The State of Colorado's Creative Economy

Alliance for Creative Advantage

Regional Technology Strategies and

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December 2008

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Table of Contents

Acknowledgments

We appreciate the opportunity from the Colorado Council on the Arts and state of Colorado to assess the scale and distribution of the state's creative enterprises. This analysis was a collaborative effort of Regional Technology Strategies, Inc. (RTS) in North Carolina and Mt. Auburn Associations in Massachusetts under a contract with the Colorado Council on the Arts. Beth Siegel and Stuart Rosenfeld were the lead authors, Chris Beacham, RTS, managed the grant, and Jenna Bryant, RTS, carried out most of the quantitative analyses. Dan Broun, RTS, edited the final version and assisted with the final layout. Trevor Young-Hyman, Jacob Stern, and Beth Falkof of Mt. Auburn Associates also assisted with the research and provided support.

Elaine Mariner, Executive Director of the Colorado Council on the Arts guided the project and provided invaluable insights about the regional differences in the state's the creative economy and key players. Henry Sobanet, President of ColoradoStrategies, provided critical feedback and suggestions on early draft reports and on the data analyses.

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Regional Technology Strategies
December 2008

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I. Colorado: State-of-the-Art

At a time when virtually every state is searching for its creative soul and its artistic core, Colorado has found them. It has been a long cultural road from the state's traditional personality formed by its dependence on land and resources to its current identity as a cultural and creative hub.

When John Gunther made his historic trek across the nation and, in 1947, wrote *Inside USA,* he titled his chapter on Colorado "—But Scenery is Not Enough." He saw the state's tremendous economic potential of its natural beauty, with 51 of the 64 peaks higher than 14,000 feet, but at the same time he observed the lack of any significant public sector investment, or even interest, in culture and tourism.[i]

By the time Neal Peirce and Jerry Hagstrom retraced Gunther's path and wrote their own *Book of America* in 1983, Colorado's population had doubled, its politics had become more progressive, and its economy was being reshaped by high tech and entertainment industries that were drawn, in part, by its natural environment. But the state still was far from an art hotspot. "Outdoors-minded Denver," they wrote, "was a full generation behind other regional capitals in building its cultural center."[ii] But, the authors added, the new Denver Center for the Performing Arts was a big step toward building a new cultural image.

Fast forward to 2008, and Colorado is a very different place. The population had increased another 60 percent over the early 1980s and the economy further evolved via technology and, even more dramatically, through creativity. When the Democrats held their 2008 convention in Denver, the *New York Times* headline was "Denver's Unconventional Art, Ready for the Convention." "Denver," according to the article, "is hoping to declare its emerging artistic identity to the world next week when the gaze of the global news media and political power turns on the city… Not just the western art associated with the western states, but a much more 'complex relationship of the wild and urban'."[iii] Denver already holds a prominent position in the art world. In the best-selling *1,000 Places To See Before You Die*, Denver is a featured site because of its arts. And, recognizing this growing art scene, Create Denver has been established to brand Denver as the "Creative Capital of the West."[iv]

Richard Florida also recognizes the quality of the state's urban creative environments. In *Who's Your City*, Denver makes the list of best five large regions for mid-career professionals and Boulder makes the top five list of small regions.[v] But, in Colorado, creativity extends far outside of the well-known magnets for creative people—Denver, Boulder, or Aspen. The state's art pervades its small cities, towns, and the countryside. John Villani, in his most recent edition of *100 Best Art Towns in America*, finds nine of the 100 best art towns in Colorado—more towns than in the nine Midwest states combined.[vi]

Colorado has found a way to blend the arts and culture associated with its wild west past, early settlers and Native Americans, and old economy with the contemporary arts, culture, and design that are associated with its recreational environment, first generation Coloradoans, and technology-based economy. Saloons and sirloins exist alongside wine bars and sushi. The state's reputation for outdoor and casual fashions is drawing a new high fashion industry. The melding together of the old and new is creating art forms that are unique to Colorado and its neighboring mountain states.

The state has developed an edginess to balance its western traditions and culture, expressed in such places as The Lab at Belmar, which hosts exhibitions, performances, and "Mixed Taste" lectures that combine such topics as "Earth Art with Goat Cheese," "Prairie Dogs with Gertrude Stein," and "Swiss Topography with TV Theme Songs."

At the core, Colorado has a particularly rich resource base, the creative talent of its residents. In the U.S. Department of Agriculture's Bohemian Index,[vii] a measure of concentration of artists and performers by county based on occupational data, ten of the top 25 counties in the U.S. are in Colorado. That is 40 percent in a state with a population that represents only 4 percent of the U.S. population—and it is growing. In 2006, the state was home to 13,000 independent artists, writers, and performers. Furthermore, many artists are overlooked or differently classified in any data collected by federal agencies.

The state's strength goes well beyond that core of artists most closely associated with the creative economy. Based on 2000 census data, Colorado ranked 2nd among all states in concentration of architects, 5th in total artists, 7th in designers, 7th in writers and authors, 8th in photographers, and 9th in producers and directors and in musicians.[viii] Colorado is prominent in almost every dimension of creative output. But Colorado also has certain strengths and features that set it apart from the increasingly crowded international field of existing, emerging, and nascent "creative economies."

- The support of the community to use local taxes for the Scientific and Cultural Facilities District to support Denver's main cultural centers is indicative of how strongly metropolitan Denver feels about the arts. The tax helps support five major institutions as well as over 300 small and mid-sized organizations.

- The state is a leader in the design and manufacture of outdoor sports apparel and gear, with dozens of companies making clothing and gear for climbing, biking, hiking, fishing, and hunting, complemented by specialty stores, advertising firms, and magazines to serve and create the markets.

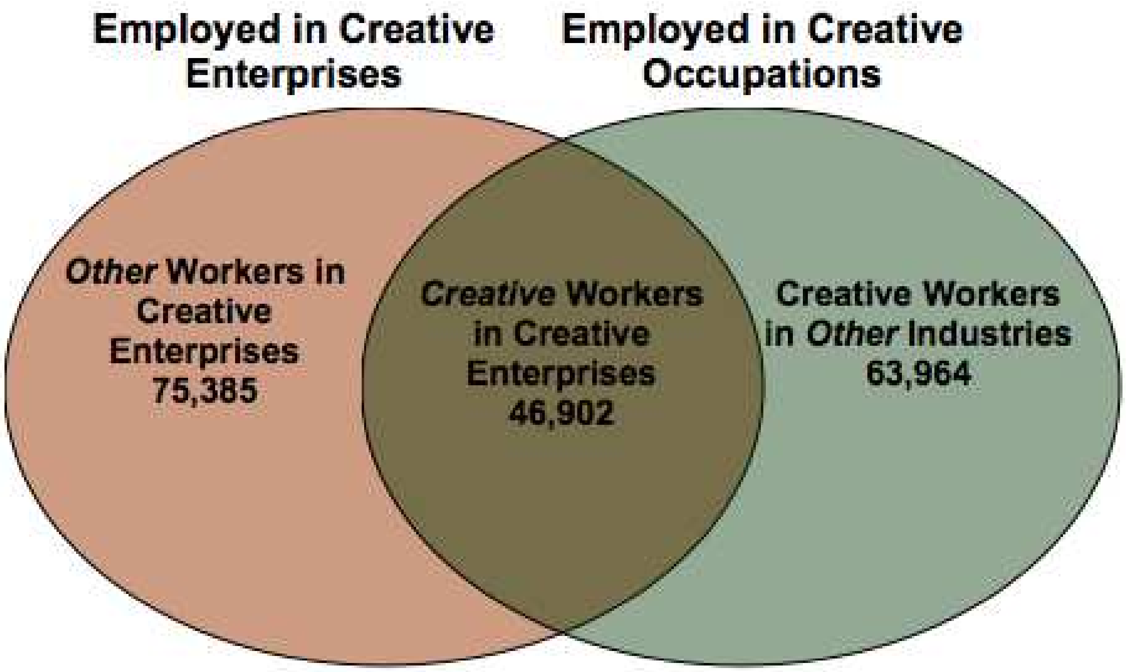
- The state has a vibrant film and media industry and a large number of film and media studies programs at universities, community colleges, and private schools across the state. An early leader in the nation's cable industry, Colorado is home to the industry's Cable Center, Starz entertainment, and many related cable TV production activities. Since the start of 2000, 131 films and videos have been shot in Colorado and another 24 are in production.[ix] In addition, the state is home to over 30 film festivals, including in Denver, Boulder, Aspen, Durango, Telluride, and other smaller cities.

- Colorado is known for its poets, from a community of western "cowboy" poets and of Xicano poets to beat and experimental poets. Colorado was the second state to name a Poet Laureate, Alice Polk Hill in 1919. Allen Ginsberg founded the Jack Kerouac School of Disembodied Poetics in Boulder, which under Chögyam Trungpa Rinpoche became the core of the Naropa Institute in 1974, and is now Naropa University. The University of Northern Colorado hosts the Colorado Poets Center, and poetry readings are common in cafes in most cities and towns across the state.

Creative Enterprises and Creative Talent: The Foundation of the Creative Economy

To fully understand the importance of the state's creative economy, one must look at the scale and scope of two critical and overlapping components—creative companies and creative occupations. Colorado has deep resources in both areas, shown in Figure 1 below. More than 186,000 direct jobs in the state are associated with creative enterprises and creative talent.[x]

Figure 1: Total Creative Enterprises and Total Creative Workforce in Colorado, 2007



The creative enterprises include nonprofit cultural institutions, commercial businesses that are producing and distributing products in which the creative content defines their market position, and, finally, the thousands of individuals who are self-employed. In effect, every artist is also a business seeking to successfully produce and sell his products to consumers. They include not only those involved directly in creative activity (46,902) but the employees responsible for routine and less creative functions (75,385) required to operate a successful creative enterprise.

These creative enterprises tell only part of the larger story. In addition, about 64,000 Colorado workers are employed in occupations that require creativity but in businesses that do not meet the criteria for a "creative enterprise." These include art teachers in public and private schools, musicians in the state's religious organizations, designers working in manufacturing to ensure that products combine "artistry and usefulness," decorators working in department stores, or landscape designers employed by office buildings to maintain artistic grounds and gardens.

This report tries to capture the diversity and strength of both elements of the creative economy but its focus is on the business enterprise as an underappreciated driver of the state's economy. It is the diversity and strength that helps to create new jobs and economic competitiveness in Colorado's economy. Furthermore, some call the creative enterprise cluster a "keystone species" because its impact on a region is disproportionate to its size. In addition to the jobs and revenues it represents, it influences overall quality of life, residential desirability, and creative and innovative milieu.

It is evident that Colorado is performing as a "State-of-the-Art" place to live and work. Most important, its creative economy is well distributed among its smaller communities, deeply embedded in the larger economy, and ingrained in the lifestyles of the people. This report describes the profile of the state's creative economy mainly in quantitative terms, but supplemented with examples and illustrations to provide a context for the numbers.

II. Defining the Creative Economy

Every effort to examine the economic importance of the creative economy begins with the definitional issue. While the concept of the "creative economy" has received more attention by policymakers, its use and meaning varies widely.

A. The Challenge

As noted in a recent academic study on defining the creative economy, "From the outset, concepts and measures of what constitutes a creative economy, creative city, creative class, cultural industry and cultural workforce have been hotly contested."[xi] Because creative content represents a relatively new defining characteristic for an industry and of competitive advantage, its parameters, the business classifications that comprise it, are still in an early stage of development both in the U.S. and internationally. The term "creative" itself is a moving target, expanding and contracting to fit the goals and missions of its users. At its extremes, the creative economy extends from those companies that produce pure art to those companies that depend on applications of creative thinking.

Overall, there seems to be greater agreement about what constitutes creative or cultural occupations. With the exception of Richard Florida, who defines his "creative class" so broadly as to encompass almost every occupation that requires higher education,[xii] the work of Ann Markusen and others are in general agreement about the occupations that comprise the general boundaries of creative occupations.

It is when one gets to defining the specific industries to include as part of the creative economy that real and substantive differences emerge. Some studies of the creative economy incorporate the entire value chain and include industries that provide any input into the creative economy (i.e., photographic chemicals) as well as any industry involved in the distribution of creative products (i.e., electronics stores). In some cases, creative economy projects have used the term "creative" as, in effect, a substitute for the term "innovation." The result is that a wide range of technology-based industries such as biotechnology, engineering, software development, and information technology is included as part of the creative economy definition. There is no correct or incorrect definition.

B. A Colorado Definition

The study team started its work using the creative economy definition created by the New England Foundation for the Arts (NEFA), which focuses on the businesses involved in creating cultural products and services.[xiii] The NEFA definition includes a total of 112 industries as a framework for characterizing the businesses involved in a region's creative economy. (See Appendix A) The use of the NEFA definition allows for broad comparisons across different states. Appendix B provides a comparison of total employment in creative industries in Colorado and the New England states using this NEFA definition.

Unfortunately, a single definition does not always produce the specificity needed in truly characterizing the talents, outputs, and inventive processes that are unique to a specific geographic area or state.

For the purposes this study, we define a "creative enterprise" as *any company for which the primary value of its products or services is rooted in its emotional and aesthetic appeal to the customer*. Using that definition in the context of an "industry cluster" means that all companies in the value chain, from materials to distribution, are part of the creative economy.

We have identified 69 industries involved in the production, distribution, and marketing of artistic goods and services that we believe meet this criterion. For example, electronic stores retailing mass-produced televisions, DVDs, and game consoles are included in the NEFA definition but not in the more refined definition put forth by RTS, Inc. and Mt. Auburn Associates. Still included, however, are those companies that created the movies on the DVDs sold in electronic stores. *A detailed comparison of both definitions by industry is presented in Appendix A.*

The analysis used for this study limits the quantification of the creative economy to the *direct employment* associated with creative enterprises and creative work. This report does not include "multipliers"—jobs that might result, for example, from employees' local purchasing power—that are often used in economic analyses to bolster the impact. This analysis is purely descriptive and not intended to assess both direct and indirect impacts.

