

Creativity in the Natural State



Growing Arkansas' Creative Economy



REGIONAL
TECHNOLOGY
STRATEGIES, INC.

Regional Technology Strategies, Inc.

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Growing Arkansas' Creative Economy

With

Mt. Auburn Associates

Arkansas Arts Council

Arkansas Science & Technology Authority

Arkansas Association of Two-Year Colleges

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Cover Captions:

Top Row

Poster from Fayetteville Arts Festival, 2006,
Bubba's Blues corner in Helena,
"The Sounds of OEM" at Family Faith Festival in Little Rock

Bottom Row

Larry Pennington working at wheel,
Opening scene in "Gone with the Wind,"
Unidentified artisan making dulcimer

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Finally, this project is being carried out under a grant from the Winthrop Rockefeller Foundation, and we appreciate their support.

Stuart Rosenfeld, March 20, 2007

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Creative Roots to a Competitive Economy

Arkansas' creative economy has deep roots.

In the 1840s, fiddling was common at public gatherings, including "Arkansas Traveler," which eight decades later became the first country music ever recorded.¹ Eureka Springs hosted the first Ozarks folk festival in 1934, attracting tourists and capitalizing on the town's healing springs.

The King Biscuit Time radio show, which in the 1940s featured legendary blues artist Sonny Boy Williams, put Helena on the map as a national center for the blues. The daily show, which still airs on KFFA, laid the foundation for Helena's annual Delta blues festival.

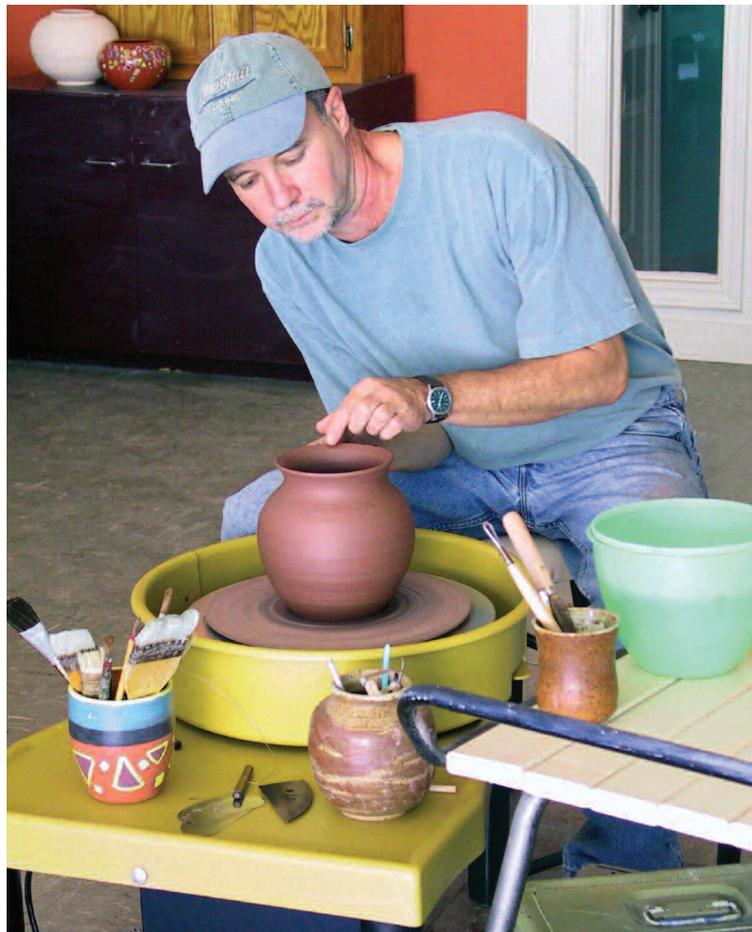
In 1964, Winthrop Rockefeller, a strong contributor to the arts and civic projects in black communities, included folk singers and country bands in his campaign entourage when he successfully ran against the incumbent at the time, Orval Faubus.²

The creative economy extends beyond music. In the early 1900s, Nilaok Pottery Company gained national recognition with its innovative Mission Art Pottery and a series of innovative designs and methods that kept Arkansas crafts in the spotlight for decades.

These deep roots continue to nourish creative activities throughout Arkansas.

Towns across Arkansas count among their residents people who earn a living through their creative talents. Entrepreneurs have established businesses throughout the state that use creativity as a basic "raw material," their principal source of competitive advantage. Traditional businesses understand that creative design, packaging, and branding give companies a competitive edge. And the

state and the business community are beginning to recognize the significant economic benefits that investments in nonprofit cultural institutions can bring to Arkansas' cities and towns.



**Larry Pennington
at Claytime
Pottery Studio
in Little Rock**

The talents of past generations and local culture, from crafts and music in the Ozarks to the blues in the Delta and Native American arts in the west, have enriched local economies and garnered new respect from the business world.

Can this talent base and cultural history become the source of further economic growth?

What is the **Creative Economy**?

In the broadest sense, the creative economy is the enterprises and people involved in producing and distributing goods and services in which the aesthetic, intellectual, and emotional engagement of the consumer gives the product value in the marketplace.

It includes the individual artists that are the talent and source of creativity—for example, writers, photographers, painters, glass blowers, sculptors, furniture makers, filmmakers, architects, choreographers, chefs, and composers who originate creative ideas and concepts.

It includes the non-profit cultural institutions and commercial businesses that take the original ideas of individual artists and produce creative goods and services—performing arts organizations, dance troupes, printing companies, recording studios, design studios and shops, advertising firms, film production companies, and architectural firms.

It includes the non-profit and commercial institutions and commercial businesses that bring the creative products to the marketplace—museums, libraries, art galleries, publishing companies, performing arts venues, and higher education arts facilities.

It includes institutions and commercial businesses that depend on creative talent to survive—technology companies that produce media products or manufacturing companies that derive a competitive advantage from their core elements of design.

It includes the support system that nurtures and sustains creative activity: the public school system's art education programs; governments that create public policies and provide tax incentives that enable the arts to flourish; community foundations that provide financial resources to support individual artists and arts organizations; neighborhood cultural organizations that provide creative-learning opportunities for young people; and higher education institutions that nurture creative talent.

This report is the first step in a more ambitious effort to find an answer.

The Arkansas Creative Economy Project is a multi-year effort that is attempting to increase and broaden the economic impact of the state's creative enterprises and people. Its premise is that the creative talents of Arkansas residents, and the deep cultural roots that define what is unique about Arkansas, can help the state compete in a global economy.

This report, the result of the first year of work, provides a better understanding of the scale and nature of the creative economy in Arkansas. It will be followed next year with a report that inventories the creative and cultural assets that exist in every corner of Arkansas and in every segment of the population. In future years, the project will identify and carry out the steps needed to build greater creative capacity, and turn those assets into sustainable economic growth and competitive advantages for communities.

Why Focus on the **Creative Economy**?

THE NEW ECONOMIC IMPERATIVE

Three decades ago the Arkansas economy, like that of its Southern neighbors, looked to manufacturing as its source of growth and prosperity. Arkansas' rural areas, in particular, were able to reap the benefits of manufacturing companies migrating from the Northeastern U.S. to the South. In 1984, 40 percent of all non-government jobs in rural Arkansas were in manufacturing, many paying wages that were still too low, but nonetheless raised average incomes.

In the 1990s, Arkansas transformed itself by investing in education, science, technology, and education. Its leaders realized that the road to better jobs required higher productivity, which depended on new technologies

and a labor force with better skills to modernize and expand the state's industrial base.

During this period, the arts were viewed as cultural resources to be preserved, rather than economic assets to create wealth.

The economy in 2007 is very different than it was in the 1980s and '90s. Advanced technologies and skilled workers are available almost everywhere today—even in developing countries where labor costs are very low. As a result, the gains that Arkansas made in the 1990s are disappearing. Between 2000 and 2004, the state lost about 10,000 manufacturing jobs: Employment in the wood products industry dropped by 16 percent, the furniture business by 34 percent, and the apparel trade by 58 percent.

