, these jobs offer quality wages and a competitive benefits package for full-time employees.

The fund has also invested in Bentek Manufacturing, a specialized semiconductor company that grew from 60 to 100 employees as a result of the investment. It hires workers that have a minimum of a high school education, and offers in-house training to provide workers with the electronics training they need.

Reaching Out to Diverse Populations

The region's economic development strategy includes programs and outreach aimed at foreign and ethnic populations because they form such a large share of the workforce, constitute such a large consumer base, and because immigrants historically have contributed hard work and innovation to the economy.

As discussed previously, the beneficiaries of equity financing from the city's Catalyst Fund have been minority-owned and -operated enterprises, including a Latino grocery store and a semiconductor firm owned by an Asian immigrant. The city works with minority or foreign-born business owners by partnering and advertising with ethnic chambers of commerce. For example, Work2Future is working with Santa Clara County Black Chamber of Commerce to create a business incubator at the newest Work2Future one-stop location.

The primary outreach to all jobseekers in South Santa Clara County is through the three one-stop centers in San Jose, Gilroy and Campbell, as well as a satellite center in Morgan Hill. There are 50 people on staff at these centers. Clients vary from highly skilled workers to those with multiple barriers to employment, such as migrant farm workers. The centers tend to help those with the lowest income and skills. Over 88 percent of the youth and adult clients are low-income, and 76 percent have a high school diploma or less as their highest education.

One-stop centers offer comprehensive employment resources for both job seekers and employers, including job search and placement assistance, career counseling, skills workshops, computer and Internet access and online job postings. Catering to diverse populations, the center also offers English language classes and specialized programs for seniors and people with disabilities. Workers are connected to job training for both hard skills, such as computer literacy, and soft skills such as customer service. The Work2Future centers often provide bilingual (English/Spanish) staff and services, sometimes trilingual (Vietnamese) as well.

One project spearheaded by OED/Work2Future is the Migrant Collaborative, a group of 20 organizations that serve temporary and permanent farm workers with the goal of introducing them to social services and career opportunities. One of the most successful programs has been truck driver training. Work2Future found

that crafting a program that allows workers to train during weekends and evenings, so that they don't have to leave their current employment, has helped its success. About 70 workers have gone from making as little as $7 per hour or less in the fields to making about $20 per hour driving trucks. A training program for child care providers has also had some participants; other workers have gone on to become dental hygienists and medical assistants. Of the approximately 100 clients served by the Migrant Collaborative, 90 percent have been successfully placed in jobs.

One successful way that the Migrant Collaborative has reached out to farm workers is by starting a community event called Celebracion del Campo ("a celebration of the field"). The event serves as a job fair with regional employers, including Wal-Mart, Costco and other large companies. In addition, social service providers in areas such as education and training attend, and doctors and clinical workers give health tests on site. The event has been enormously successful in introducing hard-to-reach workers to these services and opportunities. Several sponsors, including Univision, Kaiser Permanente and Washington Hospital, contribute to funding and publicity.

The Work2Future staff have reached diverse populations in Santa Clara County through aggressive advertising in diverse media outlets, such as Spanish-speaking radio stations, and even distributed fliers out in the fields to migrant workers to inform them of Celebracion del Campo.

Fostering Quality Jobs in a Changing Economy

San Jose was an early comer to the model of merging a WIB with OED. Since then many other communities, including New York City and Chicago, have merged economic development and workforce development departments. Coming out of a strong history of innovation and technology and cycling through booms and busts, the region has adapted its strategies to provide opportunities across a range of skills and wages, for the benefit of both its residents and a diversified economy.

Aside from its many competitive advantages within the clean and green sectors – and the view that the federal government will continue to support the green economy in the years to come – San Jose is pursuing growth in these areas because they provide jobs at a range of wage and education levels, strengthening the city's ability to build its middle class. The city sees green sectors providing both higher-wage jobs – in areas such as research and development – and mid-level jobs for solar installers, weatherization professionals and others, well into the future.

Benefits, wages and job security all are part of the quality jobs equation, and in San Jose as elsewhere, there is no one equation that serves a diverse population. Yet economic and workforce developers in the region have worked to improve these in many aspects of their approach – whether through access to worker training, fostering steady-demand and growth industries, bringing different ethnic groups into the economic mainstream or providing widespread access to entrepreneurship and small business development services.

Notes:

[31] Index of Silicon Valley, 2008.

[32] While historically downtown revitalization has been an important part of the city's overall economic development strategy, this case will focus on the alignment of economic and workforce development and how it has been used as a foundation for new cluster development that proactively targets the rebuilding of the middle class.

[33] Clean Tech Strategy Memorandum, July 2008. City of San Jose.

[34] The City of San Jose, 2008.

[35] Clean Tech Strategy Memorandum, July 2008. City of San Jose.

3.0 NEWTON, IOWA

At first glance, the story of Newton is one of recovery from economic crisis. But underneath is the bigger story of a region's transformation from the industrial economy to the knowledge economy.

The loss of a single major employer widened fissures already present in this rural area. Yet economic developers turned the challenge of converting Newton from a one-company town into an opportunity to build workforce skills and diversify its economy. That required Newton to change its approach and institutional infrastructure to support the creation of higher-skilled jobs that would be competitive in a volatile global economy. In many ways, the story of Newton exemplifies the challenges facing other rural regions.

On May 10, 2006, the Whirlpool Corporation, the new owner of Maytag Corporation, announced that it would close the Maytag corporate headquarters and production facilities in Newton. In this town of 15,500, nearly 13 percent, or 1,900, worked at Maytag Corporation. At its height in the 1990s, Maytag had 3,900 employees. The loss of the Maytag prompted a dramatic rise in unemployment and the fear of perpetual underemployment.

The majority of the production jobs that were cut paid average hourly wages of over $20 and offered benefits. Historically, it had been possible for a Newton resident to graduate from high school, go to work on the assembly line and eventually make a middle-class income, sufficient to support a family. With the closing of Maytag, Newton's leadership realized that this era was over and thus embarked on the long-term transformation of the regional economy.

The Newton case really began in May 2005, when Newton's leaders learned that a private equity firm was planning to place a bid on Maytag. In response, community leaders began meeting informally to talk about strategies to address potential job loss. By August 2005, Whirlpool had emerged as the higher bidder for the company. Within just a few months, economic development leaders – including the Newton Development Corporation, the Jasper County Economic Development Office and the City of Newton – were putting a strategy in place aimed at convincing Whirlpool to maintain the Maytag facility in town.

Retention efforts ultimately failed, and in May 2006, Whirlpool announced it would move the corporate and production facilities to Michigan and Ohio. On that same day, the community and business leaders engaged in Newton's initial retention efforts formed the Newton Transformation Council (NTC) to plan for economic recovery. It is this story, which is still very much in progress, which will be told below.

The challenge facing Newton in the short term was to replace the 1,900 jobs lost due to Maytag's closure with jobs that involved at least comparable levels of skills and pay. The longer-term challenge was, and still remains, to build workforce skills in targeted, industries that paid well (incomes had continually lagged national levels and growth rates) and would be likely to grow in the town over time. NTC also aimed to build a culture of entrepreneurism.

Regional Snapshot

Newton is located 35 minutes east of downtown Des Moines on Interstate 80. It is in the region known as the East Central I-80 Corridor and sits on the Iowa Interstate Railroad's main line between Chicago and Omaha. Newton is the county seat for Jasper County and had a population of just over 15,000 in 2008. The region is also home to Des Moines Area Community College (DMACC) and Buena Vista University; advanced degree program offerings from the University of Iowa and Iowa State are available as well.

Table 3.1 below provides a quick overview of the region in comparison to the state and nation. (Much of the data below is given at the county level, as 2006-2008 U.S. Census-American Community Survey data is not available for the city of Newton.) The unemployment rates for Jasper County and Iowa are below the national average, as is the percentage of persons below the poverty line.

Table 3.1: Demographic and Economic Profile

	Newton	Jasper County	State of Iowa	United States
Unemployment Rate	NA	4.8%	4.6%	6.4%
Persons Below Poverty Line 2006 (Estimate ACS)	NA	11.3%	11.2%	13.2%

** U.S. Census Bureau: American Community Survey 2006-2008*

** Newton population data found on: http://www.recap.iastate.edu/ - accessed on January 7th, 2010*

The percentage of people living in poverty increased from 2000 to 2008 in Jasper County and Iowa, yet remain below the national averages.

Table 3.2: Percentage of Persons Below the Poverty Line

	2000	2008
Jasper County	6.5%	11.3%
Iowa	9.1%	11.2%
United States	12.4%	13.2%

Source: U.S. Census Bureau, 2006 – 2008 American Community Survey 3-Year Estimates

Jasper County and Iowa are less ethnically diverse than the United States as a whole, with nearly 97 percent of resident classifying their race as white alone.

Table 3.3: Ethnicity in Jasper County, Iowa and the United States

	Jasper County	Iowa	United States
White alone	96.8%	92.7%	74.3%
Black or African American alone	0.9%	2.4%	12.3%
American Indian and Alaska Native alone	0.3%	0.3%	0.8%
Asian alone	0.3%	1.6%	4.4%
Native Hawaiian and Other Pacific Islander alone	0.0%	0.0%	0.1%
Some other race alone	0.6%	1.5%	5.8%
Two or more races	1.1%	1.4%	2.2%

Source: US Bureau of Census, American Community Survey, 2006

Jasper County's population is behind the state of Iowa and the U.S. in achievement of higher education (e.g., associate's, bachelor's and graduate or professional degrees). After the departure of the Maytag, NTC and the region's leadership began working in partnership with the Des Moines Area Community College (Newton Campus) to provide quick entry into retraining and degree programs.

Table 3.4: Educational Rates of Population 25 Years and Over: 2008

	Jasper County	Iowa	United States
Population 25 years and over	25,683	1,965,813	197,794,576
Less than high school diploma	10.9%	10.3%	15.5%
High school graduate (including equivalency)	44.2%	35.0%	29.6%
Some college, no degree	21.4%	21.1%	20.1%
Associate degree	7.2%	9.3%	7.4%
Bachelor's degree	12.1%	16.8%	17.3%
Graduate or professional degree	4.2%	7.5%	10.1%

Source: US Bureau of Census, American Community Survey, 2008.

Population stabilization and growth is key to employment growth, in addition to securing the tax base. The population of Jasper County and Newton has fluctuated in the last 30 years, returning to its 1980 level in 2008.

Table 3.5: Population data for Newton, Jasper County, Iowa and the United States

	Newton		Jasper County		Iowa		United States	
	Population	% Change	Population	% Change	Population	% Change	Population	% Change
1980	15,292		36,425		2,913,808		226,545,805	
1990	14,789	-3.3	34,795	-4.5	2,776,755	4.7	248,709,873	9.78
2000	15,579	5.3	37,213	6.9	2,926,324	5.4	281,421,906	13.15
2008	15,042	-3.4	36,583	-1.6	3,002,555	2.6	303,824,640	7.96

Source: U.S. Bureau of Census

Newton is particularly interested in stabilizing its population after sustaining such large job losses. The table below indicates that Newton is slowly losing population, but at a slower rate than expected given the large number of jobs lost in 2006-2007.

Table 3.6: Newton Population Change, 2003-2008

	2003	2004	2005	2006	2007	2008	% Change 2003-2008
Newton City Population	15,682	15,531	15,353	15,232	15,099	15,042	-4.0%

Source: http://www.recap.iastate.edu/, accessed on January 7, 2010

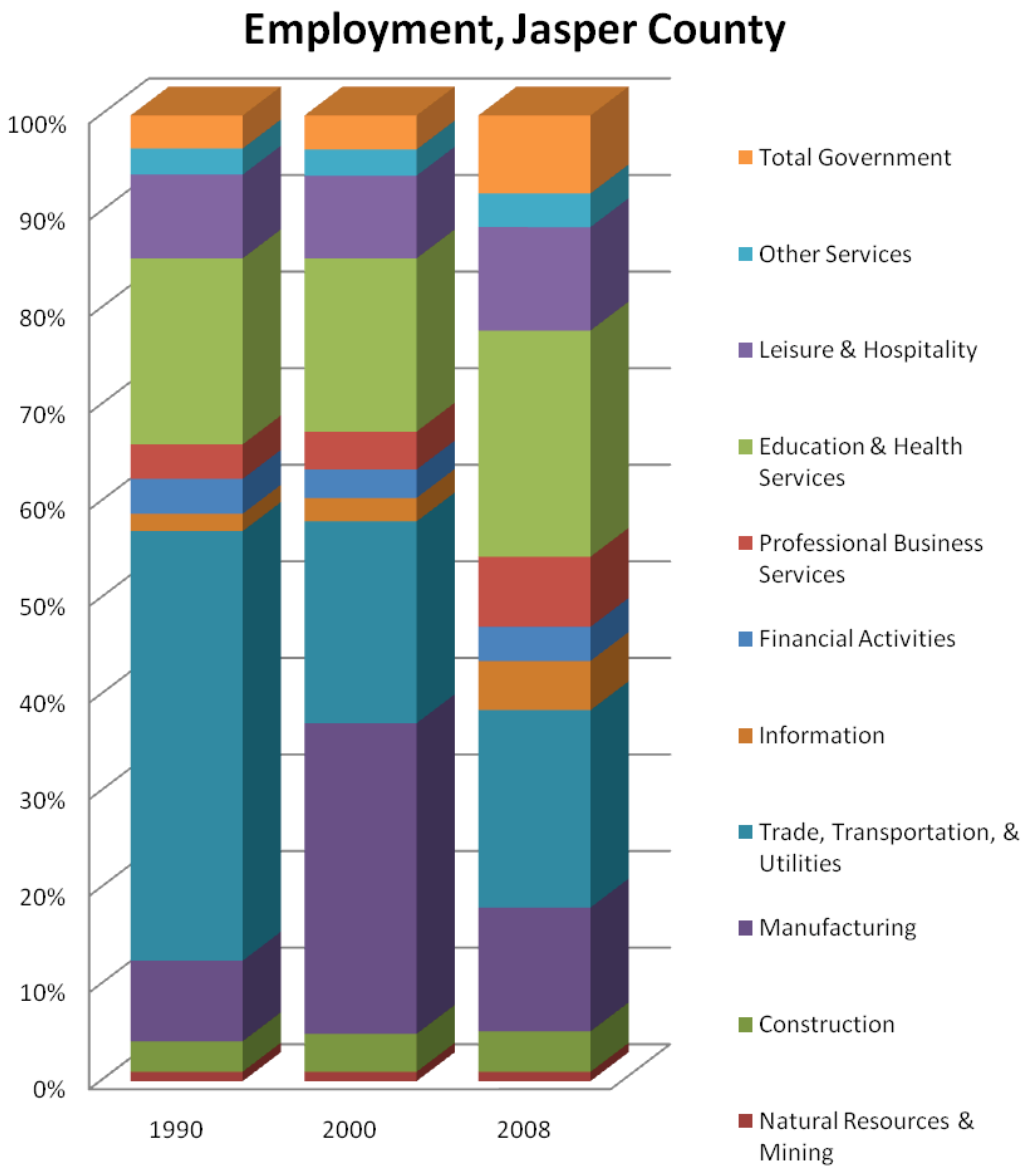
The 1,900 jobs lost in Newton caused additional, indirect job loss in the region, though it is difficult to determine how much. Jasper County lost 3,051 jobs in 2008, raising the unemployment rate to 7.6 percent. Iowa's unemployment rate was nearly half that during the same time (4.1 percent).[36]

Table 3.7: Jasper County
Change in Employment 1990 – Current by Decade

Year	Labor Force	Employment	Total Employment Change	% Change	Unemployment Rate
1990	17,983	17,317			3.7%
2000	19,908	19,389	2,072	11.9%	2.6%
2008	17,961	16,338	-3,051	-15.7%	7.6%

Source: US Bureau of Labor Statistics

Table 3.8: Jasper County Employment Percentages: 1980-2007



Source: US Bureau of Labor Statistics

A look at Jasper County's industries by location quotient (LQ) shows that Jasper County's manufacturing LQ exceeded 2.0 in 2000, then fell to approximately 1.28 in 2008 (Table 3.9). Jasper County's dependence on manufacturing is clear from these figures, as are the changes wrought by the loss of Maytag. As Jasper County works through the structural changes currently taking place in its

economy, industries such as services (which grew from 0.81 location quotient in 2000 to 1.03 in 2008) may help fill the void, but it remains too early to tell.

Table 3.9: Jasper County Industry Location Quotients by Decade

Industries	2000	2008
Natural Resources & Mining	0.708859	0.679583
Construction	0.720654	0.770766
Manufacturing	2.326834	1.281767
Trade, Transportation, & Utilities	0.960722	0.997691
Wholesale Trade	0.779557	0.983732
Retail Trade	1.180835	1.120904
Transportation & Warehousing	0.136864	0.650581
Utilities	0	1.07843
Information	0.81264	2.177646
Financial Activities	0.482837	0.589896
Finance & Insurance	0.511586	0.658562
Real Estate, Rental & Leasing	0.405541	0.402515
Professional Business Services	0.292754	0.544102
Professional, Scientific & Technical	0.495152	0.614751
Mgt. of Companies & Enterprises	0	0.451691
Admin., Support, & Waste Mgt.	0	0.49654
Education & Health Services	0.909427	1.065018
Educational Services	0.035338	0.050527
Health Care & Social Assistance	0.601451	0.731717
Leisure & Hospitality	0.886167	1.035926
Arts, Entertainment & Recreation	0.422837	0.888785
Accomodation & Food Services	0.981633	1.066407
Other Services	0.811543	1.034201
Total Government	0.634181	1.456826

Source: US Bureau of Labor Statistics

Per capita income serves as a good overall measure of wage growth and as a leading indicator of economic growth and transformation. Lost with Maytag was decades of steady wage growth through union negotiations. Jasper County's per capita personal income surpassed Iowa's averages in 1980 and 1990, but fell below the state in 2000 and 2007. Personal income in Jasper County has been below national figures every decade, but by 2007 had fallen significantly farther behind the state and nation.

Table 3.10: Per Capita Personal Income Change, 1980-2007

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
Jasper County	$23,667	$27,934	$31,286	$30,030	18.03%	12.00%	-4.02%
Iowa	$22,986	$26,752	$31,959	$34,916	16.39%	19.46%	9.25%
United States	$24,231	$29,953	$35,937	$38,615	23.62%	19.98%	7.45%
Ratio - County / US	97.58%	93.22%	87.11%	77.77%			
Ratio - County / State	102.96%	104.42%	97.90%	86.01%			

Source: U.S Bureau of Economic Analysis
Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor

In 1989 and 1999, median household income in Jasper County surpassed state averages and remained relatively close to national averages. However, by 2008, household income fell below the state's average, and trailed the U.S. average more significantly.

Table 3.11: Median Household Income

	1989	1999	2007	1989-1999	1999-2007
Jasper County	$46,340	$51,870	$45,882	11.93%	-11.54%
Iowa	$42,347	$49,114	$46,399	15.98%	-5.53%
United States	$48,526	$52,257	$50,007	7.69%	-4.31%
Ratio - County / US	95.50%	99.26%	91.75%		
Ratio - County / State	109.43%	105.61%	98.89%		

Sources: U.S. Bureau of the Census 1990 Census of Population and Housing; U.S. Census Bureau Census 2000; U.S. Census Bureau – American Community Survey 2006-2000. All figures are adjusted using U.S. Census Bureau CPI-U-RS:2007 Dollar Factor.

From 2004 to 2008, annual average employment, total wages and average pay for Jasper County declined steadily (except for a bump in wages and pay in one year, 2006). By 2008, Jasper County had fallen far below 2004 averages in all areas.

Table 3.12: Jasper County Annual Average Employment, Annual Total Wages and Annual Average Pay for the Private Sector

	Annual Average Employment	Annual Total Wages	Annual Average Pay
2004	11,078	372,033,977	33,582
2005	10,202	341,581,001	33,482
2006	9,556	364,476,819	38,141
2007	9,023	309,337,352	34,282
2008	8,532	256,995,134	30,122
2004-2008 % Change	-23%	-31%	-10%

Source: BLS Employment and Wage Statistics: Accessed on January 20, 2010: ftp://ftp.bls.gov/pub/special.requests/cew/

Changing Strategy: Moving to a Systemic Approach

Before Maytag closed, Newton's economic development approach centered on making periodic, usually property-based transactions using a standard set of tools, such as development assistance, tax abatements, assistance with state loans and grants and local revolving loan funds. When Maytag closed, Newton was forced to move beyond these tools to find new strategies that would achieve both short-term reemployment goals and long-term economic resiliency.

Newton chose to move away from transaction-based economic development to a more systemic approach, based on building partnerships around community, workforce and economic development strategies and outcomes. Specifically, NTC began investing its resources and working with workforce developers, institutions of higher education to improve workforce skills in industries that would be competitive in the future. While NTC, Jasper County and the state of Iowa did pool their resources to offer incentive packages that would help attract new employers to Maytag facilities, these transactions were part of a larger strategy to anchor more strategic, long-term growth.

In Newton, the real "aha" moment came through the process of trying to attract new tenants to the Maytag facility. Through that experience, NTC quickly learned that potential employers were more interested in Newton's available workforce. So NTC, working with Iowa Workforce Development, was able to identify and highlight specific, transferable skill sets that the local workforce offered. One of the actions Newton took during its recovery was to interview regional private employers to identify the skills they needed. Those included:

- Problem-solving – thinking through problems and offering solutions
- Teaming – willingness to support others' work
- Quality control – taking pride in how a job is done
- Continuous improvement – a culture of lifelong learning

Such skills are vitally important in a fast-paced economy that requires worker flexibility and creativity. Local leaders realized that helping upgrade skills like these would be likely to mitigate the duration that individuals were unemployed or underemployed. In addition, a base of skilled workers helps strengthen the overall ability of a community to bounce back from economic shocks. NTC also realized that it needed to articulate a single message that welcomed new industries. This message focused on the quality of the Maytag workforce and its ability to adapt to meet the demands of the knowledge economy.

Only a few days after the closure announcement, the offices for the Newton Development Corporation, Iowa Workforce Development, and the Career Transition Center (more on this below) co-located in a building adjacent to the Maytag headquarters and the local campus of the Des Moines Area Community College.

Newton was able to take these insights and actions and apply them early in its recovery. Only a few days after the closure announcement, the offices for the Newton Development Corporation, Iowa Workforce Development, and the Career Transition Center (more on this below) co-located in a building adjacent to the Maytag headquarters and the local campus of the Des Moines Area Community College. This co-location led to a stronger partnership that permitted companies approaching the Maytag facility to speak directly with Maytag employees, and in some cases hand out job applications on site.

Further, while Maytag was still in operation, Whirlpool Corporation supported NTC's decision to study the skill levels among Maytag employees. The data gathered on site were then used to inform prospective employers of the locally available skill sets.

Whirlpool also provided funding to support a Career Transition Center. The center provided career assistance to former Maytag employees that included designing an action plan to build both the hard and soft skills of every unemployed or underemployed individual. Openness was purposely built into the center's proactive approach to technical assistance. This included contacting each and every former Maytag employee to ask if the Career Transition Center could be of any assistance.

In February 2007, before Maytag had shut its doors and less than a year after its announcement, Caleris, a call center company, announced its decision to locate in Newton. Caleris was able to draw upon Maytag's call center staff, a direct transfer of skills. The facilitation of this match by the economic development and workforce team was instrumental to Caleris's decision to relocate. Caleris now has 150 workers and expects to bring employment up to 300 or more over the next few years. While the average hourly wage is below Maytag's, at slightly above $11 per hour, the jobs offer full benefit packages, an important criterion of job quality.

Building on Existing Assets

Newton's transition from a company town to a more diverse economic base required foresight and follow-through. Newton proactively formed the Newton Transformation Council to serve as the umbrella organization to align and formalize leadership in economic development. Specifically, NTC was designed to take on the following responsibilities:

- Develop dynamic partnerships
- Create a core group of key regional leaders
- Implement strategies to stimulate positive growth
- Capitalize on workforce capacity
- Provide the necessary infrastructure to promote and create diverse economies

NTC was structured as a virtual organization that provided stakeholders the opportunity to share ideas and benchmark Newton's recovery. Newton's leadership purposely made NTC an open organization, giving all interested regional, state and federal parties the opportunity to sign up and be part of Newton's transformation. Local leaders knew this was necessary because the community would have to leverage all possible resources and partnerships to accomplish its goals. The economic crisis catalyzed a cooperative approach that was essential to the challenges at hand.

Newton's leadership purposely made NTC an open organization, giving all interested regional, state and federal parties the opportunity to sign up and be part of Newton's transformation.

Whirlpool, Alliant and Aquila provided $135,000 early on to support the activities of NTC, including an in-kind contribution from Whirlpool to provide a project manager (a Whirlpool employee). Whirlpool's engagement with NTC was central to its progress.

These sources were also contributors to an important visioning session that involved 350 community participants in helping shape the transformation project at an early stage. Together, NTC and private-sector leaders held an open meeting to discuss the Maytag loss, to which the local newspaper and radio station

were invited to discuss the question on everyone's mind: "What's next?" Initially, the community wanted to know how Newton's leadership planned to reuse the Maytag facilities, in addition to what would happen to the laid-off employees. One outcome of the visioning process was the decision that population stabilization and growth would be a key measure of NTC's success.

NTC and Whirlpool agreed that Newton's transformation required a better understanding of Newton's workforce capabilities, resulting in an assessment that revealed that many previous Maytag employees needed to upgrade their skills. As a member of NTC, the Des Moines Area Community College (DMACC) was the logical partner to offer training. For example, DMACC did extensive outreach to Maytag workers and offered special classes in math and computers, key skills that would give former Maytag employees a better chance at reemployment in knowledge-based jobs. In addition, DMACC established a new semester that began right when the Maytag layoffs took effect.

Efforts to locate new employers in the region extended beyond those who would occupy the Maytag facilities. Given Newton's small size and limited resources, it partnered with the state of Iowa, which was heavily focused on building up overall capacity in the alternative energy sector – especially wind energy, given Iowa's natural assets in this area. A wind blade manufacturer, TPI Composites, initially visited Newton to look at the vacant Maytag facilities. While the real estate did not meet the company's needs, it chose to locate in Newton to access the region's workforce. TPI brought 500 jobs to Newton with starting salaries of about $13 per hour – less than the production jobs at Maytag, but with benefits and in a growing industry.

Another wind energy company, Trinity Structural Towers Inc., announced in April, 2008 that it would bring a $21 million wind tower factory and 140 jobs to Newton. Trinity also had been invited to view the Maytag facility before it shut down. Due to the aggressive schedule of the transition efforts, Trinity moved into a Maytag property located right off the rail line in Newton. The company operates some of the largest-capacity facilities for the fabrication of tubular wind towers in North America.

Prior to Maytag's closing, leaders had already begun working to diversify the region's economic base by investing in the Iowa Speedway, a state-of-the-art, tri-oval race track and motorsports facility. A combination of planning and leadership brought this project to fruition. Developers broke ground in June 2005 and by September 2006, the race track held its first competition. Designed for year-round use and including 25,000 permanent grandstand seats, the Speedway supports the region's economic development efforts and improves its quality of life by providing recreational activities for both residents and tourists. It operates

with 25 full-time employees but employs up to 500 or more employees on event days.

Building Economic Development Capacity

Newton engaged in several important initiatives to build overall economic development capacity to enable quality job creation. First, it created institutions necessary to oversee the transformation and leverage resources; most critical was NTC. Second, Newton also collected and disseminated critical data and information that informed the community of its assets and challenges but also ensured that everyone had the same understanding of those issues. Finally, Newton built partnerships to reach diverse institutions and resources that could be used to tackle several goals simultaneously.

Organizationally, NTC brought diverse community assets into one point of contact. If a local entrepreneur was looking to expand in Newton, NTC would gather resources, in partnership with its members, to make sure the new firm's growth needs were met. NTC also represented the community with one voice. For example, if a new firm rented a section of the vacated Maytag facility, NTC made the announcement.

Organizationally, NTC brought diverse community assets into one point of contact. If a local entrepreneur was looking to expand in Newton, NTC would gather resources, in partnership with its members, to make sure the new firm's growth needs were met.

NTC played a critical role in the data collection efforts that were part of regional capacity-building. Initially, NTC needed data on the vacant Maytag facilities, in addition to collecting and analyzing data on workforce skills. Whirlpool's leadership believed that NTC needed to quickly document and circulate Maytag's real estate profile, which would lead to timely recruitment and attraction efforts. With Whirlpool engaged in NTC's vision, it was much easier to gather the information required by site selectors, as well as the data needed by firms seeking to tap the Maytag workforce. Having the data enabled Newton not only to understand its assets, but to bring people together based on a common understanding of what the region's strategies should be.

Finally, NTC was able to reach its goals by expanding and deepening its partnerships. Below are a few of the organizations that were engaged in Newton's transformation.

- Local economic development organizations – the Newton Development Corporation, the Jasper County Economic Development Corporation and the City of Newton's Department of Community Development
- Central Iowa Regional Leaders – a wide-variety of public, private and non-profit leaders brought together through Central Iowa's DOL Regional Innovation Grant

- Workforce development organizations – Iowa Workforce Development and the Maytag-Whirlpool Career Transition Center
- The business community – Whirlpool Corporation, Iowa Telecom, Alliant Energy and Aquila. Iowa Telecom bought the headquarters site and located offices there. Alliant Energy was the electric utility and Aquila was the natural gas utility for Maytag, which had been its biggest customer.
- Higher education institutions – Iowa State University, University of Northern Iowa and Des Moines Area Community College
- Federal agencies – Department of Labor, Department of Commerce, Department of Agriculture, and the Small Business Administration

It is clear that building a systemic approach meant working with a range of different institutions, sectors and government agencies. Thus, building capacity requires learning how to work effectively with other economic development stakeholders. For smaller rural regions, working with larger economic development organizations is especially important. For Newton, the Iowa Department of Economic Development was instrumental in helping NTC gather data to list the vacant facilities, in addition to augmenting the incentive packages that could be offered to potential employers. This relationship was particularly important because the vacant Maytag facilities were the largest available industrial space in the state at the time. Among the economic development tools that NTC, Jasper County and the Iowa Department of Economic Development used were career counseling services; Enterprise Zones (of which a good portion of Newton is designated, providing tax exemptions and credits to entrepreneurs and investors who locate businesses there); and the HUB Zone program, under which qualified small businesses can more easily bid on federal government contacting opportunities.