While limiting the analysis to direct employment, we define that to include elements of the value chain that convert creativity into marketable products and services, where appropriate, reproduce them, and get them to their final markets. Musicians, for example, need instruments, sound systems, and recording studios; actors need scripts, set designers, lighting, and costumes; and artists need art supplies to produce their work. Downstream, artistic creativity is converted into consumer goods through publishers and printers; film, video, and music production companies; advertisers; and manufacturers. Literary art is published, scripts are made into plays, movies, or television shows, and animation can be converted into advertising or games. Even further downstream, businesses display, distribute, and market art and design through venues such as museums and cultural sites; galleries, theaters and festivals; and the media.

Finally, the quantitative analysis is conservative in another important respect. Thousands of additional jobs in companies not identifiable as "creative enterprises" produce creative goods that are embedded in other industries. Examples include potters, which are counted as part of a larger more generic ceramics manufacturing; high-end furniture producers; and design-based decorative home furnishings such as specialty lamps and chandeliers. While the report examines the economic importance of these types of creative enterprises qualitatively, the employment associated with such production has not been included in the analysis.

C. The Creative Sub-Groups

Even limiting the definition of creativity to clearly designated industry classifications covers a great deal of economic territory and includes a wide range of types of enterprises. A rural writer has vastly different interests and needs than an urban architect. Thus, to make the creative economy more easily understood in terms of its geography, needs, and potential, we have subdivided the full creative economy into six more manageable sub-groups of enterprises with more in common and more possibilities for collaboration and synergy. Some of the sub-groups tend to concentrate geographically, forming "clusters" of similar or complementary firms.

To better understand the nature of the creative economy in Colorado, enterprises in the creative economy were categorized within the six sub-groups that are described below.

- *Design* is product and environmental design sectors that apply artistic content to commercial products, services, and the environment whose markets depend on that artistic input. The artistic content of architectural drawings, landscapes, advertising, websites, office and home interiors, and some (but by no means all) manufactured products influences customers and determines commercial success.

- *Film and media* covers the technical and distributive elements of Colorado's entertainment sectors, including firms that provide the technical production support systems, such as sound, lighting, digital art, animation, and sets and studios, broadcasting, and distribution channels via motion picture, video, and music production companies, radio, cable, and Internet, and motion picture theatres.

- *Heritage* includes Colorado's historical sites, museums, and botanical gardens.

- *Literary and publishing* includes at its core the state's authors, poets, and writers, but also the editors, publishers, and printers that reproduce the text, and the libraries, bookstores, and newsstands that make them available to the public.

- *Performing arts* is composed of actors, musicians, promoters, producers, and directors and the venues at which they perform.

- *Visual arts and crafts* is the group most closely associated with the creative economy, the sketchers, painters, photographers, sculptors, potters, glassblowers, metal artists, jewelers, paper artists, carvers, and other artisans who create products as well as the shops and galleries that show and sell them.

Although the basic unit of analysis in our study is the economic "enterprise," we understand that the economy includes large numbers of individuals who earn their living by applying or developing creative talents but are not employed by an enterprise that meets the classification criteria—the many art teachers in the public schools, interior designers and architects working for real estate developers, editors and staff writers working within multinational corporations, and musicians employed by churches. Conversely, the creative economy defined by industry codes includes large numbers of support staff that are not expected to apply creative talents to their jobs.

Despite some unavoidable ambiguity in the definition of what constitutes the "creative economy," it is clear from the following analysis that Colorado's creative economy, by any measure used, is large and diverse.

III. Estimating the Size of the State's Creative Economy

Colorado's creative economy comprises 69 industries (see Appendix A) that are engaged along the value chain, from the raw materials and supplies through the conceptualization, production, support, distribution, and marketing of aesthetically or emotionally pleasing creative and cultural products. The industries in the creative economy cover a wide range of economic activities including photography, commercial printers, and greeting card publishers, art galleries, and advertising agencies.

Employment in Creative Enterprises

46,902 in creative occupations

+ 75,385 in non-creative occupations

122,287 employed

A. Overall Economic Importance

In 2007, the combined creative sectors employed more than 122,000 individuals in about 8,000 establishments. Employment in creative enterprises makes up roughly four percent of the 3.2 million total jobs in the state. The 3.2 million figure is approximately 800,000 more than the 2.4 million generally used by state employment agencies based on the unemployment insurance law because it includes self-employed workers, sole proprietors, farm workers, railroad workers, military, as well as a more complete coverage of educational institutions, membership organizations, and small nonprofit organizations that are not typically covered under civilian labor statistics.

The percentage of creative jobs to all jobs has remained relatively stable over the past five years. From 2002 to 2007, employment in the state's creative economy increased by more than 8,000 jobs, or 7 percent, compared to a 6 percent growth in creative enterprise employment in the U.S. In 2007, Colorado creative industry earnings, including benefits, totaled approximately $5 billion.[xiv]

Within the creative economy, self-employment is particularly important. A large number of individuals in Colorado earn their living in the creative economy not as employees of a firm but as sole proprietors or self-employed contractors. Growth for this group of individuals was 15.7 percent since 2002, more than the national average (14 percent) for independent artists, writers, and performers. When combined, this group also has a high relative employment concentration although the classification actually includes portions of multiple sub-clusters: literary and publishing (writers), visual arts and crafts (artists), and performing (actors and musicians).

How does the size and performance of creative enterprises compare to other key sectors[xv] of the Colorado economy? In short, the answer is that it is very competitive.

- The number of jobs in the creative economy ranks it as one of the larger clusters of the Colorado economy, nearly as large as biotech/biomed and IT & telecommunications.[xvi] (See Figure 2)

- In terms of relative strength, the concentration of employment in creative enterprises is well above the U.S. average. In addition, Colorado's creative sector is one of the strongest in the state, ranking fifth among the state's designated clusters. (See Figure 3)

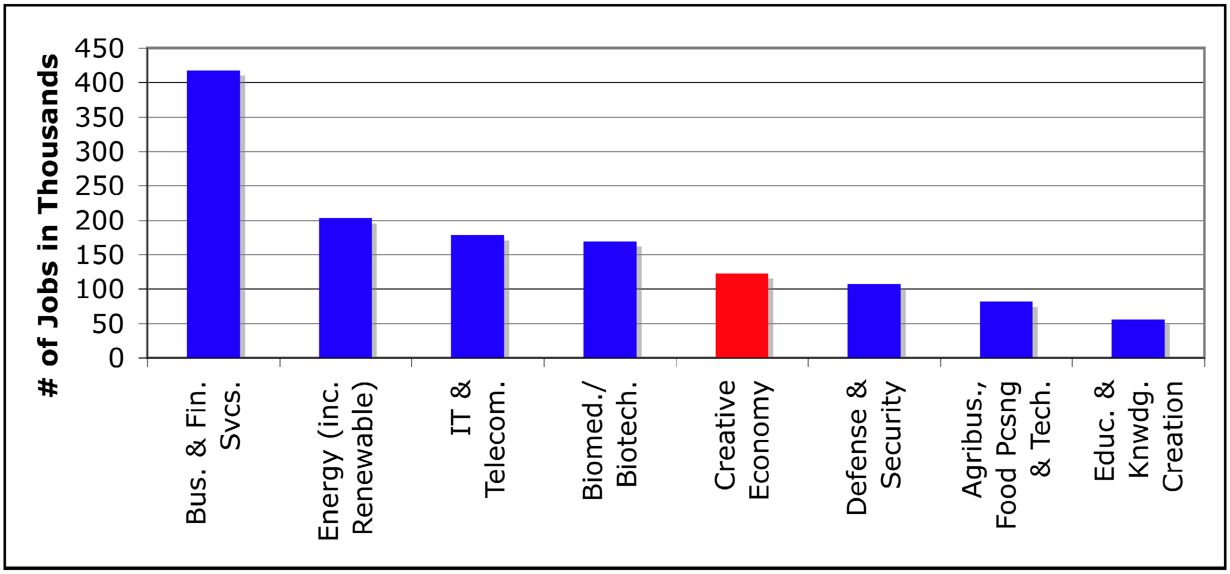
- Employment in creative enterprises has been growing faster than most other clusters.

Table 1: Total Employment in Creative Enterprises, 2002 and 2007

	2002 Jobs	2007 Jobs	Change	Percent Change	% of Labor Force, 2007
Colorado	114,282	122,287	7,992	7.0	3.9
U.S.	5,880,199	6,254,815	374,616	6.0	3.5

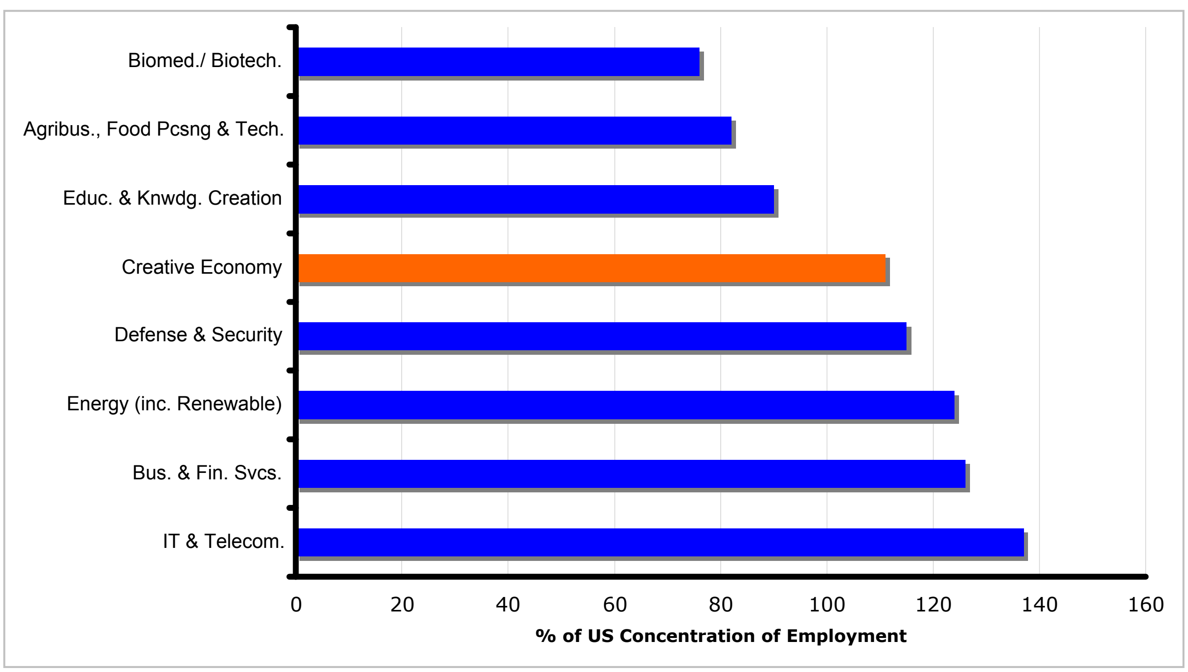
Source: Data from Economic Modeling Specialists, Inc., 2008.

Figure 2: Comparison of Key Clusters in Colorado—Total Employment, 2007



Source: Data from Economic Modeling Specialists, Inc. 2008.

Figure 3: Comparison of Cluster Concentrations of Employment in Colorado Relative to US Concentrations of Employment, 2007



Source: Data from Economic Modeling Specialists, Inc., 2008.

B. Segmenting the Creative Economy

This section describes in more detail the sub-groups in Colorado's creative economy. Table 2 separates the state's creative economy into sub-groups of sectors that reflect different forms of creative value. The table shows employment for 2007, the change from five years earlier, and the location quotient, which is simply a comparison of the concentration in Colorado to the concentration nationally. If 1.0 is the national average, 1.16 can be interpreted to mean Colorado's concentration (proportion of all employment) is 16 percent higher than the national average.

Table 2: Employment by Sub-Group, 2007

Sub-group	Employment	% Change, 2002-07	Location Quotient
Design	33,999	15.9	1.16
Film & media	22,623	-1.4	1.08
Heritage	2,133	32.5	0.96
Literary & publishing	32,950	-0.5	1.02
Performing arts	16,548	8.9	1.09
Visual arts & crafts	14,036	16.0	1.29
Total	122,289	7.0	

Source: Data from Economic Modeling Specialists, Inc., 2008.

1. Design

Product and environmental design is "An activity that translates an idea into a blueprint for something useful, whether it's a car, a building, a graphic, a service or a process. The important part is the translation of the idea, though design's ability to spark the idea in the first place shouldn't be overlooked."[xvii]

With about 34,000 jobs, the design sector is the largest among the state's creative sectors. Growth in number of jobs also was among the highest in the creative economy, adding 4,675 jobs between 2002 and 2007. We estimate that about 36 percent of the growth was due to the state's unique regional attributes.[xviii] An area of particular design strength is in environmental design, the architects, design firms, interior designers, and landscape architects. Many design companies in Colorado offer integrated services that include multiple disciplines. In addition, the state has particular strength in sustainable, or "green," design, an area of rapid growth across the nation.