The assets that once meant competitive advantage now represent nothing more than the opportunity to compete. Many of the products that were the bread and butter of the South's economy are made off shore. Manufacturing employment in Arkansas has dropped below 20 percent for the first time since 1942. Even companies once committed to selling only goods made in America, are not able to withstand the price competition from China and other emerging nations, and import growing proportions of their goods.

Today, talented workers are more mobile and selective. They look at location first and particular jobs second, causing states and nations to reorder their priorities. Chasing talent has replaced chasing the smokestack.

NEW MARKET OPPORTUNITIES— THE PRODUCTION OF CREATIVE GOODS AND SERVICES

The news isn't all bad. Consumer markets, different than they were in the 1980s, have created a plethora of new opportunities in nontraditional sectors. Arkansas benefited from

My Community, a documentary filmmaking program, engages high school and college students in their communities, encourages creativity, and teaches valuable career skills. By making digital documentary films about places in Arkansas, students learn communication skills, planning, teamwork, digital technologies, writing, and editing skills in a real-world environment. They also develop an appreciation for what makes places special. The videos compete for awards from the state based on content, theme, story, narration, camera techniques, editing, and music. Recent documentaries include student art murals at Fayetteville High School; the emergence of the Hot Springs' Arts community; Randolph County's great outdoors with a historical backdrop; children's perspective of El Dorado's downtown; Batesville, the second-oldest city in the state, and World War II Japanese internment camps in Arkansas.



Red glass vessel created by James Hayes, Pine Bluff

entertainment markets that have skyrocketed. The state has been the location for more than 200 commercial movies, videos, and television shows. All of the entertainment sectors and, some argue, the publishing sectors, create experiences that generate revenue and local development.

Buyers are paying premium prices for products that evoke an emotional response, create an image, or provide a sensory experience based on authenticity, appearance, or style embedded in content, packaging, or brand. Alessi kitchenware, Bang & Olufsen media products, Kohler's artist-edition sinks, Viking ranges, and, in Arkansas, Munro's Icon shoes are all designer products

**Debby Gwaltney
making glass
beads in Ozone,
Arkansas**



that command high prices from customers who seek more than function in the products they use every day.

The state's creative economy consists of large numbers of very small enterprises, not small numbers of giant enterprises that begin with ribbon-cutting ceremonies and media hype. Many are in distinguishable categories, such as new media, design, and publishing. But many more are buried in classifications that combine companies producing artistic goods with those making purely utilitarian products.

The state's creative economy also comprises companies that produce "personal ornaments, aesthetized commodities, modes of social display, forms of entertainment, and instruments of persuasion."³ These businesses might produce art, crafts, performances, designs, music, films, books, advertising, architectural plans, video games, and high fashion consumer goods. Additional economic benefits come from the enterprises that supply, reproduce and market these goods. They include entrepreneurs with special artistic or design flairs who have discovered or created niche markets.

A NEW COMPETITIVE ADVANTAGE

Increasingly, talented people are moving to Arkansas, either immigrants from other nations or urban artists and designers escaping the high costs and congestion of big cities in other states. Other talented Arkansans come out of a technology background, segueing from their technical areas into the growing fields of digital arts, computer and video games, and design. The state's EAST lab program attracts high school students into digital media, where some remain on a creative career track.

Arkansas also has an advantage in amenities, which could bring new wealth and opportunities to the state. In CfED's 2007 Development Report

Card of the States, Arkansas received its only "A" grade in the amenities resources sub-index because of its clean air, affordable housing, low energy costs, and accessible health care.

EXPANDING THE ROOTS AND BUILDING THE ECONOMY

The state's creative people, cultural heritage, and quality of life present a new set of opportunities. With its cultural and creative assets to play a new role in building a more equitable and competitive economy, Arkansas is poised to attract companies that depend on creative content and talented people who want to live in creative communities.

With the contraction of manufacturing and growing competition for research and development, Arkansas needs to establish its niches and create a lasting brand that inspires customer loyalty and attracts talented people who will put down roots. The creative economy holds promise for both but will require support that is considerably ramped up.

Arkansas must differentiate itself from the pack, rethink its special advantages, and look for creative sources of growth and inventive niches that can resist competition, imitation and importation—in short, develop its creative economy. The future of Arkansas will rest heavily on its creative talents and assets, both through the image-producing industries they represent and the value they add to other sectors.

Fortunately, Arkansas has deep reservoirs of culture, talent, and creativity. Unfortunately, the state considers them amenities rather than sources of growth, as tourist attractions rather than export or consumption industries. This report will turn that view around by focusing on Arkansas' wealth-generating creative economy.

Understanding the scale, nature, and impact of this creative economy means digging a little deeper.

What is the "Creative Economy"?

Creative" is a vague concept generally applied to imaginative, inventive, artistic people and objects. When used to describe a type of economy, however, the term is more manageable. "Creative" becomes a characteristic of certain companies (industries), people (occupations), and places (environments), see Figure 1.

We use the term primarily to define a certain type of business entity. A creative enterprise is a company for whom imagination, invention, or art is its lifeblood, the basic "raw material" that sustains it. This includes all businesses that get their principal competitive advantage from a distinctive appearance, form, content, or sound embodied in their products or services.

Under this definition, the creative economy encompasses all employees of creative enterprises who owe their livelihood to the creative content of the products or services, even if their particular contribution (e.g., administration, transportation, or bookkeep-

"Arkansas must differentiate itself from the pack, rethink its special advantages, and look for creative sources of growth and inventive niches that can resist competition, imitation and importation..."

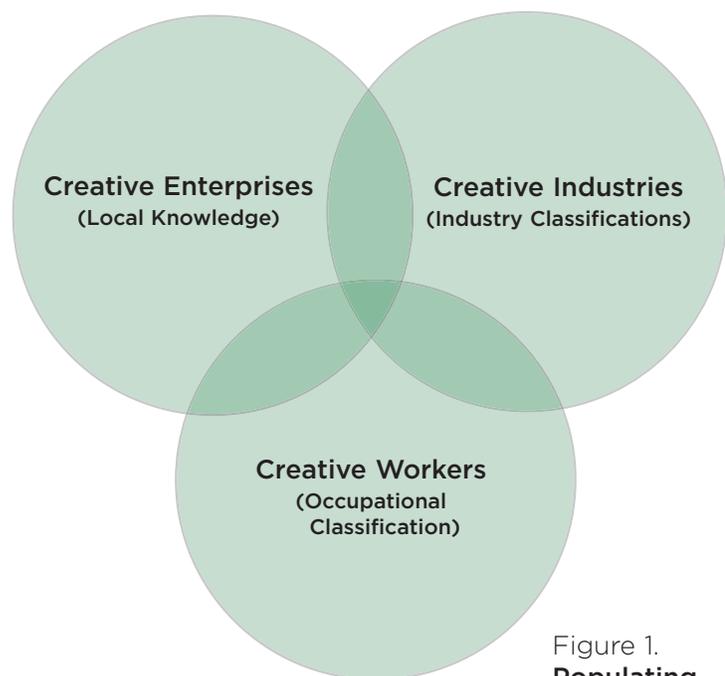


Figure 1.
Populating
the Definition

ing) does not demand creativity. Conversely, many people employed in non-creative companies do work that does require creativity (e.g., window designers at department stores and landscape architects at resorts). The research team looked briefly at the occupational data but focused mainly on the companies to represent the economy.



Helena is home to the longest-running daily radio show devoted to the blues, "King Biscuit Time" as well as an internationally renowned blues festival

"Creativity flourishes where creative people socialize, develop relationships, and form networks."

As in many industries, creative enterprises tend to cluster more heavily in some places than others, either because of a special location advantage, historical roots, or just a pure chance event. Creativity flourishes where creative people socialize, develop relationships, and form networks. An environment where ideas can be easily exchanged inspires creativity.

