Hawaii's Creative Industries

Update Report 2010

Department of Business, Economic Development and Tourism

June 2010

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research & economic analysis division

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EXECUTIVE SUMMARY

Assisting development of Hawaii's key creative activities has become an important economic development strategy. Hawaii's cultural diversity and its Hawaiian host culture are major attractions for millions of visitors and their spending. The uniqueness of Hawaii's creative, artistic and cultural content helps Hawaii's creative products compete in worldwide markets. In addition, the creative industries and their workforce are key sources of ideas, content and talent for Hawaii's emerging technology sector.

In order to capture and track data on the range of activities that can address the broader relationship between creative industries and emerging markets for technology and entertainment, the Research and Economic Analysis Division teamed with the DBEDT Creative Industries Division to review more current definitions of creative industries and revise the scope of the activities in Hawaii's creative sector, based in larger part on similar work in Massachusetts. This update has resulted in additional industries being added to the creative sector portfolio, such as advertising and marketing, design services, architecture, and engineering/research and development. The creative sector now overlaps some elements of the technology sector.

Industry Groups in the Creative Sector

The table below shows the 13 industry groups in the updated creative sector (left side), and their 2008 job counts based on the updated definition of the sector. In total, the creative industries accounted for about 44,650 jobs in Hawaii for 2008. This was up nearly 10% from 2002, but down a slight, half percent from 2007. The earnings average was $49,947.

CREATIVE INDUSTRIES PRODUCTION GROUPS AND MARKETS			
PRODUCTION SIDE TARGET GROUPS		MARKET SIDE ACTIVITIES	
Industry Group	2008 Jobs	Market	Estimated Jobs
Performing and Creative Arts	8,531	Digital Media Market	na
Engineering/R&D	7,336	Film & TV Market	1,319[1]
Computer and Digital Media	6,657	Animation	150+[2]
Marketing & Related	4,918		
Business Consulting	4,291		
Publishing & Information	2,887		
Cultural Activities	2,311		
Architecture	2,280		
Design Services	1,453		
Radio, TV Broadcasting	1,361		
Film TV & Video Production	1,231		
Music	1,106		
Arts Education	287		
TOTAL CREATIVE SECTOR	44,649		

[1] Estimate of full-time equivalent jobs based on shoot days and number of hires. Source: DBEDT, Creative Industries Division

[2] Estimated by Creative Industries Division.

These industries have been defined using the North American Industrial Classification System, or *NAICS*, which provides a rich source of standard data at a detailed level on producing industries. Without that standard data, we would be faced with the need to do special surveys and compilations, which are costly and usually not comparable with similar activity elsewhere.

Unfortunately, NAICS is focused only on firms and industries, not markets. For that reason NAICS data does not clearly identify major *commercial markets* for creative sector products such as digital media, computer animation and games development shown on the right side of the table. The information available on these markets will be presented in the body of this report.

Performance of the Creative Industries Portfolio

Beyond improving the definition of the creative sector, a primary purpose of this report is to measure performance of the industry groups. For each of the NAICS-measurable groups in the creative sector industry portfolio, a performance profile was constructed that was composed of three primary performance measures: jobs growth, change in competitive national industry share, and level of concentration (or specialization) in Hawaii's economy. The first two measures help assess the strength and competitiveness of the activity, while the third identifies likely export industries in the portfolio.

Combining the measures into a common framework called a performance map allows the creative sector industry groups to be placed in four performance categories as show in the figure below (the full report explains this mapping process in more detail).