Design-related work pays relatively high salaries. In Colorado, workers in design-related industries earn an average annual income of more than $56,000, which is 37 percent more than the state per capita personal income of about $41,000.[xix]

In Colorado, the largest segment of the design sub-group is architectural services. Advertising, interior, and specialty design services also are quite strong. A closer look at the composition of employment growth in each of the industries suggests a regional comparative advantage in several industries within the sector. For example, architectural services have enjoyed significant employment growth adding over 1,000 jobs between 2002 and 2007. After accounting for the changes in the national economy and industry trends, the industries most strategically advantageous to the state have been media representatives, advertising agencies, display advertising, media buying agencies, and custom architectural woodwork and millwork. Together, these industries account for 2,600 of the sector's total employment. It is estimated that 2,200 of those jobs can be attributed to factors specific to Colorado's economy.

Architecture & Design – A Leading Colorado Sector

In 2006, Colorado had 887 architectural firms in the state employing about 5,000 individuals, a concentration that puts Colorado third among all states. An additional 1,300 individuals are self-employed architects. On a per capita basis, Colorado ranks second in the U.S. in the number of licensed architects living in the state. The state is not only strong in architecture, but also in many related areas. Colorado also ranks 2nd in the nation in the interior design industry and 3rd in landscape architecture.

While most of Colorado's design firms are small and work in state, a large number of architecture and design firms are engaged in large national and even international projects. Major design firms include:

- OZ Architecture of Denver, a comprehensive design firm that employs about 250 people, designs worldwide and has international experience in urban design, architecture, and interior design.
- Fentress Architects with over 100 professionals, internationally known for its airport designs including Denver International Airport, Seattle-Tacoma International Airport, and Incheon International Airport in South Korea, is currently involved in designing a $75 million office tower in Kuwait City.
- RNL, based in Denver, a design firm involved in architecture, interior design, urban design, and landscape architecture, has a strong focus on sustainable design.
- Design Workshop, winner of the 2008 Landscape Architecture Firm Award by the American Society of Landscape Architects, once a small firm doing ski area development, is now an international firm with over 200 employees and offices in many cities with projects around the globe ranging from master planning to resort development.

2. *Film and Media*

The film and media sector has a strong presence in Colorado, with about 22,600 employed in 2007. However, the total number of jobs and the relative concentration of the sub-group compared to the U.S. in this highly competitive segment both have declined slightly since 2002. The average annual earnings of approximately $60,700 are higher than those of any other sector of the state's creative economy.

The film and media sector is fueled partially by Colorado's historic strengths in the telecommunications industry. The Colorado cable industry was a pioneer in the development of cable services and has been called the "cable capital of the U.S."[xx] While consolidation and contraction have reduced cable-related employment within the state, the industry remains an important economic force.

Companies such as EchoStar, Starz Entertainment, the DISH Network and the family-owned Jones International are all headquartered in the Denver area. The location of these national headquarters and the long history of cable in the state have also generated a number of ancillary companies and industries relevant to the creative economy.

One example is the Cable Center, a national nonprofit educational organization located in Denver. The mission of the Center is "…to provide education and information to the educational community, the cable

Film and Video in Colorado

Colorado's film and video industry is poised for potential growth. Partnerships between film nonprofit organizations and higher education institutions with cutting edge technology and facilities may enable Colorado to become a major player in the film and video industry and attract global talent. In addition to its many film and video production-related companies, Colorado has one of the largest and most engaged film audiences in the U.S. It has also developed a strong training infrastructure likely to spin out the next generation of filmmakers.

Denver Film Society & Starz FilmCenter: The Denver Film Society (DFS), established in 1978, promotes film as both an art form and a civic forum. In 2002, DFS partnered with the University of Colorado Denver's College of Arts and Media with support from the Starz Encore Group and the Scientific and Cultural Facilities District to launch Starz FilmCenter, a seven-screen cinematheque at the Tivoli Student Union, reclaimed home of the historic Tivoli Brewery. This cinematic education center hosts educational and community outreach programs and screens 600 to 700 film titles per year.

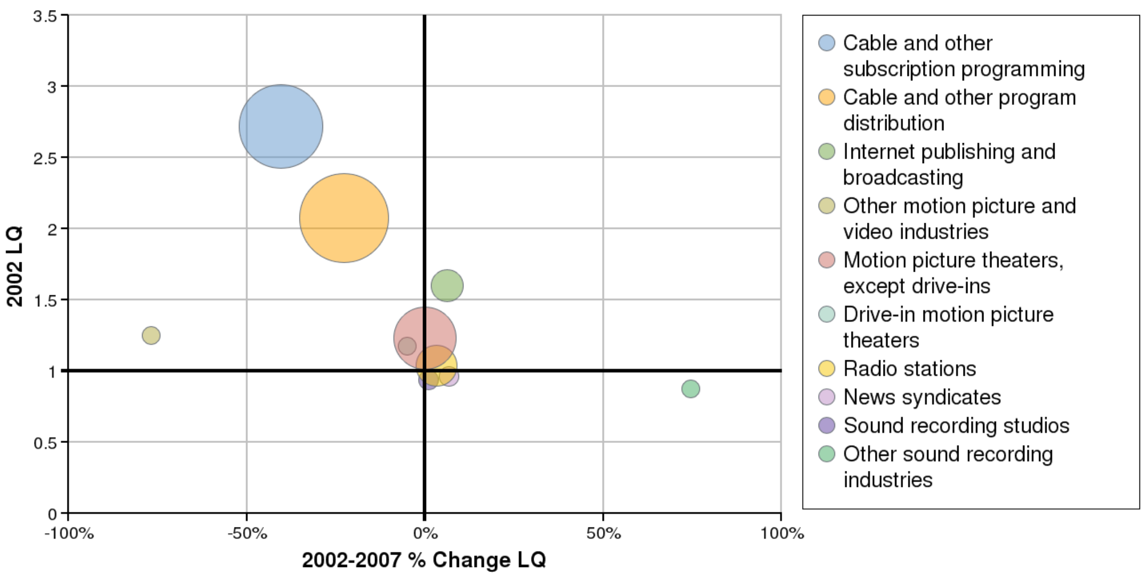
More than 200,000 Denver Film Society members and guests per year attend Starz FilmCenter's series, symposia, and festivals. The Tattered Cover Free Classic is hosted by Colorado Public Radio film critic and UC Denver College of Arts and Media Educational Director, Howie Movshovitz. DFS's flagship event, the 11-day Starz Denver Film Festival, includes international screenings, premieres, and awards ceremonies.

The Colorado Film School: The Colorado Film School, located on the Lowry Campus of the Community College of Aurora, provides certificates, and Associate of Applied Science degrees in writing and directing, cinematography/videography, or postproduction. The Colorado Film School immerses students in the film production industry by providing state-of-the-art cameras, stages, lighting grids, and editing labs. The school's teaching and training philosophy commands the use of this professional equipment: "Just as a medical school needs to run a hospital in order to train doctors, the Colorado Film School is actively engaged in original film productions so that our faculty can model the professional activity we teach."

industry, and the public, while celebrating cable's contributions to society." The Center, located on the University of Denver campus, is an interactive, hands-on educational facility. The Center collaborates with the University of Denver on various programs including a cable specialization MBA.

The growth and diversification of Jones International, founded in 1969, highlights how the state's cable industry has generated economic activity within the creative economy. The company spun-off numerous entities, including Jones International University, the first accredited on-line university. Jones Banana Network develops and delivers entertainment and educational content on mobile devices such as cell phones, while Jones Entertainment produces independent film and television projects. The cable industry has also assisted in the development of the state's motion picture and video production sector. One proprietary source estimates that the state has 25 companies with nearly 2,000 workers in this sector.[xxi]

Unfortunately, while still an important component of the state's creative economy, total employment in the cable industry has declined over the past five years, from about 10,000 jobs in 2002 to only 7,779 jobs by 2007. Declining job prospects in the cable programming subscription and distribution industry is important because of its high concentration of employment. Both cable and other subscription programming and cable and other program distribution had location quotients above 1.6 in 2007, a significant decrease from 2002 (as shown in the graph below).



*Bubble size represents 2002 jobs in each industry.

Two industries within the film and media segment of the creative economy with job growth between 2002 and 2007 are Internet publishing and broadcasting (see Figure 4), which is quite concentrated in the state (LQ of 1.7), and other sound recording industries (LQ of 1.5). Internet publishing and broadcasting is growing nationwide and has seen positive industry effects; conversely, other sound recording industries appears to be growing despite negative industry trends. Thus, this industry is boosted by the regional effects that are specific to Colorado. Other sectors with positive regional competitiveness include television broadcasting, radio networks, radio stations, tele-production and postproduction services, and integrated record production and distribution. Thus, within the film and media sector, radio- and television-related industries seem to be a comparative advantage for Colorado.

3. Heritage and Museums

The heritage sub-group consists of places that exhibit cultural, natural, and historical aspects of the state. Museums, zoos, botanical gardens, and historical sites account for 2,133 jobs in the state, a 32 percent increase since 2002. All of the industries in this sector experienced growth in employment. Based on employment in private sector enterprises, this is the smallest sector in terms of jobs and total payroll in the creative economy. But the true scale is hidden from view because so many employees work for the public sector or are part of educational institutions. For example, the U.S. National Park Service manages various cultural assets, and jobs associated with these historic sites are counted as "government employment." In addition, this sub-group relies heavily on unpaid interns and volunteers. Total payroll in 2007 reached $67.3 million, or just 3.5 percent of the design sector's total payroll. Of the 71 establishments in the state, 56 are classified under the museum industry. Most of the 61.6 percent job growth between 2002 and 2007 occurred in the zoos and botanical gardens industry.

4. Literary and Publishing

Literary and publishing is the second largest sub-group in Colorado's creative economy in terms of employment. Comprising 18 industries ranging from

Tattered Cover

In October 2008, the *Boston Globe* cited Denver's Tattered Cover among the top tier of independents nationwide, a small indication of the stature this Colorado bookstore plays in the book industry. Tattered Cover is more than a bookstore; it exemplifies the creative economy in urban development, the potential employment and growth potential of creative enterprises, and the strength of the state's literary arts industry.

Denver's Tattered Cover Book Store, established by Joyce Meskis in 1971, is an independently owned community bookstore. Two of the three greater Denver locations are located in adaptive reuse development buildings, creating a series of shops with architectural integrity and modern amenities. Tattered Cover's Lower Downtown, or LoDo district building, is housed in a 19th century western mercantile renovated to include a 250-seat events space; the new Highland Ranch location seats up to 400; and the Colfax store, formerly the art deco Bolfils-Lowenstein playhouse, seats 100. Collectively, these locations, with an inventory of over 500,000 books, foster community engagement and interaction.

Tattered Cover has a strong community presence and is embraced by the metropolitan area for its event series and charitable contributions. In addition to book talks and author lectures, programming for all ages is represented by The Active Minds lecture series, Reading Clubs for children, literacy awareness programs, land use discussion series, among other dedicated and community-centric offerings. In 2008, 550 events were at Tattered Cover stores. Colorado Public Radio and Tattered Cover also partnered to host a free classic film series hosted by Howie Movshovitz, Colorado Public Radio film critic, held at the Starz FilmCenter at the Tivoli.

commercial printing to greeting card publishers, the sub-group employed nearly 33,000 people in 1,440 establishments last year.

The sector has been adversely affected by declines in the commercial printing industries. Since 2002, the sub-group as a whole has lost 845 jobs, most in commercial printing. Declines in these industries may also be attributable to declines in publishing as a result of increases in technology related to electronic publishing and changes in the way end users of content receive literary-related information.

Greeting card publishers are highly concentrated in Colorado—almost six times the national average. However, much of this employment strength is in only two successful firms, Current USA and Leanin' Tree. Leanin' Tree, which "starts with art," has grown to over 250 employees in Boulder. Its relationship to the creative economy is further exemplified in the Leanin' Tree Museum of Western Art in Boulder, a private collection of Western Art that is open to the public.

5. Performing Arts

The performing arts sub-group includes theater, music, and dance as well as the supporting industries and venues for these activities. Overall, the performing arts sub-group provided a total of 16,500 jobs in 2007. While smaller than some of the other segments of Colorado's creative economy, it has been growing, with an increase of 1,350 jobs since 2002. This part of the creative economy also has very large self-employment and secondary employment components. Most of the jobs—about 9,000—involve self-employed, and often part-time, actors, musicians, dancers, and other performers. Salaries for all these industries are below $50,000 a year with most of the industries paying average annual earnings of less than $25,000. Thus, many in the cluster require other work to supplement their incomes.

Within performing arts, Colorado has a very strong network of theater companies and a large number of sizable theatrical venues. According to the Colorado Theatre Guild,[xxii] there are 225 theater companies in the state, including small community theaters in some of the more rural parts of the states, theater companies associated with the state's colleges and universities, as well as some larger theater companies in Denver and Boulder. The state also has a number of large performing arts centers such as the Arvada Center for the Arts and Humanities and the Denver Center for the Performing Arts. These centers host a wide range of Colorado performing arts groups, as well as bring national and international performers to the state.

6. Visual Arts and Crafts

The visual arts and crafts sub-group involves the training, production, and distribution of arts and crafts. Three industries make up this sector: fine art schools, portrait studios (photography), and art galleries. In addition, this segment of the creative economy includes thousands of individual artisans and craftspeople working in the state.

In 2007, the enterprises in this segment employed 14,000 individuals. As in performing arts, much of the economic activity involved self-employment. Half of the visual arts and crafts sector's employment is in portrait studios, another 2,057 in fine arts schools, and the remaining 1,632 in art galleries.

The remaining employment in this sub-group, about 40 percent of the total, are self-employed artists and craftspeople. This total, however, misses, a large number of craftspeople who are classified in manufacturing sectors associated with their medium, such as ceramics, glass, or metal, or in retail operations. As a result, many of the jobs associated with the crafts industry are excluded from the total direct creative economy employment. Moreover, while often providing essential family income for many individuals—particularly in more rural regions of Colorado—their art is not their primary job. As a result, the full economic benefits associated with the crafts industry in Colorado cannot be completely quantified.