The full scope of the creative economy encompasses more than collections of independent firms that produce creative concepts and products. An economy operates as a system and includes all of the other enterprises necessary to do business: those that sell, supply, reproduce, or otherwise contribute to the same products. The research team classified the parts as inputs, creation, production, dissemination, and support (see Figure 2). Taken collectively, these parts represent the full scope of the creative economy.

- *Inputs:* Companies that provide materials, parts, or equipment used by the companies in the creation category e.g., art supply stores.

- *Creation:* All firms that produce original creative intellectual property, or whose competitive advantage relies on incorporating distinctive aesthetic material into their products or services. This includes self-employed people who originate creative concepts and merchandise.

- *Production:* Firms that reproduce art- or design-based goods or services such as film and video production, sound studios, publishers, printers, and art foundries. This component also includes manufacturing firms that incorporate art and design into their products but are not generally considered to be creative enterprises.

- *Dissemination:* Entities that deliver art- or design-based products to the public, such as book and music stores, theaters, and museums.

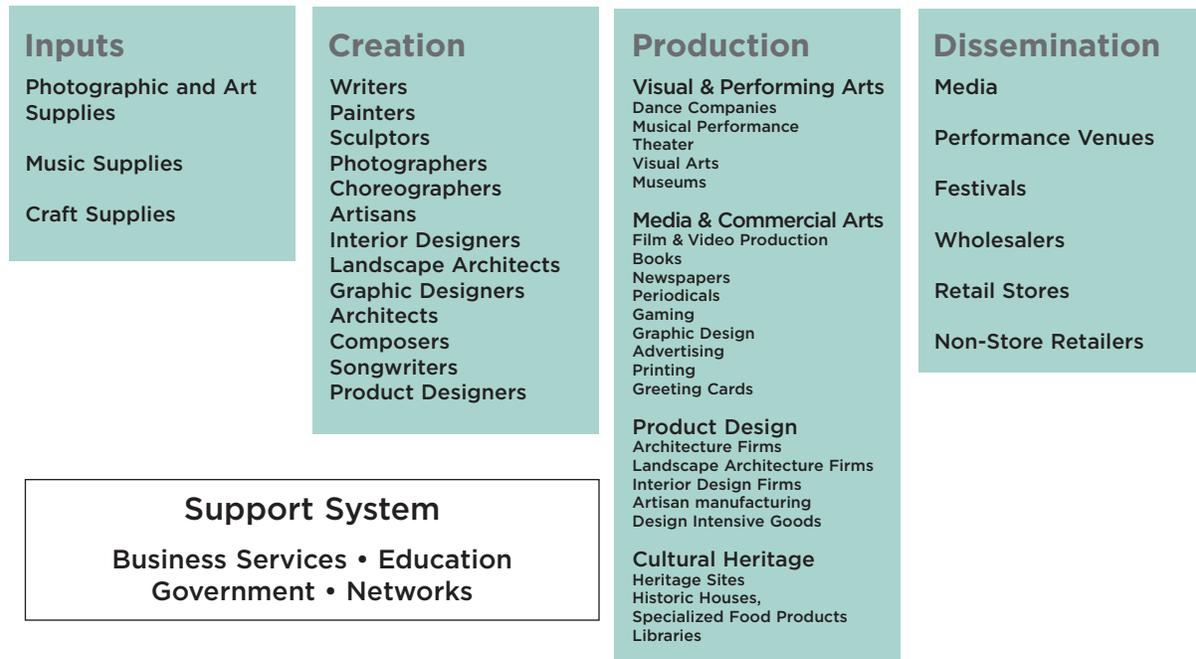
- *Support System:* Institutions that facilitate arts- and design-based activity, including schools, arts councils, nonprofits, arts incubators, agents, business services, and government agencies.

CREATIVE CONNECTIONS

Benefits of the creative economy spill over into many industries (Figure 3). The most obvious is in tourism and hospitality sectors. Some parts of the creative economy are designed to attract visitors, and their success is measured in attendance and local spending patterns. But studies also show that high concentrations of artists and performers are associated with high rates of tourism. The amenities that attract tourists also attract the creative personnel employed by technology-intensive companies.

Creative economy clusters often co-exist with lifestyle clusters, such as wellness and holistic health groups, and spiritual and retirement commu-

Figure 2. Elements of the **Creative Economy**



nities. Some elements of the arts and culture sectors correspond to lifestyle choices attractive to other special interest groups that hold similar values, such as organic farmers, environmentalists, and high tech entrepreneurs. In addition, spiritualism and wellness are associated with both creative art forms and specialty products.

Many of the fastest-growing elements of the agriculture sectors rely on creativity—as creative labeling and marketing of organic and specialty foods, wine, and beer; as farm families relying on craft products or foods or farm stays as secondary sources of income; and as home landscaping and garden design.

Creative economies are linked to high technology industries, both through the creative content of some technology-based industries like software design, computer and video games, and special effects and as a creative outlet for other high-tech employees. A survey showed that more than half the employees in Silicon Valley have secondary artistic interests, ranging from poetry to pottery.⁴

How Large is the Creative Economy?

No universally accepted boundaries define the creative economy. Some creative businesses, like design services, film and sound companies, and artists and architects, are clearly identified by their industry classifications. But many other businesses that depend on creative content, such as handmade goods, fine furniture, or Web design, are buried within more general categories. Industry classifications of businesses without employees depend on how each individual chooses to classify the business for tax purposes. Data that are available, however, produce useful estimates of the size of the creative economy and insights into how creative companies and assets contribute to local economic growth.

The most recent data available shows that the creative economy of Arkansas employs about 27,000 individuals, excluding self-employed and part-time workers. That's about 2.8 percent of all private-sector employment.

“Many of the fastest-growing elements of the agriculture sectors rely on creativity—as creative labeling and marketing of organic and specialty foods, wine, and beer...”

While this may seem a small percentage, it actually outstrips the contribution of some of Arkansas' major industries. Table 1 shows employment figures for Arkansas' top-traded clusters. The figures came from a recent analysis presented to the National Governors' Association by the Monitor Company Group in February 2007 and refined by this report's definition of creative enterprises. Although the precise composition of the Monitor Group's clusters is proprietary, the creative enterprises cluster ranks third, ahead of major state industries such as forest products, automotive, and even hospitality/tourism.

CREATIVE INDUSTRIES

The size and scope of Arkansas' creative economy can be estimated using several different economic measures: number of establishments in creative industries, number of people employed

in these establishments, number of people self-employed in creative industries, and number of people engaged in creative occupations (regardless of industry). Table 1 categorizes by industry the number employed and self-employed in Arkansas' creative industries.

Self-employment data, excluded from most economic analyses, is very important to understanding the true scale of creative economy activity. Self-employment, shown in Table 1, is a significant proportion of the creative economy. This is particularly true for independent artists, where 95 percent are self-employed, and for design-based services and manufacturing, where 39 percent and 47 percent, respectively, are self-employed. In Arkansas, a reported 8,030 people are self-employed in creative industries, comprising nearly a quarter of the total employment in the state's creative economy, and bringing total