Newton's transformation was led by two guiding principles: leadership and innovation. NTC's ability to leverage private-sector investments and act regionally early on gave it enough momentum to carry through Newton's transformation.

In addition, NTC worked with the state to qualify TPI for a training program that diverts TPI's employee payroll taxes into Des Moines Area Community College's training programs, which continually train TPI employees in advanced manufacturing techniques.

Leadership and Innovation to Build a Regional Approach

Newton's transformation was led by two guiding principles: leadership and innovation. NTC's ability to leverage private-sector investments and act regionally early on gave it enough momentum to carry through Newton's transformation.

The need for capital to get the community's strategies up and running was of immediate importance. The quick infusion of private money – which can often be secured more quickly when community stakeholders combine their available

resources around a common goal – provided the seed necessary to jumpstart efforts to reuse the Maytag site and attract new employers.

Newton was able to leverage funding for its economic development efforts from multiple public sources, including the Department of Labor, the city of Newton, the state of Iowa and Jasper County. A Small Business Administration Portability Grant provided money for a regional business center to grant technical assistance and training to new businesses. The Des Moines Area Community College also was a source and conduit of money to nurture and train existing businesses and entrepreneurs, as well as to create a worker pipeline through its Career Academy, located in two of the former Maytag buildings. For example, the College's Production Engineering Career Academy prepares students for manufacturing careers in which high school students learn the basics of welding, automation, machine tool operation (CNC), computer-aided drafting and design (CAD), and other workplace skills.

The effort to replace and grow jobs in Newton got a regional boost in March 2007, when the Department of Labor awarded a $250,000 Regional Innovation Grant (RIG) to the seven-county region that includes Newton to help it develop a strategy around new industry clusters and a workforce pipeline to staff them. The RIG brought together local and regional leaders to initiate a comprehensive, sustainable, and integrated regional plan using the Workforce Innovation in Regional Economic Development (WIRED) conceptual framework and principles. The RIG resulted in a viable regional plan whose implementation is now being funded with support from numerous regional partners.[37]

It was clear from the beginning that the RIG-funded strategic plan needed to be data-driven. Organizing and sharing common data sets among interested parties would lead to better results, as well as allowing all interested parties to benchmark their successes and challenges. Some concerns had to be addressed before the strategic planning process began, such as the tendency of some local and state agencies to guard their data. When the RIG brought all of region's stakeholders to the table, a discussion on data dissemination led to a new policy of data-sharing among all partners. This gave NTC and other economic development organizations a clear picture of the region's structure. The term now used in Newton is "data on demand," which has led to stronger relationships between economic and workforce development in the region.

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The RIG initiative led to the region's leadership to start the Iowa Innovation Gateway (IIG), in which cross-county and cross-discipline collaboration in Central Iowa works to boost the region's global competitiveness. According to a business retention data program, close to 50 percent of the region's employers work in just two sectors: advanced manufacturing and technology/information. To improve the

region's competitiveness, IIG is developing a talent attraction and retention strategy. IIG also agreed to focus its business recruitment campaign on companies that had Iowa roots and were looking to expand. For example, the NTC engaged Iowa Telecom's leadership to gauge its future expansion needs, which ultimately led to an expansion in Newton.

Another important piece of Newton's recovery was its ability to retain the highly skilled labor force that was once employed at Maytag. For example, NTC helped former Maytag engineers start Springboard Engineering, Inc., by leveraging Community Development Block Grant funding to offer the new company a no-interest loan to acquire its current facilities. Springboard employs close to 50 individuals, all of whom receive profit-sharing packages. Springboard also was able to take advantage of local accounting, finance and human resource representation in Newton to help it successfully grow.

Newton Medical Clinic

Creating a system-based economic development strategy that is more inclusive and strategic also includes initiatives that support the population and the quality of life, often well beyond traditional economic development efforts. In Newton, this is exemplified by its focus on workforce skill development, discussed throughout this case, and in NTC's efforts to deliver health care in the wake of the Maytag closure.

The NTC team worked hard with community health leaders to open a free clinic that would compensate for Maytag employees' loss of medical benefits. Initially, NTC asked a representative of Free Clinics of Iowa (FCI) to present information to Newton. The local group applied for some grant funds from the Iowa/Nebraska primary caregivers group; they received seed money and continued funding each year. Even though the clinic was started because of the closure of Maytag, anyone in the community who lacks insurance is eligible for services there.

Entrepreneurship and Small Business Development

From the beginning, NTC began to organize an entrepreneurship and small business development strategy intended to help former Maytag employees launch new firms and create good jobs. Newton's leadership viewed its displaced workforce as a source of new entrepreneurs. By providing start-up assistance, including market information and skills development through education providers, the region's leadership equipped and pointed potential entrepreneurs towards growth industries. Encouraging entrepreneurship was also considered a retention strategy for residents who considered leaving the region.

NTC did not have to look far to tap into the resources of MyEntreNet, a statewide entrepreneurship and small business development program funded by the Iowa state legislature, the U.S. Small Business Administration and the Northwest Area Foundation. The program nurtures new and existing businesses through web-based, confidential counseling with small business development consultants, on-line seminars and connections to other entrepreneurs and resources.

In addition, public and private funding was dedicated to providing training to existing businesses and entrepreneurs. The Kauffman Foundation's FastTrac Program was offered to Maytag employees that were interested in building a business in the Newton region.

Entrepreneurship among former Maytag employees has been strong. The former head of research and development formed Springboard Engineering and hired close to 50 members of his former team. Another former Maytag employee founded Central Iowa Energy, a company that uses animal fat instead of soy and corn in biodiesel; most of his 29 employees are former Maytag coworkers. Other employees have founded a payroll service, an art gallery and a hair salon.

Arts Incubator

Using philanthropic funds, community leaders were able to organize resources to open an informal arts incubator. The Centre for Arts and Artists (CAA) was created in 2007 to provide a downtown environment to create and display art. The incubator is intended to spur the growth of local artistic talent by bringing together community organizations interested in the arts, promoting their programs and connecting them with each other. It focuses on economic and community development; creating jobs and businesses while improving the overall quality life in the region.

In early 2010, CAA had seven occupants skilled in a range of media. CAA has become an integral part of the effort to establish a new creative culture and economic opportunity for the community. Buses have begun visiting Newton for art tours, and volunteer docents and artists gather annually to provide education at 25 public art sites to the community's fifth-grade students as a part of the school curriculum.

Newton's Results to Date

Moving forward, Newton continues to center its economic development efforts on building its supply of skilled workers for industry, and continues to assist workers with training and placement. Newton's strategy is part of a seven-county effort to nurture growing industries; those industries and selected existing employers include:

- Advanced manufacturing: TPI, Trinity Structural Towers Inc, Fisher Controls, Vermeer, Jeld-Wen
- Information technology: Palisade Systems, Iowa Telecom, Boyd Software Company
- Bio-sciences: MVTL Laboratories, Keystone Laboratories
- Sustainable energy: PowerFilm Solar, Central Iowa Energy
- Entrepreneurial firms: Springboard Engineering Inc., Prism Projection
- Tourism: Iowa Speedway, Knoxville Raceway, Tassel Ridge Winery

Due to NTC's efforts, over 1,000 jobs have been created from companies locating or expanding in Newton since Maytag shut down, including Iowa Telecom, Caleris, TPI and Trinity Structural Towers, all of which offer salaries in the teens. In addition, entrepreneurship among former Maytag employees has been strong.

Newton's unemployment rate, which was 4.5 percent in May 2006 when the closure was announced, grew to a height of 9.5 percent in December 2007 (after the October 2007 closure). It was down to 6.9 percent in April 2008, though that was significantly higher than the state average of 3.5 percent in early 2008.

NTC's vision statement indicates that its success should be measured in population stabilization and growth, and recent figures indicate that Newton's population has remained steady. However, like much of rural America, Newton has experienced a decline in its young adult population. In 2003, Newton's population was 15,682; as of 2008, it had declined by 640 people, to 15,042. This 4 percent decline in Newton's overall population was mostly among young adults.

While a census has not been conducted since Maytag left, there is the sense that any outmigration from Newton has been small. More common than a change of residence has been for many former employees of Maytag in Newton to commute to places such as Des Moines for work. While they are likely to find jobs with comparable salaries there, there is a price paid in time and gasoline.

A Story in Progress

Newton's story illustrates the challenges of creating quality jobs, particularly of working from a small base to invent a new economy after the departure of the town's major employer. It is a story of regional cooperation to build long-term systems for a stronger economy. It clearly points the need to link economic and workforce development as central to economic transformation. But this work is one day at a time, and the successes are mixed.

Of those workers who did not find employment, many enrolled at the community college to be trained for completely different work. The state's Displaced Worker Program reported that the large majority of former-Maytag employees found new work in something completely different – from truck driving to heating and cooling to architectural drafting. Such experience clearly points to the need for training and education as core components of any long-term, inclusive quality job strategy.

For some of the workers who transferred from the call center or other sales and services departments of Maytag to Caleris, wages are comparable. But for most of the new jobs in Newton, those who had been on Maytag's production line had to accept significant pay cuts. However, many of the jobs created offer benefits packages, opportunities for advancement, employment with long-term growth potential in emerging technologies, and a livable wage, all key components of quality jobs.

This is perhaps one of the hardest lessons about quality job creation in a transitioning, global economy – that skill levels that once commanded good wages are no longer sufficient. Ultimately, NTC understood that its greatest asset was it workforce, not the facilities that housed them. By improving the skills of the existing workforce, in addition to the availability of manufacturing and office facilities, NTC was able to attract large employers to the region. Perhaps more important, though, has been the ability of Newton's leadership and its partners to implement a systemic growth strategy focused on long-term progress in workforce and economic development goals.

Ultimately, NTC understood that its greatest asset was it workforce, not the facilities that housed them. By improving the skills of the existing workforce, in addition to the availability of manufacturing and office facilities, NTC was able to attract large employers to the region.

Notes:

[36] Accessed on January 8, 2010: http://www.bls.gov/lau/lastrk08.htm

[37] These include Fisher's Division of Emerson Controls; Des Moines Area Community College; Iowa State Center for Industrial Research and Service/Manufacturing Extension Partnership; Alliant Energy; MidAmerican Energy; Poweshiek County; Marion County; Marshall County; Jasper County; the Iowa Department of Economic Development and the Iowa Association of Business and Industry.

4.0 ALBUQUERQUE, NEW MEXICO

Two major challenges historically have faced Albuquerque's economic developers. First was the region's long-time concentration of employment in just two sectors – the U.S. military and the agriculture industry. By the end of World War II, the government sector employed the majority of the workforce, while manufacturing only accounted for 8.8 percent of employment. The second challenge has been the lack of land for commercial real estate development. Development has been restricted on a large proportion of the region's land, owned by the Air Force or belonging to tribal authorities. These two challenges later played a central role in Albuquerque's economic development strategies and subsequent growth.

The presence of the military provided for a strong skill base in both the research and construction industries. Military base and laboratory construction required a highly skilled labor force, supplied by strong construction unions in the region. Later, when Albuquerque began developing land to accommodate the growing high-tech industry, skilled construction workers enabled the efficient, fast construction of new facilities. Those construction skills also provided a foundation for the growth of the film industry.

In 1960, Albuquerque business leaders formed the first informal economic development organization, Albuquerque Industrial Development Service, with the goal of promoting industrial development in the city. It later changed its name to Albuquerque Economic Development (AED) and began an aggressive campaign of image-building and workforce training to attract high-tech companies into the region. At the same time, AED began reaching out to local organizations, universities and training programs to match the workforce with the region's targeted growth industries. From its inception, Albuquerque's economic development system prioritized alignment with workforce development.

Recognizing the need to continually upgrade workers' skills, AED formed the Technology Vocational Institute (TVI) in 1965 to provide customized workforce training to local and regional employers. Initially, educators in the community would offer their time and services to train residents in the technical skills that were in demand by businesses. Companies looking to expand their workforce in Albuquerque would also send their employees to TVI.

In its 40-year history, TVI transitioned from a trade school to become Central New Mexico Community College, the second largest educational institution in New Mexico. More than 28,000 students currently attend classes at its four campuses and Workforce Training Center in the Albuquerque metropolitan area.[38]

In its 40-year history, TVI transitioned from a trade school to become Central New Mexico Community College, the second largest educational institution in New Mexico. More than 28,000 students currently attend classes at its four campuses and Workforce Training Center in the Albuquerque metropolitan area.

In addition to its focus on workforce development, Albuquerque made other key decisions to ensure that the city stayed economically competitive, most

significantly its commitment to growing green industries. As a recipient of a U.S. Department of Labor WIRED grant in 2007, the eight-county Technology Triangle is creating a wide network of potential regional partners and resources build critical mass in the following industries: renewable energy, green building construction, microelectronics, optics, aerospace/aviation and advanced manufacturing.

These initiatives, plus others around land development, the film industry and more discussed in this case illustrate how Albuquerque has worked to successfully build on its assets, mitigate its challenges and ensure that the region remains competitive for industries that demand skilled workers and offer good jobs.

Regional Snapshot

Located in central New Mexico, Albuquerque was founded in 1706 and incorporated in 1891. The area has long been a commercial and transportation hub within the Southwest. The Albuquerque Metropolitan Statistical Area consists of four counties: Bernalillo, Sandoval, Torrance and Valencia. The two largest cities in the region are Albuquerque, located in Bernalillo County, and Rio Rancho in Sandoval County, with a number of other smaller towns and suburbs throughout the metro area.

The population of the city of Albuquerque and the Albuquerque MSA has undergone double-digit growth rates from 1980 and 2007.

Table 4.1: City of Albuquerque, Albuquerque MSA, State of New Mexico and U.S. Population Changes from 1980-Present

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
City of Albuquerque	332,920	384,736	448,607	507,823	15.56%	16.60%	13.20%
Albuquerque MSA	485,430	589,131	729,648	845,913	21.36%	23.85%	15.93%
New Mexico	1,303,302	1,515,069	1,819,046	1,962,226	16.25%	20.06%	7.87%
United States	226,545,805	248,709,873	281,421,906	301,237,703	9.78%	13.15%	7.04%

Source: US Bureau of Census

Poverty rates in Albuquerque in 2008 and the MSA are above the national level, but below that of New Mexico.

Table 4.2: Percentage of Persons Below the Poverty Line

	2008
City of Albuquerque	15.2%
Albuquerque MSA	14.7%
New Mexico	17.9%
United States	13.2%

Source: U.S. Census Bureau, 2006 – 2008 American Community Survey 3-Year Estimates

The ethnic mix in the city of Albuquerque and the MSA is similar to New Mexico's, but differs from the nation. Table 4.3 indicates that the city of Albuquerque, the MSA and the State of New Mexico have a much larger percentage of Hispanic or Latino (of any race) ethnicities than compared to the United States. Specifically, 44 percent of the city of Albuquerque and 44.2 percent of the MSA are Hispanic or Latino (of any race) compared to 15.1 percent in the United States. Moreover, the city and MSA have a higher than national percentage of American Indian and Alaskan Native.

Table 4.3: Ethnic Mix

	City of Albuquerque	Albuquerque MSA	New Mexico	United States
White alone	67.5%	68.1%	70.1%	74.3%
Black or African American alone	3.5%	2.9%	2.2%	12.3%
American Indian and Alaska Native alone	5.1%	6.0%	9.3%	0.8%
Asian alone	2.6%	2.0%	1.4%	4.4%
Native Hawaiian and Other Pacific Islander alone	0.0%	0.0%	0.0%	0.1%
Some other race alone	18.0%	17.8%	14.0%	5.8%
Two or more races	3.3%	3.2%	3.0%	2.2%
Hispanic or Latino (of any race)	44.0%	44.2%	44.5%	15.1%

Source: US Bureau of Census, American Community Survey, 2008

The Albuquerque MSA's labor force has grown from 305,429 workers in 1990 to 412,541 in 2008, a 35 percent increase in less than 20 years. Total employment in the Albuquerque MSA grew 23.4 percent from 1990 to 2000 and grew 11 percent from 2000 to 2008.

A good indicator of the region's resilience is its unemployment rate, which was lower than the U.S. rate in 2008. The Albuquerque MSA seasonally adjusted unemployment rate was 8.2 percent for October 2009, up from 8.0 percent in September but below the 10 percent national average during that same period.[39]

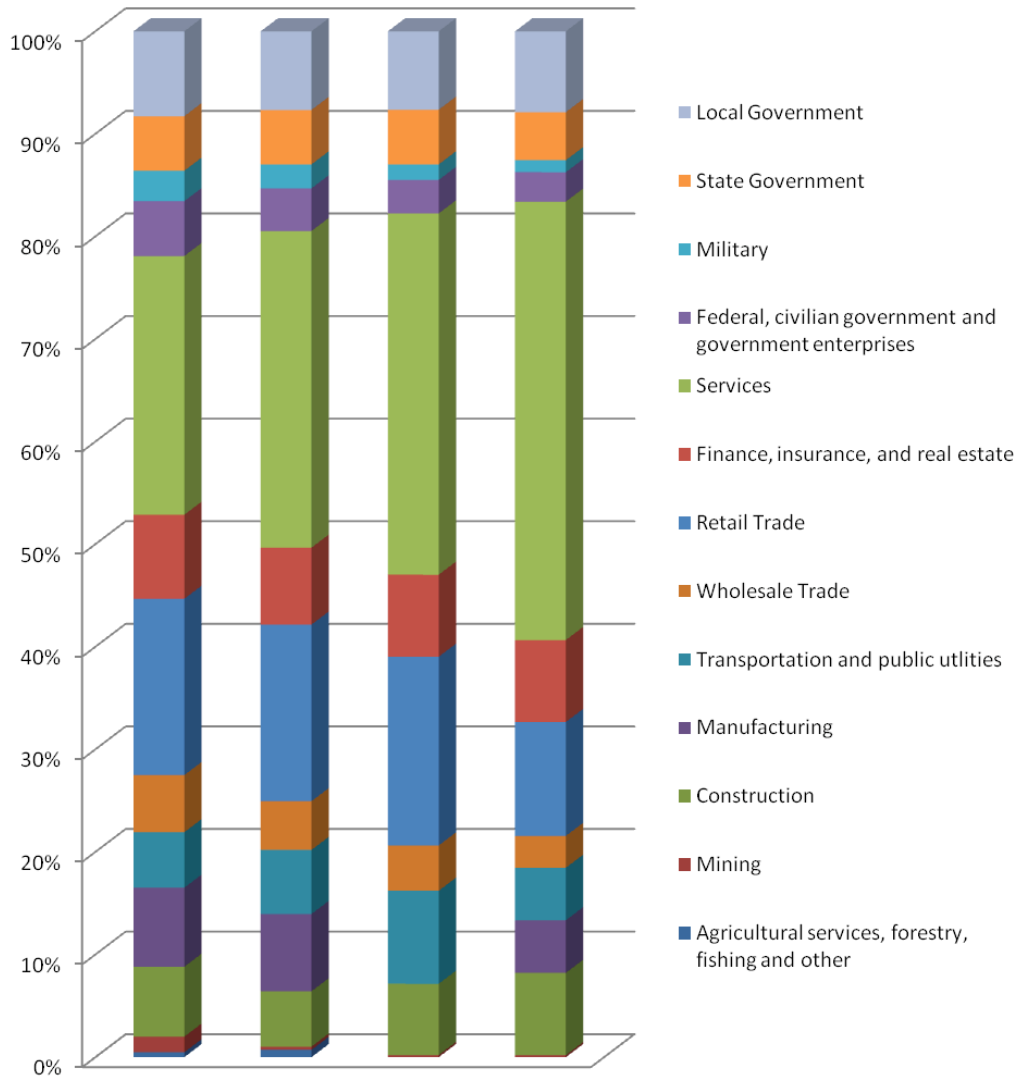
Table 4.4: Albuquerque MSA: Change in Employment 1990 – Current Decade

Year	Labor Force	Employment	Total Employment Change	% Change	Albuquerque MSA Unemployment Rate	United States Unemployment Rate
1990	305,429	288,040			5.7%	5.6%
2000	370,857	355,580	-67,540	23.4%	4.1%	4.0%
2008	412,541	394,950	-39,370	11%	4.3%	5.8%

Source: US Bureau of Labor Statistics, 2008

The Albuquerque MSA is home to over half of New Mexico's total employment and workforce, with 512,964 jobs in various sectors. Although agriculture and military employment have historically dominated the economy, through concerted economic development efforts over the past four decades, employment grew steadily from 1980 to 2007 in construction (142 percent), manufacturing (37 percent), retail (122 percent), finance, insurance and real estate (101 percent), and services (197 percent).

Table 4.5: Albuquerque MSA: Employment Percentages by Industry: 1980, 1990, 2000 and 2007



Source: Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce. Note: agricultural services, forestry, fishing and other is missing for 2000 and 2007. Also, manufacturing data is missing for 2000.

Location quotients for the region's industries, in comparison with the U.S., indicate a strength in the construction industry, in addition to retail trade; services; federal, civilian government and government enterprises; and military sectors.

Table 4.6: Albuquerque MSA: Location Quotients

Industries	1980	1990	2000	2007
Agricultural services, forestry, fishing and other	0.579518	0.669111	0	0
Mining	0.967721	0.400144	0.44725	0.031042
Construction	1.336818	1.012962	1.24926	1.279844
Manufacturing	0.410915	0.520773	0	0.65493
Transportation and Public Utilities	1.058983	0.935484	1.114841	0.7345
Wholesale Trade	1.073827	0.961835	0.987885	0.864743
Retail Trade	1.066067	1.024472	1.148063	1.093235
Finance, Insurance, and Real Estate	1.036798	0.95269	1.029295	0.89434
Services	1.119699	1.086937	1.129018	1.146475
Federal, Civilian Government and Government Enterprises	1.978712	1.750128	1.914122	1.911391
Military	1.316877	1.172705	1.246033	1.06697
State Government	1.573198	1.64026	1.827393	1.685924
Local Government	0.962062	0.959074	0.996704	1.041024

Source: U.S Bureau of Economic Analysis, 2009

The Albuquerque MSA's median household income grew from 1979 through at least 1999, but declined by 2007. Despite this decrease, the region's household income has remained above New Mexico levels since 1979, but consistently lags national levels. Notably, the city did not experience the same level of decline as the MSA or that nation; an anomaly for an urban center, especially given the tough economic times.

Table 4.7: Median Household Income Change

	1979	1989	1999	2007	1979-1989	1989-1999	2000-2007
Albuquerque City	NA	$44,488	$47,625	$45,962	NA	7.05%	-3.49%
Albuquerque MSA	$43,224	$44,106	$48,640	$45,634	2.04%	10.28%	-6.18%
New Mexico	$39,005	$38,889	$42,474	$41,042	-0.30%	9.22%	-3.37%
United States	$44,826	$48,526	$52,257	$50,007	8.25%	7.69%	-4.31%
Ratio - City / US	NA	91.68%	91.14%	91.91%			
Ratio - MSA / US	96.43%	90.89%	93.08%	91.26%			
Ratio - MSA / State	110.82%	113.42%	114.52%	111.19%			

Source: U.S. Bureau of Census. Income is adjusted for 2007 CPI-U-RS

Per capita personal income is a key indicator of the existence of quality jobs. The Albuquerque MSA outperformed state per capita personal income levels from 1980 to 2007. While the region's per capita personal income has remained below national averages, the growth rates of each have remained similar.

Table 4.8: Per Capita Personal Income Change 1980-2007

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
Albuquerque MSA	$21,424	$26,134	$31,101	$33,305	21.98%	19.01%	7.09%
New Mexico	$20,014	$22,960	$26,647	$30,706	14.72%	16.06%	15.23%
United States	$24,254	$29,965	$35,917	$38,615	23.54%	19.86%	7.51%
Ratio - MSA / US	88.33%	87.22%	86.59%	86.25%			
Ratio - MSA / State	107.05%	113.82%	116.71%	108.46%			

U.S Bureau of Economic Analysis - Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor

Educational attainment rates in city of Albuquerque and the MSA are higher than rates for both New Mexico and the nation. Since 1990, the region has made a concerted effort to increase the number of individuals completing higher education at all levels. The following three tables show steady increases in education rates in the city and the region from 1990 to 2008.

Table 4.9: Educational Attainment Rates of Population 25 Years and Over: 1990

	City of Albuquerque	Albuquerque MSA	New Mexico	United States
Population 25 years and over	248,612	306,632	922,590	158,868,736
Less than high school diploma	16.1%	17.9%	24.9%	24.8%
High school graduate (including equivalency)	27.0%	27.7%	28.7%	30.0%
Some college, no degree	22.9%	22.2%	20.9%	18.7%
Associate degree	5.6%	5.5%	5.0%	6.2%
Bachelor's degree	16.7%	15.7%	12.1%	13.1%
Graduate or professional degree	11.7%	11.0%	8.3%	7.2%

Source: US Bureau of Census, 1990.

Table 4.10: Educational Attainment Rates of Population 25 Years and Over: 2000

	City of Albuquerque	Albuquerque MSA	New Mexico	United States
Population 25 years and over	291,485	456,076	1,134,801	182,211,639
Less than high school diploma	14.1%	16.1%	21.2%	19.6%
High school graduate (including equivalency)	24.1%	25.9%	26.6%	28.6%
Some college, no degree	25.2%	23.6%	22.9%	21.0%
Associate degree	5.9%	5.9%	5.9%	6.3%
Bachelor's degree	18.4%	16.5%	13.6%	15.5%
Graduate or professional degree	13.3%	11.9%	9.8%	8.9%

Source: US Bureau of Census, 2000.

Table 4.11: Educational Attainment Rates of Population 25 Years and Over: 2008

	City of Albuquerque	Albuquerque MSA	New Mexico	United States
Population 25 years and over	332,065	541,893	1,258,320	197,794,576
Less than high school diploma	13.5%	14.4%	18.0%	15.5%
High school graduate (including equivalency)	24.0%	25.8%	27.4%	29.6%
Some college, no degree	23.1%	23.4%	22.5%	20.1%
Associate degree	7.1%	7.3%	7.2%	7.4%
Bachelor's degree	18.0%	16.4%	14.3%	17.3%
Graduate or professional degree	14.3%	12.7%	10.6%	10.1%

Source: US Bureau of Census, 2008.

The region has always imported a large number of highly educated individuals to work at the advanced military research facilities. Realizing the importance of growing its own talent base, leaders recently began efforts to expand educational opportunities in Albuquerque, particularly to a wide-spectrum of its residents for inclusion in this burgeoning green sector.

Diversifying the Region's High-Tech Roots

The selection of Los Alamos as a site for atomic research in 1942 started Albuquerque on the path to become a major center for research and development. Sandia National Laboratories, Kirtland Air Force Base, and American Car and Foundry (ACF) all established manufacturing and research facilities in the region. This also led to rapid population growth in the city, which nearly tripled from 35,449 in 1940 to 96,815 in 1950. As mentioned above, by the end of World War II, the government sector employed the majority of the workforce, while manufacturing accounted for just 8.8 percent of employment.

After the creation of Albuquerque Industrial Development Service in 1960, 1,000 new jobs were created in Albuquerque through 1964. However, when a government contractor in heavy manufacturing closed its operations in 1967, cutting approximately 1,200 jobs, the city lost more than half its manufacturing jobs. In a response to the loss, Albuquerque Industrial Development Service changed its name to Albuquerque Economic Development (AED) and began an aggressive campaign of image-building and workforce training to attract

advanced technology companies to the region.

AED's mission evolved to include responsibilities in site selection assistance, labor market analysis, business incentive analysis, workforce recruitment and job training assistance, and coordination of state and local assistance. AED began working on recruiting companies into the area and at the same time began reaching out to local organizations, universities and training programs to match workforce skills to the potential industries' needs.

To finance AED's economic development strategies, Albuquerque's leaders created the Albuquerque Industrial Foundation (AIF) to provide financial assistance that would help companies relocate to Albuquerque. The first AIF grant was given to Levi Strauss, for $25,000. At the same time, AED opened a job center for those interested in working at the company; more than 10,000 residents visited, hoping for jobs.

In addition to establishing the foundation for financial incentives, AED leaders began reaching out to potential companies, running an advertising campaign promoting Albuquerque as a relocation site. The federal research and development facilities had existed in Albuquerque for years and was a major attraction for potential companies, as was the proximity to national labs. Despite the presence of the military research industry, however, Albuquerque still lacked a skilled workforce, as the majority of its highly educated workers came from outside the region. That's when leaders of AED formed the Technical-Vocational Institute, now known as Central New Mexico Community College.

The state also was instrumental in assisting AED's economic and workforce development strategies, with the legislature passing a number of incentives for companies to upgrade their workers' skills. In 1972, the state created the Job Training Incentive Program (JTIP), which reimburses qualified companies for a significant portion of training costs associated with new jobs. The reimbursements range between 50 to 80 percent of total costs. Since its inception, more than 800 companies and 40,000 workers have benefited from the program.

While AED was one of the first economic development organizations established in New Mexico, rapid growth in the area led to the creation of other complementary organizations. One of AED's main partners is the New Mexico Economic Development Partnership (NMP), a public-private, non-profit group formed in 2003 as the recruiting arm for the state's Economic Development Department. NMP works to recruit companies in industries that include aerospace and aviation; agribusiness; business and financial services; clean energy; digital media; technology and manufacturing.

To attract new companies to the state, NMP provides incentives specifically for training and hiring the local workforce, in the form of reimbursed training costs. NMP also offers incentives for companies that pay high wages – a tax credit benefit of 10 percent for four years on combined wages and benefits. To qualify, a company must pay a minimum of $40,000 per year to employees in metro areas and a minimum of $28,000 per year to those in rural areas.