Overall, the visual arts and crafts sub-group is one of the smaller sub-groups in the creative economy when compared on the basis of number of jobs and earnings. Although the total payroll of the sector is small, the share of employment in visual arts-related activities is still well above the national average.

C. The Regional Distribution of Employment in Creative Enterprises

As the elevations and natural landscape change with travel across the state, so does the creative economy. Regional sectors have formed to take advantage of local resources, community-based entrepreneurship, and relationships among businesses that foster the transfer of knowledge and skills. This study uses the geographic regions designated by the Colorado Tourism Office: Front Range, Northeast, Northwest, South Central, Southeast, and Southwest. A map of counties in each region, as classified when the project began, can be found in Appendix C.

Table 3 below details the areas of the creative economy where each of the regions has built up a concentration of employment and/or specialization. While some areas are skilled in several portions of the creative economy, the Northeast and Southeast regions do not seem to exhibit a comparative advantage in any of the creative economy sectors.

Table 3: Concentration of Employment Relative to Concentration in U.S., by Sub-Group, by Region, 2007

	Front Range	Northeast	Northwest	South Central	Southeast	Southwest
Design	1.33	0.37	1.27	0.70	0.30	0.94
Film & media	1.24	0.40	0.78	0.66	0.52	0.69
Heritage & museums	1.07	n/a	0.62	1.00	0.67	0.28
Literary & publishing	1.00	0.51	0.77	1.21	0.72	0.85
Performing arts	1.10	0.22	1.21	0.80	0.65	0.72
Visual arts & crafts	1.26	0.45	1.86	1.28	0.83	2.04

Source: Data from Economic Modeling Specialists, Inc., 2008.

1. Front Range

The Front Range region, which hosts the cities of Denver, Aurora, Fort Collins, and Westminster, is the most populous region in the state of Colorado with more than 3.2 million people and 92,407 employed in its creative economy. Design is the largest sector in the region with 26,361 jobs, followed by literary and publishing (19,196), and film and media (18,381). The Front Range region has concentrations in several of the creative sectors (as shown in Table 3): design, film & media, and visual arts & crafts.

The region also is a magnet for independent artists, writers, and performers, who comprise about 16,900 jobs of the total 92,407 jobs. Most of the independent artists are in the performing and literary arts with writers/authors and musicians and singers listed as the top occupations.

2. Northeast

The Northeast region is the least populated of the six regions with just over 107,885 residents. It has a long pioneer history and retains much of its old west feel. The region is home to the historic Kit Carson carousel and hosts over 150 fairs, rodeos, and food, arts and crafts festivals such as the Prairie Grass Bluegrass Festival in Burlington.

Like the region's population, the creative economy also has the smallest number of jobs. Employment in the Northeast's creative economy is about 900 jobs, most in either the literary arts and publishing or design groups. However, none of the sub-groups in the Northeast's creative economy employed more than 300 individuals in 2007. Although a small part of the economy, many of the small towns in the region are working to build on their cultural assets. Julesberg, Holyoke, and Burlington, for example, are restoring historic theaters as local cultural centers.

Denver's Art District on Santa Fe

"Just take a trip down Santa Fe for a First Friday Art Opening. The street is so packed that it feels like a New York City sidewalk at rush hour." Enfuse Magazine, January 2007

In Denver, urban renewal is being accompanied, and in some cases spurred, by the growth of the arts along Santa Fe Drive. The Denver Art District on Santa Fe is home to a wide range of galleries, theaters, and museums that promote the area as a regional and national arts destination. While Santa Fe Drive has long been central to Denver's arts scene, momentum grew in 2003 when 17 galleries and museums formed a nonprofit aimed at promoting the district. Now the "ArtDistrict on Santa Fe" has more than 50 members.

The District features a wide range of galleries and museums including:

- *The Museo de las Americas*, a museum "committed to preserving, presenting, and promoting the art and culture of the Latino people."
- *NineTenArts,* a "green" building that features artists' lofts and studios for area artists.
- *Artists on Santa Fe*, shared gallery space that for more than 30 years has featured local Colorado artists and that allows visitors to mingle with artists in their working environment.
- *The Limited Addiction Gallery*, just one of many contemporary art galleries on Santa Fe. The *New York Times* mentioned the gallery as a possible destination for the throngs of people who came to Denver during the 2008 Democratic National convention.

One of the District's most popular events is the First Friday Art Walk. Visitors flock to Santa Fe Drive to see new exhibitions and to view and purchase new art. The popularity of this event continues to increase with the ArtDistrict organization sponsoring shuttles to take visitors to and from the event. The ArtDistrict also works with local nonprofits to help beautify and promote the area.

3. *Southwest*

Colorado's Southwest region has roughly 4,500 employed in the creative economy, with design its largest sub-group. The most significant creative industries here are drafting services, with a concentration almost three times the national average, and ornamental architectural metalwork manufacturing, which is twice the national concentration. The culture of metalwork may be related to the region's rich history of ore and silver mining historically conducted in the region.

Employment is also concentrated in the visual arts and crafts. Its 475 jobs, mostly in La Plata and San Miguel counties, is twice the national average concentration. The region has a very concentrated art dealers industry, four times the national average, and strength in portrait photography studios, which employ 44 percent of the visual arts and crafts sector in the Southwestern region, 60 percent above the U.S. concentration. The region's San Luis Valley is particularly known for its large community of visual artists and crafts people (see box).

San Luis Valley and Monte Arts

One of the state's most vibrant artistic regions lies far from the state's urban centers. The San Luis Valley boasts a range of artists from those rooted in the long-standing Native American and Latino traditions of this rural area to more contemporary arts being shown and taught at the region's institutions of higher education. And now the artists themselves are taking more formal action to increase the impact the creative economy is having on one of the state's poorest regions.

Around five years ago, a group of local artists around Monte Vista began to come together to swap ideas on how to get their work to market and to generally support each other in their various artistic endeavors. The group, who dubbed itself The Art Thing, met monthly over a potluck dinner and engaged in a variety of collaborative activities. As the group continued, however, some of them, including a local fiber artist named Laura Murphy, realized that the community needed to take some more formal steps to advance the arts in the Valley.

"At the Arts Thing, the only rule we had was there was no rules," Murphy said. "But a group of us thought there was a need for an organization that could promote the arts." This produced the Monte Arts Council, which promotes such activities as networking, local arts festivals, exhibits, and community concerts. The Art Thing still is there for those who value more informal cooperation, but the Council can attract the support of such entities as municipal government, which can see the importance of the arts in growing the region as a tourism destination.

The Council and other artists also benefit from the impact of the nearby Adams State College in Alamosa and its art department. The department not only churns out a wide range of students with artistic expertise, but its galleries also provide a space for stellar exhibitions of local and national artists.

"In a way, the galleries are the most progressive artistic voice in the region," says Murphy. There is some frustration about getting more Native American and traditional artists involved in such efforts as the Monte Arts Council, but individuals like Murphy are diligent in their efforts. "We have a profound commitment to building an arts scene that reflects the history and culture and the area," she says "We don't want to impose something that is not natural."

4. Southeast

The Southeast region, with a population of 228,110, exemplifies Colorado's more traditional past, i.e., associated with the Santa Fe Trail that runs through the region, Kit Carson and John C. Fremont, the Native American community, and the railroads. The Southeastern Colorado Heritage Center, a collaborative of five historic organizations, is developing a center to further promote its heritage. In addition, Pueblo, the largest city in the region, has a growing art scene that includes the Sangre de Cristo Art, a focal point of the region's creative economy with galleries, the Buell Children's Museum, and the Jackson Sculpture Garden.

Overall, the southeastern region employs 2,300 in the creative economy and more than 700 in the literary and publishing sub-group. Many of those earning a living in the creative economy in this region are self-employed writers and authors. However, various occupations in the visual arts and crafts sector also play a key role in defining the Southeast's creative economy. While this region does not appear to have a dominant, specialized creative sector, it does have a concentration of employment in enterprises that deliver live theatrical presentations such as magic shows, carnivals, and circuses.

5. South Central

South Central is the second most populated region in the state of Colorado with 748,413 residents. More than 70 percent of the region's population is located in El Paso County, which contains Colorado Springs. (See box.) Similarly, roughly 65 percent of the 15,500 jobs in the creative economy are also located in El Paso County.

Literary and publishing is the largest sector in the region with over 4,800 jobs. Nearly half of the jobs are in the greeting card and newspaper publishing industries. An additional 700 self-employed writers and authors also work in the region.

The area is highly specialized in the greeting card publishing industry, at 32 times the national average concentration. The other commercial printing and book publishing industries are also highly concentrated in the South Central region. Other commercial printing is five times more concentrated than the U.S., while the book publishing industry is almost three times as concentrated.

Colorado Springs

While Denver metro arts is supported by a dedicated sales tax generating over $40 million annually, other Colorado communities must rely on broader and more diverse ways of funding the arts and creative enterprises. The Colorado Springs metro area is an example of that strategy. The community responded with a combination of grants, dues, philanthropic support, and public investments by Colorado Springs and other municipalities to build an art community supporting visual, dance, theatre, literary, and other artistic expression. A key to its success is based in a strong philanthropic community. Philanthropic organizations are the lifeblood of metro arts efforts and include:

- Bee Vradenburg Foundation
- Pikes Peak Community Foundation
- El Pomar Foundation
- Joseph Henry Edmondson Foundation
- Gay and Lesbian Fund for Colorado
- Colorado Council on the Arts

Through these and similar organizations, the business community, and private donations, the community was able to complete a $28.6 million renovation and 48,000-square-foot expansion of the Colorado Springs Fine Arts Center while the Pikes Peak Center for the Performing Arts completed a $5 million capital campaign.
Not to be left out, higher education has been a stimulus to the arts community. The private Colorado College is developing the Edith Kinney Gaylord Cornerstone Arts Center designed by famed architect Antoine Predock. The University of Colorado at Colorado Springs' Heller Center for Arts & Humanities is developing an exhibition complex with housing for artists in residence.

The Colorado Springs region has an integrated strategic coordinator of arts through COPPeR, The Cultural Office of the Pikes Peak Region. Besides coordinating and providing a strategic base for the region, it provides a non-paralleled information source called the *COPPeR Pages: The Official Guide to Arts & Cultural Organizations in the Pikes Peak Region*. This 24-page document, available on its website, lists 147 different organizations within the creative community. Its web masthead proclaims Colorado Springs as a *community united by creativity*.

COPPeR also worked with Americans for the Arts to produce an economic impact report on the region, which found that the nonprofit arts industry generated $94.7 million in economic impact and 2,639 jobs.

COPPeR and other organizations also are integrating the arts into the region's vibrant tourism sector. Historic areas like Old Colorado in Colorado Springs and the tourist town of Manitou Springs generate substantial economic and cultural impact from the burgeoning tourist industry. Manitou Springs has developed an arts business incubator, the Business of Arts Center, to increase the incomes of area artists and provide synergy between tourism and creativity.

6. *Northwest*

With more than twice the population of the Northeast and a tenth of the Front Range, the Northwest region of Colorado is known for its colorful landforms, dinosaur fossils, and destination ski resorts including Steamboat Springs, Vail, Breckenridge, and Beaver Creek. Its largest city, Grand Junction, has a vibrant art scene with galleries and art centers such as the Western Colorado Center for the Arts, a focal point of artistic activity in the community.

Forty percent of the population lives in Mesa County, but only has 16 percent of the region's creative employment. Eagle and Pitkin counties contain a significant amount of the creative economy's workforce.

The Northwest's creative economy includes 9,800 jobs, a third in the design sub-group. Literary and publishing also have significant levels of employment, with over 1,800 jobs. However, the visual arts and crafts define the Northwest region's creative economy, with a very specialized visual arts and crafts sector and a large concentration of art dealers.

In some ways, the conventional economic data do not fully capture the depth of the creative economy in this region. Most of the major ski communities host significant arts and cultural festivals, such as the Beaver Creek Arts Festival (see sidebar on festivals); Strings in the Mountains Music Festival in Steamboat Springs, which includes more than 170 artists; Literary Sojourn, a major literary festival in Steamboat Springs; and the Bravo! Vail Valley Music Festival, which hosts the Rochester Philharmonic, the Philadelphia Orchestra, the New York Philharmonic, the Columbus Jazz Orchestra, along with chamber music, jazz, and pops throughout the summer. The region is also home to the Perry-Mansfield Performing Arts School & Camp, the oldest continuously operated performing arts school and camp in the nation, located outside of Steamboat Springs.

IV. Creative Talent Drives the Creative Economy

What drives a state's creative economy is the creative talent of its residents matched with their entrepreneurial spirit. In Colorado, the strength and depth of its talent has led to the vitality of not only the state's creative enterprises but also of many of its core industries. To remain competitive globally, the creative sectors, like other key sectors of the Colorado economy, must attract or produce and keep highly skilled workers.

Colorado, fortunately, has a very strong pool of talent. (See Appendix E for list of creative occupations.) In 2007 there were nearly 111,000 residents employed in creative occupations working in many different industries. In fact, a large proportion of these creative individuals work in non-creative industries. For example, 1,200 of the state's estimated 5,000 musicians are employed by religious organizations. Many retail chains employ interior decorators, display artists, and advertising writers.

Employment in Creative Occupations

46,902 in creative occupation within creative enterprises

+ 63,964 in creative occupations outside of creative enterprises

110,866 employed in all creative occupations

At least as important in today's economy, the growth of the creative economy will require a continuing pipeline of new young talent. This pipeline can come from individuals who move to Colorado to pursue their careers or it can be grown from within, through the educational institutions that are training the next generation of creative leaders.

Colorado is strong in all of these areas. It has a deep existing resource, is a growing location of choice for talented individuals worldwide, and has an extensive array of educational institutions that are training and retaining the next generation.