Creative Industry Groups Mapped by Performance, 2002-2008

Total Jobs in Creative Industry Groups, 2008: 44,649

Average Annual Earnings All Groups, 2008: $49,947

Net Change in Jobs 2002-2008: 9.7%

Transitioning Groups: 51% of jobs			Base-Growth Groups: 8% of jobs		
Groups	Chg in Jobs	Ave. Earnings	Groups	Chg in Jobs	Ave. Earnings
Arts education	19%	$13,190	Cultural activities	15%	$43,557
Computer & digital media (creative)	16%	$68,244	Music	6%	$26,229
Architecture	10%	$64,145			
Marketing, & related	1%	$40,027			
Performing & creative arts	0%	$14,393			
Ave. change in jobs 2002-2008:	**6%**		**Ave change in jobs 2002-2008:**	**12%**	
Average 2008 Earnings for Group:		**$40,752**	**Average 2008 Earnings for Group:**		**$37,949**

Declining Groups: 12% of jobs			Emerging Groups: 29% of jobs		
Groups	Chg in Jobs	Ave. Earnings	Groups	Chg in Jobs	Ave. Earnings
Radio & television broadcasting	(2%)	$58,442	Design services	28%	$42,135
Publishing & information	(2%)	$63,183	Business consulting	27%	$52,948
Film, TV, video production/distrib.	(18%)	$33,793	Engineering/R&D serv. (creative)	26%	$79,672
Ave. change in jobs 2002-2008:	**(6%)**		**Ave. change in jobs 2002-2008:**	**26%**	
Average 2008 Earnings for Group:		**$55,402**	**Average 2008 Earnings for Group:**		**$66,735**

The highest performing industries in the creative sector for the 2002 to 2008 period appear on the right side of the figure above. Industry groups on this side of the map have not only grown jobs over the period but have outperformed the same industries nationally, suggesting they are gaining in competitiveness. In addition, the *Base-Growth* industries show a higher proportion of jobs in Hawaii's economy than is the case nationally. This suggests they are likely to be exporting some proportion of their output, either directly or indirectly. This also means that while relatively small, these industries are among the economic drivers in the economy. *Emerging* industry groups are not as concentrated in Hawaii's economy, but their otherwise high performance suggests they are candidates for becoming economic drivers in the future.

Industries on the left side of the performance map face some challenges. *Transitioning* industries are still growing or holding steady in terms of job count. However, they are growing slower than their national counterparts. This suggests that they have reach a plateau in terms of competitiveness. Finally, *declining* industries have lost jobs over the period under study. In some cases this may be the result of unusual factors such as the natural volatility of the film industry. In other cases, like information and broadcasting, it may reflect outsourcing of service beyond Hawaii and/or significant increases in productivity, thanks to emerging technology that reduces labor needs. In either case, these industries warrant closer study to understand the challenges and barriers to growth that they are facing.

Overall, the creative industry groups added about 3,950 jobs to the state's economy between 2002 and 2008. This amounted to a 9.7 percent increase in jobs, somewhat under the vigorous, 13.3 percent growth in Hawaii's civilian economy as a whole for the period. Much of the underperformance by the portfolio can be traced to the 6% overall decline among the broadcasting—information Film/TV groups and the modest 6% growth among the transitioning creative industry groups, which pulled down the average for the portfolio. Despite its underperformance in job growth, the earnings average of the creative industry portfolio of nearly $49,950 in 2008 was well above the statewide average of $43,900.

High Performing Creative Industry Groups

Two creative industry groups, cultural activities and music, registered as high performing base-growth industries for the 2002 to 2008 period. However, their combined jobs growth amounted to a below-Hawaii-average, 12% for the period. Moreover, the two industries combined earnings average was only about $37,950, 14% below the statewide average.

The industry groups in the emerging category did much better. Composed of design services, business consulting & engineering R&D, this group grew jobs 26% for the period. This quadrant also had the highest earnings average at about $66,735.

Other Creative Industries' Performance

Most of the creative sector industry groups (five) fell into the transitioning category for the 2002 to 2008 period. These ranged from the performing and creative arts, which just barely avoided the declining category, to arts education, which grew jobs by 19%. While these industry groups grew, they lost ground to the nation in terms of competitive industry share.

Finally, three creative industry groups that lost jobs in the 2002 to 2008 period fell into the declining quadrant of the performance map. Broadcasting, information, and film/TV all lost jobs for the period. Broadcasting and film/TV also lost national competitive industry share (Figure 3), while publishing/information held its national share. This is because the same national industry lost jobs at about the same rate.