Focusing solely on recruiting businesses in the manufacturing and service industries, NMP has created more than 12,000 jobs since its inception in 2003. NMP's goals for 2009 were to create 2,200 jobs, 900 of those in rural areas. While NMP is a state organization, its programs have had tremendous impact on the workforce development of Albuquerque in particular, due to its high proportion of the state's total employment. The collaboration among AED, NMP, Central Community College of New Mexico and the state legislature set the foundation for strong partnerships in Albuquerque's economic development delivery system—a system centered on its alignment with workforce development.

While AED and NMP work to attract new business to the region, efforts to expand and promote entrepreneurship in Albuquerque took root. For example, Sandia National Laboratories partnered with Technology Venture Corporation to facilitate the commercialization of technologies developed in national labs and research universities. In addition, ACCION New Mexico, a micro-lending non-profit, was formed in 1994 to address the needs of small businesses, particularly those in disadvantaged areas. Entrepreneurship and small business development has emerged as a core strength in the Albuquerque region.

Moving forward, the recent implementation of a WIRED grant is designed to ensure that economic developers, workforce developers and educators are working together to grow the region's green economy. Central New Mexico's Technology Triangle (which includes the counties of Bernalillo, Los Alamos, Sandoval, Santa Fe, Sierra, Socorro, Torrance and Valencia) is guided by a three-year implementation plan that lays out the following goals and strategies:

Moving forward, the recent implementation of a WIRED grant is designed to ensure that economic developers, workforce developers and educators are working together to grow the region's green economy.

- Constructing a training pipeline for green manufacturing operations in the region
- Developing the entrepreneurial and innovative capacity of the region around green technology
- Monitoring, expanding, nurturing and promoting the pipeline of green tech talent

Technology Triangle partners are implementing an initiative called "Seeding Innovation in New Mexico's Green Manufacturing Cluster." The region's

leadership is planning for the time after the WIRED funding has been allocated, and it will need to continue to leverage the strong relationships built among the public partners, the private sector and institutions of higher education.

To continually develop and upgrade the skills of the region's workforce, AED, CNM and additional regional partners are working together to build new high school and collegiate curricula around green-focused manufacturing and engineering. Building on the strong workforce of scientists and engineers at the federal laboratories, economic and workforce development practitioners are helping entrepreneurs to develop green technologies as well. Finally, maintaining high-quality management talent to help start-ups and existing businesses is also part of nurturing green-tech talent in the region.

Building on Existing Assets: Partnerships

A number of partnerships emerged in Albuquerque to maintain the growth of existing industries and grow new ones. Most notable are the Kirtland Partnership Committee, Sandia Science and Technology Park and its development corporation and the film production incentive program. While the Kirtland Partnership Committee developed as a response to the federal Base Realignment and Closure initiative to close Kirtland Air Force Base, Sandia Science and Technology Park was developed help expand the region's growth in high-tech industries. Key to both efforts was the region's ability to forge cross-jurisdictional partnerships, along with its dedication to vocational training and higher education.

Kirtland Partnership Committee

Kirtland Air Force Base, built in 1941 in Albuquerque, was home to over 19,000 jobs by 1994. That same year, the U.S. military recognized Kirtland AFB as a model military installation in the nation. So when the Department of Defense BRAC list included Kirtland AFB in 1995, it was a shock to the members of Kirtland Strategic Taskforce, a volunteer organization made up of Kirtland AFB's employees.

A realignment of Kirtland AFB would have meant the loss of 8,000 jobs and approximately $1 billion annually to the local economy. Recognizing the devastating impact that such an event would have on the region, the Kirtland Strategic Taskforce incorporated itself as a not-for-profit organization and renamed itself the Kirtland Partnership Committee (KPC). KPC then began a community and state-wide effort to remove Kirtland AFB from the BRAC list. In order to better understand the financial decisions of the BRAC committee, KPC raised over $300,000 from business leaders, local companies, and various

individuals to attain the financial software and run the analysis.

After analyzing the financial impact of BRAC decisions, KPC found that the closure of Kirtland AFB would in fact increase costs for the U.S. Department of Defense, rather than decreasing it. The KPC provided its findings to the BRAC commission, requested that Kirtland AFB be removed from the BRAC list and was successful. Today, KPC continues to support the preservation of Kirtland AFB and its jobs. The Department of Energy and Department of Defense, which are the main employers at Kirtland AFB, both provide jobs that pay average annual salaries of $80,000. Since 1995, the number of jobs at the base grew from 19,000 to 21,500 jobs today. Preserving the highly skilled jobs at Kirtland AFB has been critical to maintaining quality job growth in the Albuquerque region and the state.

Science and Technology Park Development

The Sandia Science and Technology Park (SSTP) is a technology community of more than 200 acres located adjacent to Sandia National Laboratories in Albuquerque. The SSTP, founded in 1998, is a public-private partnership effort involving Sandia, Technology Ventures Corporation, the city of Albuquerque, Albuquerque Public Schools, New Mexico State Land Office, and private landowners. The park is home to technology companies that work with Sandia as well as companies spun out of Sandia.

Interestingly, Albuquerque Public Schools is one of the major landowners in the park, with 80 acres, and therefore is a major partner in the park's development. The school system is in early discussions to develop a science and math charter school near the park.

The initial collaboration between Technology Venture Corporation (TVC) and Sandia National Laboratories led to a larger partnership to establish the Sandia Science and Technology Park Development Corporation (SSTPDC), a nonprofit foundation formed to assist in the development of the SSTP. The partners were joined by other entities[40] to develop the SSTP with the mission of creating high-paying, technology-based jobs to diversify the New Mexico economy and provide a location for companies commercializing technology developed at Sandia Laboratories.

The strategic location of the park near Sandia National Laboratories and the existence of state-of-the-art fiber optics infrastructure, combined with state and local incentives, led many advanced technology companies to locate in the park. In early 2009, SSTP counted 29 companies on its premises with more than 2,100 employees earning an average salary of more than $70,000. About 40 percent of its land was left to be developed. In addition to the jobs in the park, an additional

5,400 indirect jobs have been created by the park's activities. Over the SSTP's 12-year history, the cumulative impact on wages and salaries attributable to park activities is expected to exceed $1.5 billion.

Developing the Film Industry

While the film industry historically has been small, with only around 100 employees in 2002, it has grown to approximately 3,000 employees today in Albuquerque. The rapid growth of the film industry is the result of regional and state efforts to attract film companies and employ the skills of Albuquerque's construction workforce.

In addition to developing SSTP, Albuquerque and New Mexico also began an effort to expand and develop existing industries with growth potential that offer quality jobs to entry, mid and high skilled workers. The film industry in Albuquerque, which dates back to 1898 and has mainly focused on producing Western films, is one such target. While the film industry historically has been small, with only around 100 employees in 2002, it has grown to approximately 3,000 employees today in Albuquerque. The rapid growth of the film industry is the result of regional and state efforts to attract film companies and employ the skills of Albuquerque's construction workforce.

New Mexico state leadership drafted legislation to promote the state as an affordable site for film companies. The state's film loan program offers a no-interest loan of up to $15 million per project, which can be used for 100 percent of the financing. In lieu of interest, the state negotiates back-end participation to receive a percentage of the revenue once all parties have been paid. In order to receive the loan, 60 percent of the company's crew must be New Mexico hires and 80 percent of the picture must be shot within the state. In addition, the legislation provides a 25 percent tax rebate for all expenses spent in New Mexico. The loans and tax rebates provide an incentive for companies to relocate to or work in New Mexico, while promoting the local workforce and businesses that support the film industry.

The New Mexico Film Office also has programs to capitalize on the workforce of other industries in the state. For example, its rehiring program recruits unemployed construction workers and retrains them in stage and production set construction. The nature of the unionized workforce in the film and construction industries provides the Film Office with access to a wide pool of workers. Given the workers' knowledge of construction fundamentals, training them to build sets is much more efficient than teaching laborers with no prior construction experience. The program has helped mitigate unemployment in the construction industry during the recent economic crisis.

The Film Office also offers a Film Crew Advancement Program to ensure the advancement of New Mexico hires and help them to grow in their careers. Through the program, production companies can receive 50 percent compensation for the salaries of New Mexicans who are hired in senior positions.

The extensive efforts toward film industry development have led to tremendous job growth in both numbers and salaries. The average salaries in the film industry range from $17 to $22 per hour for mid-level professions. Furthermore, the Film Office has been working with the Mesa del Sol development (discussed later in this case) to create bigger and more comprehensive programs in Albuquerque.

Building Economic Development Capacity

One of the main challenges that Albuquerque has faced in attracting businesses to the area has been the lack of developable real estate. In the 1990s, AED lost the opportunity to bring two major corporations to Albuquerque because the city lacked suitably large tracts of land. As noted earlier, development has been restricted because much of the land in Albuquerque is either owned by the Air Force or belongs to tribal authorities.

In response to these challenges, a number of developers have been brought to Albuquerque to begin large-scale developments on the outskirts to attract future investors. The developers prepare shovel-ready sites and building designs, with permits approved and completed, that can be ready within six months of a company's request. Highly skilled construction workers provide the developers with a skilled workforce.

Mesa del Sol

One of the biggest of these projects is Mesa del Sol, a mixed-use, master-planned community being developed on previously state-owned land. Led by Forest City Enterprises, Mesa del Sol's development is a collaboration among governmental, quasi-governmental, non-profit and for-profit organizations. The main stakeholders in the project are Forest City Covington NM LLC, the University of New Mexico, and the state of New Mexico through the State Land Office.

The approved master plan includes 37,000 residential units and 18 million square feet of industrial, office and retail space designed to accommodate 100,000 residents and 50,000 new jobs. The community is designed to be environmentally sustainable, walkable, provide a range of housing options and be highly wired for technology uses.

Local economic developers, in cooperation with state and regional economic development organizations, established three new technology-based "micro-clusters" to guide the business development strategy in Mesa del Sol. Entertainment and digital media, government services and renewable energy were identified as the industries most suited to attract and grow at Mesa del

Sol. Forest City Covington was an active economic development partner in this project, helping design and coordinate development specifically to create the physical environment needed to grow the targeted clusters.

Other collaborations are aimed to build economic development capacity. For example, UNM established the Mesa del Sol Professorship in Film and Media, which was endowed in the amount of $750,000 from Forest City Covington. The multi-disciplinary program aims to attract students from the fine arts, engineering, arts and sciences to work on real-world projects in teams. In addition, Albuquerque Studios, a film and television production facility, located at Mesa del Sol and is projected to add a total of 2,000 jobs once the studio is fully operational.

Mesa del Sol has been instrumental in bringing a number of firms to the region, such as Albuquerque Studios, Fidelity Investment, Molina Healthcare, SCHOTT Solar and Advent Solar. As of 2008, Mesa del Sol has created 1,250 jobs paying an average of $50,000 per year.

Mesa del Sol is achieving multiple goals – quality job growth, equitable housing, cluster development, an energy-efficient community – by bringing together a wide range of industries and actors. The collaboration between the state, private developers, economic development groups and UNM is at the core of the project's success. Mesa del Sol's job-creation program is enabling the new community to be developed within the city with no net expense to local government. As it is located adjacent to one of the city's underdeveloped areas, partners anticipate that the opportunities at Mesa del Sol will directly benefit bordering neighborhoods.

Creative Albuquerque

Previously known as the Arts Alliance, Creative Albuquerque is a newly formed membership organization that aims to connect the non-profit and for-profit creative sectors in the region.[41] Previously, the Arts Alliance focused its efforts on dance, theater, visual, music, and literary arts. Moving forward, Creative Albuquerque will embrace other creative industries, such as film and architecture, to complement the five major arts disciplines and represent close to 20,000 jobs in the region.

A recent study conducted by UNM's Bureau of Business and Economic Research found that the arts and cultural industries in Albuquerque and Bernalillo County annually generate $1.2 billion in revenues, $413 million in wages, and include 19,500 jobs, totaling 6 percent of all employment in the county. Moreover, half of this activity is funded by dollars from outside the region. However, the study also

indicated that the region's arts and cultural industries were disjointed and in need of an organizational structure for better alignment – hence the creation of Creative Albuquerque to encourage synergies and expand networking among diverse business and arts sectors.

Creative Albuquerque receives funding from multiple sources, including federal, state, county and city governments, foundations and close to 10,000 former Arts Alliance members. In its advocacy role, Creative Albuquerque will work to increase funding for creative sectors, including in primary education and beyond. This type of effort strengthens both the economy and the community.

Entrepreneurial and Small Business Development

In 1989, Lockheed Martin proposed the formation of Technology Venture Corporation (TVC) in Minnesota as a for-profit organization comprising investors in the commercialization of the technologies. While this model failed, in 1993, Lockheed Martin modified it as a non-profit corporation and established an office in Albuquerque. At that time, Albuquerque had begun an aggressive campaign to promote entrepreneurship and venture capital by building stronger relationships among higher education, business, industry, and the state. The role of TVC was to facilitate the commercialization of technologies developed in the national laboratories and research universities to create thriving companies and skilled jobs in New Mexico. One of the first laboratories that TVC began working with is Sandia.

The challenges TVC faced were both the lack of investors and experienced entrepreneurs in Albuquerque. Fifteen years ago, there was minimal commercialization activity and no venture capitalists in the region. In order to establish a base of entrepreneurs, TVC began touring the Sandia labs, educating employees about its services and locating individuals that were capable of commercializing their products. In recruiting entrepreneurs, TVC advertised an array of services, which included assigning each entrepreneur a project manager who would help put business plans together, provide business counseling, and serve as mentor and advisor. In addition, TVC would help entrepreneurs patent their work to ensure intellectual property rights.

Sandia was very supportive of TVC's efforts. It agreed to allow the employees picked by TVC to explore their business ventures to return to their positions if their businesses did not succeed. Sandia also cooperated with TVC by identifying and referring technology commercialization opportunities to TVC. Since TVC would focus only on three to five employees out of Sandia's 10,000, the impact was minimal on the labs' operations.

TVC also traveled to various U.S. cities to hold workshops and networking opportunities highlighting the immense technological resources available at the national labs in Albuquerque. TVC recruited investors into the area and matched them with the entrepreneurs it recruited. By working on both fronts and acting as a matchmaker between investors and entrepreneurs, TVC has helped create over 100 companies and 12,000 jobs, with investments exceeding $1 billion since its inception. The formation of TVC and its services fostered high-paying jobs that both provided new opportunities for residents of Albuquerque and attracted new high-tech companies.

While TVC was the main actor behind the growth of venture capital in Albuquerque, the state of New Mexico also helped attract investors through policy. In 1994, the state legislature passed a bill enabling the State Investment Council to invest 2 to 3 percent of the Severance Tax Permanent Fund (a state endowment fund) into New Mexico venture capital funds. These are venture capital firms that agree to open an office in New Mexico; staff the office with full-time investment professionals; and invest, or cause to be invested, a matching amount of the funds received from the State Investment Council.

The bill was modified in 1997 as the state promoted the use of the funds by multiple investors to mitigate the high risk. Such a strategy provided more incentives for investors to locate in Albuquerque and by 2004, 13 of the 16 venture capital firms in New Mexico (most located in Albuquerque) had received state funding. Thus, the state played a significant role in attracting venture capital firms by investing in those that would make a commitment to the economic growth of New Mexico.

ACCION New Mexico and the Development of Small Businesses

To promote equitable development, ACCION NM specifically targets its services to minority groups and businesses in disadvantaged areas.

At the other end of the business finance spectrum, ACCION New Mexico, a micro-lending organization, was formed in 1994 to address the needs of small and micro-businesses. To promote equitable development, ACCION NM specifically targets its services to minority groups and businesses in disadvantaged areas.

In 1993, AED submitted a proposal to ACCION International to open an office in Albuquerque. Upon receiving the proposal, ACCION International conducted a feasibility study in partnership with the Hispanic Chamber of Commerce, AED, and state officials, which determined that there was a credit gap and great need for access to capital in Albuquerque.

ACCION NM works with TVC, AED, and the Small Business Development Center (SBDC) to determine the financial and managerial needs of small business in the

region. Both TVC and AED continuously refer clients to ACCION while the SBDC coaches entrepreneurs on how to run their businesses. Local banks are also important ACCION partners; First Community Bank of New Mexico is a primary one. By closing the loans for ACCION (saving operating costs for the organization), First Community Bank is able to establish a wider customer base, including residents of rural areas.

In 2008, ACCION disbursed 216 loans totaling over $2.8 million, helping to create or sustain 3,829 jobs that support disadvantaged neighborhoods and people. The average loan size disbursed by ACCION is $13,271. By targeting minority groups with micro loans, ACCION helps small businesses grow and take part in the economic development of the area. ACCION has since expanded its operations to Arizona and Colorado.

Bernalillo County's Strategy to Support Job Growth in Recessionary Times

Recently, Bernalillo County launched a new program focused on small business job growth. This program has a three-step process with the goal of helping 500 small businesses hire just one person each. The first step was a listening tour – a five-week outreach program designed to gather details on the impediments to small business growth and development. The second step was a summit was designed to bring small business owners together to identify a common set of policies and incentives that may help them grow. Third was to document the small business development needs assessed in steps one and two and build an action-oriented legislative packet to inform local, state and federal leaders about the small business development needs in the region.

This legislative packet was introduced in the January 2010 session of the New Mexico Legislature and included incentive programs for small businesses such as seed grants and low-interest loans, in addition to removing policies that stifle economic growth. This economic development strategy is now known as the "Increment of 1" initiative.

Expanding Inclusion: Workforce Development Initiatives

The creation of Central New Mexico Community College, the Albuquerque region's primary workforce training entity, and its central role in the economic development system was discussed above. Other significant workforce development initiatives came from a variety of places, such as high schools, Sandia labs, the state Film Office and other industry. Each addressed different training needs as well as different segments of the workforce, from minority and low-income workers to students and highly skilled professionals, creating a range of job opportunities and a more inclusive economy.

Sandia High School Program

In 1997, Sandia National Labs began a manufacturing training program with West Mesa High School in Albuquerque. The program is designed to prepare young workers for high-tech industries in order to replace workers who are beginning to retire, offering students internship opportunities, a curriculum with local colleges, as well as the choice of joining the workforce directly upon graduating. The program was designed to provide a lab space and have a maximum class size of 19 students. While Sandia helped set up the infrastructure, the high school worked with public and private partners to secure grants and acquire equipment.

The curriculum ensures that students who participate in the program can graduate with one year of associate-level credits completed. Sandia and the school board worked collaboratively to develop classes, such as one in the physics department on holograms and another a shop class that focused on design. Also, by strengthening the math and science curricula, the average GPA of the students increased from 2.5 to 3.86 within three years of program implementation.

Intel

In 1994, the Technical Vocational Institute, in partnership with local manufacturing industries, developed an Associate of Applied Science degree that would prepare students for entry-level positions as manufacturing technicians. Once the degree was established, CNM began exploring ways to provide hands-on training for students.

Intel, which opened operations in Albuquerque in 1980 with 50 employees, funded the construction of a laboratory and donated the equipment needed to train its potential workforce. Completed in 1996, CNM's Regional Semiconductor Manufacturing Training (SMT) Laboratory aimed at providing students with experience in working in cleanrooms, practicing protocol and running processes that mimic those in the semiconductor industries. By 1998, the lab had provided training to around 600 students from six different colleges across the state. In addition to the Intel partnership, the National Science Foundation awarded the lab a grant to conduct instructor workshops in 10 different states. In addition to the training programs, CNM also provides tours of the SMT Lab for middle and high school students in order to expose them to the working environment of semiconductors.

Today, Intel employs more than 5,000 people in Albuquerque. Its expansion is due to CNM's program to train students and instructors for the semiconductor industry.

Film Education Programs

In 2003, the state Film Office in Santa Fe began approaching community colleges and universities to develop training programs for the film industry. Currently, five New Mexico colleges have film programs, one of which is CNM. The Film Office helped launch the various programs, which include a vocational track in digital media, editing and visual effects. High schools also have incorporated film-related educational programs. In addition to the expertise of the teachers, students build relationships with the people in the industry and create important networks.

The Film Office also targets minority groups, in particular Native Americans and the Hispanic community, to identify potential employees and talent for the industry. A state initiative aimed at increasing the participation of minority groups in the film industry allocates $1.5 million to offer no-cost training to future film crews. By working collaboratively with high schools, colleges, and building its own training center, the Film Office is working to include people from a range of backgrounds for creative, high-paying jobs.

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Green Jobs

Recognizing the growing opportunities available in energy and green jobs, the city of Albuquerque quickly began promoting and developing these sectors. Both energy-related and other green jobs offer competitive salaries and highly skilled work opportunities. However, recognizing that its climate and skilled workforce may not be enough to grow the green economy in Albuquerque, state and local leaders created incentives to train workers and offered comprehensive economic development services to the green sector.

In 2008, Albuquerque became the first U.S. city to sign the green jobs pledge, which was launched at the International Council for Local Environmental Initiatives (ICLEI) Local Action Summit held in Albuquerque in May 2008. ICLEI is an association of local governments and regional and national organizations that promotes sustainable development. Cities that sign onto the initiative commit to investing in green jobs in order to advance environmental, economic and climate protection goals.

In 2008, Albuquerque became the first U.S. city to sign the green jobs pledge, which was launched at the International Council for Local Environmental Initiatives (ICLEI) Local Action Summit held in Albuquerque in May 2008.

The state of New Mexico helped by introducing two bills to promote the green sector; both of which focus on creating opportunities for individuals while promoting a growth industry. Modeled after the film industry incentives that prompted the growth of film production in the state, the bills aim not just to create jobs but to growing an entire sector. One of the bills appropriates a minimum of $1 million from the existing Job Training Incentive Program (JTIP) to aid businesses that install alternative energy technology, such as solar panels, or

businesses that retrofit buildings to be more energy efficient. A second bill, Severance Tax Investment in Green Industries, would allocate up to $15 million of the permanent fund to New Mexico industries that provide green jobs to local residents.

SCHOTT Solar, which specializes in solar energy and power plants, was interested in the talent available in Albuquerque to build its U.S. headquarters. In 2007, AED worked with SCHOTT Solar to identify state incentives, the right talent and the quality of vocational training in Albuquerque. After touring the region's facilities, SCHOTT Solar broke ground in Mesa del Sol on a 200,000-square-foot facility, an initial investment of over $100 million. While the company anticipated the creation of 300 jobs within the first year of operations, SCHOTT Solar surpassed that number within the first six months. The long-term plans for the company's expansion in the region include the creation of 1,500 new jobs and total investment of $500 million.

While Albuquerque signed the green jobs pledge in 2008, green industry efforts actually began in New Mexico in 1998. They have had significant economic and environmental impact on the state between 1998 and 2007:[42]

- Green jobs grew by 50 percent in New Mexico, 25 times the rate of overall job growth
- The state's clean energy sector grew by 118 percent
- Energy efficiency grew by 184 percent
- Environmentally friendly production grew by 99 percent
- Conservation and pollution mitigation grew by 35 percent

Central New Mexico Community College

The School of Applied Technologies (AT) at CNM is currently leading the state's efforts to design new curricula around green-based technologies.

The School of Applied Technologies (AT) at CNM is currently leading the state's efforts to design new curricula around green-based technologies. In doing so, AT is ensuring that green courses are integrated into all relevant existing AT programs of study (degrees and certificates) to ensure that students graduate with the latest green skills. For example, a student graduating from the Construction Technology program will have completed components in green building in addition to all the applicable skills required by the industry. This integrated approach allowed CNM to develop curricula that improved existing programs, such as:

- Landscaping – new emphasis on water conservation through effective irrigation and xeriscaping
- Construction Technology and Construction Management – New courses include photovoltaic (solar panel) installation, introduction to green building and LEED certification

- Plumbing – Development of a solar thermal curriculum for the operation and maintaining of residential solar thermal systems
- Transportation Technology – A new alternative fuels course as an elective for the degree

CNM received a WIRED grant to support green initiatives. A number of programs funded by the WIRED grant are integral to developing workforce skills to support the growth of green industries, including machine tool technology, photonics, manufacturing and electronics. CNM also received a Department of Education Carl D. Perkins Grant to support the development of new curricula and the purchase of materials needed to support it. The Perkins grant provides funding for CNM's automotive, welding, electrical, geographic information systems and construction technology programs, among others.

CNM continuously evaluates the relevance of its programs' content, especially career technical programs, through its advisory boards. These boards are set up for a wide variety of programs and consist of industry leaders and professionals in the community, along with economic developers, CNM program chairs and staff. Together, they help to ensure that students are learning the skills in the classroom that will translate to success in the workplace.

CNM further develops talent in the region by providing non-credit training opportunities through its Workforce Training Center. Professionals already working in the field can upgrade their skills and certifications, allowing them to stay in step with their professions' demands. For example, CNM recently held a three-day session at the Workforce Training Center targeted at individuals currently working in the solar energy industry, such as contractors, engineers, licensed electricians and others who are involved in the design, installation, evaluation and inspection of photovoltaic systems. CNM created the session in response to requests from local professionals who were in need of such training. The session was filled to capacity and drew solar industry professionals from other states.

CNM also recently entered into a partnership with AED on a project called "NM Career Match," which helps connect New Mexico businesses with graduates of New Mexico colleges and universities. Its goals are to keep New Mexico's college-educated workers in the state and to entice talented graduates who have moved away to return to New Mexico to work in the state's growing industries.

Diversifying for the Future

From a highly specialized economy reliant on federal government employment in the middle of the 20th century, the Albuquerque region has diversified its economic base significantly. It has formed partnerships to attract firms to the

region, worked to ensure a supply of skilled workers, provided incentives and created new commercial development opportunities.

Albuquerque is marked by an historic alignment between its economic and workforce development system; with the economic development entity catalyzing the creation of what is now its community college. State and regional leaders from the public and private sectors have initiated training opportunities at companies, high schools, the main technical college and universities all in the same industries targeted for growth through other initiatives. They have worked to ensure that as many residents as possible are able to access and participate successfully in the economy. Even the predominant business incentives used for to stimulate business growth centered on training the workforce.

The state and region also have been creative with funding, policy, and other systems to support growing industries, particularly green sectors and the film industry. Both of these sectors promise significant growth potential and create a spectrum of job opportunities that serve the disadvantaged through the highly educated.

The state and region also have been creative with funding, policy, and other systems to support growing industries, particularly green sectors and the film industry. Both of these sectors promise significant growth potential and create a spectrum of job opportunities that serve the disadvantaged through the highly educated.

The Albuquerque story is one that emphasizes the ability to turn economic challenges into opportunities and the importance of targeting industries and entrepreneurs and using tools (e.g. training incentives) that can both drive the economy and include a wide range population in that economy. Like the other cases, this is a story still in motion, as industries shift and skill demands change. Also similar to the other stories, this city has many lessons to share.

Notes:

[38] Accessed January 25th, 2010: http://www.cnm.edu/depts/mco/media/History.php

[39] Accessed January 25th, 2010: http://www.bls.gov/lau/

[40] These include Lockheed Martin Corporation, the U.S. Economic Development Administration, the U.S. Department of Energy/National Nuclear Security Administration, the state of New Mexico, Bernalillo County, Public Service Company of New Mexico, Mid-Region Council of Governments, and the New Mexico congressional delegation.

[41] Accessed January 25th, 2010: http://bber.unm.edu/pubs/UNM_BBER_AbqBCo_A&CIs.pdf

[42] Accessed January 25, 2010: http://www.edd.state.nm.us/

5.0 TUPELO/LEE COUNTY, MISSISSIPPI

At the turn of the 21st century, Tupelo/Lee County had a strong economic base rooted in a history of furniture manufacturing. But with manufacturing facing the unrelenting challenges of globalization and accelerating innovation, the region needed to diversify its economy to maintain quality jobs for its citizens. Tupelo, whose core asset is its workforce, chose to focus on increasing skill levels and educational attainment to achieve its economic development goals.

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The Tupelo case study illustrates how a rural region, dependent on a single sector, was able to build greater resilience into a volatile economic base. By focusing on incumbent training and strengthening the breadth and reach of the economic development system, it was able to diversify its economy and rapidly increase per capita income.

Tupelo/Lee County serves over 220 manufacturing and distribution operations, in which less than one percent of the workers is unionized. In a 60-mile radius, the region has 276,000 workers, 32 percent of them with a background in manufacturing. Workers' manufacturing skills are diverse, from furniture to medical products to polymers.

But the region was concerned about staying competitive in manufacturing, considering the industry's trends to downsize or move off-shore. Some believe that targeting manufacturing is a "low road" economic development strategy that will fail because the industry tends to seek the lowest production costs. Yet it is likely that some manufacturing will remain in the United States for many reasons, including the skilled workforce, the rising cost of transport and proximity to end markets. The key was to promote the kind of manufacturing that would be globally competitive – lean, advanced and modern. Tupelo-area economic developers focused on attracting this profile of competitive manufacturer, and training its workforce to be multi-skilled and highly productive.

Workforce competitiveness would be Tupelo's focus to advance its economic development strategy; the challenge was how to upgrade the skills of both incoming and existing workers. Through multiple initiatives, the region ended up offering a comprehensive, coordinated system of hard skill training in advanced manufacturing and health care, combined with extensive soft skill training.

Since 2000, 12,000 people (more than 25 percent of Tupelo's population) have now gone through soft skills training, which was implemented after a survey of companies indicated that soft skills were the greatest workforce need. The training covers areas such as leadership skills, communication, team work and time management. Investment in soft skills – an often-overlooked skill set – gave Tupelo/Lee County the competitive edge that helped it attract major employers like Toyota (discussed in more detail below).

Tupelo/Lee County did not have the critical mass needed to launch multiple sector-based initiatives. Instead, the region's economic developers pushed for stronger partnerships within the northeast Mississippi region to attract new businesses, develop into an advanced manufacturing economy and diversify into other economic sectors.

Regional Snapshot

Tupelo (population 35,270 in 2008) is located in rural northeast Mississippi, approximately two hours from both Memphis and Birmingham. Its economy historically has been based on small-scale agriculture and manufacturing.

Tupelo and Lee County's unemployment and poverty rates are below the state's but higher than U.S. averages.