A. The Existing Workforce

In May 2008, the National Endowment for the Arts (NEA) issued a research report, *Artists in the Workforce*, which analyzed the demographic and employment patterns of the nation's artistic workforce between the years 1990 and 2000. It was based on self-reported primary occupations collected by the U.S. Census Bureau. While only a snapshot in time that is now close to a decade old, this report highlights the unusual relative strengths of the artistic workforce in Colorado:

Table 4: Creative Talent, 2007

Artist/Performers	*Number Employed*	
Craft artists	2,462	
Fine artists	2,419	
Multi-media artists and animators	2,491	
Artists and related workers, all other	2,363	
Actors	1,639	
Producers and directors	2,031	
Dancers	344	
Choreographers	342	
Music directors and composers	3,496	
Musicians and singers	5,076	
Entertainers and performers, other	1,701	
Writers and authors	8,469	
Total cultural workers		32,833
Archivists	103	
Curators	302	
Museum technicians and conservators	237	
Librarians	2,979	
Library technicians	3,094	
Audio-visual collections specialists	296	
Total		7,011
Designers		
Architects, except landscape and naval	4,659	
Landscape architects	2,409	
Commercial and industrial designers	1,516	
Fashion designers	977	
Floral designers	2,010	
Graphic designers	4,426	
Interior designers	2,360	
Set and exhibit designers	1,159	
Designers, all other	1,087	
Total		20,603
Media/Communications Workers		
Photographers	17,087	
Advertising and promotions managers	1,370	
Marketing managers	5,079	
Public relations managers	1,181	
Agents and business managers	731	
Art directors	2,840	
Radio and television announcers	1,078	
Broadcast news analysts	392	
Reporters and correspondents	1,136	

Public relations specialists	7,602
Editors	3,244
Technical writers	1,666
Media and communcation workers, all other	3,118
Audio and video equipment technicians	969
Broadcast technicians	954
Radio operators	123
Sound engineering technicians	264
Camera operators, television, video, and motion picture	445
Film and video editors	325
Media and communication equipment workers, other	815
Total	50,419
Total Creative Workforce	**110,866**
Creative Workforce as % of State	**3.4**

Source: Data from Economic Modeling Specialists, Inc., 2008.

- Colorado had 35,750 artists working in the state in 2000, which placed it fifth in terms of total artists per capita.

- Colorado ranked among the top ten states in the U.S. in every artistic category other than actors, dancers and choreographers, and announcers.

- The Boulder-Longmont region ranked in the top ten regions based on total artists, architects, designers, photographers, and writers and authors per capita.

- The Fort Collins-Loveland region ranked in the top ten per capita for fine artists, art directors, and animators per capita.

Colorado experienced a 29.5 percent increase in the number of artists between 1990 and 2000, well above the national average of 11.6 percent. Only five states experienced more rapid growth.

Although we will have to await the results of the next decennial census to fully capture trends since 2000, more recent occupational data provide a consistent picture of a state with an extremely deep and strong creative workforce that has been growing at a relatively rapid rate.

Table 5: Projected Percent Growth in Selected Creative Occupations, 2008-2018

Field	Occupation	% Growth
Media/communications	Audio & video equipment technicians	45.9
Media/communications	Broadcast technicians	43.6
Media/communications	Camera operators, TV, video, films	32.6
Media/communications	Film and video editors	31.7
Media/communications	Broadcast news analysts	30.9
Cultural	Curators	30.1
Designer	Interior designers	28.6
Media/communications	Public relations specialists	28.5
Media/communications	Public relations managers	28.5
Designer	Landscape architects	26.8
Artist/performer	Producers and directors	26.2
Media/communications	Sound engineering technicians	26.1
Media/communications	Radio operators	26.0
Media/communications	Radio & TV announcers	25.8
Media/communications	Media & comm. equipment workers	25.0
State average		**25.0**

Source: Data from Economic Modeling Specialists, Inc., 2008.

While the NEA report focused primarily on "artistic occupations" covering artists, performers, and designers, primarily the "originators" of creative products, a more comprehensive picture of the "creative workforce" developed for this project includes the many management and technical occupations critical to the production of creative goods. In total, we estimate that there are 110,866 individuals in the state, or 3.4 percent of the workforce, who are earning some portion of their incomes through creative occupations. (See Table 4)

Not only is the size of the creative workforce in Colorado large, but these occupations are expected to grow significantly over the next 10 years. In each of the occupational categories, Colorado's rate of growth is expected to exceed the national average growth of that occupation. Growth rates are particularly strong for cultural workers such as librarians and museum curators, as well as for media and communications occupations.[xxiii] (See Table 5)

The projected growth rates for a number of occupations also exceed the projected state average growth rate of 25 percent. Many of the creative occupations that are growing are in the media and communications field. Unlike the stereotype of most creative jobs, many of those that are growing are technical jobs that do not require extensive higher education, but could involve vocational training and on the job training.

A common stereotype about creative jobs is that they are relatively low wage. In fact, a large number of the creative occupations pay average hourly wages that exceed the state median wage. (See Table 6)

Table 6: Colorado Creative Occupations Ranked by Median Hourly Wages

Sector	Job Title	Wage
Media/Communications	Public relations managers	$38.37
Media/Communications	Marketing managers	$36.11
Designer	Landscape architects	$33.78
Designer	Architects	$30.33
Cultural	Curators	$29.08
Media/Communications	Advertising and promotions managers	$27.84
Media/Communications	Technical writers	$26.64
Media/Communications	Radio operators	$25.08
Cultural	Librarians	$24.05
Media/Communications	Media & communication equipment workers, other	$23.98
Cultural	Archivists	$23.60
Media/Communications	Editors	$22.84
Media/Communications	Film and video editors	$22.66
Media/Communications	Public relations specialists	$22.38
Designer	Commercial and industrial designers	$21.84
Artist/Performer	Producers and directors	$21.35
Media/Communications	Sound engineering technicians	$20.66
Cultural	Museum technicians and conservators	$20.53
Designer	Interior designers	$20.22
Media/Communications	Reporters and correspondents	$20.21
Designer	Fashion designers	$20.00
Designer	Set and exhibit designers	$19.73
Designer	Designers, all other	$19.52
Media/Communications	Broadcast news analysts	$19.52
Media/Communications	Camera operators, tv, video, and motion picture	$19.36
State Median		$19.30

Source: Data from Economic Modeling Specialists, Inc., 2008.

Finally, Colorado has some surprising strengths in its existing creative workforce. In particular, the state has a very high concentration of architects, landscape architects, and interior designers. According to the U.S. Bureau of Labor Statistics (BLS):[xxiv]

- Colorado has the highest concentration of architects in the nation. The Boulder metropolitan area has the third highest concentration of architects of any metropolitan area in the U.S.

- Colorado has the highest concentration of landscape architects in the nation. The Denver region has the highest concentration of landscape architects of any metro region in the U.S.

- Colorado has the highest concentration of interior designers in the nation.
- BLS is projecting significant growth in these occupations over the next decade. According to BLS projections, Colorado will have the highest growth of interior designers in the U.S. (38 percent), the third highest growth in landscape architects (38 percent), and the third highest growth rate for architects (41 percent).

B. The Talent Pipeline

To sustain and grow the creative economy, Colorado not only needs a strong creative workforce, but it must also have a pipeline of creative talent. As a result of its highly perceived quality of life, one source of this pipeline is the thousands of talented individuals who move to Colorado as a location of choice. From musicians and writers, to architects and filmmakers, Colorado has increasingly become a destination location for creative individuals.

Table 7: Certificates and Degrees Awarded by Institutions of Higher Education in Colorado, 2005-06

Sub-group	Assoc & Certificate	Bachelors	Masters	Doctorate
Design	399	618	121	5
Film & media	355	1,077	49	0
Heritage & museums	7	3		0
Literary & publishing	1	562	98	0
Performing arts		493	133	25
Visual arts & crafts		142		0
Total	**762**	**2,895**	**401**	**30**

Source: Data from Economic Modeling Specialists, Inc., 2008.

Beyond those attracted to live in the state because of its obvious natural amenities, the educational pipeline in Colorado is a powerful generator of new talent. Colorado's emphasis on the importance of the creative economy is apparent in its comprehensive cultivation of creative talent throughout its higher education institutions. A spectrum of creative industries is represented in Colorado's college and university landscape, from traditional visual and fine art, to green design, to technology-based music business programs. In addition to awarding Bachelor's degrees in these fields, Colorado's higher education institutions offer associate degrees, certificates, and non-credit programs. For example, Pikes Peak Community College and San Juan Basin Technical College offer educational programs for television broadcasting technicians, as does the Colorado campus of the Ohio Center for Broadcasting. At the baccalaureate and higher levels, the University of Colorado at Boulder and University of Northern Colorado award doctorate degrees in music and theater.

In 2005-2006, 4,100 creative employment-based certificates and degrees were awarded by Colorado public and private universities, liberal arts colleges, and public community colleges.

Colorado is also home to many art schools specializing in educating students for the creative workforce that award certificates. Courses of study include painting, photography, and ceramics, but Colorado's institutional arts offerings extend beyond traditional models and incorporate modern trends in design, production, and technology. Students trained at these Colorado higher education institutions will graduate with skill sets uniquely marketable to a changing and expanding creative industry.

The state's educational institutions equip students with knowledge and tools to make an impact on the local creative economy and to position Colorado as a national leader in contributions to this economic sector. Below is a small sampling of some of the more unusual creative degrees one can earn at Colorado institutions of higher education:

Green Design: Rocky Mountain College of Art and Design (RMCAD) is a private four-year art college that offers a Green Design Area of Emphasis and a Certificate in Sustainability or Green Building. This specific education prepares students to recommend healthful and ecologically conscious design solutions relating to the built environment. RMCAD's interior design program also aims to reduce the ecological impact of design and construction on the environment.

Colorado State University Department of Design Merchandising and Avenir Museum of Design and Merchandising

The Department of Merchandising within Colorado State University's College of Applied Human Sciences prepares students to contribute to the global textiles, apparel, and merchandising complex. The emphases of study within CSU's Apparel and Merchandising major range from performance evaluation of textiles, historic costume and textiles, social and psychological aspects of clothing, and apparel design/production. Courses in Consumer Behavior, Bricks and Mortar Retailers, and Dress as a Factor in Collective Behavior complement classes in patternmaking, product development, and research methods.

About 90 percent of Apparel and Merchandising students participate in paid internships annually at fashion design houses such as Betsey Johnson and DKNY for apparel design and Neiman Marcus and Ralph Lauren on the production and merchandising side. Increasingly, students choose to work in Colorado after graduation securing employment at local athletic apparel and skiwear companies Pearl Izumi, Spyder, and Sierra Designs.

CSU's Department of Design Merchandising offers a unique asset that provides its 700 undergraduate and graduate students (2006-2007) with valuable hands-on training: The Avenir Museum of Design and Textiles, formerly CSU's Historic Costume and Textile Museum, owns over 12,000 artifacts from the 19th and 20th centuries with a special emphasis on objects reflective of Colorado's development and diversity. Among its collection is a donation by Calvin Klein; CSU's museum was one of only 21 institutions internationally where Mr. Klein chose to direct a donation. Students are invited to explore this resource in the museum's storeroom, seeing and feeling details in embroidery, application design, and fabric motifs. The greater community may attend gallery exhibitions, workshops, and page through books at the museum's resource library. The museum's curator hosts study clubs and groups of antiques aficionados interested in exploring culture.

On October 14, 2008, the University Center for the Arts, housed in the former Fort Collins High School, celebrated its grand opening as a one-stop inter-departmental and creative multi-use building. CSU's new arts hub will host the Avenir Museum of Design and Merchandising, CSU's art museum, theaters, and music and dance spaces.

Fine Woodworking: Red Rocks Community College (RRCC), "where learning is for life," is a two-year institution awarding degrees, certificates, and credits, some of which are transferable to four-year Colorado institutions of higher education. RRCC offers woodworking courses that combine old and modern techniques in the craft. Students may earn an Associate of Applied Science degree in Fine Woodworking and gain craftsman-level skills in chairmaking, period furniture reproduction, among other specific crafts and skills. Students can also acquire a certificate in classical guitar making and bench building.

Neurologic Music Therapy: Colorado State University offers a Master of Music degree in Neurologic Music Therapy, advancing the professional education and understanding of the scientific-evidence-based practice of neurologic music therapy. The curriculum includes coursework on neuroscience and psychology.