It is important to note that the independence of these creative groups is not yet clear. The performance of some groups may reflect strong or weak markets driving other industries for which the creative target is simply a supplier. For instance the high performance of cultural activities in the performance map probably reflects the strong tourism demand over the period, rather than a specific local or export market for cultural products. Likewise, some targets may perform poorly because they are tied to another industry that has experienced difficulties.

Conclusions and Next Steps

Work should continue to flesh out the dimensions and opportunities of the commercial markets served by the NAICS-based creative industry groups. This particularly includes digital media and the broader film industry, which is only partially captured in the NAICS film production industry. Also needing closer study is the link between specific creative activity and emerging technologies in information, communications, entertainment, and the broad range of commercial applications that are being driven by innovation. Learning how creative activity supports and utilizes emerging technology can help clarify the skill sets and educational elements that will help make Hawaii a leader in innovation. An occupational profile of creative industry occupations is currently underway.

I. INTRODUCTION

Development of Hawaii's key creative activities has become an important focus in the State's economic development efforts in recent years for several reasons. First, Hawaii's cultural diversity and the unique heritage of its Hawaiian host culture are major attractions for the millions of visitors that inject billions of dollars into Hawaii's economy each year. Without this cultural component to the visitor experience, Hawaii is mostly a sun and surf destination like many of its competitors.

Secondly, the depth of Hawaii's creative and cultural talent and unique artistic content helps Hawaii's creative products compete in worldwide markets. Supporting this asset is a market of millions of visitors to the state each year, which helps the arts and culture sector maintain critical mass. In addition, visitors absorb the creative products of Hawaii in context and share their discovery in the many markets from which they have come.

Finally, the creative industries and their workforce are key sources of ideas, content and talent for Hawaii's emerging technology sector. Increasingly, science and technology are making possible the development and delivery of new and valuable intellectual property, such as computer animation, mini-applications for mobile devices and even 3D modeling of potential new products. While the property rights to new technologies like iPods and iPhones may be owned and licensed by a few, or even just a single company, content development stemming from, or using these technologies has no limit in terms of products and number of companies that can benefit from content development.

For instance, while only Apple Computers owns the iPhone technology[1], hundreds or thousands of firms (often very small) can develop, own and license applications, utilizing the iPhone as a delivery platform. The same principle applies to creative innovation in architecture to address new energy technologies, and advertising and marketing innovation in the age of new delivery challenges like the internet and Tivo[2].

Particularly, since successful scientific technology companies are vulnerable to being relocated outside the state, developing a strong, creative, intellectual property development sector may provide more over-

[1] There will likely be some competition from Google in 2010, which is currently testing a similar mobile device.

[2] Device that records live TV for later viewing.

all stability to Hawaii's innovation economy. Hawaii's beauty, climate and cultural diversity may be major competitive assets in attracting and keeping creative, intellectual talent.

Updating the Definition of the Creative Sector

In 2007 DBEDT's Research and Economic Analysis Division (READ), in conjunction with DBEDT's Creative Industries Division (CID) developed a measure for the creative sector that focused on a number of key industry groups, highlighted by film and TV, music, and performing arts.[3]

However, since that report, several emerging areas have been added to that focus of interest, particularly emerging types of intellectual property based on new technologies for developing and delivering content through digital media and the internet. The priority focus by the State on the creative sector is now on a number of key activities for which Hawaii has an established competitive advantage as well as areas based on emerging technology that can generate valuable exports and high paying jobs; including:

- Film and TV
- Music
- Computer and digital media products (such as games and mobile applications)
- Animation
- Workforce development in these focus activities

To support the evolving development focus, CID and READ determined that a broader definition of the sector was needed. More current definitions of the creative sector were reviewed and the scope of the activities was revised based in large part on a similar study in Massachusetts.[4] In addition to including more technology-based creative activity, the newer Massachusetts definition also broadens the scope of industries in the creative sector portfolio to include such activities as advertising and marketing, design services, architecture, engineering and research and development.

[3] *The Creative Industry in Hawaii*, April 2007, DBEDT.