Table 5.1: Tupelo/Lee County, Demographic and Economic Statistical Profile

	Tupelo	Lee County	Mississippi	United States
Unemployment Rate, 2006	7.4%	6.5%	8.6%	6.4%
Persons Below Poverty Line 2006 (Estimate ACS)	20.4%	18.4%	21.0%	13.2%

Source: U.S. Census Bureau: American Community Survey 2006-2008

Poverty levels in Tupelo and Lee County have risen since 2000 due in part to the recessionary economy. In 2000, at the local levels, the percentage of persons below the poverty line is on par with national averages while the state is significantly higher than local and national rates in all years examined.

Table 5.2: Percentage of Persons Below the Poverty Line

	2000	2008
Tupelo City	12.7%	20.4%
Lee County	13.4%	18.4%
Mississippi	19.9%	21%
United States	12.4%	13.2%

Source: U.S. Census Bureau, 2006 – 2008 American Community Survey 3-Year Estimates

Population growth in Tupelo/Lee County surpassed state and national rates in the 1990s. However, population growth slowed in recent years and rates for the city of Tupelo and Lee County fell slightly behind the U.S. by 2008.

Table 5.3: Population Comparison between the City of Tupelo, Lee County, Mississippi, and the United States (1980-2008)

	City of Tupelo		Lee County		Mississippi		United States	
	Population	% Change	Population	% Change	Population	% Change	Population	% Change
1980	23,905		57,061		2,520,638		226,545,805	
1990	30,685	28.36	65,579	14.93	2,573,216	2.09	248,709,873	9.78
2000	34,211	11.49	75,755	15.52	2,844,658	10.55	281,421,906	13.15
2008	36,233	5.91	81,139	7.11	2,938,618	3.30	303,824,640	7.96

Source: U.S. Bureau of Census

Looking at employment change over the last few decades, some interesting insights emerge. In terms of raw numbers, manufacturing grows significantly between 1990 and 2000, and then declines in 2008, due in part presumably to the recession. Looking at percentages, manufacturing actually shows a steady decline as a percentage of overall employment due in part to a growing population and evidence of economic diversification. The location quotients indicate that Lee County retains a significant advantage in manufacturing nationally, even with these changes.

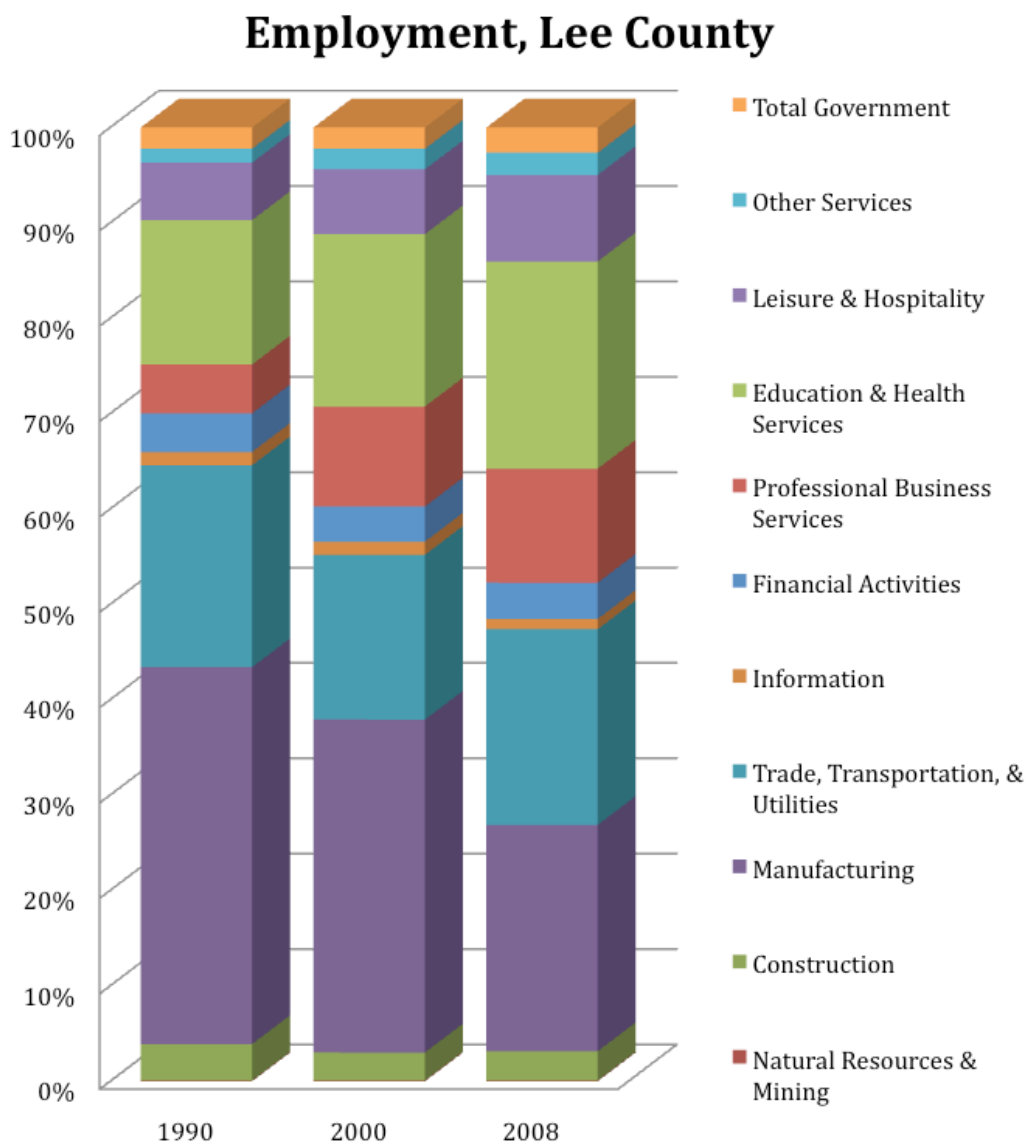
The location quotient analysis also reveals that Lee County has a growing advantage in transportation and warehousing, healthcare and social assistance and some business services. Thus the region's focus on manufacturing and health care as economic development targets is based on solid data.

Table 5.4: Lee County Location Quotients, 2000 and 2008

Industries	2000	2008
Natural Resources & Mining	0.060	0.057
Construction	0.548	0.557
Manufacturing	2.573	2.350
Trade, Transportation, & Utilities	0.810	0.992
Wholesale Trade	0.808	0.742
Retail Trade	0.885	1.162
Transportation & Warehousing	0.633	0.833
Utilities	0.587	0.664
Information	0.466	0.453
Financial Activities	0.617	0.629
Finance & Insurance	0.670	0.659
Real Estate, Rental & Leasing	0.475	0.547
Professional Business Services	0.797	0.888
Professional, Scientific & Technical	0.384	0.643
Mgt. of Companies & Enterprises	1.267	1.495
Admin., Support, & Waste Mgt.	1.047	0.986
Education & Health Services	0.933	0.978
Educational Services	0.027	0.049
Health Care & Social Assistance	1.136	1.146
Leisure & Hospitality	0.717	0.869
Arts, Entertainment & Recreation	0.451	0.503
Accomodation & Food Services	0.772	0.945
Other Services	0.659	0.682
Total Government	0.409	0.472

Source: US Bureau of Labor Statistics

Table 5.5: Lee County
Employment Totals by Industry: 1990, 2000, 2008



Regarding educational attainment, Tupelo surpassed Lee County, Mississippi and U.S. figures in the percentages of residents with associate's and bachelor's degrees. Tupelo also surpassed Lee County and state percentages in terms of residents with graduate or professional degrees.

Table 5.6: Educational Rates of Population 25 Years and Over: 2008

	Tupelo City	Lee County	Mississippi	United States
Population 25 years and over	22,621	51,580	1,845,409	197,794,576
Less than high school diploma	15.4%	18.9%	21.2%	15.5%
High school graduate (including equivalency)	25.1%	28.7%	31.2%	29.6%
Some college, no degree	22.7%	24.9%	21.0%	20.1%
Associate degree	7.9%	7.3%	7.5%	7.4%
Bachelor's degree	19.3%	13.9%	12.5%	17.3%
Graduate or professional degree	9.6%	6.4%	6.5%	10.1%

Source: US Bureau of Census, American Community Survey, 2008.

In terms of ethnicity, Lee County and Mississippi have a much larger portion of the population classified as Black or African American alone than the national level. The region has made a concerted effort to develop inclusionary policies and programs that serve minority groups, specifically in entrepreneurship and small business development.

Table 5.7: Ethnicity 2008

	Lee County	Mississippi	United States
White alone	71.8%	60.0%	74.3%
Black or African American alone	26.1%	37.1%	12.3%
American Indian and Alaska Native alone	0.1%	0.4%	0.8%
Asian alone	0.6%	0.8%	4.4%
Native Hawaiian and Other Pacific Islander alone	0.0%	0.0%	0.1%
Some other race alone	0.5%	0.7%	5.8%
Two or more races	1.0%	0.9%	2.2%

Source: US Bureau of Census, American Community Survey, 2006

Per capita income is a good indicator of the level of job quality in a region. Per capita personal income levels for the Tupelo Micropolitan Statistical Area (which includes Itawamba, Lee and Pontotoc counties), Lee County and Mississippi all are below the national average. However, per capita personal income growth rates for the Tupelo Micropolitan Statistical Area and Lee County surpassed national averages from 1980-1990 and from 1990-2000. At the bottom of Table 5.8, the per capita personal income ratios comparing the Tupelo region and Lee County to the U.S show that Tupelo and Lee County have been slowly closing this gap between 1980 and 2007.

Table 5.8: Per Capita Personal Income Change 1980-2007

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
Tupelo MSA	$16,830	$22,011	$27,400	$28,679	30.78%	24.48%	4.67%
Lee County	$18,571	$24,260	$30,363	$31,030	30.64%	25.16%	2.20%
Mississippi	$16,803	$20,137	$25,280	$28,541	19.84%	25.54%	12.90%
United States	$24,254	$29,965	$35,917	$38,615	23.54%	19.86%	7.51%
Ratio - City / US	69.39%	73.46%	76.29%	74.27%			
Ratio - County / US	76.57%	80.96%	84.54%	80.36%			
Ratio - County / State	110.52%	120.48%	120.11%	108.72%			

U.S Bureau of Economic Analysis - Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor.
Note: A micropolitan statistical area definitions is used by BEA for personal income estimates.

Median household income also helps illustrate economic development and growth in a region. From 1999-2006, Tupelo and Lee County fell behind state and U.S. growth rates.

Table 5.9: Median Household Income 1989 - 2006

	1989	1999	2006	1989-1999	1999-2006
Tupelo City	$44,999	$47,785	$39,528	6.19%	-17.28%
Lee County	$39,793	$45,003	$37,804	13.09%	-16.00%
Mississippi	$32,510	$38,986	$35,632	19.92%	-8.60%
United States	$48,526	$52,257	$50,007	7.69%	-4.31%
Ratio - City / US	92.73%	91.44%	79.04%		
Ratio - County / US	82.00%	86.12%	75.60%		
Ratio - County / State	122.40%	115.43%	106.10%		

Sources: U.S. Bureau of the Census 1990 Census of Population and Housing - Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor; U.S. Census Bureau Census 2000 - Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor; U.S. Census Bureau – American Community Survey 2006-2008 - Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor.

Transformation: How Quality Jobs Came About

Located in Tupelo, the Community Development Foundation (CDF) is a unique organization that brings economic, community and workforce development efforts, plus the chamber of commerce, under one roof. Organized in 1948 as a membership organization, CDF takes the lead in developing the economic base of Tupelo/Lee County. CDF is governed by a 60-member board of directors, elected by its 1,400-plus members, and a 15-member executive committee. CDF has a long history of regularly conducting comprehensive planning processes to guide its industrial recruitment, financial strategies and community initiatives.

In 2000, CDF began a visioning exercise that grew into a comprehensive plan for the community, which became known as Future Focus 2001-2005. The plan featured an emphasis on workforce development, and at first there was some resistance. Many economic development organizations, elected officials and other community leaders favor projects with short-term results to programs with long-term horizons. Winning buy-in to the vision meant convincing community members to think long term.

The goals of Future Focus were to:

- Modernize the furniture industry by enhancing its productivity, competitiveness and workforce skills
- Develop lean manufacturing and attract major manufacturers based on a superior class of workers
- Support the health care industry and fill occupational shortages
- Promote business development and entrepreneurship
- Increase educational attainment and skill levels among the population

CDF built allies across economic and workforce developers, educational partners, the private sector, and local, state and federal governments. It made a concerted effort to both identify the transferable skills of incumbent workers and build the skills of future workers. CDF was aggressive and effective at winning grants and attracting public and private funds for its initiatives. From 2001-2005, during the first Future Focus plan, 7,000 new jobs were created in Tupelo and Lee County, and personal consumption increased by $60 million annually in Lee County. Also during this period, 20 new businesses located in the county and 47 businesses expanded.

Two thousand jobs will come with the region's major recent economic development win – the 2007 decision of Toyota to locate a plant in the region to manufacture the Prius. The wage rate for these production workers has not yet been determined, but will likely be around $20 per hour. The region's workforce quality has been widely cited as a top reason for the location.

Building on Existing Assets

In developing Future Focus, CDF reached out to existing employers in the region – the majority of whom were in the furniture industry – through consortia and surveys, and found that their number one concern with the economy was the soft skills of the workforce. Using employers' occupational and skill demands, Future Focus's vision was that investments in lean operations and workforce development would provide steady demand or growth in the target industries of modern manufacturing and health care in the long run.

To strengthen the skills of its incumbent workforce, Tupelo first had to strengthen its own institutional capacity to develop and deliver training. This required identifying new resources, creating appropriate partnerships, designating appropriate staff and better aligning workforce and economic development goals.

It started by accessing federal resources. Using a grant from the Department of Labor, CDF worked with Itawamba Community College (ICC) and Mississippi

State University to offer training in hard skills (ergonomics, lean manufacturing and product design) and soft skills (health, safety, computer literacy, teamwork and communication). ICC is the primary source of workforce training for a four-county region including Tupelo/Lee County. It also serves as the local Workforce Investment Board (WIB) for the region and operates its one-stop centers. The training program's reach was regional, covering workers in 17 counties in northeast Mississippi, where approximately 95 percent of the state's furniture production is located. Over 1,000 people took part in the training.

Staffing allocations to align economic and workforce development also were pursued. CDF designated a person with industry background to coordinate training programs at the community college for skills that were in demand by industry. ICC has become progressively more involved in coordinating with private industry and economic development and aligning its goals with CDF. ICC views both companies and students as its primary customers. CDF and ICC aim to equip workers with skills that are both specific enough to meet the needs of businesses and general enough to transfer to other industries or employers.

In 2003, ICC developed an office of workforce development that now has four project managers who are responsible for helping meet the workforce needs of area companies. Staff visit, survey and otherwise communicate with business to determine their workforce needs and meet them through ICC course curriculum; direct training for company employees or for a consortium of companies in an industry; or helping companies obtain funding to conduct their own training. In the last fiscal year, over 9,000 workers received about 25,000 hours of training at ICC. CDF coordinates closely with this office to make sure training options are aligned with economic development strategy.

The region is home to North Mississippi Health Services (NMHS), which employs 5,000 people and is the largest rural health care administrator in the United States. NMHS worked closely with ICC to develop courses for nurses, nursing assistants and other health professionals and is the key employer for these workers.

Finally, new partnerships were built to better strengthen the overall economic competitiveness of the region. The Mississippi Corridor Consortium is a network of four community colleges – ICC, East Mississippi Community College, Northeast Mississippi Community College and Northwest Mississippi Community College – that serves 16 counties and was formed to raise the region's economic competitiveness. The consortium coordinates training for businesses and students. As each college has different resources and expertise, the consortium works together to see which college can best deliver the training when an employer needs a particular skill.

The partnership of CDF, ICC and Mississippi State University received an award from Business Retention and Expansion International, an economic development association, for the workforce training and development program for northern Mississippi furniture workers. The regional collaboration in the investment of employees was cited as the winning approach.

Building Economic Development Capacity

Beyond training, capacity-building in Tupelo required strengthening and widening its economic development delivery system. That was accomplished by forming the Pontotoc-Union-Lee County (PUL) Alliance, Mississippi's first regional economic development alliance, in 2001 (it was approved in 2003 under state legislation). Its members include the boards of supervisors for the three counties; the cities of New Albany, Pontotoc and Tupelo; CDF; Three Rivers Planning and Development District; the Pontotoc County Chamber of Commerce and the Union County Development Association. The collaboration worked to transform northeast Mississippi into a competitive region for advanced manufacturing.

The PUL Alliance was designed specifically to finance, assemble and market a major industrial site, an initiative known as the Wellspring Project. In 2007, the alliance successfully secured the location of Toyota Motor Corporation's eighth U.S. manufacturing plant. CDF served as the primary marketing agent for the megasite, while various partners assisted in other facets of the project. In particular, Three Rivers Planning and Development District (a seminal CDF partner that serves as the grants and workforce administrator for all of CDF's economic development projects) was the key administrative body of the PUL Alliance and was also charged with securing options on the 1,700-acre site.

The Wellspring Project grew out of the 2000 strategic planning process, when CDF's consultants recommended automotive manufacturing as a viable development target based on the region's labor force and overall industry trends. It was this planning process that led to a cooperative, regional initiative for the auto recruitment project.

There are other success stories than Toyota, including Holley Performance Products, which moved manufacturing jobs from Mexico to the region, and National Electronics Warranty Corporation's call center, which chose to locate in the region despite industry trends to locate overseas.

Entrepreneurship and Innovation

The hype surrounding Toyota sometimes obscures efforts the region has placed on nurturing small businesses and entrepreneurs as a critical component of its economic foundation. While this strategy does not produce the immediate, large job creation impacts that the Toyota recruitment did, it diversifies the business community with companies that have local roots, strengthens the overall innovation potential of the region and helps existing businesses tap into the growth that is occurring.

The key components in Tupelo/Lee County's small business development strategy include its service-oriented incubator; attentiveness to target industries; partnerships; and responsiveness to niche demands and growth opportunities.

In 2006, CDF began operation of the Renasant Center for IDEAS, a small business incubator located in Tupelo's Fairpark redevelopment district. The 31,000-square-foot facility was made possible by a partnership among eight federal, state, and local agencies to support entrepreneurs and small businesses in their initial stages of growth. CDF provided financial assistance in the construction phase and is now both the property manager and the small business support and development administrator on site. CDF recently announced that it will construct a phase-two addition to the existing facility with the help of a matching grant from the Economic Development Administration.

Since 2006, the Renasant Center has fostered the growth of 28 new small businesses with 298 jobs and $2.8 million in private investment. Seven businesses have graduated from the incubation program and are now established in the community. The center is 85 percent occupied by companies in tourism, health care and manufacturing. The Manufacturing Solutions Center (discussed below) also is located at the incubator, providing a positive synergy for manufacturing start-ups.

Renasant Center staff collaborate with a Small Business Development Center counselor to assist on-site businesses as well as those in the community at large. In 2007, the center hosted "First Steps" workshops for potential entrepreneurs who wanted to learn how to start a business. A total of 320 people attended 43 business assistance workshops last year. The center also collaborates with the Women's Center for Entrepreneurship to help its entrepreneurs get the legal, financial and other technical assistance they need.

To nurture second-stage companies with high growth potential, the Renasant Center is teaming with the Mississippi Technical Alliance to create the Northeast Mississippi Regional Innovation Coordination Initiative, a project

focused on locating and nurturing innovation-based businesses. The plan is to hold training sessions in three cities in the region to help these companies develop business plans and plans to attract venture capital and other financing.

The Renasant Center also has created infrastructure to assist the many businesses in its community that contract with other businesses, or want to contract with businesses such as Toyota. The center collaborates with the Northeast Mississippi Contract Procurement Center, which deploys a representative on site at the incubator once a week to help small business owners learn how to become contractors, suppliers and vendors. The center advises companies on how to develop business plans and how to widen the market of potential customers beyond Toyota. It also is working to create a model contractor program to help local construction contractors with best practices.

CDF also encourages small businesses development in health care, another regional strength with job creation potential. Incubator clients in health care include Residence Hospice Care, which arranges for the care of the terminally ill in their homes, and PediaStaff, which recruits and places pediatric pathologists, therapists and related staff throughout the United States.

Workforce Development and Inclusion

Tupelo/Lee County used training as a core strategy to make its manufacturing workforce leaner, multi-skilled and more competitive. In the area of modern manufacturing, Itawamba Community College offers a flagship tool and die program and a Modern Manufacturing program to train multi-skilled employees who can work in a lean manufacturing environment not just as specialized welders, electricians or mechanics, but across all areas. ICC's goal is to provide a manufacturing curriculum that will help workers have the most flexible, portable and advanced skills, and help businesses stay lean and competitive.

ICC provides custom training to meet business needs, which may be performed at the campus or on site, and during flexible hours. ICC will train an estimated 1,600 production workers for Toyota's manufacturing plant. So far, the company has hired a few hundred employees, and tool and die and multi-skill training have begun. ICC is conducting about half of the 23 weeks of tool and die training and Toyota will deliver the rest.

ICC is also a partner in the Manufacturing Solutions Center (MSC) in Tupelo, which provides training through non-credit classes that often have more flexibility to meet specific industry needs. Courses don't need to be tailored to meet any academic curriculum criteria and scheduling is flexible. MSC is a collaborative effort of the Mississippi Corridor Consortium (the group of regional community

colleges) and is geared toward automotive manufacturing, supply chain management, welding and leadership development. It is located at the Renasant Center incubator and has offices, a training room and a welding lab.

Since August 2005, 500 employees at local companies have been trained at MSC. About 70 employers are served each year. The center plans to begin training for individuals that will not be company-specific.

In addition to providing skills in modern manufacturing and health care and assisting small business, Tupelo/Lee County has taken a vested interest in its education system, from pre-kindergarten through high school and beyond. Perhaps even more than workforce development, educational attainment was considered a questionable area of economic development investment among many who preferred the idea of quicker progress through projects and buildings. Investment in education again required a presenting a strong vision and enlisting allies at all levels.

A key reason that Toyota located in the region was the skill levels of the workforce. The investment of CDF and the community colleges in raising these skill levels, including soft skills, differentiated the region from others who also wanted to lure Toyota.

The effort has engaged educators, economic developers, non-profit foundations, the private sector and other players, because for any one area in northeast Mississippi to prosper, the entire multi-county region must be engaged in educational improvement. A key reason that Toyota located in the region was the skill levels of the workforce. The investment of CDF and the community colleges in raising these skill levels, including soft skills, differentiated the region from others who also wanted to lure Toyota.

The region has collaborated on multiple education initiatives, including tuition reimbursement for community college, high school dropout prevention and GED completion. Much of the leadership for education programs has come from the CREATE Foundation, which focuses on economic and community development in 17 counties in northeast Mississippi and works closely with CDF. In 1995, CREATE started the Commission on the Future of Northeast Mississippi, assembling regional leaders to address current and future needs and opportunities; recommend strategies and solutions; research socioeconomic trends and set annual goals. Improving educational attainment has been front and center among those goals.

While some students will go on to four-year colleges, Tupelo/Lee County recognizes that for the majority, a two-year degree that gives them workplace skills is a significant short-term goal for the region. The CREATE Foundation and partners have crafted an ambitious program to guarantee two years of college tuition to the region's residents, similar to a program in Kalamazoo, Michigan. They program started out offering the benefit to four school districts in the region; the goal is eventually to cover students in 31 school districts.

In order to curb the high school dropout rate in northeast Mississippi, which has reached as high as 40 percent, CREATE has organized dropout summits for the region's school districts and engaged the media. The CREATE Foundation sponsored two dropout prevention summits, in 2007 and 2008, which drew 175 people from 25 of 31 school districts in the region. Each school district sent its superintendent, a school board member and an economic development professional or business person from the community. CREATE also formed a media alliance to help inform people about the value of finishing high school or going to college. Media companies contributed $1 million worth of advertising time on radio and television, with one company contributing 60 billboards.

Community leaders have also focused on educating the large number of adults (more than 30 percent in the region) who have not finished high school and who seek basic skills training or a GED to advance their work prospects. With a $50,000 grant to ICC, CREATE started "Project Learn More Earn More" to lift barriers to GED completion by assisting with child care and money for transportation and testing fees. CREATE donated $30,000 to support a child care development center where students can take their children while they attend classes at ICC. The program also offers $10 weekly gas cards and a waiver to the $40 testing fee for students in need. After the program began, adult education/GED enrollment increased 27 percent over the previous year, and the number of students who finished the program and earned a GED increased by 34 percent.

Community leaders have also focused on educating the large number of adults (more than 30 percent in the region) who have not finished high school and who seek basic skills training or a GED to advance their work prospects.

After CREATE began funding community colleges in northeast Mississippi, the state decided to give $100,000 to each community college to help with dropout recovery and GED completion programs in the state. The program also leveraged private dollars. In Ripley, Mississippi, home to Northeast Mississippi Community College, a local bank donated $50,000 to improve the college's facilities, assist with test fees and donate computers.

In response to growing demand for CDF's expertise in workforce development, minority and small business development, and other economic development services, CDF added a Community Development division to its organizational structure in 2007. CDF now offers several programs designed to foster grassroots community development, such as an adult literacy program, at-risk youth mentorship, and a minority-owned business service.

The minority business contact program functions similarly to CDF's existing industry visitation program. The program is intended to give minority businesses an opportunity to voice concerns, highlight areas for improvement in the minority business community, and help CDF better connect to the specific needs and challenges of minority small business owners. The adult and child literacy

program has been successful in providing coursework to those seeking improved literacy and is expected to continue. Finally, the at-risk youth mentoring has coordinated approximately 50 mentors from the business community to provide one-on-one outreach to targeted youth.

Upgrading Workforce Skills for a Competitive Advantage

Tupelo/Lee County's investment in human capital since 2000 has been tremendous and has brought returns. Efforts to enhance educational attainment and train the workforce in soft and hard skills are connected to job growth and the attraction of new employers such as Toyota and National Electronics Warranty. There are signs of improvement in the high school dropout and GED completion rates as well.

Last year, CDF began recording average wage rates for new and expanding industries in Lee County. For fiscal year 2008-2009, the average new or expanded industry wage among 15 projects was $14.50 per hour. Currently, CDF is using the funds raised in the Future Focus 2010 campaign to achieve goals around job creation; a wage rate of $15.25 for new, primary jobs; increasing Lee County personal income by $175 million; fostering $125 million in new capital investment in industrial and office construction; and providing skills training to 2,000 employees.[43]

CDF and its partners have changed the reputation of the region, which is now known as a place where investment in education and workforce training has resulted in higher skill levels and a strong work ethic. This not only gets the attention of a major employer like Toyota in the short term, it also builds success in the long term as a more educated, skilled workforce develops.

Toyota is expected to have an impact that reaches far beyond its 2,000 jobs. In addition to multiplier effects on the economy (as incomes and consumer spending increase, and as suppliers and contractors grow to support the company), the overall skill level in the region is expected to rise with Toyota's presence. Toyota likely will draw highly skilled workers from current employers in the Tupelo area, producing a cascading effect in which less-skilled employees then upgrade their skills through training and get better jobs. The process raises the skill level of the entire regional workforce.

As the region moves forward, it maintains its focus on advanced manufacturing, health care, small business development and improving educational attainment. Tupelo/Lee County made the news for successfully attracting the Toyota plant, but underpinning that win – and the region's future success – is a base of highly skilled workers.

Notes:

[43] http://www.cdfms.org/cdf/?id=72. Community Development Foundation - Tupelo/Lee County. Accessed January 25, 2010.

6.0 PITTSBURGH, PENNSYLVANIA

Pittsburgh's multi-faceted transformation centered on three efforts: repositioning its economic anchors, the reuse of its riverfront and brownfield properties, and aggressively helping entrepreneurs launch new firms. This transformation has been a work in progress for close to 30 years. After the loss of many high-wage, low-skill manufacturing jobs in the early 1980s, like many industrial cities in the Midwest, Pittsburghers were forced to rethink exactly what a "quality job" meant.

After the loss of many high-wage, low-skill manufacturing jobs in the early 1980s, like many industrial cities in the Midwest, Pittsburghers were forced to rethink exactly what a "quality job" meant.

Located in southwest Pennsylvania, Pittsburgh was built on steel manufacturing, due in large part to the abundance of natural resources in the region. After the global recession in 1982 led to 150,000 manufacturing jobs losses, unemployment in the region reached 18 percent, and some mill towns surrounding Pittsburgh were virtually abandoned. Initial efforts to retain the region's heavy industry base failed and leaders were forced to formulate a new economic development strategy.

To stimulate economic growth and diversification, Pittsburgh's leaders started to map region's economic and workforce assets to better understand the region's strengths and weaknesses. Pittsburgh's regional economic development organizations (EDOs), such as the Allegheny Conference, the city's Urban Redevelopment Authority and the Regional Industrial Development Corporation, helped guide the asset-mapping process. This process eventually led to two straightforward strategies: to focus growth efforts on specific sectors (initially education and medicine), and to continuously leverage the knowledge of the region's people and institutions. Pittsburgh has invested in incumbent training and education reform to prepare its current workers for emerging jobs in a changing economic base and strengthen the worker pipeline today and tomorrow.

Over the years, Pittsburgh's economic development team also worked with multiple stakeholders to develop an entrepreneurship and small business growth strategy. Pittsburgh organized a diverse set of commercialization and tech transfer intermediaries to mitigate risk and financially support start-ups. The city's efforts to continually nurture entrepreneurship have led to the greater availability of venture capital in the region, and created a climate to support continued economic diversification.

Pittsburgh's leaders believed that counting jobs was the wrong measure of success for the region; scarce resources should not be used to create low-skill, low-wage jobs. Led by the Allegheny Conference, the region's new economic development strategy made it clear that to be successful, Pittsburgh's leadership needed to clearly spell out the difference between any job and a quality job. Hence, the region is working to create wealth and increase the

region's per capita income through the following strategies:

- Target specific industries and build the critical mass they require to rapidly expand
- Bind research and development with commercialization
- Incorporate capital formation into business incubation programs
- Develop human capital
- Redevelop and reuse infrastructure
- Work hard to give every resident "quality of place"
- Measure and improve the region's business climate

Regional Snapshot

In 1950, Pittsburgh was the 12th largest city in United States, with a population of 676,806 residents. Shortly thereafter, however, Pittsburgh's population began to decline. War-time manufacturing came to a standstill and the steel industry faced considerable downsizing. By 1980, Pittsburgh's population had fallen roughly 37 percent to 423,938, which had reverberating effects on employment and wages.