Figure 3.
Creative Economy Connections

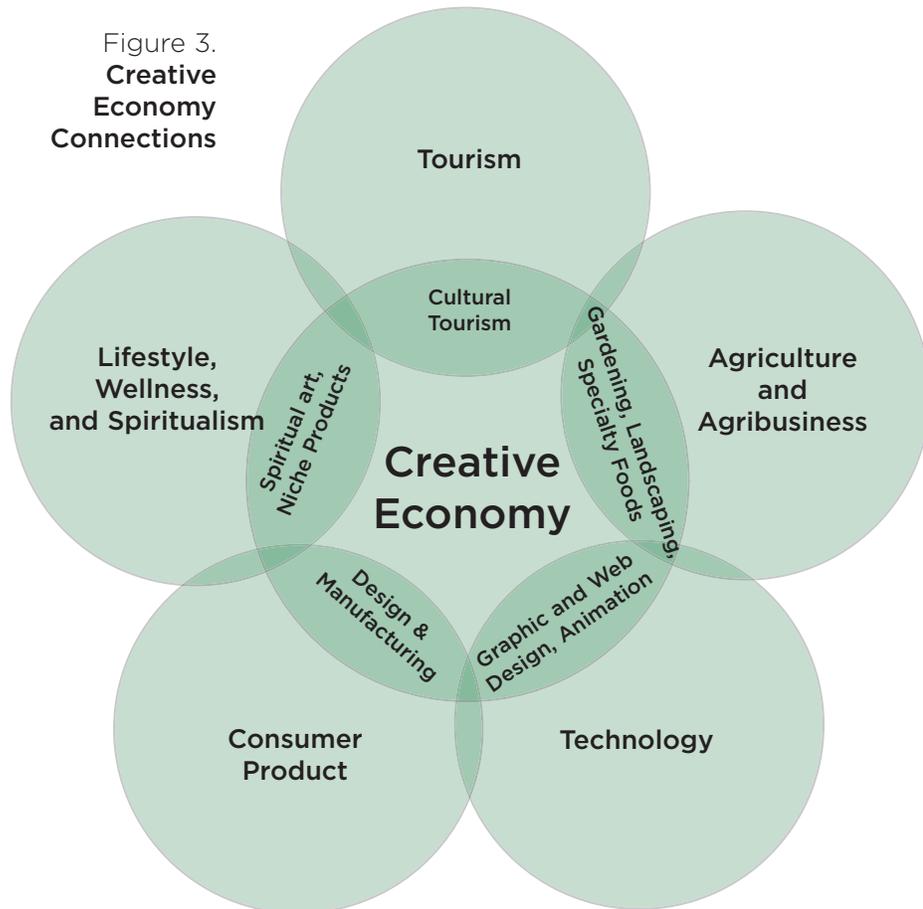
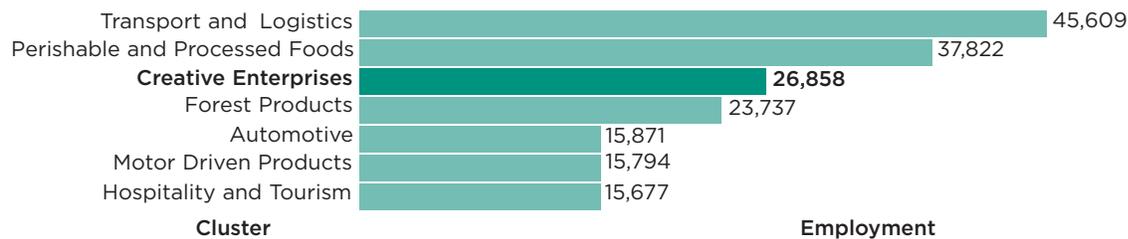


Table 1. **Employment and Self-Employment in Arkansas' Creative Economy Industries, 2005**

Category	Employed	Self-employed	Totals
Independent Artists	106	2,245	2,351
Performance	1,210	337	1,547
Design manufacturing	1,118	983	2,101
Design services	1,911	1,200	3,111
Publishing and printing	9,671	597	10,268
Film and sound	1,353	186	1,539
Broadcasting	3,657	206	3,863
Photography	733	526	1,259
Advertising	1,710	659	2,369
Support & infrastructure	711	33	744
Retail	4,678	1,058	5,736
Totals	26,858	8,030	34,888

Source: U.S. Census, U.S. Bureau of Labor Statistics, Arkansas Manufacturers' Register

Figure 4. **Arkansas' Creative Economy Compared to Largest Traded Clusters⁵**



creative economy employment to 34,888. These jobs generate an estimated \$927 million in personal income for Arkansas's citizens.

Each category in Table 1 represents a larger number of related industries. The category of performance, for example, contains performing arts companies and their agents and promoters, but excludes volunteers or paid performers of religious organizations. Any performing arts company with at least one paid employee is included in this category, but volunteers—though unquestionably important to cultural and artistic contributions in their communities—are not.⁶

Design services, another example, include product- or niche-specific design service industries: architecture

and landscape architecture, interior design, industrial design, and graphic design. This category, along with independent artists, forms the core of the creative economy. The design services industries engage in activities that compete in the marketplace only by being aesthetically distinctive and of high artistic quality. Even more so than the work of individual artists, these industries show how original creative content can be incorporated into a product or a service that, although it exists for reasons other than aesthetic ones, succeeds or fails primarily because of its creative functionality and distinctiveness.

Publishing and printing refers to printing services; book, newspaper and periodical publishing; greeting

The annual **Hot Springs Music Festival**, inaugurated in 1996, presents 20 concerts and holds more than 250 open rehearsals over a two-week period. It pairs world-class musicians from major orchestras, chamber ensembles, and conservatory faculties with talented apprentices, all of whom receive full scholarships. Over 20,000 people attended festival events in 2006. The festival's mission is twofold: mentoring young musicians at the juncture of their student and professional lives and making music accessible to residents and tourists through performances in nontraditional venues. School groups and others attend the free open rehearsals. The festival, marketed internationally, draws people from out of town who spend money on hotels, restaurants, tourist attractions, and other local businesses. The festival broadcasts concerts on NPR, has released several concert CDs, and was featured in an Emmy award-winning 2001 documentary film, "The Sound of Dreams," shown on over 275 public television stations. The festival also promoted local providers of creative services, including graphic designers and printers, who donate their services in return for recognition in the Festival's printed and electronic media materials.

Aristotle is a nationally recognized company that has fused technical with creative and artistic talents to deliver Internet and interactive multimedia design services. Founded by Marla Norris, a Colorado native who moved to Arkansas in 1981, the company is located in Little Rock and has received many awards for its designs. Its clients include Dollywood, Elvis Presley Enterprises, and the Stax Museum of American Soul Music, and well as many tourism organizations. The company, now with more than 60 employees, does all its work in-house and competes successfully with larger companies in New York and Los Angeles. Aristotle works closely with UALR, providing scholarships to students, and Norris helped the university design its CyberCollege.

card production; and software publishing. This set of industries comprises almost 30 percent of all reported employment, with newspaper publishing the dominant industry, followed closely by greeting card production. Some of the larger firms are the *Arkansas Democrat-Gazette*, in Little Rock, which employs 250 people, and American Greetings Corp., with 1,400 employees, making it one of the largest manufacturing companies in the state. The set also includes much smaller firms, such as single-employee printing shops like Hillbilly Press in Cedarville that prints wedding and birthday invitations, among other items.

The film and sound sector contains industries related to producing and distributing music and film. The sound recording industries make up only a very small part of this category; the film industries account for more than 95 percent of all employed in this category. Examples of companies in these industries range from the large, well-established firm of White Diamond



Independent book store in Blytheville hosts readings by well-known authors from across the U.S.

Productions in Harrison, which creates custom promotional and educational films and videos, to the small business MVP Editing in West Memphis.

Only the category of independent artists remains an individual sector because it is unlike any other industry sector examined and represents the core of the creative economy.

To provide a rough estimate of the scale of the economic impact of employment and self-employment in

Table 2. **Wages and Revenues in Arkansas' Creative Economy Industries, 2005**

Category	Wages (1,000s)	Self-employment revenues (1,000s)	Totals (1,000s)	Wages or revenue generated per person
Independent Artists	\$3,036	\$26,413	\$29,449	\$12,526
Performance	\$28,752	\$7,853	\$36,605	\$23,661
Design manufacturing	\$39,927	\$35,543	\$75,470	\$35,920
Design services	\$87,487	\$36,127	\$123,614	\$39,734
Publishing and printing	\$317,346	\$16,823	\$334,169	\$32,545
Film and sound	\$13,055	\$3,502	\$16,557	\$10,758
Broadcasting	\$175,626	\$4,402	\$180,028	\$46,603
Photography	\$19,567	\$10,172	\$29,739	\$23,621
Advertising	\$66,533	\$23,857	\$90,390	\$38,155
Support & infrastructure	\$64,364	\$296	\$64,660	\$86,909
Retail	\$63,897	\$36,754	\$100,651	\$17,547
Totals	\$1,763,578	\$173,487	\$1,057,475	\$30,894

* No self-employment reported in this category.