[4] Specifically the *North Shore Creative Economy, Market Analysis and Action Plan*, ConsultEcon, Inc., Economic Research and Management Consultants. Prepared for: the Enterprise Center at Salem State College, the Salem Partnership, and the Creative Economy Association of the North Shore, April 2008.

Creative Industries Development State Priorities

Established in 2003, the Creative Industries Division (CID), is the state's lead agency dedicated to advocating for and accelerating the growth of Hawaii's arts, culture, music, design, film, television and digital media industries. Comprised of the Film Industry Branch (FIB) aka the Hawaii Film Office and the Arts and Culture Development Branch (ACDB), CID supports and implements programs that connect creative communities and form strategic industry alliances that are the basis of Hawaii's creative economy.

In spite of the economic crisis, Hawaii continues to exhibit growth in its creative sectors which collectively contributed $4 billion to Hawaii's GDP in 2008 - up 10% since DBEDT began tracking the activities of the thirteen creative sectors in 2002..

Through a focus on maximizing export opportunities of Hawaii based creative intellectual propety and products coupled with attracting off shore industry to bring projects for Hawaii, the division strives to achieve a balance between these areas which are key building blocks of Hawaii's creative economy. Together, these important cornerstones of Hawaii's creative identity have exhibited the potential to generate significantly greater income for residents through high paying jobs, foster entrepreneurship and contribute to the health of Hawaii's overall economy.

Operational priorities:

- *Manage the Hawaii Film Office and the statutory obligations of the department to carry out film permitting, tax incentive management of Act 88, film studio management and operations, production servicing and business development/marketing functions for the local film industry – to ensure uninterrupted service of local and offshore production.*
- *Continue to focus on the sectors in the transitioning and base growth areas such as music, culture and art.*
- *Continue to seek activities and support that will lead to establishing Hawaii as a key leader in the global creative economy movement through innovation in education and innovation in infrastructure for new media and the arts and to be known worldwide for its arts and culture activities.*
- *Become a magnet for creative people and companies, and a place that visitors want to return to because of Hawaii's creative industry activities.*
- *Support creative industries that show the greatest growth potential such as music and arts educational services.*
- *Maintain and build Hawaii to be among the top 5 U.S. states in film production expenditures.*
- *Build strategic partnerships to elevate and expand distribution opportunities for creative industry sector products outside of Hawaii.*
- *Maintain and develop partnerships with industry groups (domestic and foreign)*

By focusing on these priorities it is the goal – given the current economic conditions – to maintain the creative sectors 2008 levels of GDP (6.2%), jobs and earnings.

Data Sources

A major feature of both the 2007 and current update of the creative sector is measurability and comparability. Where possible, the industries in the creative sector are selected from the very detailed North American Industrial Classification System (NAICS). A rich and reliable array of data is available on economic activity based on NAICS. NAICS data also permit the comparison of Hawaii industries against the same activities nationally, allowing better measures of performance.[5] The data for this report were developed for a recent DBEDT study on emerging industries which included the creative sector. They consist primarily of jobs and labor earnings that are available annually for very detailed industries.[6] Other measures such as sales, output and gross product are not available as frequently or in as much detail. More discussion on the data is contained in the following section.

[5] The framework was developed by DBEDT in another recent study for the evaluation of emerging industry performance See *Benchmarking Hawaii's Emerging Industries*, http://hawaii.gov/dbedt/info/economic/data_reports/emerging-industries/ .

[6] The basic data are compiled by Economic Modeling Specialists, Inc. (EMSI) and processed by DBEDT. EMSI supplements data from the Federal Departments of Labor and Commerce by including estimates of proprietors and self employed jobs, and by estimating data for very small industries that are not reported by the Federal agencies due to disclosure issues.

II. OVERVIEW OF HAWAII'S CREATIVE INDUSTRIES PORTFOLIO

Table 1 provides an overview of the 13 industry groups in the updated creative sector (left side), and their 2008 job count, based on the updated definition of the sector. In total, the creative industries accounted for about 44,650 jobs in Hawaii for 2008. This was up nearly 10% from 2002, but down a slight, half percent from 2007. The earnings average was $49,947.