The annual average employment in 1979 was 765,762. From that point on, the Pittsburgh MSA's annual employment totals did not surpass that of 1979 until 1990. Annual total wages grew slowly after 1979, except for a decline from 1981-1983. After 1983, wages began to grow again, as did employment.

Table 6.1: Pittsburgh MSA – Annual Average Employment and Annual Total Wages for the Private Sector

Year	Annual Average Employment	Annual Total Wages
1979	765,762	11,039,664,494
1980	756,749	11,876,322,942
1981	749,219	12,784,551,409
1982	716,680	12,763,081,629
1983	691,910	12,720,626,036
1984	703,323	13,281,243,402
1985	709,591	13,774,119,273
1986	710,253	14,206,884,593
1987	723,337	15,045,698,320
1988	743,519	16,149,840,565
1989	763,242	16,953,955,511
1990	779,395	18,277,541,188

Source: BLS Employment and Wage Statistics: Accessed on January 20, 2010: ftp://ftp.bls.gov/pub/special.requests/cew/

Indicative of the region's transformation, the percentage of persons below the poverty line in Pittsburgh and in Pennsylvania is below the national rate. Further, the city, the MSA, and the state all follow the national trend of a slight increase in poverty from 2000 to 2008. However, looking at rates in the city alone, it is clear that poverty remains concentrated in the urban core.

Table 6.2: Percentage of Persons Below the Poverty Line

	2000	2008
City of Pittsburgh	20.4%	21.6%
Pittsburgh MSA	10.8%	11.6%
Pennsylvania	11.0%	11.9%
United States	12.4%	13.2%

Source: U.S. Census Bureau, 2006 – 2008 American Community Survey 3-Year Estimates

The ethnic mix of the Pittsburgh MSA is predominantly White alone and Black or African American alone (96.7 percent of all residents). The city shows a more diverse mix, with a large percentage of Black or African-American alone, population.

Table 6.3: Ethnicity in the Pittsburgh MSA, Pennsylvania, and the United States

	City of Pittsburgh	Pittsburgh MSA	Pennsylvania	United States
White alone	67.0%	88.7%	83.8%	74.3%
Black or African American alone	26.5%	8.0%	10.3%	12.3%
American Indian and Alaska Native alone	0.1%	0.1%	0.1%	0.8%
Asian alone	3.5%	1.5%	2.4%	4.4%
Native Hawaiian and Other Pacific Islander alone	0.1%	0.0%	0.0%	0.1%
Some other race alone	0.7%	0.3%	2.0%	5.8%
Two or more races	2.1%	1.3%	1.4%	2.2%

Source: US Bureau of Census, American Community Survey, 2006

The educational attainment rates of the Pittsburgh MSA population compared to the State of Pennsylvania and the United States is located below. The Pittsburgh MSA has a larger percentage of associate, bachelors and graduate or professional degrees than the State of Pennsylvania and the United States. In the city of Pittsburgh, the percentage of graduate and professional degrees is over five percentage points above the MSA, State and national averages. Notably, both the city and the MSA have a smaller percentage of the population than the nation of people who have not attained at least a high school degree. Educational attainment was a focal point of Pittsburgh's economic transformation in recent decades and the strategies used to boost the region's number of high school graduates and beyond will be discussed later in this report.

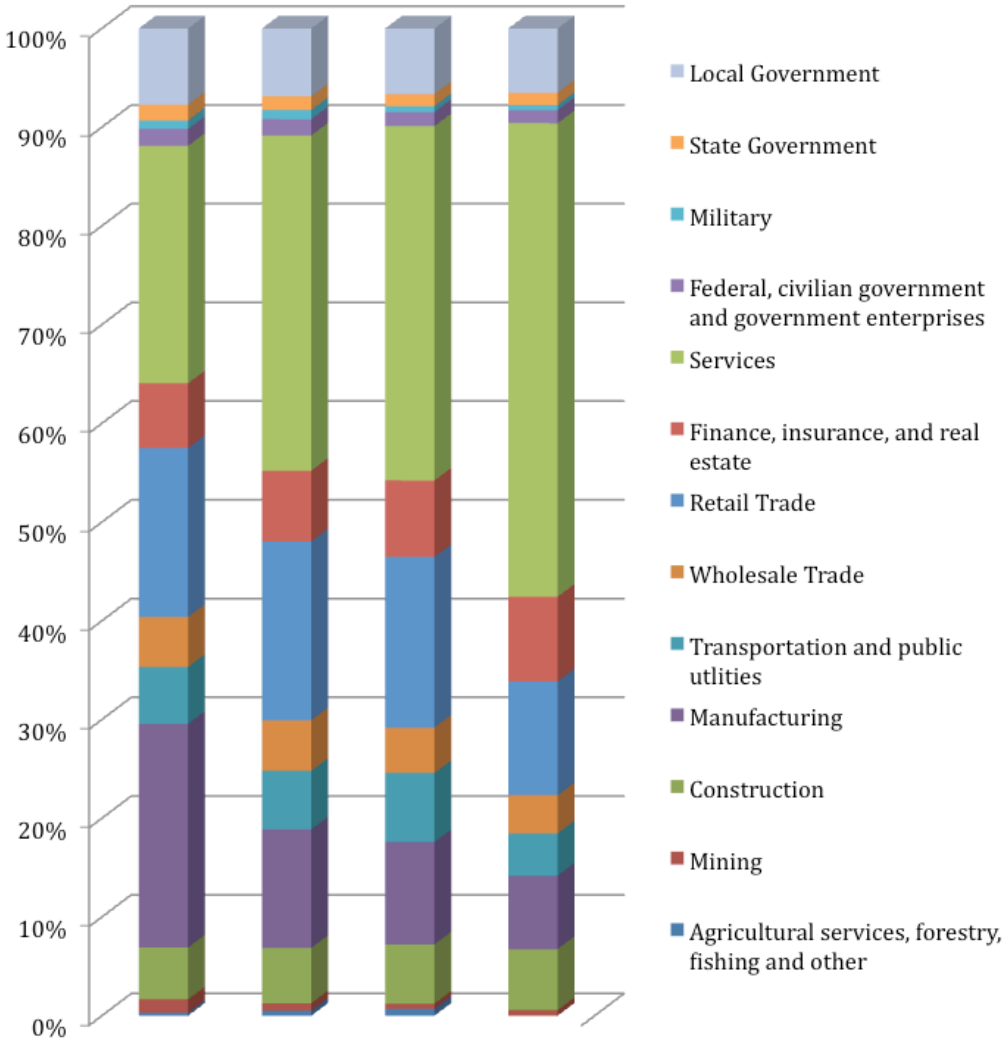
Table 6.4: Educational Attainment Rates of Population 25 Years and Over: 2008

	City of Pittsburgh	Pittsburgh MSA	Pennsylvania	United States
Population 25 years and over	192,020	1,651,981	8,439,935	197,794,576
Less than high school diploma	13.2%	9.9%	13.2%	15.5%
High school graduate (including equivalency)	31.9%	37.3%	38.1%	29.6%
Some college, no degree	15.7%	16.0%	15.5%	20.1%
Associate degree	6.9%	8.8%	7.3%	7.4%
Bachelor's degree	16.2%	17.5%	16.1%	17.3%
Graduate or professional degree	16.2%	10.5%	9.9%	10.1%

Source: US Bureau of Census, American Community Survey, 2008.

Since 1980, the Pittsburgh MSA witnessed employment declines of over 50 percent in the mining and manufacturing industries alone. This prompted leaders to make a concerted effort to reposition Pittsburgh's economic anchors, but transitioning from a heavy industrial base to a technology-driven economy didn't come easily. One challenge was that the skills in mining and manufacturing, which lost the lion's share of jobs locally, were not easily transferable to advanced technology, where job growth was beginning to occur. Since 1980, mining employment levels have fallen 51 percent and manufacturing fell 62 percent by 2007. These declines have been offset by growth in the retail trade (25 percent), finance, insurance and real estate (52 percent) and services (96 percent).

Table 6.5: Pittsburgh MSA Employment Percentages by Industry: 1980, 1990, 2000 and 2007



Source: Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce. Note: Agricultural services, forestry, fishing and other data is missing for 2007.

A look at the location quotients of Pittsburgh industries as compared to the U.S. clearly indicates the elimination of mining as a regional strength by 2007. In addition, the location quotient for Pittsburgh's manufacturing industry fell drastically between 1980 and 1990. It has rebounded somewhat since then, but remained markedly lower in 2007 (0.94) than it was in 1980 (1.2).

Table 6.6: Pittsburgh MSA Location Quotient by Employment per Decade: 1980, 1990, 2000, 2007

Industries	1980	1990	2000	2007
Mining	1.174825	0.989724	1.139496	0.091487
Manufacturing	1.203969	0.823833	0.895571	0.948679
Transportation & Public Utilities	1.124603	1.172992	1.221266	1.06645
Wholesale Trade	0.969194	1.028074	0.999257	1.068713
Retail Trade	1.057695	1.06994	1.048627	1.079233
Finance, Insurance, & Real Estate	0.826266	0.904974	0.969353	0.958503
Services	1.062981	1.186873	1.118576	1.270907

Source: US Bureau of Economic Analysis, 2009.

After the large employment loss in 1982, federal, state and local resources were poured into retraining Pittsburgh's incumbent workforce; however the real challenge to Pittsburgh's economic vitality soon became population stagnation and even decline. In the city of Pittsburgh, the population declined 12.75% from 1980 to 1990 and continued to decline through 2007.

Table 6.7: City of Pittsburgh, Pittsburgh MSA, State of Pennsylvania and U.S. Population Changes from 1980-Present by Decade

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
City of Pittsburgh	423,938	369,879	334,563	295,988	12.75%	-9.55%	11.53%
Pittsburgh MSA	2,571,223	2,394,811	2,431,087	2,351,192	-6.86%	1.52%	-3.29%
Pennsylvania	11,863,895	11,881,643	12,281,054	12,418,756	0.15%	3.36%	1.12%
United States	226,545,805	248,709,873	281,421,906	301,237,703	9.78%	13.15%	7.04%

Source: U.S. Bureau of Census

The loss of population in Pittsburgh had immediate effects on job-growth and diversification strategies. Because of this, Pittsburgh's leaders stopped focusing on counting jobs, and became more involved with growing the region's per-capita income. As the leading indicator in Pittsburgh's transformation, measuring per capita income serves as a good overall indicator of wage growth in a region. As indicated in Table 6.8 below, Pittsburgh's per capita income has grown with the State of Pennsylvania and U.S. averages, and in all cases Pittsburgh's per capita income has remained above national averages. Specifically, in 2007, the Pittsburgh MSA's per capita personal income was 106.71% of the national level.

Table 6.8: Per Capita Personal Income Change 1980-2007

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
Pittsburgh MSA	$25,314	$30,232	$36,840	$41,206	19.43%	21.86%	11.85%
Pennsylvania	$24,185	$30,288	$35,738	$38,793	25.24%	17.99%	8.55%
United States	$24,254	$29,965	$35,917	$38,615	23.54%	19.86%	7.51%
Ratio - MSA / US	104.37%	100.89%	102.57%	106.71%			
Ratio - MSA / State	104.67%	99.82%	103.08%	106.22%			

U.S Bureau of Economic Analysis -
Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor.

Even though the growth in per capita personal income is above state and national averages, the Pittsburgh MSA's median household income levels are below the State and U.S. levels. However, in recent decades economic and workforce development efforts have shown results in terms of raising income levels. In 1989, the ratio of the Pittsburgh MSA median household income level compared to the U.S level was 88.69%, whereas in 2008 that same ratio is 89.62%. This is a rather slow growth rate, but nonetheless the rate is moving in the right direction. Table 6.9 below describes the region's median household income trends in more detail. While Pittsburgh revitalization has been real, work remains to bring the city and the region's earnings in line with the nation.

Table 6.9: Median Household Income 1989-2008

	1989	1999	2008	1989-1999	1999-2008
Pittsburgh City	$33,497	$35,574	$34,834	6.20%	-2.08%
Pittsburgh MSA	$43,038	$46,623	$44,814	8.33%	-3.66%
Pennsylvania	$46,933	$49,907	$47,913	6.34%	-4.00%
United States	$48,526	$52,257	$50,007	7.69%	-4.31%
Ratio - City / US	69.03%	68.08%	69.66%		
Ratio - MSA / US	88.69%	89.22%	89.62%		
Ratio - MSA / State	91.70%	93.42%	93.53%		

U.S. Bureau of the Census 1990 Census of Population and Housing – 1989 figures for Pittsburgh MSA represent Pittsburgh—Beaver Valley, PA CMSA -
Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor
U.S. Census Bureau Census 2000 - Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor
U.S. Census Bureau – American Community Survey 2006-2008 -
Adjusted using U.S. Census Bureau CPI-U-RS: 2007 Dollar Factor

Today, Pittsburgh is faced with a new challenge in terms of its workforce pipeline. A comprehensive workforce study completed by the Three Rivers Workforce Investment Board indicated that Pittsburgh has a 50-50 challenge. Basically, this means that Pittsburgh has 50,000 fewer younger works and 50,000 additional older works than its peer cities. All in all, Pittsburgh has been challenged and will continue to confront economic decline and stagnation; however the region's willingness to face these challenges head-on has proven to be effective.

Opportunities for Economic Transformation

The two core strategies underlying Pittsburgh's economic transformation were to bind research and development with commercialization and to redevelop and reuse its infrastructure. Pittsburgh's primary initiative to increase technology-based development was to support a series of commercialization intermediaries (discussed below) that are designed to take research and development off the shelf and transform it into commercial and industrial uses. Pittsburgh's leadership also built a strong institutional capacity around brownfield redevelopment, which led to the revitalization of many of Pittsburgh's commercial and residential centers.

To Pittsburgh's economic development leaders, developing quality jobs means having a diversity of jobs in the region that offer family-sustaining wages. This was a lesson from the job losses of 1982 – that relying on a single industry was an unstable economic strategy. The main push for innovation-led economic development came in 1983, when in partnership with the Westinghouse Electric Corporation, Pittsburgh's leaders formed the Pittsburgh Technology Council (PTC). As a membership organization, the PTC was organized to leverage the deep engineering talent located at Westinghouse. In time, this organization grew to become a centerpiece in Pittsburgh's economic development strategy.

Shortly after its inception, the PTC studied the needs of its members and began a strong campaign to persuade state, regional and local leaders that Pittsburgh was in need of an innovation-led economic development strategy, which included:

- Business development, to help start-up firms find talent and capital
- Developing, attracting and retaining talent
- Publicizing Pittsburgh's technology-based businesses to increase their visibility
- Lobbying for a better business climate (e.g., reduced payroll taxes and other regulations that could stifle business growth)

Working with the PTC, workforce developers, industry leaders and foundations, Pittsburgh's economic developers aligned their efforts to reposition Pittsburgh's universities and colleges as economic anchors. The goal was to steer an innovation-led transformation in partnership with Carnegie Mellon University, the University of Pittsburgh, the University of Pittsburgh Medical Center and the 45 additional institutions of higher education in the region.

Pittsburgh is fortunate to be home to a number of large foundations, such as the R.K. Mellon Foundation, The McCune Foundation, the Heinz Endowments and others. The direct involvement of these foundations strengthened the city's ability sustain its new economic development strategies. For example, a good portion of the funding for Pittsburgh's commercialization intermediaries has come from foundations. The R.K. Mellon Foundation and others invested $35 million into the life sciences sector and over $7 million in computer sciences to help build the industries' critical mass in the region.

Pittsburgh's foundations also are actively involved in creating economic opportunities for all residents. In particular, the McCune Foundation invests its resources to prepare young people for the workforce, and works to build healthy and economically viable communities to attract people to the city and region. In 2007, the McCune Foundation made 170 grants to 154 organizations, totaling

Quality jobs in Pittsburgh meant developing export-sector jobs.

$28.9 million; 81 percent of these grants were awarded in southwestern Pennsylvania.

Quality jobs in Pittsburgh meant developing export-sector jobs; Pittsburgh leaders believed that local service sector jobs would naturally follow. The launch and continual development of commercialization intermediaries and tech transfer programs has indeed led to more job growth in traded sectors. In 2005, southwestern Pennsylvania had 117,065 life science industry employees who earned an average wage of $50,075. By 2007, the industry had grown 3.9 percent to 121,630 employees, whose average wage had increased to $54,417. In advanced manufacturing, employment grew 4.1 percent from 2005 to 2007, and the average wage increased 12.5 percent, from $47,030 in 2005 to $52,908 in 2007.

With $765 million in university research and development expenditures in 2007 alone, the innovation ecosystem that the region has built over the years is adding quality jobs and increasing incomes. The PTC and Pittsburgh's commercialization intermediaries helped build the critical mass necessary to launch new high-technology firms and diversify the region's economic base.

Building on Existing Assets

In addition to strengthening newly formed partnerships with institutions of higher education, Pittsburgh worked hard to redevelop and reuse its riverfront property.

Brownfield Redevelopment on Riverfront Property

Since 1982, the URA has administered 2,371 small business loans, and has invested nearly $299 million in redevelopment projects that have leveraged over $2 billion in total project costs. The URA's direct investments have created nearly 16,000 jobs, mostly in distressed neighborhoods.

Pittsburgh was able to transform many distressed neighborhoods by leveraging public and private funds to redevelop blighted properties. For example, the Urban Redevelopment Authority (URA) focuses a good deal of its job creation initiatives in distressed areas by helping small business owners obtain loans, in addition to acquiring and demolishing derelict properties. Around 90 percent of the URA's work is performed in census tracts with predominantly low- to moderate-income individuals. Since 1982, the URA has administered 2,371 small business loans, and has invested nearly $299 million in redevelopment projects that have leveraged over $2 billion in total project costs. The URA's direct investments have created nearly 16,000 jobs, mostly in distressed neighborhoods.

The city's redevelopment strategy has two goals: to increase property values in neighborhoods that have seen decline and disinvestment, and to help low-income individuals reside closer to places of employment. As it turned out, the URA's holdings became strategic assets for local firms looking to expand. From January of 2000 through September 2009, URA disposed of 764 parcels of land for redevelopment.

A number of Pittsburgh's brownfields were large sites in the ownership of a single company. This made redevelopment significantly easier, because the city didn't have to assemble multiple smaller parcels to market. As the URA engaged in public-private partnerships to redevelop the city's brownfields, the state also passed legislation that improved liability laws, and Pittsburgh ultimately became a national leader in brownfield redevelopment.

The city's redevelopment strategy has two goals: to increase property values in neighborhoods that have seen decline and disinvestment, and to help low-income individuals reside closer to places of employment.

In Allegheny County alone, public-private partnerships have cleaned up over 1,000 acres in the last five years. Much of this success is due to the availability of public funds available to close financing gaps. For example, the URA has been instrumental in closing the financial gap on parking garages in recent years. The Regional Industrial Development Corporation (RIDC) also has worked with Pittsburgh's leadership to redevelop riverfront brownfield properties into tech parks. Two examples are detailed below.

Lawrenceville Riverfront Brownfield Redevelopment Project (north side of Pittsburgh)

Working closely with Carnegie Mellon University, RIDC and its regional partners set out to link university research and development with the private sector by acquiring and assembling Pittsburgh's riverfront real estate. CMU led this effort by locating its National Robotics Engineering Center (NREC) in a 100-year-old warehouse on a site that previously was home to several steel industry equipment suppliers. Shortly thereafter, RIDC acquired the properties adjacent to CMU's NREC to develop for entrepreneurial firms looking to spin out of NREC. RIDC currently is working with the city to prepare the property for development.

The Lawrenceville Corporation, a community development corporation, worked in the area simultaneously to preserve community diversity and the neighborhood's working class heritage. The Lawrenceville Corporation worked with stakeholders to concentrate development in areas identified as priorities through strategic planning processes.

The long-term growth and development of this corridor is part of the region's bigger redevelopment goals. In partnership with the URA, consultants are currently developing the Allegheny Riverfront Vision Plan to guide the redevelopment of 6.5 miles of the river's south shore. The study area involves hundreds of parcels, both publicly and privately owned. The project will examine ecological systems, market-based land uses, neighborhood connections, open space, infrastructure and pedestrian and transit opportunities.

Pittsburgh Technology Center Brownfield Redevelopment: 2nd Avenue (Hazelwood)

Located right off 2nd Avenue in the Hazelwood area, close to 180 acres of brownfield property was redeveloped into Pittsburgh's largest tech park. It cost roughly $18 million to remediate the Pittsburgh Technology Center site and make it attractive to buyers. Public sources of funding and their uses include:

- $6 million from the state Commerce Department for land acquisition and site preparation
- $2.4 million from the Pittsburgh Water and Sewer Authority for installation of utility lines
- $1.9 million from the Urban Redevelopment Authority's (URA) land acquisition fund
- $1.4 million in city bond funds
- $1.3 million from the Regional Industrial Development Corporation, which the URA had chosen as the developer for the project

Once an abandoned steel mill, the Pittsburgh Technology Center site has been redeveloped with ample green space and amenities to offer to over 1,000 of Pittsburgh's knowledge workers. The presence of Pittsburgh's commercialization intermediaries and universities has made this tech park a focal point for innovation-based jobs.

Engaging Institutions of Higher Education

As noted above, Pittsburgh's EDOs were determined to leverage the region's higher education institutions for economic growth. The region's steady growth in university R&D has helped build its expertise and in recent years, Pittsburgh has become globally competitive due to its corporate and individual patent growth, as well as the commercialization intermediaries that are fueling Pittsburgh's entrepreneurial spirit.

U.S. Steel, which has been headquartered in Pittsburgh and a leading employer since 1901, was an element of Pittsburgh's transformation high-skill, high-wage job growth. Rather than abandoning the region's historical strength in manufacturing, Pittsburgh's leaders instead worked to advance the level of technology used in manufacturing processes and to support smaller, "boutique" manufacturers. Importantly, U.S. Steel has fostered innovation in manufacturing and product development by working with the region's research institutions, in addition to operating its own research and technology center in Munhall, Pennsylvania. This center employs over 100 scientists and engineers who have been awarded over 550 patents in the last 30 years.

Pittsburgh's universities and colleges are continually expanding their R&D capacity. Carnegie Mellon started as a regional research institution and grew into to a global competitor in broad-based computing. In 1983, a joint effort by IBM and CMU led to Project Andrew, one of the first information technology research efforts, creating the foundation of computer networking. It still spins out new firms today. CMU also has a brownfield program that helps students of economic development understand the impact that site cleanup and reuse can have on a community. Students can tour brownfield sites where companies such as Google and Apple now have research facilities.

Carnegie Mellon reworked its formal intellectual property and tech-transfer agreements with its researchers to remove policies that stifled entrepreneurship. CMU also instituted an entrepreneurial leave policy and allows researchers to start new firms without having to heavily negotiate their intellectual property.

CMU has become a talent attraction and retention centerpiece to Pittsburgh's efforts to replenish its population. Roughly 3,600 foreign-born students are enrolled at Carnegie Mellon alone. Additionally, research institutions are able to attract and retain high-tech firms because of Pittsburgh's ability to develop and commercialize state-of-the-art research and development.

Pittsburgh will continue to build on its existing assets by introducing new residents and incoming workers to advanced technology fields, and upgrading the skill sets of incumbent workers. For example, in 2004 the Pittsburgh Life Sciences Greenhouse (PLSG, discussed in detail below) administered a first-of-its-kind, $2.4 million federal grant from the U.S. Department of Labor to train western Pennsylvania workers for employment in the life sciences industry. The PLSG worked in partnership with Community College of Allegheny County, Lyceum Group LLC and the Pittsburgh Technology Council to develop new curricula and educate over 6,000 trainees, far exceeding its original goal of training 400 participants.

The curricula were developed to upgrade incumbent skills and move transitioning workers into biosciences positions. For example, for individuals not employed in the life sciences sector but who possessed the relevant skill sets, the PLSG created a 40-hour core curriculum designed to help them get jobs in the life sciences. For incumbent life sciences workers, the PLSG created customized training designed both to meet the training needs of particular employers and to help individuals enhance their expertise and achieve promotions and pay increases. This initiative opens up opportunities for a wider range of lesser-skilled or transitioning workers to enter and advance in an emerging economic sector.

The training materials developed through the grant have been turned into an

"open source" resource and can be accessed on the PTC website. Even though the curriculum was originally designed in response to the educational needs of the medical device and biotech industries, any industry can now benefit from the technology course work.

In addition, the PLSG began operating a full-scale Mobile Laboratory Program, traveling laboratories that allow students to participate in biosciences investigations on board. The program is now maintained by the University of Pittsburgh to serve students and educators throughout the region.

Building Economic Development Capacity

The two large EDOs in Pittsburgh are the Urban Redevelopment Authority and the Allegheny Conference. By facilitating and strengthening partnerships between the region's public and private sectors, Pittsburgh was able to take an honest inventory of its assets and incorporate these into a forward-looking economic development strategy. These EDOs have taken on the challenge to move beyond traditional economic development benchmarks to explore new ways to measure the effectiveness of their work.

Asset mapping was a key tool in diversifying Pittsburgh's economic base. For example, the URA was organized to acquire and demolish derelict properties, and in some cases used eminent domain to redevelop neighborhoods. In working with small community development organizations, the URA was also able to collect better data on its community's assets. The data gathered helped the URA measure changes in the city's property tax base.

In addition, the URA is looking at models that will help measure "offsite value creation" – the effect on the surrounding community after a project such as a brownfield redevelopment is completed. The city also has worked to turn former industrial properties into parks and other green amenities to improve the quality of life. Currently, the URA is measuring success in these initiatives by benchmarking the yearly increase in home values surrounding these redeveloped green sites.

The Allegheny Conference works to build economic development capacity across the Pittsburgh region through strategic affiliations with the Greater Pittsburgh Chamber of Commerce, Pennsylvania Economy League – Southwestern Pennsylvania, and the Pittsburgh Regional Alliance. Mainly, the Allegheny Conference is responsible for initiating and benchmarking Pittsburgh's economic development strategy, regularly taking an inventory of Pittsburgh's commercial and industrial assets and matching this against stated goals.

The metrics used to benchmark these efforts vary among the economic

development partners. However, the Pittsburgh Technology Council uses a set of metrics that have been widely accepted as good indicators of economic growth and diversification: number of firms, total employment, total annual payroll and average wages. These metrics benchmark the region's efforts to grow six main technology clusters, which include:

- Information technology
- Life sciences
- Advanced manufacturing
- Advanced materials
- Environmental technology
- Energy technology

Clusters can offer a wide range of job and wage opportunities. Pennsylvania's Department of Labor and Industry has invested significant dollars to create a skilled workforce through industry partnerships, which are multi-employer collaborative efforts that bring management and labor together around the common purpose of improving a cluster's competitiveness. These initiatives help the public sector understand the opportunities and challenges facing a set of similar companies and how it can help, while preparing the workforce to assume higher quality jobs.

During 2008-2009, the Pennsylvania Department of Labor and Industry invested $1.3 million in the Three Rivers' partnerships and its incumbent worker training programs, helping approximately 2,000 incumbent workers improve their skills.

In Pittsburgh, the Three Rivers Workforce Investment board (which will be discussed in more detail later) manages partnerships in manufacturing, energy, building and construction, among others industries. During 2008-2009, the Pennsylvania Department of Labor and Industry invested $1.3 million in the Three Rivers' partnerships and its incumbent worker training programs, helping approximately 2,000 incumbent workers improve their skills. Incumbent training builds advancement into existing industries and clusters, which as we noted, is crucial for defining quality jobs.

The Tech Belt Initiative

In 2007, the Pittsburgh Life Sciences Greenhouse and BioEnterprise of Cleveland announced a collaboration to create a Biosciences Tech Belt. Its goal is to link the assets of the two metro areas and leverage their resources to attract greater levels of funding and talent. Specifically, the Tech Belt Biosciences Initiative (TBBI) covers an inter-state region of 7.2 million people with a potential economic impact of more than $1 billion in annual academic R&D. Currently, 700-plus companies employ more than 25,000 people in bioscience enterprises alone in the Tech Belt.

In 2007, the Pittsburgh Life Sciences Greenhouse and BioEnterprise of Cleveland announced a collaboration to create a Biosciences Tech Belt. Its goal is to link the assets of the two metro areas and leverage their resources to attract greater levels of funding and talent.

This increase in opportunity, attention, funding and activity has and will continue to benefit the entrepreneurship and life sciences commercialization efforts of the PLSG and western Pennsylvania. The TBBI builds on the strengths of the PLSG and BioEnterprise to create a center for entrepreneurship; market the critical mass of industry and research that exists in the Cleveland-Pittsburgh corridor; and establish collaborations between technology communities that generate economic growth.

The initiative has also helped bring new venture capital to the region. For example, the combined regions accounted for $343 million in healthcare venture investment in 2007, distributed across 45 companies. In 2009, the success of the Biosciences Tech Belt attracted federal support of the effort in western Pennsylvania and prompted the development of a broader Tech Belt effort that includes the energy sector.

Entrepreneurship and Innovation

The state of Pennsylvania has long embraced entrepreneurship and small business development. Ben Franklin Technology Partners (BFTP) has been supported by every Pennsylvania governor and the state General Assembly since its inception in 1983. The BFTP has shown a 3.5-to-1 return on investment for every state dollar. When the Pittsburgh Technology Council was organizing a tech-led economic development strategy to support new state initiatives, the two groups began working together.

In Pittsburgh, there are a number of entrepreneurship and small business development intermediaries that are focused on high-tech, high-wage job growth. These efforts are crucial for diversifying the economic based, and strengthening the region's economic engines, ultimately catalyzing broader growth patterns throughout the region. Pittsburgh's leadership, in association with the state and regional foundations, created these organizations to help convert academic intellectual property to commercial and industrial uses, and to ultimately drive the creation of new businesses, new industries and higher-wage job opportunities.