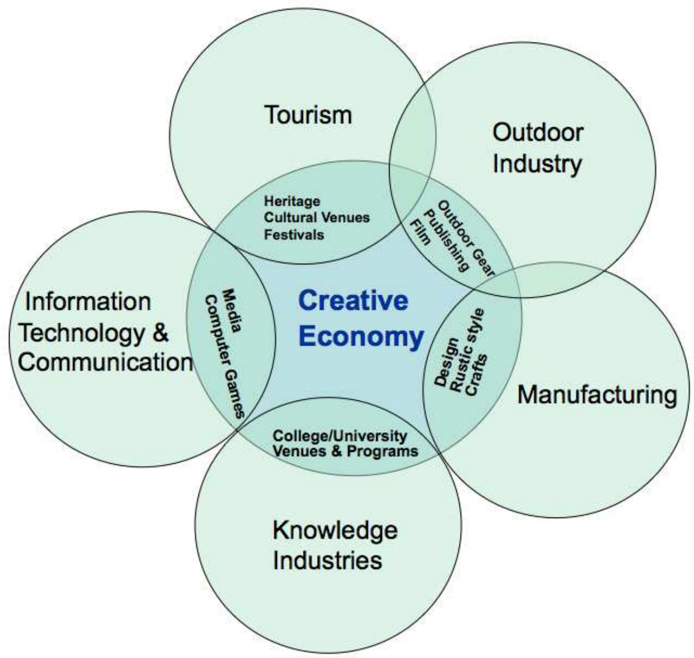
Music Business: "Art meets technology and commerce" at the University of Colorado Denver's (UC Denver) College of Arts and Media, one of the university's 13 schools and a key resource in the state's creative economy. The Department of Music and Entertainment Industry Studies teaches and trains students in music performance, music business, and the recording arts, while offering hands-on experience with industry professionals. UC Denver's arts-based technology and business emphasis extends to music management and provides students with advanced training beyond the classroom. Classes in the Music Business and Recording Arts programs are taught by industry professionals in marketing, financial analysis, and the law. CAM Records, the University's record label, recorded the Billboard Top 40 recording artist The Fray on its Colorado Cuts compilation. The UC band is now signed to Epic records. CAM Records is run professionally, with students soliciting and listening to demos, writing contracts, signing bands, as well as assuming the business and legal responsibilities of the record label. In February 2008, UC Denver was recognized by the U.S. Department of Justice and awarded a grant to establish a National Center for Audio/Video Forensics in the University's Department of Music and Industry Studies. Graduate students enrolled in Recording Arts, Statistics, Computer Science, and the Health Sciences will benefit from technology enabled by this grant.

Computer Gaming: The University of Denver offers a baccalaureate in Game Development through its Computer Science program. The BS degree is the combination of a Computer Science degree with a minor in mathematics, a second minor of a student's choice, and a collection of five approved classes in Art, Electronic Media Art Design, and Digital Media Studies. The BA track requires a double major, one in Game Development and one in Digital Media Studies, Electronic Media Art Design, or Studio Art. The University of Colorado at Colorado Springs (UCCS) recently added a Bachelor of Innovation Degree in Game Design and Development to its list of majors. In the fall of 2005, an interdisciplinary team of faculty at UCCS developed the proposal for this program that was soon approved by University of Colorado Regents. In addition to the technical knowledge involved in video game development, the curriculum ensures students gain skills (calculus, rhetoric, and writing) and knowledge about business issues in the field (entrepreneurship, intellectual property, and marketing).

V. Creative Convergence—Where Talent and Firms Merge

Traditional economic data tell only part of the story about the creative economy. There is a significant amount of economic activity that is clearly "creative" but embedded in other industries. The 186,251 jobs reported in creative enterprises and creative occupations is an extremely conservative estimate of employment. It excludes a great deal of creative employment including the following.

Figure 5: Overlapping Clusters



- Crafts and artisan enterprises are largely embedded in *manufacturing* codes for economic reporting purposes and thus not counted in the overall employment figure.

- The state's extensive cultural festivals contribute significantly to *tourism* in many parts of the state, but, as one-time events, their economic contribution is not captured in employment data.

- The myriad arts and cultural activities at the state's colleges and universities are only captured as part of the employment data for higher education. The museums and performing arts venues, and literary publications that are part of the "knowledge" sector could not be disaggregated and counted.

- Interactive media and computer gaming companies that are part of the state's *information technology* sector are also part of the state's creative economy. These companies are often coded within the much larger software and information technology industries.

- Creative content is a key competitive factor for firms in the *outdoor recreation* industry, linked to the state's considerable natural resources amenities.

Although we define creative enterprises based on the relative importance of aesthetics and emotional responses to their success, both the application of creativity and markets for creativity reach across many other sectors of the economy. Many of the state's key industries that fall outside the definition are often beneficiaries of the strength of Colorado's creative economy

The following section provides a deeper view of the creative economy, capturing some of the clearly creative activity not captured in the employment numbers.

A. Crafts and Artisan Manufacturing

One reason why employment and economic impacts related to the creative economy are often underestimated is that much of crafts and artisan activities are embedded within secondary employment data for manufacturing. In communities with a rich crafts tradition, the economic activity related to this segment of the economy is often missed. This is particularly true in Colorado, which has a vital crafts and artisan tradition throughout the state.

1. Art Glass: A relatively large number of art glass producers operate in the state. From one of the premier craftsmen of glass paperweights in the world, to the numerous stained glass artists, blown glass artists, and producers of highly designed architectural glass products, Colorado has a large glass community. These artisan companies are included in the same industrial code as companies that manufacture quartz products for the semiconductor industry, companies that produce glass windows, and companies that manufacture glass laboratory equipment. We estimate that there are at least 40 companies in the state that are involved in creative glass blowing and stained glass production.

2. Pottery and Ceramics: Like glassblowers, the state's many artisans involved in making custom designed and produced pottery are often distributed across different industrial codes. Those who sell their products directly through their own retail establishment may be captured under the code for retail establishment. Others are part of the manufacturing code for ceramic products. Such creative enterprises as Mesa Verde Pottery, producers of handmade Native American pottery, or Van Briggle Pottery in Colorado Springs, one of the oldest active art potteries in the United States, are not captured easily in the economic data. These two companies alone employ 40 artisans.

3. Home Furnishings and Accessories: Embedded within the industrial codes for furniture, wood products, and textiles are many companies that are essentially producing custom designed "crafts" products for the home. There are literally hundreds of companies in the state that are producing handcrafted furniture and home accessories. One area of particular strength is in the Colorado "rustic style." (See box.) We estimate over 100 companies in the state employ over 300 people producing products in this style.

The Rustic Style: Colorado Design

The Rustic Style is a distinct expression of the Coloradan experience, the spirit of pioneering adventurism, challenges of industrialization, and reverence for natural spaces. While crafts, products, and structures in the Rustic Style have evolved in different manifestations in regions across the United States, today they find a vibrant home in Colorado and contribute greatly to the Colorado Creative Economy.

While there is no single accepted definition of Rustic Style, broadly it is an attempt to celebrate the unrefined beauty of the American wilderness in the manmade environment through the use of indigenous materials maintained in their natural state. The Rustic Style has manifested itself in a wide range of products, from clothing to jewelry to fine arts, but is perhaps best expressed in architecture, furniture, and interior design.

Colorado Rustic furniture takes much of its inspiration from the Western style of Thomas Moleskin and incorporates Native American and cowboy elements. Coloradan Rustic furnituremakers are renowned for their use of deer and elk antlers and benefit from the vast herds of wildlife in the Rocky Mountains. It is a common and expected practice among all Rustic furniture makers to only use discarded antlers and only use wood from dead trees. Crystal Farms of Redstone, Colorado, has been producing Rustic furniture and chandeliers for over 25 years and is nationally recognized as a specialist in the construction of antler furniture. The blending of classical Rustic elements and modern furniture designs flourishes in Colorado, as illustrated by Aspen Rustic Billiards, whose tables use both burled wood and finished planks to achieve both form and function.

The rapid growth of ski resorts in the Rocky Mountains has provided a catalyst for the growth of the Rustic architecture in the home construction market. While all industries related to home design and construction incorporate some degree of artistry and craftsmanship, the design and construction of traditional log homes is particularly "creativity intensive." Some Colorado companies, like Frontier Log Homes of Montrose County and TJ's Wood Products in Park County, construct both individual homes and large resorts. Many homes are shipped out of state. Creativity is often incorporated by builders who finish homes with crafted parts. Builders purchase or construct and install elaborate customized Rustic Style mantles, staircases, banisters, porches, and flooring.

B. Technology Industries

The design of computer games is an area where Colorado's strength in the creative industries and in technology industries overlaps. While this is not yet a very large segment of the state's economy, it is one that is poised for future growth.

As the game design and development industry becomes more popular and profitable, the demand for talent with advanced training is rapidly increasing. The necessary skills to create game software translate to arenas beyond video games: education, healthcare, financial industries, and the military utilize interactive simulations and authoring environments in their field-specific software. Traditional computer science and engineering programs do not prepare students for jobs in the gaming industry. Instead, jobs in this field reflect the intersection of technical expertise and creativity that is the hallmark of new media and the creative economy.

Carolyn Rauch, senior vice president of the Entertainment Software Association, believes in the current popularity of this career path: "Just like when rock and roll came of age everybody wanted to be a rock star, as video games have come of age, everyone wants to be a developer."[xxv] In response to this trend, graduate programs across the nation explore the transformative cultural effects of video games. The sweeping impact of games will continue to expand as technology advances and as institutions of higher education train new talent for this competitive field.

NetDevil

In 1997, three colleagues at an information technology firm designed a massive multiplayer online game (MMOG) called Jumpgate. Eventually, the trio quit their day jobs and founded NetDevil with a focus on constructing MMOG universes. In 2001, Jumpgate was released, and Jumpgate Evolution, an advanced and upgraded version of the action game, set in a science-fiction persistent world, is slated for release in 2009. "Jumpgate incorporates all of the highly successful elements of the space action genre and brings them into a fully online universe accessible by thousands of people simultaneously from around the world." The team's second title, Auto Assault, was also a critical success.

In 2007, NetDevil relocated to a new 30,000-square-foot studio space in Louisville, Colorado, designed exclusively for the company. This unique environment is the setting for the design and development of its latest project. NetDevil and the LEGO Group are currently producing the MMOG LEGO Universe, marking the first professionally developed virtual experience for LEGO fans. LEGO Universe provides "social interactivity in a child-safe environment" where players will safely create, build, quest, and socialize together. The game will be available on DVD and for download in 2009.

There are over 40 major design and development companies comprising Colorado's game industry, employing 350-400 people total.[xxvi] NetDevil, the largest of these companies, currently has a 100-person staff that continues to grow. A close second is Idol Minds with approximately 80 employees.

Beginning in 1987, members of the Colorado Game Developer's Association (CGDA) have met monthly to network and discuss the computer game industry. In 2001, the group became affiliated with the International Game Developer's Association, the largest nonprofit serving individuals who create video games. Members from the Denver/Boulder/Colorado Springs area are either professionals in the industry or students wanting to break into the field. About 20 to 80 people attend each meeting, held at local college campuses.

According to Raymond Hutchins, CGDA president, higher-level gaming industries exist in Texas, California, and New England, but Colorado boasts a "highly organized cluster that's well-structured and growing."

Hutchins is founder and president of the Interactive Gaming and Simulations Alliance (IGSA), a trade association "dedicated to the development of an interactive entertainment cluster in Colorado. The IGSA membership is comprised of companies, academic institutions, and individuals dedicated to creating a business community that brings new opportunities and jobs to the state of Colorado." Currently, there are 45 member companies.

C. The Recreational Industries

Colorado has a strong and growing cluster of companies involved in the design and manufacture of apparel and equipment to serve the recreational and adventure sports industries. The National Outdoor Industry Association, headquartered in Boulder, lists over 170 companies from Colorado that are engaged in some aspect of the outdoor recreation industry.[xxvii] From the production of ski equipment to the publishing of guides and the production of films, this is becoming an important niche sector of the state's economy. And, the design talent that is part of the state's creative economy is a critical part of this industry.

Some of the overlap between the outdoor industry and the creative sector involves the "content" of many of the creative enterprises. From adventure films, to outdoor magazines and guides, there are numerous examples of where the creative economy and the state's outdoor cluster are linked.

While much of this linked activity is "counted" as part of the creative enterprises in the previous chapter, there is much that remains embedded within the manufacturing sectors. Most specifically, design is a critical element of what makes many of the state's foremost outdoor equipment and clothing companies compete in the marketplace. While the economic activity overlaps with the creative economy, its significant economic contributions have not been captured in the quantitative analysis of the creative economy.

Perhaps the best-known Colorado company in this area is Crocs, makers of a shoe originally designed for use in spas. Despite a recently weakening performance, its growth in the state illustrates the potential where design, branding, and manufacturing come together to create jobs. Many other companies in the recreational products industry make their home in Colorado. A sample of companies where creativity and design are at the heart of their comparative advantage includes:

- Boa Technology, Inc., a designer of specialty lacing systems for the sports industry;
- Chaco Inc., a designer and producer of sport sandals in Paonia, a rural town on the Western Slope of the Colorado Rockies. Chaco has over 100 employees and sells primarily through outdoor retailers throughout the U.S. and overseas;
- Ecologic Designs, Inc., a producer of environmentally friendly outdoor and lifestyle gear designed and manufactured in Boulder; and
- Stonewear Designs, a Boulder designer of women's active wear clothing.

D. Tourism

Tourism is one of the most critical industries to the state and, after many years of stagnation, tourism spending in 2007 was up by 10 percent over the previous year to $9.8 billion.[xxviii] While no one would dispute that activities related to the state's natural beauty and mountains are a primary draw for tourists, the state's cultural amenities are becoming a critically important complement and, in some cases, driver of tourism in some communities and at certain times of the year. A 2005 study of the economic benefits of historic preservation in Colorado reported that in 2003, 5.1 million trips, 24 percent of the total in the state, included a visit to at least one historic area. This study estimated that heritage tourism alone generated about $1.5 billion in direct economic benefits in the state.[xxix] In Denver, studies have shown that visits to the city's cultural institutions mean big business in the city. The *2006 Economic Activity Study of Metro Denver Culture* estimated a total of 2.4 million cultural tourists who generated $334 million in new money for the region's economy.[xxx]

In addition to the state's rich heritage, museums, and performing arts that attract visitors each year, Colorado celebrates creative traditions in film, music, and arts and crafts with festivals and fairs. Local artists and talent from around the globe showcase their talents in Colorado, and tens of thousands of visitors annually are drawn to the state's robust festival landscape. In some cases, these festivals extend the seasons in tourism-dependent communities. In all cases, these festivals are contributing substantial economic benefits to the state and its communities.

Festivals

The combination of Colorado's mountain views and state-of-the-art venues makes it a superb setting for major events. Across the state, these festivals and independent fairs attract impressive crowds confirming Colorado's emphasis on the arts.