Source: U.S. Census, U.S. Bureau of Labor Statistics, Arkansas Manufacturers' Register

Arkansas' creative economy, the table shows wages and revenue in the state's creative economy industries.

SEGMENTING THE CREATIVE ECONOMY

Because the definition of a creative economy is so expansive, deconstructing it into categories, or "sub-clusters," of creative industries that represent distinct competencies and markets can be useful. We chose to divide it among visual and performing arts, media and digital arts, product and environmental design, and cultural heritage and conservation. The data presented on the individual segments cannot be totaled to equal the overview data for three reasons. Some industries fall into more than one segment, some of the industries are presented in greater detail than in the overview groupings, and self-employment data are not available at some of these industry levels. Except where noted, the data presented represent only employment in establishments.

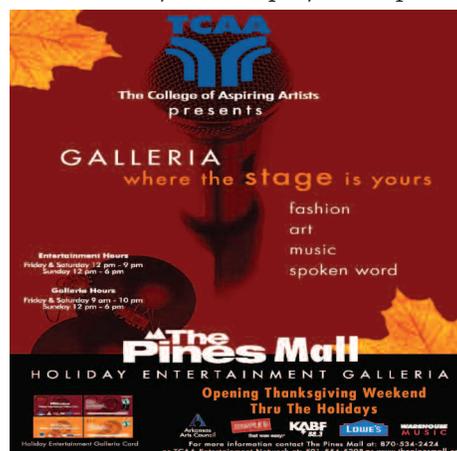
Visual and Performing Arts Industries

The visual and performing arts segment represent the heart and soul of any creative economy, the sec-

tors that generate creativity. The artists, writers, dancers, actors, and musicians in the visual and performing arts segment represent the primary constituency of arts councils and beneficiaries of arts funding. Some of the state's best-known native writers include poets Maya Angelou, Ellen Gilchrist, and Dee Brown. But the category is also the sub-cluster whose economic contributions are most often under-rated because the majority of artists are not employed in arts-related businesses.

This segment, more than any other, is dominated by self-employment, part-

"The visual and performing arts segment represent the heart and soul of any creative economy, the sectors that generate creativity."



The College of Aspiring Artists offers students venues for their musical talents

Table 3. **Arkansas' Visual and Performing Arts Industries, 2004-2005**

Sector	Employees	Establishments	Self-Employment	Total Employment
Printing**^	2,098	92	166	2,264
Photographic supplies manufacturers**^	16	3	NA	16
Pottery	17	7	NA	17
Glass**^	45	6	20	65
Costume Jewelry	5	3	NA	5
Art goods manufacturing*^	377	2	NA	377
Jewelry wholesalers	250	17	111	361
Photography stores*^	23	4	9	32
Jewelry Stores	895	170	208	1,103
Book Stores*^	1,273	99	76	1,349
Sewing stores	255	56	204	459
Art Dealers	86	35	85	171
Publishers	425	63	431	856
Libraries and Archives	81	11	NA	81
Photographic Services	733	185	526	1,259
Fine Arts Schools	194	61	NA	194
Indep. Artists, Writers, and Performers	106	50	2,245	2,351
Museums	167	33	33	200
Grantmakers	284	48	NA	284
Totals	7,330	942	4,114	11,444

Source: U.S. Census, U.S. Bureau of Labor Statistics, 2005, except where noted

* U.S. County Business Patterns 2004

** 2007 Arkansas Manufacturers Register Manufacturing News, Inc, Evanston, IL 2006

^ Wages estimated using U.S. Averages, County Business Patterns, 2004

+ U.S. Census, 2004

NA: self-employment data unavailable for category

The **Hot Springs Documentary Film Institute** has made Hot Springs a leading international venue for viewing documentary films. The institute's major event is the Hot Springs annual Documentary Film Festival. Started in 1992, it was the first all-documentary film festival in the U.S. and is now one of the largest in the world. In 2006, it showed over 90 films to more than 24,000 people. The institute also sponsors "What's Up, Docs?," a documentary film festival for children, and holds seminars and workshops during its festivals and throughout the year. Its impact on the local economy is estimated to be about \$4 million. Hot Springs is now one of seven communities in the U.S. that screens potential Academy Award™ documentary nominees. To engage young Arkansans in the art and technique of documentary filmmaking, the institute is requesting the educational rights to films in order to share them with Arkansas schools. The institute hopes to develop educational curricula for documentary filmmaking to share with higher education.

time employment, and underreported incomes, which explains the low numbers in Table 2. For example, a third of all musicians in the country are employed by religious organizations, with a large number associated with African-American churches. The College of Aspiring Artists in Little Rock prepares artists for careers in Arkansas churches, as well as other music careers. Opera in the Ozarks is a nationally known company that only operates during the summer but has a disproportionate impact on the region's reputation and economy.

Folk artists across the state use their skills and talent to supplement other jobs, turning marginal incomes into a sustainable living. Some have been able to turn their craft into a viable business. Larry Williams, named an "Arkansas Living Treasure" in 2006, has a plane-making company in Eureka Springs, and Linda Battisto is a successful one-of-a-kind handbag artist in Little Rock. This sub-cluster comprises many nonprofits not represented in the establishment data, including the many arts organizations and schools, which collectively have a large economic impact on the state.

Entertainment and New Media

Industries The media, entertainment, and digital arts segment includes all firms that produce, distribute, and support film, radio, television, music, advertising, and computer and video games. Traditionally concentrated in large cities, this sub-cluster is increasingly relocating to smaller towns due to the high costs associated with expensive metropolitan areas and the pervasive availability of virtual networks. It's a very high-growth market. The international market for the entertainment and media industries, sustained by online rentals and digital streaming, licensed digital downloads, online video games, electronic books and news, and online casino gaming, is growing 6.6 percent per year and is expected to reach \$1.8 trillion by 2010.

Munro Shoes in Hot Springs is one of the few remaining shoe manufacturers in the U.S., and exemplifies a company that uses art and design. With four factories, Munro offers a high-quality work environment, culture, and education to its 1,000 employees since the 1960s. Twenty years ago, artists came into its factories to paint murals and brighten the surroundings. The company's flagship line is Icon shoes and accessories, a brand that incorporates original art to create products that reach high-end consumers.

Nationally, more than 30,000 compact discs are distributed each year, although that demand appears to be decomposing into niche markets, with businesses acquiring exclusive rights to music as part of branding strategies and alternative distribution methods, such as the Internet, gaining prominence. The film and video industry also is growing. Even though it operates in a very competitive international market, the Arkansas Department of Economic Development's Film Office has brought 83 movies, documentaries, and television shows to be filmed in the state since 2000.

Efforts like the state's EAST lab, which attracts high school students to programs in digital media, are likely to help Arkansas take advantage of the growing opportunities in media arts by encouraging youth along these career tracks. Table 4 presents the economic data.

Product and Environmental Design

Industries The product and environmental design segment encompasses the commercial application of the arts to environment, products, packaging, advertising, and branding (Table 5). The core of the sub-cluster consists of firms that create designs for industrial, product, graphic, or commercial design and architecture firms. Aristotle in Little Rock has built a national reputation through the packaging and Web pages it designs.

"...the Arkansas Department of Economic Development's Film Office has brought 83 movies, documentaries, and television shows to be filmed in the state since 2000."

"...at least nine sporting goods manufacturers that depend on design to specialize in the niche market of supplying fishing lures and duck calls."

Environmental design is also a fast-growing field, with businesses from banks to dentists' offices paying much more attention to style and appearance to establish an image. The state's architects, interior decorators, and display designers hold the key to this field. T. Lamarr Interiors and Fine Arts, Chandler & Associates, Jim Clements, and Scott Curtis are examples of Arkansas decorators that bring holistic and artistic approaches to design for residences and businesses.