Pittsburgh's Commercialization Intermediaries

State leaders wanted to expand the number of commercialization intermediaries, from basic R&D assistance to extensive venture capital programs, to better enable budding entrepreneurs to successfully secure and market their intellectual property.

The commercialization intermediaries that were developed as part of Pittsburgh's entrepreneurship and innovation strategy – each discussed in more detail below

– include The Technology Collaborative, Innovation Works, Idea Foundry and the Pittsburgh Life Sciences Greenhouse. Part of Pittsburgh's success is due to an agreement among these groups to establish a "who can" model of service for entrepreneurs – meaning each proactively refers any entrepreneurs whose needs they can't meet to the appropriate service provider.

The Technology Collaborative

With an annual budget of $6 million to $8 million, the Technology Collaborative aims to create jobs in which employees create tangible products in export-based industries. In doing so, the Technology Collaborative works to strengthen local supply chains and create critical mass in industries focused on robotics, embedded systems and microprocessors. Since its inception in 1998, the Technology Collaborative has helped create 2,631 jobs with an average wage of $70,741.

In addition to complementing university curriculums, the Technology Collaborative offers an internship program for college students in which it reimburses Pittsburgh employers who hire local students for summer internships. Last year alone, this program sponsored 43 interns who were placed at 39 local companies. Twenty percent of the students were hired at the company where they interned after graduation, receiving a higher average wage rate than the current per capita income level in Pittsburgh.

Innovation Works

Innovation Works, another commercialization intermediary, provides direct investment and hands-on support to university researchers, hospital systems, national energy laboratories, corporations and students. Innovation Works houses Alpha Lab, a rapid product development accelerator and a hub for Pittsburgh's software and Internet community. Innovation Works' goal is to test 300 concepts per year.

Innovation Works has a unique niche in the commercialization process. It works with entrepreneurs before the seed funding stage to help with market research, prototyping and the process of securing their intellectual property. This feasibility-testing stage provides entrepreneurs with $10,000 to $25,000 to explore market potential. This helps avert financial loss in the seed-funding stage, which can provide start-up firms with up to $5 million. Innovation Works also provides seed funding to start-ups, investing $43 million into 121 regional firms over the last 10 years. Innovation Works is specifically interested in companies that are developing a proprietary technology in areas of life sciences (e.g., medical devices, biotechnology) and information technology (e.g., hardware, software, Internet infrastructure) that addresses emerging and growing markets.

Innovation Works recently helped establish Pittsburgh Equity Partners, a professionally managed angel fund that offers larger funding opportunities to promising start-ups. The Pennsylvania Department of Community and Economic Development, Innovation Works, Carnegie Mellon University and the University of Pittsburgh collectively created a competition to select a seasoned manager to form a new early-stage venture fund. The principals of Pittsburgh Equity Partners won and launched the firm with a $1.5 million investment from the competition sponsors in 2008.

Idea Foundry

Idea Foundry is a nonprofit that transforms innovative technologies into viable businesses. It serves local universities seeking to commercialize research projects and entrepreneurs trying to launch their own start-ups, as well as established organizations, with crucial technology transfer activities.

Idea Foundry's model is rooted in its Transformation Fellowship program. This ushers businesses through the formation stage, providing what often is an entrepreneur's first cash investment and managing the joint work required to get the business off the ground. In addition, Idea Foundry offers work space to a number of its portfolio companies to help them launch. Over the past six years, Idea Foundry has worked with over 60 companies that have directly created over 400 jobs. These companies are on track to create over 1,300 jobs in the next three years, and have raised over $84 million in capital.

Idea Foundry has begun applying the same concepts of investing both hands-on assistance and funding to help take later-stage companies to the next level. It also is applying its experience to corporate R&D divisions, helping to introduce new technologies into their processes and assisting them with their own technology spin-out endeavors. Finally, Idea Foundry sponsors a yearly business plan competition to infuse a culture of entrepreneurship in Pittsburgh.

The Pittsburgh Life Sciences Greenhouse

PLSG guides researchers, entrepreneurs and emerging companies through the early stages of company development by providing direct capital investments and business growth programs. Recognizing that experienced entrepreneurs were a scarce resource in Pittsburgh, PLSG launched the Executive in Residence (EIR) Program. PLSG hires full-time, experienced executives to guide seed and early-stage life sciences companies to the successful commercialization of their products and services. Specifically, services of the EIR program include business plan development; product and market development; technology transfer, licensing, and initial contracts; corporate partnering; and capital formation and

networking. Since its inception, 32 life sciences experts have participated in the PLSG executive program.

To date, the PLSG has worked with 300 companies and invested over $15 million in 60 companies, leveraging $500 million in additional capital.

By creating a strong network of entrepreneurship and small business programs focused on wealth creation and skilled job opportunities, Pittsburgh has diversified its economic base while simultaneously outpacing state and national personal per capita income growth.

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Workforce Development and Inclusion

Pittsburgh's leaders are continuously looking into strategies that will merge K-12 curriculums and higher education with job training, in addition to raising the skill levels of incumbent workers for jobs in the region's high-technology industries.

Leading Pittsburgh's workforce development strategy, the Three Rivers Workforce Investment Board has built a strategy around the correlation between educational attainment and both labor force participation and lifelong earnings potential. Three Rivers is a unique WIB because it serves two workforce investment areas (Allegheny County and the City of Pittsburgh) under one board of directors. This brings a unique perspective to and critical linkages between the different workforce challenges in the region's urban and rural areas. To prepare the workforce of tomorrow, Three Rivers focuses its efforts on the following four areas:

- Incorporating content regarding labor market information into high school curriculum
- Ensuring that students go through a career education process that includes exploration, self-assessment and the development of soft skills for success in any field
- Implementing workplace learning experiences throughout high school and post-secondary training through job shadowing, mentoring, educator-in-the-workplace and work-based learning programs
- Ensuring that students have access to multiple, innovative, high-quality pathways to post-secondary training and education options

The Three Rivers WIB mainly acquires, manages, interprets, and shares relevant workforce data for community stakeholders to ensure that the needs of both businesses and job seekers are met. By identifying and researching critical workforce issues, the TRWIB is able to help the region's leadership understand the impact of workforce development policies.

Through a program titled Employers and Educators Engaged for Excellence (E4), the WIB works with 22 Allegheny County school districts to help teachers and staff understand the labor market and the importance of career education. The E4 program has assisted students with career exploration and interest assessment opportunities; coordinated job shadowing with over 50 employers; provided mentoring to high school youth; and taught basic labor market and career education information to teachers.

The Pittsburgh Promise: K-12 and Higher Education

The Pittsburgh Promise program was launched in 2007 with a $100 million commitment by the University of Pittsburgh Medical Center (UPMC). The Promise program provides college and trade school scholarships to every child who lives in Pittsburgh for at least the last four years of high school and graduates from Pittsburgh public schools with a 2.5 minimum grade point average.

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- To mitigate and reverse the population declines in Pittsburgh and the enrollment declines in Pittsburgh public schools
- To grow high school completion rates, college readiness, and the post-high school success of all students in Pittsburgh public schools
- To deploy a well prepared and energized workforce and an eager core of community volunteers

UPMC's commitment includes an initial $10 million. The remaining $90 million is a challenge grant intended to spur a community-wide campaign to raise an additional $150 million ($15 million per year over the next ten years) for a permanent endowment that will fund future generations of graduates from the Pittsburgh public schools.

The potential social and economic impact of The Pittsburgh Promise is significant, and indicates Pittsburgh commitment of inclusion of its population into social and economic life. Currently, 27.6 percent of Pittsburgh's population holds a college degree. According to a recent study commissioned by CEOs for Cities, if Pittsburgh can grow this number by just one percentage point, the region's income would grow by $1.8 billion annually.[44]

In the second year of the program, Pittsburgh Promise scholars' college retention rates were higher than those of their pre-Promise predecessors. More high school seniors applied for post-secondary education, and teachers reported that the Promise is spurring students to study harder. And although they have not yet reversed enrollment decline, Pittsburgh's public schools recently announced better-than-expected figures and even an increase in the number of students

entering kindergarten. The hope is that the upcoming census will similarly indicate the reverse of decades-long population losses.

Technology Rises from Brownfields

Thirty years ago, Pittsburgh's higher education institutions attracted some of the best talent from the region and beyond to the city; however, these students rarely remained in Pittsburgh after graduation. Today, university graduates are increasingly staying put. The city's urban amenities and green space, combined with a strong culture of entrepreneurship and innovation, are now revered and celebrated. Amenities such as bike paths, parks and complete entertainment districts, created out of brownfields, have transformed Pittsburgh's image.

Pittsburgh understood early that it had unique, place-based assets in its universities, colleges, and large sites for redevelopment that it could leverage for economic transformation. It has taken advantage of billions of dollars in university research, creating key institutions to capture and commercialize it. Pittsburgh also invested heavily in incumbent skills training, education development and the revitalization of neighborhoods decimated by industrial decline. In doing so, the region has reversed its fortunes and grown quality jobs while enhancing the skillbase of its population to attain and thrive in those jobs. Thus, the region serves a model for others looking to manage the challenges of globalization and change.

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Notes:

[44] The City Dividends, by Joe Cortright, commissioned by CEOs For Cities, September 2008

7.0 AKRON, OHIO

Once known as the "rubber capital of the world," Akron has had to reinvent its economic base and its image in order to retain, attract and create quality jobs, in addition to the talent to fill them. Akron has undergone a considerable transformation in the years since the rubber industry largely left the city and region, taking almost 19,500 jobs in the industry and many more indirectly. Akron also lost 12.5 percent of its population from 1980 to 2008.

From 1997 to 2007, the Akron MSA was the only metro area in Northeast Ohio with job growth, at a rate of 5.8 percent.

Akron has regained traction. Since the 1980s, economic stagnation, population loss and unemployment have given way to economic growth and higher-wage employment. From 1997 to 2007, the Akron MSA was the only metro area in Northeast Ohio with job growth, at a rate of 5.8 percent.[45] Akron has gone from being a victim of globalization (with much of the rubber industry moving to lower-cost production facilities in the U.S. and abroad) to a city that is taking advantage of global opportunities. While challenges remain, Akron's story holds useful lessons for other cities struggling to overcome economic shifts and create quality opportunities.

Akron's economic transformation is fundamentally connected to leadership, continuity and commitment. Leaders have introduced new initiatives and strategic partnerships that provide the city with a competitive edge on a local, regional and global scale. As Akron moved from an economy rooted in traditional industry to one better equipped to thrive in a knowledge-driven economy, the tools, policies and strategies it used to promote economic development transformed as well.

Akron is developing new core competencies by building on its assets and diversifying its economy. A campaign that began in the 1980s to market the region and attract new businesses, in concert with the research and technology transfer of the University of Akron and other universities, has helped Akron become an internationally recognized leader in polymers.[46] The city is attracting and developing companies in other industries with growth potential for knowledge-based, semi-skilled and skilled jobs, including biotechnology, nanotechnology, health services and advanced manufacturing. Akron also is growing its own jobs with the Akron Global Business Accelerator and the University of Akron Research Foundation.

Akron has been visionary and risk-taking in its economic initiatives. For a city that was once a one-industry town, it has diversified its products and markets as part of a strategy to stay economically competitive. Additionally, community leaders have made strategic investments in downtown and neighborhood revitalization, housing, and public education to pump new life into the city. As a result, among Ohio cities, the middle class that remains within Akron's city limits is second in size only to Columbus'.

Local and Regional Snapshot

Located 40 miles south of Cleveland, Akron (population 208,000) was founded in 1835, its economy based on its location at a staircase of locks on the Ohio-Erie canal. The Akron Metropolitan Statistical Area includes the counties of Summit and Portage, with a total population of almost 700,000.[47]

Akron's population tripled between 1910 and 1920, steadily increased in the 1940s and 1950s, and peaked in 1960 with a total population of 290,351. This was during the era of Akron's booming rubber industry. Since the 1960s, the city's population has been declining; the city lost approximately 53,000 people between 1960 and 1980, due largely to suburbanization coupled with industrial decline. Recently, the city's population decline has slowed, and the MSA's population has rebounded. Akron experienced a fraction of the population loss of neighboring cities such as Cleveland, Canton, and Youngstown between 1990 and 2000. However, the Akron MSA and the state of Ohio have not kept pace with U.S. population growth during this time.

Table 7.1: Total Population Profile, 1970 - 2008

	City of Akron		Akron MSA		Ohio		United States	
	Population	% Change	Population	% Change	Population	% Change	Population	% Change
1970	275,425		679,239		10,652,017		203,211,926	
1980	237,177	-13.9	660,328	-2.8	10,797,630	1.4	226,545,805	11.5
1990	223,019	-6.0	657,575	-0.4	10,847,115	0.5	248,709,873	9.78
2000	217,074	-2.7	694,962	5.7	11,353,140	4.7	281,421,906	13.15
2008	207,510	-4.4	698,553	0.5	11,485,910	1.2	303,824,640	8.0

Sources: U.S. Decennial Census (1970-2000) and 2008 American Community Survey

The city of Akron has a more diversified racial composition than the Akron MSA. Akron has experienced less racial division over political resources compared to neighboring cities of similar racial composition, which may have played a role in its economic recovery.[48] As the table below shows, the Akron MSA mirrors the state of Ohio in terms of racial mix, with a large majority of Whites, followed by African Americans.

Table 7.2: Race – Percentage of Total Population, 2000 & 2008

	Year	City of Akron	Akron MSA	Ohio	United States
White alone	**2000**	67.2%	85.9%	85.0%	75.14%
	2008	63.7%	84.3%	84.1%	74.35%
	% Change	-3.5%	-1.6%	-0.9%	-0.8%
Black or African American alone	**2000**	28.5%	11.0%	11.5%	12.32%
	2008	31.4%	11.6%	11.7%	12.33%
	% Change	2.9%	0.6%	0.3%	0.0%
American Indian and Alaska Native alone	**2000**	0.3%	0.2%	0.2%	0.88%
	2008	0.2%	0.2%	0.2%	0.80%
	% Change	-0.1%	0.0%	0.0%	0.1%
Asian alone	**2000**	1.5%	1.3%	1.2%	3.64%
	2008	2.3%	1.7%	1.5%	4.37%
	% Change	0.8%	0.5%	0.4%	0.7%
Native Hawaiian and Other Pacific Islander alone	**2000**	0.0%	0.0%	0.0%	0.14%
	2008	0.0%	0.0%	0.0%	0.15%
	% Change	0.0%	0.0%	0.0%	0.0%
Some other race alone	**2000**	0.4%	0.3%	0.8%	5.46%
	2008	0.7%	0.4%	0.6%	5.82%
	% Change	0.3%	0.3%	-0.1%	0.4%
Two or more races	**2000**	2.1%	1.3%	1.4%	2.43%
	2008	1.7%	1.8%	1.8%	2.18%
	% Change	-0.4%	0.4%	0.4%	-0.3%

Sources: U.S. Decennial Census, 2000; American Community Survey - 2008

According to the 2008 American Community Survey, educational attainment rates in the city of Akron were in line with state averages, but trail the Akron MSA and the nation in terms of bachelor's and graduate degree holders. In the Akron MSA, 30 percent of the population has either a bachelor's, graduate or professional degree, which exceeds both state and national averages.

Table 7.3: Education Attainment (2008)

	City of Akron	Akron MSA	Ohio	United States
Population 25 years and over	130,011	467,320	7,664,309	200,030,018
Less than high school diploma	15.2%	9.9%	12.4%	15.0%
High school graduate (including equivalency)	34.7%	32.9%	35.4%	28.5%
Some college, no degree	20.7%	20.0%	20.7%	21.3%
Associate degree	8.1%	7.9%	7.4%	7.5%
Bachelor's degree	14.0%	19.1%	15.4%	17.5%
Graduate or professional degree	7.3%	10.2%	8.7%	10.2%

Source: U.S, Census, 2008 American Community Survey

Per capita income increased in the Akron MSA by approximately 20 percent between 1980 and 2000, but growth has significantly slowed in the 2000s, most likely due to the recent global recession. In terms of median household income, city rates declined in the 1980s but rebounded in the 1990s as economic transformation began. Looking at the rates between 1989 and1999, median household income growth in Akron and the Akron MSA exceeded that of the state and nation. The median household income for the Akron MSA consistently exceeds the totals for the city of Akron and the state of Ohio.

Table 7.4: Per Capita Income, 1980-2007

	1980	1990	2000	2007	1980-1990	1990-2000	2000-2007
Akron MSA	$24,374	$29,064	$35,606	$36,563	19.24%	22.51%	2.69%
Ohio	$24,091	$28,835	$33,943	$34,468	19.69%	17.71%	1.55%
United States	$24,254	$29,965	$35,917	$38,615	23.54%	19.87%	7.51%
Ratio - MSA / State	101.17%	100.79%	104.90%	106.08%			
Ratio - MSA / US	100.49%	97.00%	99.13%	94.69%			

Source: US Bureau of Economic Analysis (Income is adjusted for 2007 CPI-U-RS).

Table 7.5: Median Household Income, 1979-2008

	1979	1989	1999	2008	1979-1989	1989-1999	1999-2008
City of Akron	$40,616	$37,381	$41,130	$32,499	-8.0%	10.0%	-21.0%
Akron MSA	NA	$49,128	$55,156	$50,036		12.3%	-9.3%
Ohio	$49,044	$48,164	$52,915	$47,988	-1.8%	9.9%	-9.3%
United States	$46,522	$50,530	$54,256	$52,029	8.4%	7.6%	-4.1%
Ratio - City / State	82.8%	77.6%	77.7%	67.7%			
Ratio - City / US	87.3%	74.1%	75.8%	62.5%			
Ratio - County / State	103.5%	101.0%	103.3%	103.0%			
Ratio - County / US	109.1%	96.5%	100.7%	95.0%			

Source: U.S. Census Bureau, Summary File 3; 2008 American Community Survey
(Income is adjusted for 2008 CPI-U-RS)

Poverty rates increased at all levels, from the city to the nation, between 2000 and 2008, reflecting the current recession. Not surprisingly, poverty rates in the city are significantly higher than in Summit County in both years, which points to the need for better inclusion of urban residents into regional opportunities.

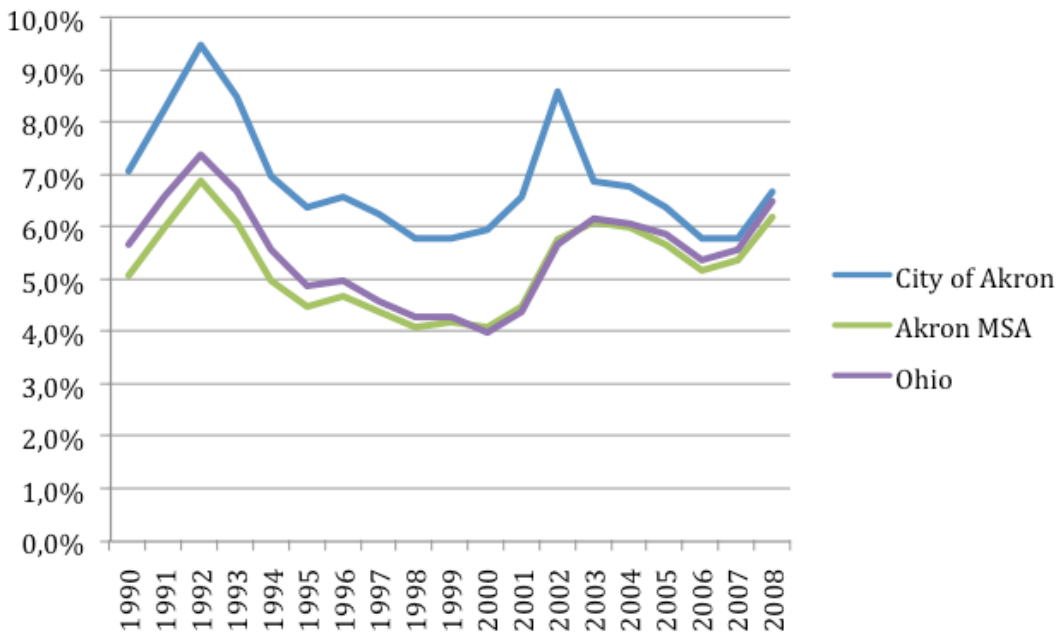
Table 7.6: Poverty Rates, 2000 & 2008

	2000	2008
City of Akron	17.5%	22.5%
Summit County	9.9%	12.2%
Ohio	10.6%	13.4%
United States	12.4%	13.2%

Source: 2000 U.S. Decennial Census; 2008 American Community Survey - 1 year estimate

The unemployment rates for the city of Akron, Akron MSA and state of Ohio have followed similar trends since 1990. The Akron MSA has maintained the lowest unemployment rate. Although the city has fared the worst, the trends show city, MSA and state rates starting to converge from 2003 onwards.

Table 7.7: Unemployment Rate, 1990 – 2008



Source: U.S. Bureau of Labor Statistics

While polymers have led Akron's initial economic recovery, Summit County and the Akron MSA have successfully diversified to a mix of industries. Employment in the polymer industry actually dropped significantly in the last decade – 54 percent since 2000, with the largest decrease during the recession of the early 2000s.

Table 7.8: Employment for NAICS Code 326, Plastics & Rubber Products Manufacturing, Akron MSA, 2000-2008

Year	Employees	% Change
2000	14,235	
2001	13,186	-7%
2002	8,633	-35%
2003	8,424	-2%
2004	8,535	1%
2005	8,183	-4%
2006	7,269	-11%
2007	6,584	-9%
2008	6,500	-1%

Source: Quarterly Census of Employment and Wages, U.S. Department of Labor

Other industries continue to be instrumental in the city's recovery processes. Advances in polymers have fueled growth in related industries such as health services and the bio-medical industry. These industries are supported by the presence of three major hospitals in the city – Akron General Hospital, Akron Children's Hospital and the Summa Health System's Akron City Hospital – in addition to close proximity to the world-renowned Cleveland Clinic, 40 miles away. In fact, U.S. Department of Labor employment data notes that the biotech sector has grown at an average of 3.6 percent per year for the last eight years.

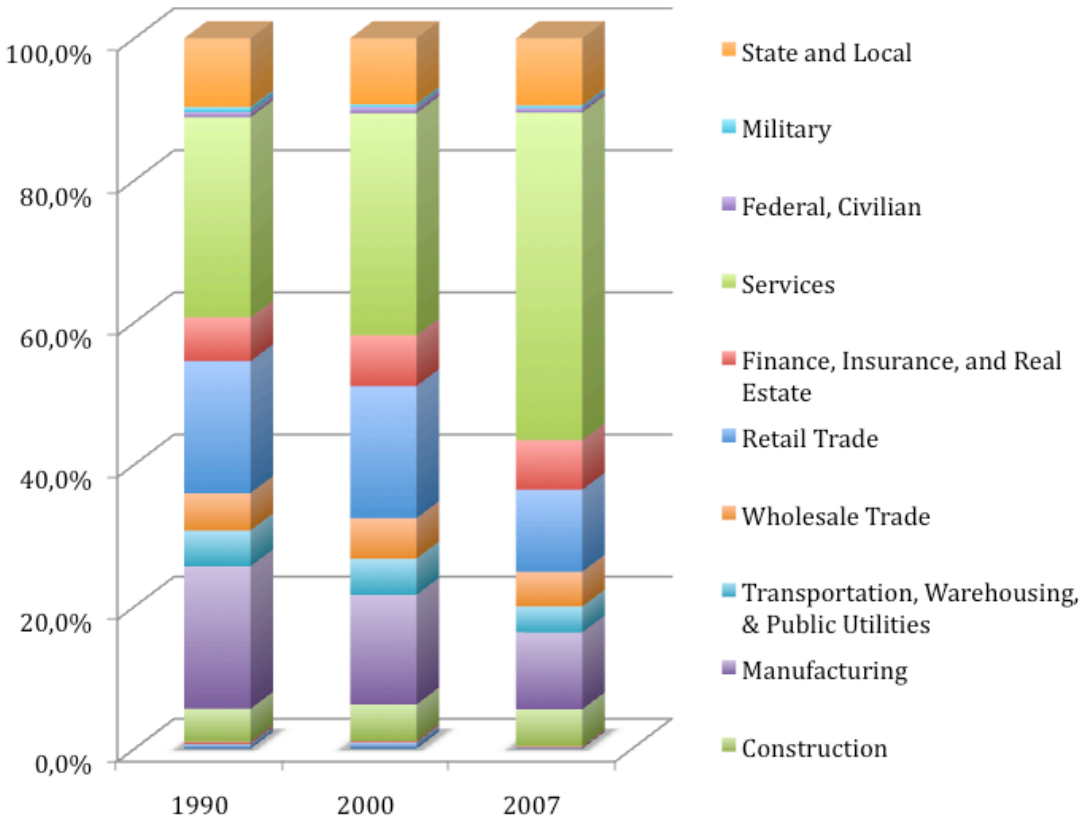
Table 7.9: Employment for NAICS 62, Health Care and Social Assistance, Akron MSA, 2000-2008

Year	Employees	% Change
2000	34,395	
2001	35,496	3.2%
2002	36,948	4.1%
2003	37,527	1.6%
2004	38,623	2.9%
2005	40,132	3.9%
2006	41,257	2.8%
2007	42,688	3.5%
2008	44,160	3.4%

Source: Quarterly Census of Employment and Wages, U.S. Department of Labor

Advanced manufacturing, instruments and controls, information technology, motor vehicles and equipment, and insurance companies have also seen growth in greater Akron – all of which have their roots in Akron's former economy in the form of knowledge, skills, facilities, and institutions. Since 1998, almost $2 billion has been invested in 62 new manufacturing operations in the region, the largest investment since World War II. Still, the service sector has become the dominant sector in Summit County, growing from 28 percent of total employment in 1990 to 41 percent in 2007. Retail trade follows at 12 percent of total employment.

Chart 7.10: Employment by Industry, Summit County, 1990-2007



Source: Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce

Location quotients for industries in the Akron MSA (compared to the U.S.) show that the Akron region has lost its specialization in manufacturing, and has increased its share of employment in transportation and utilities, wholesale trade, services, and state government. While advanced manufacturing remains critical to the region's economy, new sectors now represent areas of focus for Akron as it transitions to the knowledge economy and diversifies its economic base.

Table 7.11: Akron MSA Location Quotient by Employment Per Decade: 1980, 1990, 2000, 2007

Industries	1980	1990	2000	2007
Agricultural Services, Forestry, Fishing and Other	0.642681	0.732091	0.783529	0.1534
Mining	0.182731	0.567737	0.676579	0.054856
Construction	0.768971	0.876341	0.913241	0.93747
Manufacturing	1.41905	1.361704	1.396733	0.476894
Transportation & Public Utilities	1.001209	0.961699	0.931513	1.505662
Wholesale Trade	0.798555	0.954109	1.164877	1.388381
Retail Trade	1.080992	1.056662	1.088596	1.156578
Finance, Insurance, & Real Estate	0.728862	0.722646	0.832072	0.816235
Services	0.950735	0.941851	0.92231	1.189513
Federal and Civilian Government	0.26891	0.293631	0.44687	0.40139
Military	0.301715	0.361060	0.367714	0.421213
State Government	1.255593	1.293606	1.085193	1.422911
Local Government	1.02632	0.942945	0.974957	1.132388

Source: US Bureau of Economic Analysis

Economic Transformation: After Rubber Hit the Road

Akron was the fastest-growing city in America in the first part of the 20th century. The rubber industry transformed this small town into a thriving city as rubber manufacturers started clustering in Akron to meet the increased automobile demand associated with World War I. By 1915, four of the five leading rubber manufacturers (BF Goodrich, Firestone, General Tire, and Goodyear) had their headquarters in the city. Continued demand for tires and other rubber parts fueled the area's growth through the city's population peak in 1960.

Today, of the early, major rubber manufacturers in Akron, only Goodyear remains. The rubber industry underwent wrenching downsizing, mergers and acquisitions,

and the relocation of manufacturing to cheaper U.S. and offshore locations, resulting in significant economic dislocation and severe population loss in the city.

The most profound reshaping of the rubber industry – which caused community leaders to re-think their economic development strategy – occurred in the 1970s and 1980s. French company Michelin's radial tire brought unprecedented competition to U.S. manufacturers, and their failure to respond with an equivalent or superior product resulted in the loss of market share. Employment in Akron's rubber sector dropped by half, from 32,700 in 1976 to 15,500 in 1983, with unemployment rates more than doubling from 4.9 percent in 1970 to over 12 percent in 1983. This accounted for more than half the rubber jobs lost in the United States. In fact, by the end of the 1980s, only racing tires were manufactured in the city.

The Akron story demonstrates that no single solution can alter an economic trajectory; a multi-tiered approach is required to achieve long-term, more inclusive and sustainable economic transformation.

To survive, some of Akron's key companies made the transition from rubber to plastics by focusing on commercializing the synthetic rubber research conducted at the University of Akron. In this spirit of innovation, Akron's economic transformation relied on a parallel evolution of its economic development system.

The effectiveness of Akron's economic development strategies depended on building the right partnerships and alignments, leveraging both private and public sector resources, and investing in critical community assets. The Akron story demonstrates that no single solution can alter an economic trajectory; a multi-tiered approach is required to achieve long-term, more inclusive and sustainable economic transformation in a community.

Building on Existing Assets – Polymers and Beyond

The economic dislocation of the 1970s and 1980s put community leaders into crisis mode. Although Akron was partly a victim of globalization due to tire production jobs moving off-shore, city and regional leaders sought solutions that built on assets, enabled regional collaboration, and embraced globalization forces to increase business investment.

Previously, the executives of the major tire manufacturers led the city's economic development agenda. After their exodus, economic development became a community effort. Stakeholders came together in new ways to transform the economy for long-term recovery. They repositioned local assets to remain competitive and pursued a diversification strategy to reduce their vulnerability to economic shifts, rebranding Akron as a diversified, globally competitive economic player.

Developing a Plan of Action

In the mid-1980s, community leaders realized the need to develop a broad recovery plan and came together under the leadership of the Greater Akron Chamber of Commerce, then the Akron Regional Development Board (ARDB). With input from industry, government and academia, the group developed the "Akron Plus" campaign, a $4.7 million economic strategy and marketing plan to identify growth industries for the region.