Film

- The Boulder International Film Festival, one of the most influential young film festivals in the U.S., attracted over 13,000 filmmakers, media, guests, and enthusiasts over the four-day event in 2008.
- The annual Telluride Film Festival, a tradition for 35 years, is ranked among the top ten international film festivals in the country and among the top five U.S. film festivals. In 2008, over 30,000 saw films and attended free screenings and seminars. Over 500 volunteers help run the event.
- For the past 17 years, the Aspen Film Festival has upheld its tradition of screening a Shortsfest, a qualifying festival for the Academy Awards. Prominent directors, such as Alexander Payne (*Sideways*), have lectured and help drive the creative and professional spirit at the event.
- Since 1978, the Denver Film Society (DFS) has championed film as an art form and civic forum. The Starz Denver Film Festival and Starz Film Center grew out of DFS's vision and have aligned to create a strong trifecta of film activity in the Denver region. Now in its 31st year, the Starz Denver Film Festival is 11 days of screenings, red carpet premieres, and award ceremonies.

Music

- NewWestFest is a free two-day event held in downtown Fort Collins that attracts over 100,000 people annually. Started 20 years ago to showcase Colorado artists, it now has five stages for over 60 Colorado bands and over 300 arts, crafts, and food vendors. Kids Music Adventure, a family-friendly component, offers music workshops and an instrument petting zoo. Activities in the Discovery Science Center tent teach children about vibrations, sound waves, and how the ear interprets sound.
- For 35 years, the Telluride Bluegrass Festival has been the premier bluegrass festival in the country, drawing 40,000 visitors over four days. The festival features sets by music legends and acoustic acts from Colorado and around the world.
- Jazz Aspen Snowmass, its own not-for-profit organization, hosts an annual Labor Day festival that drew 36,700 people over five days (2008). The organization was established in 1991 with the mission of presenting and preserving jazz, American, and popular music through world-class festivals, performances, and education programs.

Arts and Crafts

- Steamboat Springs Art in the Park features works of over 150 artisans and attracts 8,000 to 10,000 people every year. Presented by the Steamboat Springs Arts Council, the event highlights works by artists in Steamboat Springs' thriving arts community: an "arts town with altitude."
- The Cherry Creek Arts Festival has been held for 16 years in early July in the Cherry Creek North neighborhood of Denver and draws over 350,000 each year. The festival includes 200 visual artists, four performance art stages, interactive art activities, and special curated art exhibits. The festival is nationally recognized and has received awards from the International Festivals and Even Association.
- Lake City Arts and Crafts Festival is an annual production of Lake City's Community Arts committees on culinary arts, dance, music, storytelling and writing (folklore, videography and documentary, poetry, and other creative writing), theatre, and the visual arts. Tile murals display the county's history and natural attractions and engage the community by inviting residents, schoolchildren, and visitors to impress designs in tiles to display. The juried festival draws over 85 vendors.
- The Beaver Creek Art Festival held in Vail, Colorado, attracts over 30,000 attendees over two days in 2008. More than 150 artists from around the country sell their works. For the past 20 years, the festival has showcased a broad range of media including photography, paintings, sculpture, jewelry, glass, ceramics, and mixed media. Festival attendee can chat with artists and commission art.

VI. Growing the Creative Economy: Next Steps

Colorado already has established itself nationally as a premier creative economy, which can be confirmed by its high national rankings and concentrations in numerous categories of creative enterprises and occupations. But despite its national reputation, the state has not yet realized its fullest potential both in building on the growing convergence and synergies with other high growth sectors such as green products, outdoor products, tourism, and technology and its potential for stimulating new kinds of learning and improving educational outcomes.

The first step to getting the greatest advantage from the state's creative enterprises and people is its recognition as a source of economic growth and competitive advantage. The 4 percent of the workforce employed in creative enterprises exceeds agribusiness & food processing and defense & security and is almost as large as biotechnology.

This report is intended to be primarily a descriptive region-by-region analysis of the scale and scope of the state's creative economy and is based on existing and accessible economic data. The analysis reveals where Colorado already has strengths. Certainly, sustainable design and game development are rapid growth areas; publishing and literature, western style home furnishings, and outdoor clothing and equipment are creative sectors in which the state has already developed a brand; and product design has the potential to become a global force.

The numbers are supplemented by a cursory review of the state's assets and special strengths used to provide context and examples of the kinds of activities that are represented by the pure numbers. The examples are not intended to be comprehensive or exhaustive. They provide just a small sampling of the richness of the state's creative assets.

To further build the creative economy in Colorado, it would be necessary to more fully understand the competitive challenges faced by each of the sub-segments, as well as to identify areas of significant economic opportunity. Taking the next steps requires a more comprehensive economic strategy that would include:

- understand what drives and what impedes the growth of the various segments of the creative economy;
- develop a deeper understanding of the linkages between the creative talent in the state and the other important clusters—to deepen these connections and improve the competitiveness of some of the more traditional industries, such as manufacturing;
- further assess the strengths of the state's higher education institutions to identify how these assets could be further harnessed to build the creative sector; and
- learn more about where creative people choose to live and why, by region, which then would lead to suggested strategies and polices that would take Colorado to the next level as a creative economy.

Appendix A: Defining the Creative Economy

NAICS	DESCRIPTION	NEFA	COLORADO
323110	Commercial lithographic printing	X	X
323111	Commercial gravure printing	X	X
323112	Commercial flexographic printing	X	X
323113	Commercial screen printing	X	X
323114	Quick printing	X	
323115	Digital printing	X	X
323117	Books printing	X	X
323119	Other commercial printing	X	X
323121	Tradebinding and related work	X	X
323122	Prepress services	X	X
325910	Printing ink manufacturing	X	
325992	Photographic film and chemical manufacturing	X	
327112	Vitreous china and earthenware articles mfg.	X	
327212	Other pressed and blown glass and glassware	X	
327215	Glass product mfg. made of purchased glass	X	
327420	Gypsum product manufacturing	X	
327991	Cut stone and stone product manufacturing	X	
327999	Miscellaneous nonmetallic mineral products	X	
332323	Ornamental & architectural metal work mfg.	X	X
333293	Printing machinery and equipment mfg.	X	
333315	Photographic and photocopying equip. mfg.	X	
334220	Broadcast and wireless comm.. equip.	X	
334310	Audio and video equipment manufacturing	X	
334612	Audio and video media reproduction	X	
334613	Magnetic and optical recording media mfg.	X	
336612	Boat building	X	
337212	Custom architectural woodwork & millwork	X	X
339911	Jewelry, except costume, manufacturing	X	
339912	Silverware and hollowware manufacturing	X	
339913	Jewelers' material and lapidary work mfg.	X	
339914	Costume jewelry and novelty manufacturing	X	
339942	Lead pencil and art good manufacturing	X	
339992	Musical instrument manufacturing	X	X
423410	Photographic equip. merchant wholesalers	X	
423620	Electric appliance merchant wholesalers	X	
423920	Toy & hobby goods merchant wholesalers	X	
423940	Jewelry merchant wholesalers	X	
423990	All other durable goods merchant wholesalers	X	
424110	Printing and writing paper merch. whls.	X	
424920	Book and periodical merchant wholesalers	X	X
443112	Radio, TV, and other electronics stores	X	

NAICS	DESCRIPTION	NEFA	COLORADO
443130	Camera and photographic supplies stores	X	
448310	Jewelry stores	X	
451120	Hobby, toy, and game stores	X	
451130	Sewing, needlework, piece goods stores	X	
451140	Musical instrument and supplies stores	X	X
451211	Book stores	X	X
451212	News dealers and newsstands	X	X
451220	Precorded tape, CD, and record stores	X	
453220	Gift, novelty, and souvenir stores	X	
453920	Art dealers	X	X
453998	Store retailers not specified elsewhere	X	
511110	Newspaper publishers	X	X
511120	Periodical publishers	X	X
511130	Book publishers	X	X
511191	Greeting card publishers	X	X
511199	All other publishers	X	X
511210	Software publishers	X	
512110	Motion picture and video production	X	X
512120	Motion picture and video distribution	X	X
512131	Motion picture theaters, except drive-ins	X	X
512132	Drive-in motion picture theaters	X	X
512191	Teleproduction & postproduction services	X	X
512199	Other motion picture and video industries	X	X
512210	Record production	X	X
512220	Integrated record prod. & distribution	X	X
512230	Music publishers	X	X
512240	Sound recording studios	X	X
512290	Other sound recording industries	X	X
515111	Radio networks	X	X
515112	Radio stations	X	X
515120	Television broadcasting	X	X
515210	Cable & other subscription programming	X	X
516110	Internet publishing and broadcasting	X	X
517510	Cable and other program distribution	X	X
519110	News syndicates	X	X
519120	Libraries and archives	X	X
532220	Formal wear and costume rental	X	
532230	Video tape and disc rental	X	
532299	All other consumer goods rental	X	
541310	Architectural services	X	X
541320	Landscape architectural services	X	X

NAICS	DESCRIPTION	NEFA	COLORADO
541340	Drafting services	X	X
541410	Interior design services	X	X
541420	Industrial design services	X	X
541430	Graphic design services	X	X
541490	Other specialized design services	X	X
541810	Advertising agencies	X	X
541820	Public relations agencies	X	X
541830	Media buying agencies	X	X
541840	Media representatives	X	X
541850	Display advertising	X	X
541860	Direct mail advertising	X	X
541890	Other services related to advertising	X	X
541921	Photography studios, portrait	X	X
541922	Commercial photography	X	X
611519	Other technical and trade schools	X	
611610	Fine arts schools	X	X
711110	Theater companies and dinner theaters	X	X
711120	Dance companies	X	X
711130	Musical groups and artists	X	X
711190	Other performing arts companies	X	X
711310	Promoters with facilities	X	X
711320	Promoters without facilities	X	X
711410	Agents and managers for public figures	X	X
711510	Independent artists, writers, and performers	X	X
712110	Museums	X	X
712120	Historical sites	X	X
712130	Zoos and botanical gardens	X	X
712190	Nature parks and other similar institutions	X	
812921	Photofinishing laboratories, except one-hour	X	
812922	One-hour photofinishing	X	

Appendix B: Comparison of Colorado to New England Using NEFA Definition

The creative economy defined by NEFA provides a broad layout of how to view the relationships between businesses in the creative economy. As a widely accepted definition, its use allows communities to make comparisons with other locations. Total employment in cultural enterprises in Colorado was estimated using the NEFA definition, as well as the same data source, the U.S. Department of Commerce 2002 Economic Census. This analysis found that Colorado's employment in the core cultural enterprises as defined by NEFA is relatively strong, encompassing about 92,000 jobs in the state.

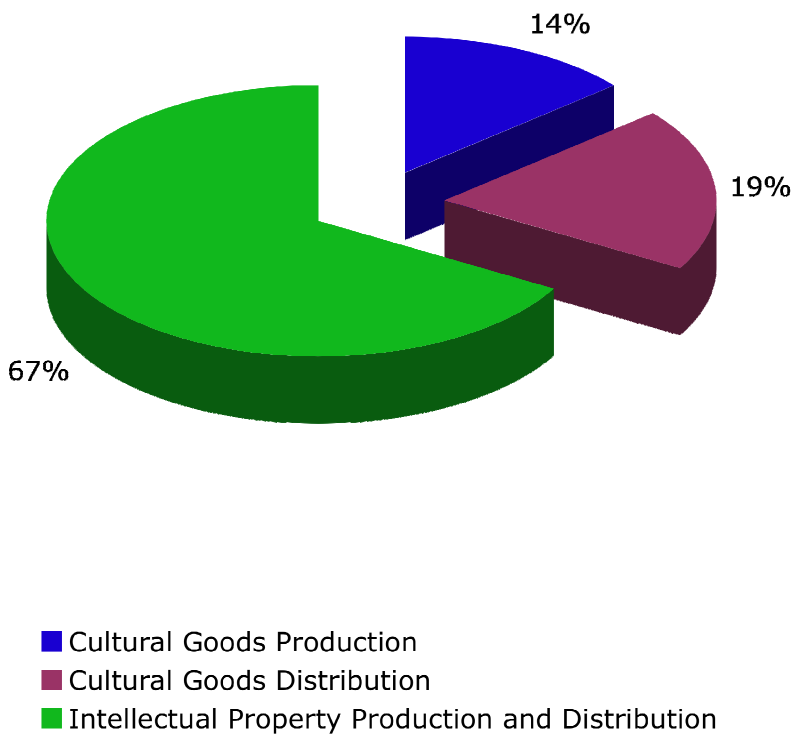
When compared to the New England states, Colorado has more creative economy jobs than all of these states, with the exception of Massachusetts, and the relative size of employment in cultural enterprises was higher than except Rhode Island (Table 8).

Table 8. Employment and Percent Employed in Creative Economy Compared to New England states Using NEFA Definition, 2002.