Product and environmental design also contains companies that compete for consumer appeal of their designs—

for example, in fashion apparel, fine furniture, and niche products. Most of these companies cannot be identified through industry codes alone and require close analysis of company strategy. To identify these companies, the project team examined Web sites and product descriptions of businesses on the 2007 Arkansas Manufacturers Register. While using this process to identify creative companies is highly subjective, the team found a diverse set of businesses totaling 1,673 employees at 68 firms.

There are, for example, at least nine sporting goods manufacturers that

Table 4. **Arkansas' Entertainment and New Media Industries, 2004-2005**

Name	Employees	Establishments	Self-Employment	Total
Printing**^	35	5	166	201
Musical Instrument Manufacturing	113	9	NA	113
Book Stores**^	1,273	99	76	1,349
Musical Instrument Stores	193	44	60	253
CD/Record Stores	644	50	34	678
Publishers	4,096	188	431	4,527
Motion Picture, Video Production/Distribution**^	236	55	110	346
Sound Recording**^and Music Publishing	49	8	76	128
Radio Networks/Stations*	1,614	129	—	1,614
Television/Cable Broadcasting	771	34	—	771
Internet Broadcasting	22	5	—	22
All Broadcasting	22	5	124	124
Arts/Sports Promoters, Agents & Managers	560	39	114	690
Theater Companies*	368	14	—	368
Dance Companies**^	5	2	—	5
Musical Groups/Artists**^	251	15	—	251
Other Performing Arts**^	10	4	—	10
All Performing Arts**^	10	4	142	142
Totals	10,259	712	1,333	11,592

Source: U.S. Census, U.S. Bureau of Labor Statistics, 2005, except where noted

* U.S. County Business Patterns 2004

** 2007 Arkansas Manufacturers Register Manufacturing News, Inc, Evanston, IL 2006

^ Wages estimated using U.S. Averages, County Business Patterns, 2004

NA: self-employment data unavailable for category

Opposite page:
J.D. Harris' garden art at Harris' Art Garden & Gallery, in Eureka Springs, top; product of Revolutionary Designs, Inc. in Hatfield, bottom



Table 5. **Arkansas' Product and Environmental Design Industries, 2004-2005**

Name	Employees	Establishments	Self-Employment	Total
Floriculture Production	110	14	NA	110
Breweries/Wineries/ Distilleries	205	7	NA	205
Printing**^	35	5	166	201
Pottery	17	7	NA	17
Glass	45	6	20	65
Ornamental Metal Work	166	18	354	520
Custom Architectural Woodwork	45	7	NA	45
Jewelry Manufacturing	19	5	NA	19
Costume Jewelry and Novelty Mfg	5	3	NA	5
Jewelry, Wholesalers	250	17	111	361
Jewelry Stores	895	170	208	1,103
Sewing Stores	255	56	204	459
Florists	1,059	277	271	1,330
Publishing	2,376	34	431	2,807
Architectural Services	1,304	159	212	1,516
Landscape Architecture	147	22	318	465
Interior Design	192	66	—	192
Industrial Design	55	10	—	55
Graphic Design	199	68	—	199
Other Specialized Design	14	9	—	14
All Design Sectors	—	—	670	670
Advertising	1,710	250	659	2,369
Totals	12,232	1,363	3,624	15,856

Source: U.S. Census, U.S. Bureau of Labor Statistics, 2005, except where noted

* U.S. County Business Patterns 2004

** 2007 Arkansas Manufacturers Register Manufacturing News, Inc, Evanston, IL 2006

^ Wages estimated using U.S. Averages, County Business Patterns, 2004

NA: self-employment data unavailable for category

The New Design Center in Fayetteville will become the first school of design in the state of Arkansas. Founded in 2005 by entrepreneurial designer and local university graduate Sonia Gutiérrez to “put Arkansas on the map in design,” the center offers an array of non-credit courses in graphic design and photo shop. Its for-profit design company produces commercial design products that will provide real-life experiences for students, and its gallery exhibits students’ work and hosts special events.

Table 6. **Arkansas' Cultural Heritage and Preservation Industries, 2005**

Name	Employees	Establishments
Museums	152	30
Historical Sites	15	3
Grant Makers	284	77
Totals	451	110

Source: U.S. Census, U.S. Bureau of Labor Statistics, 2005

Crystal Bridges is on track to become the world's premier national art museum dedicated to American art. The 100,000 square-foot museum, founded by Alice Walton and designed by world-renowned architect Moshe Safdie, is under construction in Bentonville. The museum, which has already purchased some of the most important American art collected, will be surrounded by a park with miles of nature trails, play areas, indigenous flora, and sculpture gardens. Its goal is to encourage art and art history education throughout the region, in part by working closely with local schools. When complete, the museum is expected to attract 250,000 visitors a year to its permanent and special collections, public education center, professional learning area, and visitor center. It will be a significant asset to the local economy.

depend on design to specialize in the niche market of supplying fishing lures and duck calls. These firms help cement the state as a destination for outdoorsmen. For example, Rich-N-Tone Duck Calls in Stuttgart, site of some of the best duck hunting in the nation, employs 12 people, world-champion duck callers among them, to make highly specialized products with unique designs and calls. Other design manufacturers are:

Romantique in Heber Springs produces creative fragrances.

A.G. Russell Knives in northwest Arkansas distributes artistic and handmade knives and founded the Knifemakers Guild.

Microplane in Russellville has products displayed in exclusive kitchen design stores in Europe.

Boston Mountain Copper Company of Russellville, also known as coppercutters.com, offers handmade copper cookie cutters designed by artisans, most of them residents of the Ozarks.

CULTURAL HERITAGE AND PRESERVATION INDUSTRIES

The cultural heritage and preservation segment consists of public and



One of many unusual duck calls manufactured by Rich-N-Tone in Stuttgart

Buskers perform in Eureka Springs

Table 7. **Museums in Arkansas**

Type of Museum	Number of Museums
Local History	103
Music	3
Visual Arts	12
Multi-Disciplinary	5
Military	8
Science	16
Other	3
Total	150

Source: U.S. Department of Agriculture Economic Research Service, 2006

The College of Aspiring Artists is a two-year degree program that prepares new artists for careers in the music and entertainment business. It was started by industry veterans in 1990 under the banner of TCAA Entertainment Network. TCAA Entertainment Network produced the first major entertainment salute to the King Holiday in Memphis, Tennessee, during the same year. The main campus, located in N. Little Rock at Shorter College, works closely with other two-year and four-year institutions to provide a unique blend of courses and artist development skills focused on recordings, touring, image and wardrobe, and marketing and promotions, along with agency and distribution assignments that prepare artists and entertainment executives for a variety of professions. In 2007, The College of Aspiring Artists will award over \$40,000 in scholarships to new artists. Growing interest in entertainment careers among high school students prompted a strategic partnership with the Little Rock School District. A strong collaboration with KABF Radio Station 88.3 FM has been one of the key drivers for the college to produce or program its artists and services in over 40 key projects throughout Little Rock and surrounding suburbs in 2006 alone. A major focus this year is a collaboration with the Delta Literacy Classic to help entertainers learn more about the business of music, marketing and entertainment.

private museums, historical sites, and cultural institutions that attract tourists and provide distinguishing features for communities.

Preliminary research indicates that Arkansas has more than 30,000 historic properties included on the National Register of Historic Places or the Arkansas Register of Historic Places. Historic properties can range from districts or sites to structures or objects, but they must have significance in American history, architecture, archeology, engineering, or culture. For example, the Kemp Cotton Gin Historic District in Rohwer (Desha County) is a mid-20th-century cotton gin complex that preserves the agricultural heritage of the area.

Arkansas has an extraordinary number of museums. As Table 7 illustrates, the museums span a wide variety of topics, and local history or heritage is well-represented statewide. Some museums are large and well-known, such as the Old State House Museum in Little Rock, the oldest surviving state capitol west of the Mississippi, housing a multimedia collection of Arkansas history.