From the beginning, the University of Akron (UA) leadership emphasized the need for a well-researched plan that would truly deliver the results it promised – a goal of creating 26,000 jobs. Analysis pinpointed the knowledge and skills developed from the rubber industry as the foundation for new industries to emerge. The research helped regional stakeholders better understand their assets and build consensus that the polymers industry should be the focus to transition to the new economy.

Presented in 1986, the Akron Plus study suggested a comprehensive economic development approach that included business retention and expansion activities; promoting new business ventures by local entrepreneurs; and attracting businesses within target industry sectors.

The University as a Catalyst for Economic Recovery

During that same period, university leaders were developing a vision of how the school could serve as a catalyst for economic transformation. Although the university historically was linked to the rubber industry through research and teaching, the industry's departure in the 1980s forced the University of Akron's polymer program to move beyond rubber.

The polymer program lacked a strong engineering emphasis, which would enable it to move from theory to application. In 1988, the UA leadership approved the merging of the polymer science and polymer engineering programs into one school – the first of its kind in the country – to enable interdisciplinary research in polymers and to bring global recognition to the program. The new school also attracted research dollars from local industry, and the new $17 million building had state-of-the-art equipment and machinery. This investment helped to anchor both university and industry-funded polymer research in a central location, thus beginning Akron's transition from rubber to plastics. Since the school's opening in 1991, it has become one of the largest academic polymer programs in the United States.

Strengthening Economic Development Capacity

The same year that the UA board of regents agreed to establish the new polymer school, the Akron Plus industrial recruitment and marketing effort commenced. The mayor had made a financial commitment of $100,000 to the Akron Plus campaign on the condition that city economic development staff would be co-located at the chamber office to facilitate greater collaboration.

Business retention and expansion visits allowed the staff to develop a more intimate knowledge of the community's strengths and weaknesses, as well as industrial trends and opportunities. With that knowledge, they developed international trade missions to promote Akron businesses and the region. At the onset, the jobs created by these efforts were not necessarily high-quality. Over time, the team became more successful in attracting companies that closely aligned with university and industrial activities, creating jobs that were more likely to add value to the product, service or production process.

This partnership proved to be effective. At the end of the five-year campaign (1988-1993), the region had added 37,500 jobs (40 percent more than projected); 25 percent of those were good manufacturing jobs. Of the 1,500 companies that located or expanded in the three-county region, one third of them received some form of direct assistance from the chamber.

Akron discovered that supporting horizontal clusters such as the polymers industry proved to be more difficult than originally thought. A plastics manufacturer in the auto industry often didn't realize that it shared concerns with a polymer company in the chemical industry.

By the mid-1990s, the chamber was looking for additional growth prospects. A cluster study for Northeast Ohio identified that the region's horizontal clusters of polymers, metal-working and electronics provided critical support for the vertical clusters of aerospace, advanced materials, and auto manufacturing.

Building Clusters

Akron discovered that supporting horizontal clusters such as the polymers industry proved to be more difficult than originally thought. A plastics manufacturer in the auto industry often didn't realize that it shared concerns with a polymer company in the chemical industry. One strategy that the chamber and city used was to meet with local companies at trade shows, in addition to prospects. In this environment, Akron companies were able to talk more strategically with economic development staff about their expansion plans as the trade show exposed them to new markets, products, and opportunities. After spending more time with local companies, the chamber started to get buy-in for these companies to work together in specific clusters to deal with shared problems. Later, groups would form and gain momentum in strengthening industry competitiveness, such as OhioPolymer, NorTech (the Northeast Ohio Technology Coalition) and the Ohio Polymer Strategy Council.

Business retention and expansion has been an important component in Akron's cluster strategy. First, the city successfully retained Goodyear; in December 2007, the company announced it would move into a new $890 million world headquarters facility in Akron, keeping 3,000 jobs in the city. A public-private partnership was formed and a developer hired to oversee the multi-billion-dollar redevelopment of the mixed-use area surrounding the site.

The second major success story is the retention of Firestone, the other major company in the rubber industry operating in Akron. In July 2007, Bridgestone announced that it would keep 1,000 research and development jobs in the city and invest $100 million to build a new R&D technical center. As in the case of Goodyear, the majority of Firestone's jobs in Akron are white-collar. The city collaborated with regional business leaders to retain the company.

Downtown Revitalization Efforts

The economic turmoil of the late 1970s and 1980s left its mark on downtown Akron, with the loss of retail anchors and the presence of vacant brick tire factories. By 1992, only 15,000 people worked downtown, about half of today's employment figure. In 1987, Don Plusquellic was elected mayor. Supported by Summit County and the University of Akron leadership, he pursued an economic vision for the city's downtown that would include mixed-use development, attractive and competitive commercial space, and major arts and entertainment venues that all would help to build the city's image.

The mayor and his economic staff decided to use city resources to pursue an aggressive economic development agenda focused on increasing export-oriented employment - jobs that would bring in money from outside the community. The strategy was to aggressively purchase vacant property, assemble the land into sizeable parcels, upgrade the infrastructure and facilities, and resell it at a competitive price to companies, thus marrying job creation with downtown revitalization. The city purchased over 200 acres of vacant property in four locations to provide affordable space to manufacturers, mostly small and medium-sized companies serving niche markets. They also purchased large tracts of land for parking (with an eye to future redevelopment opportunities) and today, the city owns approximately half of the parking facilities downtown. The city includes parking spaces in development packages with potential office tenants, helping the downtown office market compete with suburban office parks.

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One of the first large-scale redevelopment projects was the conversion of the former BF Goodrich factory into a mixed-use development, most of which was privately financed. This development exemplifies the city's transition from traditional manufacturing to the new economy. Due in part to the upgraded space

at affordable rents, Canal Park has attracted over 85 small and medium-sized businesses, many of which are based in the polymer and plastics industry. In total, they employ over 2,500 workers in jobs that range from manufacturing to research and development. The site also houses the city's business accelerator.

Both the downtown area and the university campus had major projects under way in the early 1990s. University of Akron leadership had university planners and architects meet regularly with city staff to improve the physical connectivity between the campus and the downtown area.[49] In 1988, the UA made a decision to locate its new $17 million school of polymer engineering and science, the Goodyear Polymer Center, in a prominent location on the edge of the campus, facing downtown.

In 1994, Akron Tomorrow, Inc., a group of business leaders, cooperated with the city to fund a study evaluating strategies to revitalize the downtown core. The result, Akron's Vision of Downtown Development, outlined the means for establishing a new partnership vehicle to complement the city's role in downtown revitalization (i.e., Downtown Akron Partnership). It also confirmed the need to prioritize downtown cultural, recreational and entertainment uses as a means of attracting a variety of ages; provided suggestions for adaptive reuse of historic buildings; and identified means for connecting downtown spaces and amenities to improve the overall environment.

Meanwhile, the city prioritized public improvements to the downtown streetscape, as well as a range of investments in downtown revitalization, urban housing, public education and other community amenities. Downtown Akron was also designated an Empowerment Zone, which enabled the city to receive an additional $3 million in federal funds to be used to establish a revolving loan fund for small businesses, to expand the city's industrial incubator, and support entrepreneurship training and other education initiatives at the Akron Polymer Training Center (there are more details on these initiatives below). Among multiple efforts, a few highlights include a new convention center; the National Inventors Hall of Fame; a baseball stadium; renovation of a historic theater; the development of parkland along the Ohio & Erie Canal; and expansions of the public library and the Akron Art Museum.

International Trade Missions

Much of Akron's expansion into international markets and the global economy has taken place under the leadership of Mayor Plusquellic. He has been a leader in promoting two-way international investment – seeking direct investment from abroad, expanding Akron businesses in foreign markets, and making direct investments of the city's funds abroad – which has paid off, particularly in the city's relationship with Israel.

Akron regional partners have embarked on important trade missions to a number of countries in Europe, Asia and South America in the past 20 years. Since 2004, the Mayor participated on five trade missions to Israel, where he was impressed with the innovation and commercial potential of the Targetech Innovation Center (a technology incubator) in the city of Netanya. The city made a $1 million investment in the incubator (as part of a $2 million total investment package) from the Greater Akron Investment Partners, in exchange for the understanding that when companies are ready to graduate from Targetech, they will look to Akron to locate a branch of their operations. In February 2008, the first Israeli technology company, Cellular Systems, committed to opening its U.S. headquarters, an R&D center, in the Akron Global Business Accelerator.

Nearly 30 European companies bringing 2,500 jobs have located in the Greater Akron area – about one third of them within city limits – as a result of Akron's international marketing efforts.

Leadership, Partners and the Region

Akron has gone that extra creative length to innovate and offer more opportunities to its residents than many of its peer cities. Much of this can be attributed to the imaginative and bold vision of several community leaders.

One of the longest-serving community leaders and a key architect of the economic transformation is Akron Mayor Don Plusquellic. Mayor Plusquellic's 23-year term has provided a continuity of leadership to see critical initiatives to completion. He is seen as a visionary mayor that has supported an inclusive approach to community-building, from public education projects to business creation and growth. He also keeps a pulse on things in the local economy and has an imaginative vision, which has led to creative economic development tools and initiatives that have given Akron a competitive edge.

As mentioned previously, the city has worked closely with the Greater Akron Chamber of Commerce, Summit County and other groups on important planning initiatives, joint marketing efforts and other business retention and expansion projects. Following are examples of other creative partnerships that have been instrumental in fostering quality jobs.

Akron was the first Ohio city to establish a JEDD, which allows cities to work with other townships to develop land for commercial purposes and share the tax revenue.

Creative Partnerships foster Regional Economic Growth

Akron's economic development path has evolved from a focus on business attraction to a sophisticated system in which partnerships are formed to embrace a wider range of issues. This evolution is marked by the creation of new and dynamic tools, such as Akron's Joint Economic Development District (JEDD).

Akron was the first Ohio city to establish a JEDD, which allows cities to work with other townships to develop land for commercial purposes and share the tax revenue. Akron uses a JEDD to allow a business to locate in the neighboring-township and receive utility services, while still paying income taxes to Akron; the township receives property tax as well as the infrastructure benefits. Two industrial parks, for example, are located in JEDDs.

The University as an Economic Development Catalyst

In 1999, Luis Proenza became the president of the University of Akron. He has since leveraged the university's core strengths to increase research funding, recruit nationally known professionals in technology transfer, enhance relations with industry, and pursue critical development projects. He has understood that universities serve as major economic anchors and believed it was the job of the university leadership to encourage greater regional connectivity through collaborations among academic institutions, government and industry. Two early initiatives include a $500 million program to physically transform the campus, and the Ohio Polymer Strategy Council, which linked government, industry and academic advisors to help promote the industry in the state.

The university took leadership in neighborhood revitalization for an area close to both downtown and the campus. The University Park Alliance (UPA) formed in 2000 as a collaboration of the university, city, ARDB, Summa Health System, and other public institutions to revitalize the 50-block area north of campus. The plan was to facilitate the development of a walkable, mixed-use neighborhood that would attract and retain both talent and companies.

UPA has been funded for the last 10 years by the Knight Foundation, which has provided approximately $13 million in grants to both plan and implement neighborhood revitalization efforts. The University of Akron and the city also provided significant support, and UPA has since grown to include many other formal partners.

UPA has been successful both in leveraging millions of dollars of investment in housing, retail, and commercial development and in connecting community resources with university resources. Some of its recent developments include a new stadium, a cancer center and a hospital for critically ill patients. Over 300 businesses have located within this area since the creation of the UPA.

Partnerships for Advancing a Biomedical Corridor

Mayor Plusquellic, who saw the potential to produce a spectrum of jobs by nurturing the bio-medical services industry, first discussed the idea of an Akron medical corridor in 2006. A vision emerged and leaders from the city, county, chamber, university, hospitals, prominent banks, and the utility company met

with the Knight Foundation to seek financial support. They received a $20 million commitment from the Knight Foundation, $20 million from the state of Ohio, and existing partners committed an additional $20 million in funds and while agreeing to raise $20 million more from the private sector.

The bio-medical corridor is anchored by the Akron General Medical Center, Akron's Children Hospital, Summa Health Systems, and the University of Akron, which together employ over 11,000 people.

The vision is to combine the research, education, and health services of the hospitals with the advanced materials research at the University of Akron to produce jobs that range from relatively low-skilled certified nursing assistants to mid-skilled medical technicians, knowledge-based research jobs and the manufacturing of specialized medical devices. The city has banked land around this corridor, anticipating that developers and businesses will want to be near these institutions.

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A part of this corridor is the Austen BioInnovation Institute, an $80 million public-private partnership initiated to develop a leading center for biomaterials in medicine, capitalizing on extensive regional capabilities in advanced materials and specialties in wound care and orthopedic programs. It is a unique collaboration of complementary research, education and health institutions that will expand Akron's legacy in materials science. The Institute is intended to transform medical breakthroughs into job creation for the city and the region. The Institute is closely aligned with regional biomedical commercialization efforts including BioEnterprise, the City of Akron's Biomedical Corridor development zone, the Akron Global Business Accelerator and Akron ARCHAngels.

Emphasizing Entrepreneurship and Innovation

The city has led some of Akron's trailblazing economic development initiatives, including the formation of Ohio's first small business incubator. To meet business and job creation goals, many of Akron's institutions have worked to strengthen the innovation ecosystem in the region. This involves close interaction among multiple actors from industry, higher education, government and the investment community.

Key institutions have been established in Akron to help entrepreneurs and small businesses develop new products and services and bring them to the marketplace, including the Akron Global Business Accelerator; The University of Akron Research Foundation; The Liquid Crystal Institute Business Accelerator and Kent State Development Foundation, as well as degree-granting entrepreneurship programs at the University of Akron, Kent State and Case Western.

Akron's Global Business Accelerator

In 1983, Akron launched the first small business incubator in the state of Ohio, to incubate companies in manufacturing, assembly and distribution. The incubator was to assist the technical and executive employees made redundant as a result of the severe downsizing in the rubber industry. The initial 30,000-square-foot facility located on the downtown/campus border filled with 12 companies in the first year and a half, indicating strong interest in entrepreneurship.

It expanded several times, and in 2006, EDA provided supplemental funding to build advanced lab facilities, a large conferencing facility and other amenities needed by many of the technology-based companies located in the incubator. The city repurposed the incubator in 2007, shifting its focus to technology-based growth after state and local studies indicated the need for Ohio and Akron to more actively participate in the knowledge economy. Five technology-based areas of strength identified include biomedical; propulsion energy; advanced materials (including polymers and nanotechnology); instrumentation controls/electronics; and information technology. During this period, the Akron Industrial Incubator changed its name to the Akron Global Business Accelerator to more accurately reflect its mission.

The Accelerator has grown a number of biomedical companies. More recently, it has attracted a small cluster of alternative energy companies and will soon open a 40,000-square-foot facility that includes green proto-typing equipment.

The Accelerator's staff and network of advisors are knowledgeable at business development, help to vet technology and provide advice on taking technologies to market. Many of the tenants have been the recipients of early-stage and seed capital, including money from Jumpstart, a Cleveland-based entrepreneurship organization that provides funds for high-tech businesses in Northeast Ohio. Jumpstart typically provides between $250,000 and $350,000 in funding with investors receiving convertible debt or equity in return.

There are currently 45 companies in the Accelerator employing over 250 people. Since it was founded, 65 companies have graduated from the Incubator, producing 800 jobs in the community. While these companies have created jobs across the skill spectrum, the average salary of these jobs in the last year was approximately $62,000.

The University of Akron Research Foundation

UA President Proenza wanted to tap into the potential in commercializing research and ideas developed at the university. In 2001, President Proenza recruited a team of technology transfer experts with experience in building and transforming a university related research foundation. The team's first initiative was to

conduct a thorough survey of the community to identify underutilized assets, which included visiting old historic areas, reviewing satellite maps, interviewing industry executives, and identifying unused patents, equipment, and industrial space. This community survey was used to help establish a strategy to re-unite these underutilized assets in a way to add value.

This study concluded that both local industry and the university conducted their business primarily in silos. The next step was to establish relationships with area businesses and then provide matchmaking services to link start-up companies with existing companies that would trade commercial and lab space for an equity position in the new company. Leaders also convinced well-established companies such as Goodyear and OMNOVA Solutions to donate non-core patents, libraries and equipment to the university, where they become community assets.

In 2003, the University of Akron Research Foundation (UARF) was spun out of the university as an independent nonprofit organization with a board made up mostly of private industry representatives. This allowed the foundation to trade in patents, take equity positions in companies and deal with foreign companies and governments, all of which would have been prohibited had it been a part of the educational institution.

The foundation has been a key factor in commercializing technology, linking industry and university research, and expanding the university's research infrastructure. UARF participates in all of the University of Akron industry-sponsored research agreements and all licensing agreements as a fiscal agent and receives funds and allocates them to stakeholders. UARF also connects entrepreneurs and investors, creating the Akron ARCHAngels Network in 2005 as a subsidiary of UARF. The group brings together 450 entrepreneurs and investors each quarter, and has raised over $30 million in capital for more than 20 companies.

Prior to the foundation's establishment, the university had no significant licensing income and only a few spin-off companies, even though it had it had $20 million in research expenditures in 2000 and a portfolio of 350 patents. Since its creation, UARF has made $5 million in profits from commercialization activities and formed or supported the creation of 28 companies with UA-based technology, 13 startups with UA/UARF support, and another nine companies that include UARF equity.

Liquid Crystal Institute

The highly-respected Liquid Crystal Institute at nearby Kent State University has been involved in technology transfer and business start-up activities for almost half of its 43-year history. Since 1989, the Institute has helped at least 14 entrepreneurs start companies, most to remain in the greater Akron area.

Since 2007, the Institute has operated a business accelerator, which houses some of the companies it assists with technology transfer. The accelerator works primarily with young liquid crystal and polymer companies to help them grow. The Centennial Research Park is dedicated to the accelerator, providing 42,000 square feet of space and shared facilities, including labs and clean rooms.

Workforce Development and Inclusion

Akron is one of many cities that is challenged to retain skilled workers. While Akron used to be a city full of production-line jobs in the rubber industry, the jobs are now largely knowledge-based or are in areas of advanced manufacturing that require an updated skill set. The Akron also region loses a significant portion of its workforce to bigger cities with more dynamic job markets and more attractive amenities.

The city of Akron and The Greater Akron Chamber of Commerce have been partners with education and training institutions to achieve three goals:

1) To help transition workers from the rubber industry into polymers, advanced manufacturing and other related industries;
2) To expand and strengthen the overall worker pipeline, with an emphasis on education; and
3) To develop a more dynamic downtown and “after hours” options to attract a younger, highly skilled population.

Transitioning Workers to Polymers and Beyond

In 1993, the University of Akron expanded its workforce development role by opening the Akron Polymer Training Center, which offers hands-on, state-of-the-art technical training to enhance the skills of employees of emerging polymer companies. Roughly 11,000 people from 6,000 companies have received training from the center. While the majority of students initially were from local companies, one-quarter of students now comes from abroad, as the center increasingly has become a magnet for both national and international clients. While there is some training for production workers in injection molding and for rubber technicians, the majority of students now are highly educated engineers and scientists who are at the center for R&D.

The center is trying to diversify its course offerings and cover a greater breadth of products in the polymer industry, as well as emerging technologies and subjects. Many of its course offerings are now in plastics, nanocomposites, and green technologies in the plastics industry.

In addition to building a polymer workforce, Akron has had strong employer-driven training resources. In 1981, the Akron chapter of the National

Tooling and Machining Association responded to demand for machinist training by opening a trade school for the industry, the Akron Machining Institute. The training programs helped fill the needs of local industry in a field offering wages of $10 to $17 per hour for entry-level jobs. After it closed in 2007, a similar training center opened to fill the gap.

The region has additional resources to assist transitioning and incumbent workers. Stark State Technical College offers a range of degree programs, including one-year certificate programs and career enrichment courses, all developed with input from local employers and professionals to align the coursework with the needs of industry. The University of Akron Summit College is part of Ohio's network of 24 two-year colleges that provide training for businesses and organizations; financial assistance is provided to make training more affordable for small and target-industry businesses. In addition, the Ohio Investment in Training program offers up to 50 percent reimbursement for customized employee training for new and expanding businesses, and the Ohio Training Tax Credit program provides up to a $100,000 credit to offset the costs of training current workers.

Akron is transforming new public school buildings into community centers which will operate outside of school hours and provide community activities and resources.

Emphasizing Education to Strengthen the Workforce

In order to improve the workforce pipeline and attract and retain residents, the mayor has begun a program to improve the schools. Through state grants, Akron is transforming new public school buildings into community centers which will operate outside of school hours and provide community activities and resources. The mayor invited community groups including the Urban League, the YMCA, and others to join as community partners. Akron is constructing all of its new public school buildings as Community Learning Centers.

Several other education initiatives are worthy of note, including the Summit Education Initiative, a nonprofit that convenes people across the education, civic and industry sectors. Recently, they have established a P-16 coordinating counsel to discuss tough issues around early childhood, high school and college transition. A partnership among the city, public schools, the University of Akron, and the National Inventors Hall of Fame also has established a STEM school to teach science and math at higher levels, connect students with mentors and inventors, and help facilitate career learning and pathways.

Innovating an Economic Strategy for the Road Ahead

In 2008, Akron was one of 10 cities nationwide to receive an "All America City" distinction from the National Civic League for the community's collaboration, inclusiveness and successful innovation.

Following the downturn of the tire industry and the departure of thousands of manufacturing jobs, Akron faced the challenge of many Rust Belt cities: how to reinvent itself and transition to a knowledge-based, globally competitive economy. Akron got on this task quickly with city and chamber leadership, in partnership with the University of Akron, private industry and other institutional stakeholders. These multi-tiered, regional initiatives helped Akron use its existing assets to transition from rubber to polymers and new technologies in biomedical, health sciences and advanced materials industries.

Akron has fared better than many similar, older industrial cities. In a 2007 Brookings study of 300 older industrial cities, Akron rose off the list of 65 cities classified as "weak" in the 1980s and onto the list of cities showing significant improvement from 1990 to 2000.

Through investments in housing, downtown revitalization, public education and other areas, Akron has developed a strong community infrastructure that is critical to attracting businesses and talent to the city.

In 2008, Akron was one of 10 cities nationwide to receive an "All America City" distinction from the National Civic League for the community's collaboration, inclusiveness and successful innovation. This reflects Akron's history since the 1980s. From establishing the first incubator in Ohio to the first JEDD, and emphasizing education, global engagement and strengthening its innovation ecosystem, Akron has been both creative and successful in bringing quality jobs back to the community.

Notes:

[45] According to the "2009 Dashboard Report" released by the Fund For Our Economic Future.

[46] Polymers are materials that can be effectively substituted for metals, glass and wood in a variety of products.

[47] Data availability by geography and year were inconsistent across the decades analyzed. As a result it was necessary to use different data points for different indicators. While this is not ideal, the data cumulatively provides a reasonable picture of the economic changes in Akron.

[48] Ledebur, Larry and Jill Norton. *A Restoring Prosperity Case Study: Akron, Ohio*, Washington, D.C.: Brookings Institution, September 2008.

[49] Bowles, Mark, *Chains of Opportunity: The University of Akron and the emergence of the Polymer Age*, 1909-2007. Akron, OH: University of Akron Press, 2008.

STRATEGY-FOCUSED CASE STUDIES

WIRED: NORTH CENTRAL INDIANA

Promoting Regional Economic Development, "Quality Skills" and "Quality Jobs"

This case pinpoints the North Central Indiana (NCI) Workforce Innovation in Regional Economic Development (WIRED) initiative, funded by the Department of Labor (DOL). While WIRED is overall not an infallible initiative, its focus of aligning human capital with quality jobs offers valuable lessons learned.

North Central Indiana is aligning workforce and economic development goals to develop quality skills and jobs for the future. NCI is a region with a vulnerable economic base, given its historic dependence on auto manufacturing production line jobs– which have delivered high wages but have not required advanced education or skill requirements. As a result, it could be hard for the region to recover in the event that a major manufacturer shut down or downsized. Much of the workforce does not have an advanced nor a portable skill set and would have a hard time finding a "quality job" with comparable wages and benefits.

Like many other areas that have faced a reduction of jobs in the manufacturing field, NCI has been actively seeking ways to counteract the effects felt in the workforce. But NCI has decided to go beyond the efforts to look for a new manufacturer to come in and 'save' the economy. This region is determined to look for new and innovative ways to survive and even thrive in the face of additional layoffs or plant closings.

Economic developers in the region have found as part of a strategy to diversify the regional economy and secure "quality jobs" in the short and long term, developing the "quality skills" of the workforce is of paramount importance. A region with a workforce with "quality skills" could innovate and staff a mix of growth and steady-demand industries and could better weather changes in the economy from automation, competition and globalization. But workforce programs must be planned and coordinated with economic developers and private industry in order to fuel economic growth.

This alignment of economic development and workforce development goals represents a paradigm shift. Economic development activity has historically been anchored around attracting and retaining the region's major employers who provided a broad and relatively stable base of employment. For generations, workers in the region were able to get a "quality job" with strong wages and benefits in manufacturing with just a high school education. With an aging population in the region, regional economic development partners are focused on the future. Moving forward, a high school education alone won't be enough. Whether through a four year degree, or quality skills obtained through vocational

The motto of many regional economic development partners has become, "it's not about your grandfather's economy, it's about your grandchildren's economy."

training – the workforce needs a stronger foundation to be competitive. As such, the motto of many regional economic development partners has become, "it's not about your grandfather's economy, it's about your grandchildren's economy."

What follows is a discussion of a region that built partnerships and worked across jurisdictions with the goal of transforming an economy before it became a post-industrial victim to global economic forces. The strategy has focused on economic diversification, targeting new growth industries, fostering entrepreneurship and training a workforce pipeline from the incoming workers still in school to the incumbent workers including older ones through the "Maturity Matters" program.

The Regional Partnership and Strategy

NCI currently is home to a laboratory of initiatives that align economic development goals with workforce and entrepreneurship initiatives as part of a regional strategy. Working across jurisdictional lines is not standard operating procedure for many economic developers but the need for a common purpose has hit home in NCI - given the shared economic and workforce base and the intertwined fate of the region.

Given its highly vulnerable economic base, this region was selected for DOL's WIRED program to fund exactly what the area was looking for: an opportunity to bring workforce and economic development officials to the table together, to develop a regional strategy and to try new and innovative ideas. The result was over 60 programs in these strategic initiative areas:

Creating Globally Competitive Industries: This effort combines university research with existing advanced manufacturing, advanced materials and agribusiness firms to create clusters of innovation to strengthen the competitive position of hoosier companies.

Building an Entrepreneurship Super-Region: The goal here is to develop and grow new business while equipping existing industry with the tools to think and act entrepreneurially. Emerging and existing entrepreneurs – including students – along with community leaders and economic development support organizations collaborate in this effort.

Developing a Workforce with 21st Century Skills: This two-pronged initiative focuses on both older and younger workers. The skills of older workers are being enhanced so they can remain employable in the future. At the same time educational approaches to strengthen Science, Technology, Engineering, and Math (STEM) disciplines for K-12 students are being deployed.

Weaving Supportive Civic Networks: To ensure the region's viability, working across organizational and political boundaries is critical. Those boundaries are irrelevant in a global economy that places an emphasis on entrepreneurship, innovation and high performance.

The region has many partners including local economic development departments, Purdue University, and private industry. Educational partners are also critical and include early education through Ivy Tech College (the state community college system) and through college-level education. Purdue University is the administrator of the WIRED program and is the only university that serves as in this capacity among the 33 communities that received WIRED grants. This reflects Purdue University's commitment to economic development, visible in its own Center for Regional Development, and its entrepreneurship and technology transfer programs.

The regional partners in NCI are moving forward with a plan to diversify their economy and bolster the educational and skill base of workers coming into and out of the pipeline. In summary, the initiatives and goals include:

- Encourage high performance production including leaner and cleaner/ greener operations.
- Support industry clusters: advanced manufacturing, advanced materials, and agribusiness, food processing and technology
- Foster an entrepreneurship-based economy
- Improve the workforce pipeline by aligning industry demands with workforce skill sets.

Towards High Performance – Leaner Operations, Growth Industries

The strategy in NCI has been to identify globally competitive industry clusters and support them through innovation transfer, technical assistance, and workforce skill development.

In 2005, the region's workforce development board, the Tecumseh Area Partnership (TAP), with funding from the state, developed the Strategic Skills Initiative which identified three key clusters for the region which have grown at a faster rate than in other parts of the United States:

- Advanced Manufacturing
- Advanced Materials
- Agribusiness, Food Processing and Technology

Advanced manufacturing has been a mainstay of the region's economy, and economic developers know that the best way they can try to prevent some of the trends of downsizing and off shoring that have hit the industry is to keep it lean, multi-skilled and competitive.

But even in advanced manufacturing, there is a need for a ready pipeline of highly skilled workers. Most jobs in advanced manufacturing represent "quality jobs" - most with wage and benefit packages above $30,000 – and are attainable with more than a high school education but less than a four-year degree. Some of this is due to demographic changes – older, skilled workers leaving the workforce and an inadequate supply of backfill from the younger generation. Thus, the region is working to keep a steady supply of skilled manufacturing workers in the pipeline.

North Central Indiana has also been nurturing the emerging field of nanotechnology. To date, 11 companies have been engaged in nanotechnology program that includes technology transfer and workforce development. The WIRED/Purdue Nano Technology Transfer Program has been developed to focus investment in the fields of advanced materials and nanotechnology. They have generated a lot of interest from local firms trying to get a competitive edge. In 2007, 300 workers with 14 advanced materials firms were trained under a technology transfer program designed to give them more advanced skills. The project aims to improve facility with technology that will result in significant productivity increases.

There is a growing emphasis on regional initiatives within economic development but NCI is sensitive to the need to spread development to the periphery and not just the core – where the monies may be received and the programs administered. Because the area is predominantly rural, some degree of agriculture and agribusiness will remain an important part of the economic base. There are ways to maintain competitiveness in agriculture, including the development of niche products and value-added goods that capture more of the potential economic value of the raw agricultural product. To date, 500 agribusinesses have been contacted through e-surveys, direct calls and interviews to assess industry conditions in NCI and their workforce needs.