State	Employed	Percent of workforce
Colorado	92,255	4.3
Connecticut	68,827	4.1
Maine	16,643	2.9
Massachusetts	132,011	4.2
New Hampshire	21,654	3.6
Rhode Island	25,453	6.7
Vermont	10,131	3.8

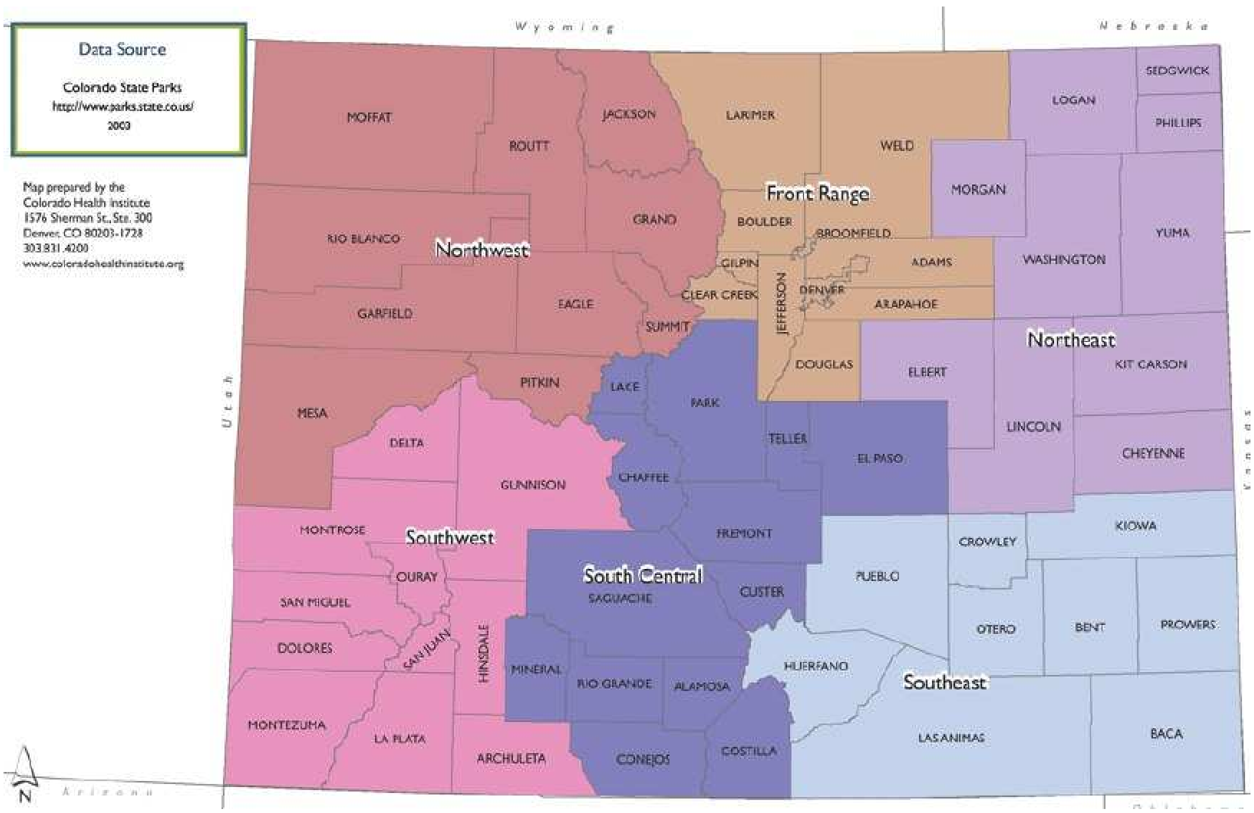
Source: United States Department of Commerce, 2002 Economic Census.

Figure 6. Colorado Employment in Cultural Enterprises—Number of Jobs by NEFA Segment, 2002



Source: United States Department of Commerce, 2002 Economic Census

Appendix C: Colorado Regions



Appendix D: About Economic Modeling Specialists, Inc.

Economic Modeling Specialists, Inc. (EMSI) provides integrated regional economic and labor market data, web-based analysis tools, data-driven reports, and consulting services. EMSI's expertise is centered on regional economics, data analysis, programming, and design so that it can provide the best available products and services for regional decision makers.

In an effort to present the most "complete" possible picture of local economies, EMSI estimates jobs and earnings for all workers using Bureau of Labor Statistics data, data from the U.S. Bureau of Economic Analysis and information from the U.S. Census Bureau. Because the number of non-covered workers in a given area can be large, job figures in EMSI Complete will often be much larger than those in state LMI data.

Occupational Data

In order to estimate occupation employment numbers for a region, EMSI first calculates industry employment. EMSI then uses regionalized staffing patterns for every industry and applies the staffing patterns to the jobs by industry employment data in order to convert industries to occupations. EMSI bases occupation data on industry data because it is generally more reliable and is always published at the county level, whereas occupation data is only published by Occupational Employment Statistics (OES) region (usually 4-6 economically similar counties). Occupation employment data includes proprietors and self-employed workers.

Annual Openings and Replacement Jobs

When projecting occupational employment, EMSI measures a change in New Jobs and Replacement Jobs. The New Jobs figure captures the change in the total number of workers employed in the occupation (the difference between the base and projection year), while the Replacement Jobs figure estimates the number of jobs needing to be filled within existing positions on account of people migrating out of the region, retiring, or dying. A combination of both numbers indicates total job openings over the projection period. Replacement jobs are an estimate based on national occupation-specific percentages from the U.S. Bureau of Labor Statistics Employment Projections program.

Occupation earnings

These are displayed in the tool are, by default, median hourly earnings based on data from Occupational Employment Statistics (U.S. Bureau of Labor Statistics) and the American Community Survey (U.S. Census Bureau). Unlike industry earnings, earnings for occupations do not include benefits. In addition, county/ZIP industry earnings are used to adjust occupational earnings at the county and ZIP level. If local industries generate more income per worker than the state average, our data will show higher occupational earnings for occupations in that industry.

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EMSI Federal Data Sources

U.S. Department of Commerce

Bureau of Economic Analysis

* Local Area Annual Estimates
* Local Area Personal Income Reports
* State Annual Estimates
* State Quarterly Income Estimates
* Industry Economic Accounts, Benchmark and Annual Input-Output (I-O) Accounts

U.S. Census Bureau

* American Community Survey
* County Business Patterns
* ZIP Code Business Patterns
* Nonemployer Statistics
* Population Division, County Population Estimates
* Population Division, Housing Units Estimates
* Population Division, State Interim Population Projections
* Census 1990 Summary Tape Files 1 and 3
* Census 2000 Summary Files 1 and 3

U.S. Patent and Trademark Office

* USPTO Patent Full-Text and Image Database

U.S. Department of Labor

Bureau of Labor Statistics

* Quarterly Census of Employment and Wages (QCEW)
* Division of Labor Force Statistics, Current Population Survey (CPS)
* Division of Occupational Employment Statistics, Occupational Employment Statistics (OES)
* Local Area Unemployment Statistics (LAUS)
* Office of Compensation and Working Conditions, National Compensation Survey (NCS)
* Office of Occupational Statistics and Employment Projections: 2004-14 National Employment Matrix; Employment by occupation (current and 10-year projections); Occupational Employment, Training, and Earnings

Employment and Training Administration (ETA)

* Characteristics of the Insured Unemployed
* National O*NET Consortium, O*NET Production Database

U.S. Department of Education, National Center for Education Statistics

* Integrated Postsecondary Education Data System (IPEDS)

* Common Core of Data (CCD) (Public Elementary and Secondary Education Database)

* Characteristics of Private Education in the United States

* Office of Educational Research and Improvement for the CIP, 2000 Standard Occupational Classification Crosswalk to 2000 Classification of Instructional Programs

U.S. Department of Health and Human Services, National Center for Health Statistics

* Health, United States

U.S. Postal Service

* Address information Systems (AIS) Products, Delivery Statistics

* AIS Products, 5-Digit ZIP Product

* AIS Products, City State Product

Internal Revenue Service

* Statistics of Income Division, County-to-County Migration Data

U.S. Department of Housing and Urban Development

* Office of Policy Development and Research, 50th Percentile Rent Estimates

U.S. Railroad Retirement Board

* Annual Railroad Retirement Act and Railroad Unemployment Insurance Act Statistical Tables

Appendix E: List of Creative Occupations

Field	SOC code	SOC Description
Media/Communications	11-2031	Public relations managers
Media/Communications	11-2021	Marketing managers
Designer	17-1012	Landscape architects
Designer	17-1011	Architects, except landscape and naval
Cultural	25-4012	Curators
Media/Communications	11-2011	Advertising and promotions managers
Media/Communications	27-3042	Technical writers
Media/Communications	27-4013	Radio operators
Cultural	25-4021	Librarians
Media/Communications	27-4099	Media and communication equipment workers, all other
Cultural	25-4011	Archivists
Media/Communications	27-3041	Editors
Media/Communications	27-4032	Film and video editors
Media/Communications	27-3031	Public relations specialists
Designer	27-1021	Commercial and industrial designers
Artist/Performer	27-2012	Producers and directors
Media/Communications	27-4014	Sound engineering technicians
Cultural	25-4013	Museum Technicians and Conservators
Designer	27-1025	Interior designers
Media/Communications	27-3022	Reporters and correspondents
Designer	27-1022	Fashion designers
Designer	27-1027	Set and exhibit designers
Designer	27-1029	Designers, all other
Media/Communications	27-3021	Broadcast news analysts
Media/Communications	27-4031	Camera operators, television, video, and motion picture
Designer	27-1024	Graphic designers
Media/Communications	27-4012	Broadcast technicians
Media/Communications	27-4011	Audio and video equipment technicians
Artist/Performer	27-2032	Choreographers
Designer	27-1023	Floral designers
Media/Communications	27-3011	Radio and television announcers
Media/Communications	27-1011	Art directors
Media/Communications	27-4021	Photographers
Cultural	25-4031	Library technicians
Cultural	25-9011	Audio-visual collections specialists
Artist/Performer	27-3043	Writers and authors

Field	SOC code	SOC Description
Artist/Performer	27-1014	Multi-media artists and animators
Artist/Performer	27-2011	Actors
Artist/Performer	27-2042	Musicians and singers
Artist/Performer	27-1019	Artists and related workers, all other
Artist/Performer	27-1013	Fine artists, including painters, sculptors, and illustrators
Artist/Performer	27-1012	Craft artists
Artist/Performer	27-2099	Entertainers and performers, sports and related workers, all other
Media/Communications	13-1011	Agents and business managers of artists, performers, and athletes
Artist/Performer	27-2031	Dancers
Artist/Performer	27-2041	Music directors and composers
Media/Communications	27-3099	Media and communication equipment workers, all other

Source: US Bureau of Labor Statistics -Standard Occupational Classification (SOC) codes
http://www.bls.gov/soc/home.htm

Endnotes

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[i] John Gunther. *Inside USA*. Harper & Company, 1947.

[ii] Neal Peirce and Jerry Hagstrom, *The Book of America*, New York: Norton Books, 1983.

[iii] Kirk Johnson, "Denver's Unconventional Art, Ready for the Convention," *New York Times*, August 21, 2008.

[iv] Kirk Johnson, "Denver's Unconventional Art, Ready for the Convention," *New York Times*, August 21, 2008.

[v] Richard Florida, *Who's Your City*, New York: Basic Books, 2008, p. 240.

[vi] John Villani, *The 100 Best Art Towns in America: A Guide to Galleries, Museums, Festivals, Lodging and Dining*, The Countryman Press, Fourth Edition, 2005.

[vii] http:// www.usda/ers.

[viii] National Endowment for the Arts, *Artists in the Workforce, 2000-2005*, Washington, DC: NEA, Research Report #48, May 2008.

[ix] http://www.infernofilm.com/onlocation.html

[x] Based on an analysis of 2007 employment data acquired from Economic Modeling Specialists, Inc.

[xi] Ann Markusen, et al, "Defining the Cultural Economy: Industry and Occupational Approaches", presented at North American Regional Science Council Meeting, Toronto, November 2006.

[xii] Richard Florida, *The Rise of the Creative Class*, New York: Basic Books, 2002.

[xiii] Douglas DeNatale and Gregory Wassall, *The Creative Economy: A New Definition*, New England Foundation for the Arts, 2007.

[xiv] Calculated using EMSI, Economic Modeling Specialists, Inc.

[xv] Based on comparisons to clusters defined by industry classifications used in Unlocking "Rural Competitiveness: The Role of Regional Clusters," Washington, DC: U.S. Department of Commerce, 2006. http://www.ibrc.indiana.edu/innovation/reports.html but using employment as calculated by EMSI.

[xvi] In order to compare the creative enterprise cluster to other Colorado industry clusters, only the direct employment associated with creative enterprises, 122,287, was included.

[xvii] "Making the Link: Advancing Design as a Vehicle of Innovation and Economic Development," City of Toronto Economic Development Division, from "What is Design," UK Design Council: http://www.designcouncil.org.uk/, 2006.

[xviii] Estimates of jobs related to a region's competitive effect are based on a shift-share analysis conducted through Economic Modeling Specialists, Inc.'s Economic Forecaster tool. Shift-share analysis estimates regional changes in employment after accounting for national trends, industry, or regional trends. Regional trends are factors specific to the specified geography like transportation costs, wage rates, policy changes.

[xix] Regional Economic Information System (2007 data), Bureau of Economic Analysis, September 2008

[xx] Colorado Cable Telecommunications Association http://www.cocabletv.com/

[xxi] Calculated by EMSI, Economic Modeling Specialists, Inc.

[xxii] Interview with Colorado Theatre Guild staff, 2008.

[xxiii] Based on projections calculated by Economic Modeling Specialists, Inc.

[xxiv] Calculations by Mt. Auburn Associates and RTS based on U.S. Bureau of Labor Statistics, May 2007 OES data.

[xxv] “More Colleges Offering Video Game Courses," from *Wired*, cited By The Associated Press, September 23, 2005.

[xxvi] Estimates provided by the Colorado Game Developers Association.

[xxvii] http://www.outdoorindustry.org/index.php.

[xxviii] Longwoods International, *Colorado Travel Year 2007 Report*, Colorado Office of Tourism.

[xxix] Clarion Associates & BBC Research and Consulting, “The Economic Benefits of Historic Preservation in Colorado,” 2005 Update.

[xxx] Colorado Business Committee for the Arts, *2006 Economic Activity Study of Metro Denver Culture*. Denver, 2006.