The majority of local history museums, however, focus on regional or local culture. The Shiloh Museum of Ozark History in Springdale preserves the local heritage of the six-county region of the Northwest Arkansas Ozarks through collections, exhibits, programs, lectures, and a research library. Another local-interest museum is the Bauxite Museum in the town of Bauxite. Featured in that small-scale operation of collections of local interest is a set of bauxite teeth. Local residents and mine workers in Bauxite in the early 20th century had a medical condition known as "bauxite teeth"—discolored, but with extra-strong enamel from minerals in the drinking water.

Table 8. Creative Economy Occupation in Arkansas, 2005 Estimates

Occupations	2005 Statewide Employment	Secondary employment estimate	Mean Wage
Architects, Except Landscape and Naval	473	8	\$60,950
Art, Drama, and Music Teachers, Postsecondary	460	0	\$41,090
Museum workers	123	0	\$35,740
Librarians and library technicians	2,386	0	\$31,560
Artists and related workers	479	43	\$31,363
Multi-Media Artists and Animators	80	8	\$42,270
Commercial and Industrial Designers	86	4	\$50,130
Floral Designers	1,022	45	\$18,280
Graphic Designers	1,320	51	\$31,930
Interior and other designers	638	24	\$34,578
Actors	198	10	\$5,861
Producers and Directors	443	56	\$39,860
Dancers and Choreographers	95	10	\$9,250
Musicians and Singers	1,095	168	\$18,143
Broadcast Workers - On-air	1,283	83	\$34,963
Public Relations Specialists	1,186	2	\$37,130
Writers	1,023	75	\$42,223
Media and Communication Workers, All Other	84	0	\$26,660
Film, video, and sound technicians	651	22	\$30,008
Photographers	1,159	122	\$23,250
Totals	14,284	730	\$20,702,843

Source: U.S. Census, U.S. Bureau of Labor Statistics, Arkansas Manufacturers' Register

Jobs that Depend on Creativity

Industries, though the primary way to measure the creative economy, are only one way. Looking at the entire establishment rather than only the individual creative workers within it offers a better way to gauge the impact of the creative activities that foster a competitive advantage for the whole establishment. Creative occupations, however, also provide a revealing snapshot of the role of creativity in a given economy. Table 8 shows the 2005 estimated statewide employment in Arkansas' most creative occupations.

Many people work in creative occupations as their secondary, not pri-

mary work, perhaps to segue into the creative job to which they aspire, or to supplement income from other jobs, or to satisfy a special interest. Records of national rates of secondary employment are used to estimate secondary self-employment in Arkansas. The numbers, lower than expected based on local information, may be because the data exclude secondary employment or incomes were under-reported or unreported.

Occupational data provide another perspective on the state's creative economy and cannot be added to employment data for the reasons shown in Figure 5. Some occupations are embedded within creative sectors and

Mountain View in north central Arkansas, is a good example of what can be missed if only occupational data are used to measure creative talent. Very few citizens report “musician” or “artist” as their primary occupation. Yet music and folk arts are a vivid presence in the town and account for much of its economic activity. The town hosts festivals every year, including the Ozark Folk Festival, Mountain View Bluegrass Festival, and Ozark Mountain Christmas, not to mention the Arkansas Bean Fest and Great Championship Outhouse Races. Equally important are the tourists who come to the town any time of the year to catch impromptu gatherings of folk musicians on the town square, in one of the bed-and-breakfasts, even at the local Hardee’s. Local youth learn folk music traditions from an early age, from friends, families, and the state’s Music in the Schools program. Residents say that the difference between their town and others that draw tourists is that the music is simply part of community life, and they would be playing music, practicing folk crafts, building musical instruments, and teaching their children in folk musical traditions “whether anyone came to hear us or not.”

others are not; adding the two would count the embedded ones twice.

These data imply an undercount. Even allowing for the fact that many people employed in creative occupations work only part time, the numbers are intuitively low. For example, the occupational estimates show only 95 dancers and choreographers in the entire state, hardly enough to populate Arkansas’ three professional dance companies, more than 75 dance studios, and four university programs. The next stage of the project will use other means to inventory these assets that resist standard methods.

The undercount is most likely due to the creative activities of many of the state’s artists, dancers, musicians, and other performers being *avocational*. They show up in the occupational data as engaged in another primary occupation, and their creative activities do not generate enough income to be counted even as secondary employment. Though these data may be an accurate reflection of the wage-generating activities of Arkansas’ creative workers, they clearly are not an accurate reflection of the degree to which people in Arkansas are engaged in activities that make them significant creative assets for their communities. The next phase of the project will provide additional qualitative information on the creative activities of Arkansas’ creative workers in order to shed more light on how they contribute to local economies and on activities that may not show up in standard measures of economic activity. If found, this information would provide a good starting point for recommendations on how Arkansas can further build on its creative assets, including its creative people, in order to advance its creative economy.

Because design in manufacturing is so resistant to measure, the project, with assistance from the U.S. Department of Agriculture, took a

Table 8. **Designers in Arkansas Manufacturing, Census Data, 2000**

Design Occupations	Number Employed
Design consultants	540
Designers employed in manufacturing	183
Printing	118
Paper	39
Textiles	29
Machinery	18
Transportation equipment	14
Computer & electronics	8
Food manufacturing	10

Source: U.S. Department of Agriculture Economic Research Service, 2006

closer look at design employment within manufacturing (Table 8). Analyzing occupational data for full-time designers in four Arkansas metropolitan areas revealed that manufacturers employ a relatively small number of people who are classified as designers—about one for every 17 companies. The largest concentration of designers is in the printing industry, mainly as graphic designers. The remaining manufacturing sectors together employ only one designer for every 150 companies. Other companies may contract with design consultants or employ a part-time designer not classified as such, and therefore design may be used more than indicated by the occupational data.

Estimating the Economic Impacts

After estimating the number of people working in the creative economy and income generated by the various sectors, the research team looked at other ways the creative sector affected the state's economy. The team examined local expenditures on unrelated sectors and instances of making places more attractive to new businesses, talent, and tourists.

To shed some light on the impact, the team examined how the size of the creative economy affects various economic indicators. Was there evidence to suggest that the intensity of a region's creative economy is related to the strength of a region's overall economy?

The results were encouraging and intriguing. A national model shows that the concentration of arts and design workers has a significant impact on county employment growth. From 1990 to 2000, each additional percentage point in the concentration of arts and design workers is associated with a 13 percentage-point increase in total employment, after taking into account other factors that



could affect employment. If a county has 1 percent of its workforce in arts and design, its total employment was likely to have grown 13 percentage points between 1990 and 2000.

Defining the economy by numbers of establishments instead of numbers of employees led to a similar finding; each additional percentage point in a county's proportion of arts and design workers was associated with an 8.5 percent growth in numbers of establishments.

Bubba's Blues Corner in Helena is considered one of the best blues record stores in the country, top

Debby Gwaltney's glass beads



**Raku fired
teapot by
Larry Pennington,
Little Rock**

The team then applied this model to Arkansas to estimate the possible effect of arts and design on the economy between 1990 and 2000. What effect did the creative economy have on Arkansas' economy?

Actual employment growth in Arkansas between 1990 and 2000 grew 24 percent. The model suggests that without artists and designers, that growth would have been only 15 percent. Similarly, Arkansas' establishments, which grew 18 percent, would have grown only 13 percent in the absence of arts and design workers.

Moving Forward

The economy of Arkansas is continuing to evolve from dependence on growing things to a focus on reproducing things and a reliance on new knowledge and creativity. Agriculture and manufacturing, while still very important to the

state, are diminishing sources of employment growth.

The future wealth of the state is likely to come from service and content-based industries—the digital, design, software, and media arts sectors that compete in global markets and are exported. It will come from the artists, artisans, and performers whose products are not applications of creativity but pure creativity, and who influence the location decisions of people and companies. It will come from manufacturers able to find specialty products that appeal to customers' emotions. It will come from technological innovations that are catalyzed by creative environments.