Towards High Performance – Cleaner/Greener Operations

In North Central Indiana, an additional way that economic developers are trying to differentiate and add value to their brand of manufacturing is by making it more energy-efficient. Economic developers and educational partners have invested some of their WIRED resources in training workers in energy efficiency. A green

ethic is spreading in the region. Companies are demanding workers skilled in energy efficiency because in this case being cleaner and greener means being leaner. The green industry and green jobs are demand driven.

Companies are demanding workers skilled in energy efficiency because in this case being cleaner and greener means being leaner.

One of the region's largest employers, Subaru, prides itself on operating a zero landfill facility and value employees with skills in renewable energy including Subaru. Haynes International indicated they annually spend in the millions on natural gas and electricity and just a 2 or 3 percent reduction can save them hundreds of thousands of dollars; they are looking for employees with skills in energy efficiency. Over 20 companies have been engaged in the Industrial Energy Efficiency and Sustainable Energy Curriculum, which has been developed with the goals of: 1) Training workers throughout the region in Energy Efficiency Practices; 2) Developing a curriculum for industrial energy efficiency; and 3) Identifying $1,000,000 in Energy Savings for industries within the region. Energy efficient industry helps companies as well as workers and companies. While companies increasingly value clean technology for cost-cutting purposes and out of environmental concern, workers trained in energy efficiency gain a new, in-demand and portable skill. To date, 4 New Curricula have been developed, 14 Companies implemented projects, 115 workers have been trained, and 137 workers received certification.

Fostering an Entrepreneurship-Based Economy

Regional economic development leaders are fostering a culture of entrepreneurship and small business development with the goal of creating home-grown businesses in steady demand and high-growth areas, diversifying the local base and adding jobs. NCI is taking advantage of its educational institutions including its top research university Purdue to support innovation, entrepreneurship and technology transfer.

Regional leaders believe it's important to instill the entrepreneurship spirit from a young age. Drawing upon the resources of the local university, the Purdue Research Foundation Entrepreneurship Academy provided the opportunity for over 60 high school students from 14 schools in the region attended a one-week academy to help them learn how to develop entrepreneurial principles in STEM (Science, Technology, Engineering and Mathematics) fields. The students worked closely with Purdue faculty, staff and entrepreneurs. The students were nominated by their teachers based on their performance in STEM disciplines.

The Indiana Venture Center tries to raise awareness of entrepreneurship opportunities and provide entrepreneurial support for the region. The Center held a competition for entrepreneurs submitting business plans and pitching entrepreneurial ideas. However, the competition is not solely a business plan

competition – it also has an educational component in that it also provides numerous opportunities for the participants to learn about marketing, attend seminars, network, in addition to getting support towards writing a business plan. Through the center, so far 58 innovators submitted their ideas participated in an "elevator pitch" competition in which they had two minutes to convince judges their idea was viable. Regional sponsors provided $25,000 in rewards to enable 21 of the contestants to further develop their ideas into business plans. In all, 14 counties will hold individual "elevator pitch" competitions leading to a regional business plan competition. The promotion of a contest with prize money proved quite attractive in drawing participation from the community and generating enthusiasm around entrepreneurship.

Economic developers are engaged in locating venture capital to fund the most promising start-ups. From casting their net to the investment community, they have engaged a network of angel investors who have indicated they might be potential sources of seed funding.

Improving the Workforce Pipeline

Regional economic developers and workforce professionals have developed programs to help connect workers with employers, improve training opportunities for employees, make those training programs relevant to employers and improve the overall performance of the workforce pipeline. Incoming, incumbent and older workers in the pipeline are targeted.

In North Central Indiana, the one-stop centers run by the local workforce investment board, the Tecumseh Area Partnership (TAP) do more than just make available local job listings. The referral process is much more customized to match the skills of the jobseeker with the needs of industry. The "Reach" program refers skilled employees to businesses based on needs assessments they have done with each individual employer and based on skill assessments they have done with each individual employee. The Reach Center's worker assessment is comprehensive and is an evaluation of both soft and hard skills – it includes a Work Keys Assessment and an evaluation of foundational academic skills, personal effectiveness skills and job skills.

To date, about 100 companies have done needs assessments and about 11,000 employees have been assessed and are in the database. Thousands of hires have been made through the program. The system was conceived after an employee assessment was conducted for the use of Subaru, as part of an incentive plan to bring the company to Kokomo, went so effectively. TAP subsequently decided to develop a project for community use. The program allows industry to express its short-term and long-term needs for the workforce.

The presence of business representation on WIRED's steering boards and the continuous dialogue with private industry helps training programs and course curricula stay aligned with direct industry needs.

But NCI is involved in much more than attracting jobs and matching jobseekers with employers. They are involved in skill development which they believe will lift the prospects of the individual worker, the company and the region. For existing workers, the focus is on helping them update their skills so they can stay competitive. In the event that a job leaves, an employee benefits by having flexible, portable skills. Employees are encouraged to gain additional education from a certificate program or specialized short-term training to a one year or two year degree program at Ivy Tech to a four-year degree program. Specialized short-term training includes earning industry-certified credentials in emerging industries including nanotechnology or in clean energy (through earning the Energy Efficiency Certificate) or certificates through other programs that are in the works, including Green Collar Certification, a Health Care Cost Control Certification, and Manufacturing Skill Standards Council (MSSC).

Several of the certificate programs operate out of Ivy Tech. Yet like many rural regions, one of the principle barriers to further educating the workforce is distance. To reach more potential students, the local community college Ivy Tech opened a new branch, the White County Instructional Center located in rural White County. WIRED funding of $416,000 is behind the initiative. Courses commenced in the fall of 2008. The county has already seen that since it posted its course schedule, students have switched their enrollments from Lafayette, which was a 30-45 mile commute, to the local center. The county anticipates that there will be many new people looking to begin a career, change a career or just update their skills that will now take courses since they can do so locally. Projections of student enrollment are expected to reach 458 students by 2012.

Yet like many rural regions, one of the principle barriers to further educating the workforce is distance.

NCI has also taken an interest in working with the business community to help them advance their productivity so that quality jobs stay in the community, and training the workers to be knowledgeable in new technology is vital to this goal. To this end, the local community college, Ivy Tech, has a Workforce and Economic Development office that has existed before WIRED – for twenty-five years – working directly with companies to develop training courses catered to the company's needs. The courses are provided to the employees often on premises. Employers such as Wabash International, Subaru and Caterpillar have taken advantage of Ivy Tech skill enhancement programs.

Often forgotten in the workforce pipeline are older workers. Prior to the 2008 recession, in NCI, there was a retirement bubble is on the horizon. As a response to that projection, the program "Maturity Matters," was developed to

tap into skills of older workers who were over the age of 45 who were unemployed, underemployed or thinking of retiring with the goal of helping them get in or remain in the workforce and with the goal of helping employers attract and retain these workers. However, with the onslaught of the 2008 global credit crisis, keeping older workers in the pipeline no longer was a problem as many people pushed back on retirement. NCI therefore adapted the program to be one of upgrading the skills of older workers to keep them relevant in a workforce that is undergoing rapid technological change.

The WIRED initiative also involves an education component – with the philosophy that education is an economic development issue because local industry needs a trained workforce. Under the Project Lead the Way (PLTW) program, Purdue University will help establish pre-engineering and technology program partnerships in one-half of the region's schools by the end of 2008 with the goal of training students to be ready for the industries that require a strong STEM skill set. In 2009, over 13,000 students had enrolled In the PLTW curriculum. NCI also has a program that offers scholarships that help "college drop-outs" return to college to complete their education and help better position themselves for quality jobs. Also, Indiana has now risen to number one ranking for schools offering PLTW thanks in large part to the concentrated effort in NCI which added 36 new schools offering the curriculum.

Planning the economy of the grandchildren

In the search for quality jobs, North Central Indiana found they needed to develop quality "skills" and improve the "talent "quotient of their workforce. They did this by bringing companies up to speed with regards to newer technologies and in helping them become more efficient and more current with regards to best practice skills for employees. They also continued to support entrepreneurs through direct technical assistance.

As a skills assessment study has shown, there are many "quality jobs" in stable or emerging industries in the advanced manufacturing, advanced materials and agribusiness sectors. In NCI, about one half of the jobs in the economy require more than a high school education but less than a college education. The educational requirements, while higher than the population has historically known, are within reach. Thus, the challenge for NCI is not just to create the quality jobs – in many cases they are already there – but to educate and build the skills in the workforce to fill those jobs.

But true to the motto of investing in their "grandchildren's economy," North Central Indiana is intervening at an early age - in the middle and high school level to help motivate students to be prepared for these skilled jobs in the new economy

through introducing a STEM curriculum and nurturing entrepreneurship. Students are encouraged to go on to higher education – often breaking a family pattern since their parents may have been able to make a healthy income in the automotive industry with just a high school degree. Students are also exposed to the promise of entrepreneurship; economic diversification demands growth in small business development in the region. The goal is to help the new workforce be prepared for jobs of the future which have higher and more flexible skill requirements.

In NCI, economic developers are at the table with workforce professionals and educators in the effort to secure economic stability, diversification and growth in their region. Modernizing and changing that economic base is a long-term investment. In NCI this investment in the area of human capital – through education and workforce training – while crucially steering that investment in alignment with the demands of private industry and the strategies of sound, sustainable economic development.

ECONOMIC GARDENING: LITTLETON, COLORADO

Economic gardening means growing jobs in the community through entrepreneurial activity instead of recruiting them through attracting industry. It was initially developed in the late 1980's in Littleton Colorado by the City of Littleton's Business Affairs department working in conjunction with the Center for the New West as an "alternative" to traditional economic development recruitment strategies. Economic gardening is considered an inside-out vs. an outside-in strategy for economic development.

Economic gardening is considered an inside-out vs. an outside-in strategy for economic development.

Economic gardening emerged partially in response to the research by David Birch at MIT that indicated the majority of jobs in any local economy were produced by small, local businesses. It is characterized by an investment in home-grown innovative knowledge-based companies that create wealth and jobs in the community. Although the approach was created with entrepreneurs first in mind, economic gardening may service the community of entrepreneurs, start-ups, small business owners and existing businesses looking to survive and expand in the community.

In general, pursuing economic gardening as a job creation tool means investing in a strategy that may produce job growth slowly and incrementally. The jobs may accrue – especially initially – to higher-educated, higher-skilled innovators (though education level does not always correlate to this). But in the longer run, through the addition of more and more small start-ups and some second-stage companies and gazelles, job growth can be significant and can result in opportunities for employment for people at various skill and education levels. Gardening programs have revealed that the entrepreneurs are highly diverse, with all levels of education. Additionally, since gardening programs focus on entrepreneurs and small businesses, they tend to service diverse industries, which helps economies diversify, stabilize and transform.

The features of the landscape for economic gardening are:

1. Connectivity – successful entrepreneurs are grown when there is an environment of teaching, mentoring and networking, starting in secondary education institutions.
2. Market Research – a hallmark of economic gardening is the emphasis on high power tools for competitive intelligence – including the use of market databases, GIS systems, trademark research, web optimization and other value-added knowledge based tools.
3. Community and Infrastructure – entrepreneurs thrive in an environment of community assets including education, community amenities, meeting places and incubators.
4. There are some important urban and rural differences; with urban places more reliant on face to face connections, and rural places, which are more peripheral, more likely to use internet connections.

Many communities in other states and nations engage in economic gardening. Some may explicitly call it “economic gardening,” others may simply practice an approach that shares many of its features. Since 1989, over 500 communities have contacted the City of Littleton to learn more about economic gardening, and there have been national conferences and list serves on the topic.

The Birth of Economic Gardening

The vitality of the economy in Littleton, Colorado (population 40,000) was being challenged by the downsizing of Martin Marietta Aerospace, the community’s main employer, in 1987 leading to the loss of several thousand jobs. Instead of focusing on recruiting a new employer to replace those jobs, the City of Littleton decided to support local entrepreneurs and existing businesses. “Economic gardening” was born in Littleton, a suburb of Denver. The philosophy was to focus on businesses that innovate a “niche” rather than produce a “commodity” – the logic being that commodity-based businesses were low-wage, low-value and potential flight risks to lower cost locations.

The City of Littleton conceived its economic gardening program to focus on identifying and nurturing innovative business ideas with the most potential to be high-growth companies, or gazelles. However, in practice, the program has an open-door policy and assists start-up, second-stage and even established companies that have varying levels of growth and come to the city to grow their local business.

Conspicuously absent, however, are a few standard features of business assistance programs – the City of Littleton’s economic gardening program does not offer financial assistance nor does it dedicate resources to attracting new businesses. Instead of providing financial assistance, the City offers value-added, in-kind assistance that is much more tailored and much more in-depth than the traditional level of business assistance from an economic development department.

The tools that the City of Littleton utilizes assist businesses to achieve, maintain or enhance their level of competitiveness. Providing competitive intelligence is key. The Business/Industry services department of the city uses technology-based tools to assist businesses and employs an Intelligence Specialist, a Geographic Information Systems Analyst and an Economic Development Specialist. The city uses high-power databases, data-mining, GIS and other software programs to aid in targeted market research and uses tools to aid businesses in web optimization. Other business services include assistance with business plans and conducting focus groups. The City of Littleton funds the economic gardening program on an annual budget of about $600,000.

Because gardening focuses on serving entrepreneurs and small firms, it does not target any particular industry. Consequently, a range of different business types in different industries find assistance to grow and prosper. To illustrate the diversity, some of the companies the city has assisted are detailed below.

- **Novus Biologicals** – This biotech company sells proteins for scientific research. The city performed initial web site optimization and other web services including keyword research and Google search assistance.
- **Church Partners** – This company sells church furniture and supplies. The city assisted them with construction reports, trade name search, web optimization and research on competitors and industry trends in the furniture market.
- **American Exteriors** – This company sells windows and siding in a multi-state region. The city provided competitor intelligence and market research.
- **Donations Ink** – This start-up company collects and refurbishes ink cartridges and cell phones. The city helped them conduct research on industry trends and competitors, performed GIS mapping of customers, assisted them contact potential customers including nonprofits, churches, college bookstores, and community colleges, and aided them with website optimization and an e-mail marketing campaign.
- **Inquisicorp** – This company is a publisher and distributor of home school curriculum throughout the world. The city assisted them with market research and marketing.

While job creation has been incremental, it has been steady and consistent across a range of job types and industries. Specifically, since 1989, the number of jobs created in Littleton has doubled from about 15,000 to around 30,000.

The Results

Since 1989, the City of Littleton's economic development strategy has practiced economic gardening as its primary growth and job development strategy. The City of Littleton assists approximately two to three hundred businesses a year.

While job creation has been incremental, it has been steady and consistent across a range of job types and industries. Specifically, since 1989, the number of jobs created in Littleton has doubled from about 15,000 to around 30,000. Moreover, sales tax revenue has tripled from $6.8 million to $19.6 million, providing additional resources to the city.

The City of Littleton has received 500 inquires about economic gardening since 1987. Chris Gibbons, the Director of Business/Industry Affairs for the city who implemented this program from its onset has traveled to consult to communities in over 20 states and also Norway, Australia and New Zealand. Other communities have sent professionals to Littleton to receive advice.

Economic gardening as a singular approach to economic development works for Littleton, due in part, to its small size. For many larger communities, gardening often appears as part of a more comprehensive strategy.

CONCLUSIONS:
TRANSFORMING THE ECONOMIC DEVELOPMENT LANDSCAPE

The case studies chart the evolution of economic development from a transaction-based approach to a systemic one—a process that is more strategic, more inclusive, and adaptive. The cases demonstrated this framework emerging in urban and rural, big and small, struggling and growing places. While each region demonstrated a variation of this framework, they all shared a common goal of creating and retaining sustainable, quality jobs in a more volatile economy. To recap, this framework for economic development has the following components:

- Alignment in a regional context
- Engaged Local leadership
- Inclusion or equity is incorporated into the strategy—quality job creation goes hand in hand with human capital development
- Capacity building to handle more complex economic development is required
- Strategies are built on existing assets and plans are based on solid research
- Innovation and entrepreneurship are central strategies

This report thus far has focused on what binds these cases together—common emerging patterns for creating better jobs and growing economies in a dynamic and often hostile market. Before reviewing lessons learned for applying these lessons, it is important to first look at some of the differences, particularly in their ability to open the widest number of opportunities that not only help rebuild the middle class but reach deeply into disadvantaged populations.

First, the more rural places—Tupelo, Newton, Ponca City and North Central Indiana—centered their strategies more aggressively and more comprehensively on building skills throughout their workforce. These regions struggled to find a well-skilled workforce, and thus often had to dig deeper and wider to meet the workforce supply demands of employers. Consequently, these areas demonstrated the most inclusive strategies.

The urban cases, however, face complex challenges when engaging disadvantaged populations. While all have taken risks to effectively transform their respective regions, entrenched poverty still remains a challenge, especially in the urban cores of Pittsburgh and Akron. San Jose is hampered by its shrinking middle class and high cost of living, yet the alignment of their economic development and workforce departments is providing for advanced opportunities of building up new sectors, namely those related to the green economy that will span multiple skill levels. Albuquerque's competitive sectors, such as specialized construction, and emerging green technologies, are providing many entry level opportunities for disadvantaged workers, and the region is taking advantage of tapping into these options.

So for these cases, as for most places, there is still work to do. Thus we will conclude this report with lessons learned on what it does take to build a more inclusive and more sustainable regional economy moving forward.

Alignment in a Regional Context

Regions are contextually-defined and have shifting boundaries

While data points and federal funds are gathered according to defined regional boundaries, which differ from data set to data set and fund-to-fund, at the strategic level, the case-study regions all actually defined themselves. Regions are in fact a map of connected players all working, sometimes together and sometimes a part, to enable that region to provide a good quality of life and broadly shared prosperity. Because players are local, it is the local definition of the region that influenced strategy and investment decisions. Moreover, the definition of the region may shift depending on the strategic goal being addressed. Take the example of Akron. The JEDD region was organized around the City of Akron and its suburbs to manage business retention and attraction. However innovation and entrepreneurship often took place within the Northeast Ohio region, drawing on a wider set of resources. As another example, the alignment of workforce and economic development in San Jose follows the WIB district lines, but its green tech strategy is Silicon Valley-wide.

The shifting borders and local definitions add strength and flexibility to regional development, allowing regions to access relevant resources to address different goals. Cohesion and continuity emerge from a set of core actors, such as the city and the university or Chamber or community college, that work in all these regional configurations to keep them aligned and connected.

All parts of the region need to be included in the program – including the periphery, not just the core

The alignment of economic and workforce development centers on skills, especially those skills that span jobs and industries.

Even with shifting boundaries, regional strategies must be fully regional. More precisely, all parts of the region need to benefit from the collective efforts and investments. For example, training available at a community college may not be accessible throughout the region covered so we see solutions that increase access, such as the community college consortium in Tupelo or the decision of an individual college to open a satellite campus. As another example, San Jose and Newton put their small business support on-line to extend access to these services across space and time.

When working on a regional level, the goal then is to create multiple access points into the system. In San Jose,Work2Future found that less than 5% of

businesses surveyed were aware of the services they had to offer, which is partially what prompted the creation of BOS, the on-line service provider for businesses.

It also means marketing those services and programs to diverse populations which requires using diverse strategies such as outreach in multiple languages or in multiple types of venue. For example, in San Jose, they advertised on Spanish and English radio stations, while in Albuquerque they recruited ACCION international for their expertise working with disadvantaged neighborhoods. Ponca City reached out to different target groups such as veterans, foster children and alternative high schools to start building a worker pipeline.

Economic development in the 21st century is not for the faint-hearted. The economic transformation of a region is a long-term undertaking.

Focus on skills, not jobs

The alignment of economic and workforce development centers on skills, especially those skills that span jobs and industries. The key to successful skills in a globalizing, changing economy includes portability and flexibility. With changing sectors and economies, having a strong labor pool and enabling the inclusion of workers in these new job opportunities, means skills.

For example, Tupelo and North Central Indiana, which were directly dealing with industrial volatility, not decline, chose to act proactively – before the jobs left – to develop skills in its workforce. Newton enhanced its workers skills to upgrade them to meet the needs of a changing economy and it served as an attraction tool for new businesses. Ponca City reached widely and deeply into its population to strengthen the overall skill base of its labor pool to enable its transition to higher skill-higher paying jobs.

Engaged Local Leadership

It takes time—the issues are complex

Economic development in the 21st century is not for the faint-hearted. The economic transformation of a region is a long-term undertaking as illustrated in the Pittsburgh and Akron cases. It is also a complex one requiring shifting and deepening partnerships, consistently nurturing new funding streams, and regularly adapting to an economy that is bigger, more competitive, and more volatile than ever before. Patience, perseverance and an ability to shoulder risk are mandatory of local leaders and are exemplified in the cases.

But these cases hit on a reality shared by all communities: disadvantaged populations and places are assets to be developed, not challenges to be managed.

Multiple leaders required

Even though we see individuals emerge as central for moving economic development forward, in actual fact, there were multiple leaders working across sectors. From mayors to universities to chambers to community colleges to vocational schools among others, their engagement and willingness to adapt to changing circumstances marked all these cases.

Incorporating Inclusion

Actively include the disadvantaged in your strategic investment portfolio

Education is the foundation for skill development; ensuring quality jobs for the emerging and next generation starts here.

We see across cases, often in different ways, the conscious attempt to more actively include disadvantaged populations and places into their overall strategies—to ensure quality jobs were more accessible to more people, while ensuring that employers had access to higher skilled individuals. This strategy often emerged as a flat-out necessity such as in Ponca City, which lacked skilled workers, or in San Jose, which was becoming increasingly more diverse as it saw its middle class decline or in Albuquerque looking to diversify its business base. But these cases hit on a reality shared by all communities: disadvantaged populations and places are assets to be developed, not challenges to be managed. The success of these cases shows their power and potential. As economies transform, the more flexible assets a community can draw upon (including workforce skills), the better a community can adapt.

Incumbent training is an underused strategy for creating quality jobs

The definition of quality jobs must center on their advancement potential if they are to provide true opportunities for the disadvantaged or those with low-to-no skills are to truly achieve and maintain economic self-sufficiency. In many of these cases, with Tupelo as a key example, upgrading the skills of existing workers (soft and hard) was a critical job retention and development strategy. In a more volatile economy, maintaining the ability of the workforce to compete and advance requires skill development. For those with lower education levels, doing it on the job becomes an essential investment. Achieving scope and scale on quality jobs also requires that businesses invest in their worker's skills. Incumbent training is an important catalyst for achieving this.

K-12 education is a critical partner

In many of these cases, upgrading and engaging the education system was a critical part of the development of the community and building the emerging worker pipeline. From STEM programs to apprentice programs to

entrepreneurship programs to using schools as community centers, the role of education is woven throughout these cases. Education is the foundation for skill development; ensuring quality jobs for the emerging and next generation starts here.

Build Capacity

Adapt or create tools that address strategic goals

Notably, no common economic development tools such as incentives, regulations or funds, emerged across the cases, but rather we see regions creating or adapting new tools to enable them to do economic development differently and achieve broad strategic goals. Akron pursued the Joint Economic Development District in the region to share tax revenue to enable regional cooperation, and strengthen their overall economic development system. Albuquerque relied on state workforce development incentives as part of their toolkit to build quality job generating economic sectors and a talented labor force. San Jose launched an equity fund to develop minority businesses serving disadvantaged neighborhoods.

In a churning economy, come with a diversified portfolio

Today's growth industry may be contracting and moving out of state or off-shore tomorrow. Real estate and gas prices are variable. Workers and industry operate on the margins and are mobile. There is no single challenge, no single opportunity. The economy is volatile and many economic sectors vulnerable. Thus to meet the economic and workforce development needs of an economy, regions need diversified investments, that can be adapted to meet different targets. This was shown to be true at the organizational level with community colleges generating new products and creating new partnerships to meet emerging regional demands, or at the regional level, with the generation of multiple approaches to a goal. In Albuquerque as an example, entrepreneurship support was provided to disadvantaged as well as fast growth companies. In Pittsburgh, multiple commercialization intermediaries were fostered to tap into the extensive higher education landscape.

Strategies can be bundled

In many cases, cities or regions were able to bundle the goals they needed to achieve into a set of targeted initiatives. Thus a project, relationship or new institution could be used to achieve multiple regional goals. Mesa Del Sol in Albuquerque packaged land and industry sector development goals. Akron redeveloped its neighborhoods to meet equity, business development and talent attraction objectives.

Build on Existing Assets and Plan on Solid Research

Your challenges are often the key to unlocking your assets

Aggressively addressing significant challenges bind all of the cases together, and became important fuel for later job creation and development. Albuquerque took on its lack of land with the Mesa Del Sol project, which also aimed to grow the green tech and film industry sector and stimulate the redevelopment of the adjacent neighborhood. Akron, Tupelo and Newton enhanced the skills of its workforce to meet the more rigorous demands of the knowledge economy. Newton, Pittsburgh and Akron helped transitioning workers start new businesses, building off and expanding the existing knowledge base.

Know your niche

The cases also indicate the importance of not just targeting sectors or clusters, but understanding your unique niche within these sectors. Ponca City identified a niche in sensor technology, invested in the development of the University Multispectral Lab in partnership with private partners and the university, which has catalyzed new business development in response. In Albuquerque, the highly specialized skills of its construction workers and its history of making western films served as a foundation for the development of a film industry.

Practice continuing quality improvement and continue to update research, plans and strategies

Things change so strategies, goals and services must as well. Across cases, we saw communities regularly updating their research, reviewing the status of their economy, revising cluster or sector targets, tweaking or generating new approaches when necessary. Moreover, many of the organizations also monitored customer satisfaction to ensure that they were indeed meeting their goals from the end users perspective. This was particularly useful for aligning economic and workforce development. For example, Work2Future in San Jose continually monitors customer satisfaction. Workers using computerized kiosks at one-stop centers are prompted to fill out surveys, which were available in Spanish and English.

Innovation and Entrepreneurship

Create opportunities, not just jobs

A focus on quality job development can camouflage the range of needs and possibilities. For example, the cases reveal that you can view displaced or

disadvantaged workers as a source of new entrepreneurs. Newton, for example, provided start-up assistance to former Maytag workers, resulting in entrepreneurial start-ups across diverse industries. Akron established an incubator to assist transitioning rubber workers develop companies.

Sectors, clusters and diverse entrepreneurs needed

To create opportunities for entry, mid and high skilled workers, it is clear that a range of targets are needed. Clusters drive innovation and the economy, sectors often create the widest set of job types, and entrepreneurship helps mange the risk of economic change, by offering a diverse collection of companies that feed into existing clusters and sectors, and diversify away from them. In all cases, we see these three goals incorporated into their overall strategies, with entrepreneurship increasing in importance for its ability to keep diversity in the economy.

Higher education must be on-board

Universities and community colleges played key roles throughout the cases. In Akron and Pittsburgh, universities were essential partners in transforming the region from an industrial to a knowledge economy. In Tupelo, Albuquerque and Newton, community colleges and vocational schools advanced skill development for displaced and incumbent workers alike and promoted entrepreneurship.

Next Steps

The research reveals an evolution in the field of economic development; from a narrow focus on industrial recruitment and job creation measured in numbers to a system-based approach based on partnerships, greater inclusion, and addressing more difficult and more complex challenges than ever before. What started as an investigation into quality job creation, became a study on how economic development was changing to respond to a harder, more complex economic environment, to rebuild the middle class and to strengthen the ability of the regional economy to generate a range of opportunities for businesses and people alike. The role of the economic developer in this system is to connect the dots, develop resources, solve problems and keep the community centered on its economic health.

Given the current recession, the expanding global economy, a dynamic and highly volatile energy market, unstable manufacturing base, the long-term unemployment rates, and growth of poverty, there are many open questions about how regions and communities can continue to grow in an inclusive, more equitable manner and rebuild and strengthen its middle class. While the cases we have looked at provide guidelines and clues on how to manage in this environment, they remain works in progress as change seems to be the new

normal. Since economic development and quality job creation is a process, and processes must adapt as well, we have chosen to end this report with some issues that still need attention, to help communities remain economically and socially healthy and vital in this more dynamic, increasingly bigger world. Some outstanding issues include:

- ***The need for new metrics:*** With new goals such as quality job creation, rebuilding a middle class, building economic engines, and more effectively including the disadvantaged into the economy, comes the need for new measures of effective economic development. Past methods for measuring job creation and cost per job and job retention are too narrow to effectively measure this transforming economic development landscape.
- ***Greater alignment still required:*** Although we see growing alignment of economic and workforce development, more work still needs to be done. Understanding how to include education, entrepreneurship and incumbent training into these burgeoning relationships, needs to be front and center on an economic and workforce agenda.
- ***Clean, green—what do we mean?:*** In the cases, in federal policy and across the country, much attention has been paid to the possibility of green and clean technology as both economic drivers and generators of quality jobs that are available to a range of entry, mid and high skilled workers. While the cases indicate that there is some truth to this, what is meant by clean or green is vague and variable. Moreover, the cases in which a focus on green technology development was evident also demonstrated past advantages that serve as a foundation for the growth of sections of this industry. These are big terms and point to a range of sectors. To start to make sense of the opportunities for quality job creation and economic development, we need to understand and identify what is 1) available to all communities (e.g. construction) versus what is niche and unique to certain communities (e.g. fuel cells); 2) what jobs are actually generated and how they are distributed (e.g. location of R&D versus installation versus production); and 3) how it will transform industries (e.g. construction), restructure industrial advantages (e.g. energy) and create whole new industries and skills.
- ***Better integration of neighborhoods into this emerging regional framework:*** While neighborhood revitalization marked many of these cases, most cities and regions still struggle with how to better engage neighborhoods into this process. While these cases provided some ideas for doing this, it is also clear more can and should be done.

The conclusion that emerges from an assessment of these cases is simple (with complex solutions)—a more volatile and dynamic economy is driven increasingly by the skills of people. The cases indicate that indeed aligning skills and jobs is now sine qua non for economic development. This is the heart of the transforming landscape of economic development.

INTERNATIONAL
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