Putting together all the information gathered to date and the information gleaned from many sources across the state leads to a number of general observations about the creative economy of Arkansas.

THE CREATIVE ECONOMY IN ARKANSAS:

Is large: When compared to the more conventional clusters presented to the state by the Monitor Group in 2007, the creative economy cluster ranks third, exceeded only by transport and logistics, Arkansas' largest cluster, and perishable processed foods.

Is undercounted: Large numbers of creative enterprises register as establishments with no employees and therefore are left out of conventional economic analyses. Collectively, the self-employed—assuming that means one person, though national surveys suggest it is closer to two people per self-employed—account for 21.5 percent of the state's total creative economy and \$173 million in revenue. This number would undoubtedly be much higher if all income was reported, all creative entrepreneurs had a "creative industry" classification, and all sources of secondary and supplementary income were reported accurately. Because most have operated under the employment radar and out of the eco-

conomic mainstream, they have been viewed as peripheral, not central, to the economy.

Provides competitive advantages: A sizable number of Arkansas manufacturers use art and design effectively in some or all of their product lines in ways that appeal to discriminating buyers or niche markets. Although some of these companies employ full-time designers, more rely on the creative instincts of owners and core staff. This offers promise as a way to counter off-shore cost advantages.

Is a catalyst for the overall economy: The economic model of factors that could affect overall growth in employment or establishments shows that the concentration of artists and designers is associated with significant growth in both categories. While not a guarantee of growth, the concentration of artists and designers appears to be a factor that can influence growth across Arkansas.

Influences location: Knowledge-intensive companies and talented people tend to locate where creative enterprises and cultural venues flourish. The investments in artistic and cultural programs and amenities in northwestern Arkansas, for example, are a public service to the state's residents but also a strategy to attract a growing and more diverse work force and revive downtown economies.

Is networked: Although creative people and companies tend to operate independently, they also need connections. Arkansas has a supportive social infrastructure for arts and culture, with arts councils, theater groups, workshops, and various types of associations that serve artists and performers. Some provide marketing and promotion, others provide grants, and all create connections.

Supports innovation: One emerging segment of the creative economy that appears to have potential for growth, employment, and research influence is digital and media arts. These in-



clude computer and video games, animation, and graphic design. Programs like EAST lab have the potential for developing interest and skills in technical-creative sectors and also attracting youth to science careers.

Has not realized its full potential: A preliminary assessment of Arkansas' creative assets suggests a great deal of creative and artistic activity that, despite cultural and social value to the communities in which it takes place, is not yet generating its full economic potential. This is a mixed finding. On the one hand, it suggests that as an economic force, Arkansas' creative vitality is not registering in economic databases as powerful as other places in the United States. On the other hand, it suggests that Arkansas has considerable creative assets and is building the momentum to convert them into economic forces.

Arkansas' old mill that appeared in opening scene of "Gone with the Wind"



Parking lot mural showing history of Eureka Springs, 1829-1929

Next steps

The preliminary findings will focus the next stage of research, explicating the context of the economic data presented. Over the next few months, the research team will do the following:

- Complete the analysis of Arkansas' creative assets. Background research revealed a great deal about Arkansas' assets. But background research can only go so far. Significant resources at the level of Arkansas' local communities will not appear through background investigation. The analysis completed so far indicates the kinds of questions to ask about creative assets in Arkansas' regions and communities. In Phase II of this study, the research team will visit these regions and conduct on-the-ground investigations to determine (1) what assets the Phase I investigation may have missed, (2) the ways in which the region's assets are being built upon in order to yield economic effects, and (3) which assets are not yet being developed and what more may be done with them.
- Examine creative economy indicators at the regional level to find local clusters of activity. All of the data presented in this report show Arkansas' creative industries and occupations at the state level, as a first-level indication of the size and scope of the state's creative economy. For the Phase II report, researchers will obtain and access these data at the regional level. The combination of these regional findings and the asset analysis will place the economic find-

ings in the context of each region's creative assets and activities.

Finally, the next phase of the project will provide support to ensure that direct action is taken as a result of this analysis. In the coming year, seed grants will be provided to launch pilot projects to demonstrate how local and regional creative assets can be built upon and developed into economic assets.

Notes

1. *History of the Encyclopedia of Arkansas Project*, Central Arkansas Library System, 2006.
2. Neal Peirce and Jerry Hagstrom, *The Book of America*, New York: Norton Books, 1983.
3. Allen J. Scott, "The Craft, Fashion, and Cultural Products Industries of Los Angeles: Competitive Dynamics and Policy Dilemmas in a Multi-sectoral Image-Producing Complex," *Annals of the Association of American Geographers* 86(2), 1996, pp. 306-323
4. Joint Venture Silicon Valley Network, *Index of Silicon Valley 2006*.
5. Source: The Monitor Group, *A Competitive Benchmarking of the Arkansas Economy*, Washington, DC: National Governors Association, 2007
6. The next phase of this three-year project will look more closely at local assets that do not appear in the economic databases.

Appendix

MODEL FOR MEASURING IMPACT

A multiple regression model was used in order to determine whether there is any correlation between economic growth and the proportion of the workforce working in creative occupations. Because observations were drawn from county-level data and aggregated to Labor Market Area (LMA) levels, Arkansas did not have enough observations to create a reliable model. The decision was therefore made to use national data to create a model of the relationship between creative occupations and economic growth, and then use the results of the model to estimate the effects on Arkansas' economic growth of its creative workforce.

Dependent variables used to capture economic change were:

- Change in total employment from 1990-2000
- Change in average wages from 1990-2000
- Change in number of private sector establishments from 1990-2000

Independent variables used to capture the possible reasons for economic change were:

- Fraction of employed workforce working in arts and design occupations
- Fraction of employed workforce working in science and engineering occupations (proxy for research and development funding)
- Fraction of population over 25 with a BA or higher
- Fraction of population over 25 without a high school diploma
- Fraction of housing constructed in last 5 years (proxy for new financial investment)
- Fraction of population aged 55 and older
- Whether the area contains an interstate
- Population density
- Fraction of the population with

family income below the federal poverty line

- Urban Continuum Score (as calculated by USDA in 1993 on scale of 1-9, averaged across counties in the LMA)
- Fraction of employed labor force working in manufacturing
- Fraction of employed labor force working in business support services
- Ratio of students attending 4 year colleges in area to total population
- Ratio of students attending 2 year colleges in area to total population
- Ratio of number of vocational (less than 2 year degree) post-secondary schools to total population
- Number of annual commercial flights per resident
- Number of annual 'air taxi' flights per resident (non commercial flights carrying passengers or mail for revenue)
- Fraction of earned income from proprietors (proxy for entrepreneurship)
- Population size
- Total Employment 1990
- Average Wages 1990
- Change in Total Employment from 1990-2000/Total employment in 1990

All of these independent variables were regressed against the dependent variables that captured economic change. The results showed that for each additional percentage point in the concentration of arts and design workers in a given Labor Market Area, an additional 12 point increase in total employment was seen in that LMA, and an additional 10.4 percentage point increase in the total number of establishments in the LMA.

This model was then used to create a hypothetical model of the effect specifically in Arkansas of changes in the proportion of arts and design workers in Arkansas LMAs on economic change in Arkansas LMAs. The analysis was run using two data sets: one that includes MSAs such as Memphis and Texarkana in the

Arkansas units, and one that does not. Ultimately the decision was made that the presence of the MSAs in the dataset was skewing the results, and the one that only includes populations within Arkansas was used.

The model is most useful in discerning the overall direction of the impact that creative workers had on Arkansas' economy, rather than in providing specific numeric values of this impact

(since it is a hypothetical rather than a predictive model). The model asks the question: given the actual level of economic growth between 1990 and 2000, what would that level of growth have been if there had been no creative workers in Arkansas in 1990? The model suggests that creative workers have had a significant positive impact on Arkansas' economy.



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