In defining the broad creative sector the Massachusetts definition used selected industries in the North American Industrial Classification System, or *NAICS*, which is considered the gold standard for classifying and measuring economic activity. Jobs and wages for all of the hundreds of NAICS industries are available from State and Federal statistical agencies. Without that standard data, we would be faced with the need to do special surveys and compilations, which are costly and usually not comparable with similar activity elsewhere.

TABLE 1

CREATIVE INDUSTRIES PRODUCTION GROUPS AND MARKETS

PRODUCTION SIDE TARGET GROUPS		MARKET SIDE ACTIVITIES	
Industry Group	2008 Jobs	Market	Estimated Jobs
Performing and Creative Arts	8,531	Digital Media Market	na
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[1] Estimate of full-time equivalent jobs based on shoot days and number of hires. Source: DBEDT, Creative Industries Division

[2] Estimated by Creative Industries Division.

Unfortunately, NAICS is strictly a production-oriented, supply-side classification system, meaning that it is focused on firms and industries not markets. For that reason NAICS data does not clearly identify major *commercial markets* for creative sector products such as digital media, computer animation and games. NAICS does measure many of the likely industries that produce products for these markets, such as computer programming, engineering and film & video production.

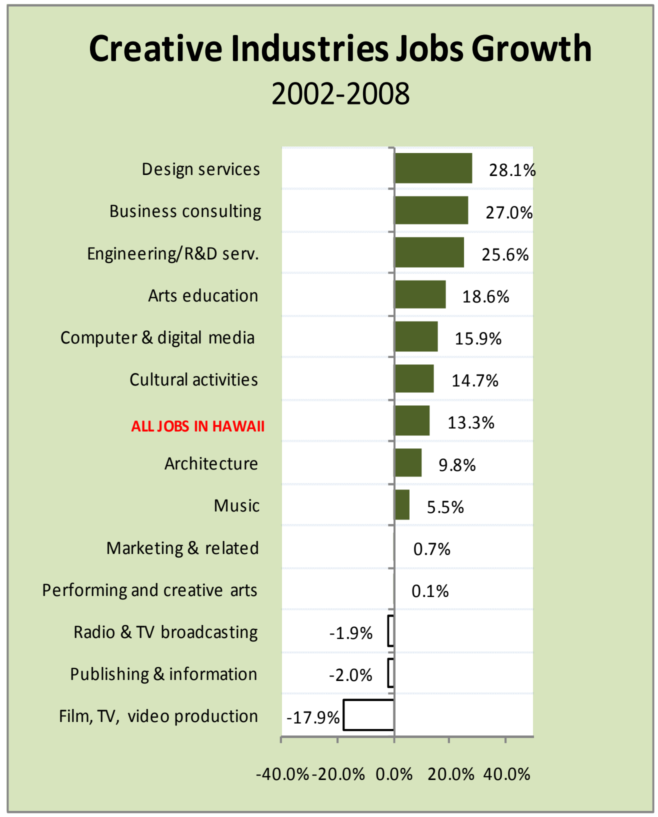
The right side of Table 1 shows the two major commercial markets associated with the Creative Sector, digital media and the film/TV market. The available information on these markets will be presented in Section V.

While the production-based NAICS data does not provide all the data we would like, it is high quality information and comparable with national data. Also, the jobs associated with the commercial market activity are contained, for the most part, in the production side industry groups. With the NAICS data as a base, further efforts can be made to better understand the commercial markets and Hawaii's competitiveness in serving them.

It must be noted that not all of the industry groups in the creative sector portfolio are the subject of active assistance by the State or local economic development organizations. Certainly, groups like film/TV, music, cultural activities, performing arts and computer services related to digital media have been of priority interest and efforts.

However, other groups like business consulting, publishing and information, broadcasting and architecture, to name a few, have not yet been the focus of development efforts. This is mainly because they have just recently been added to the creative industry portfolio through the adoption of the new, broader definition of the creative sector. The results of their performance in this study will need to be evaluated, as well as further investigated, to determine the intensity of development focus that would be appropriate for these additional creative industry groups.

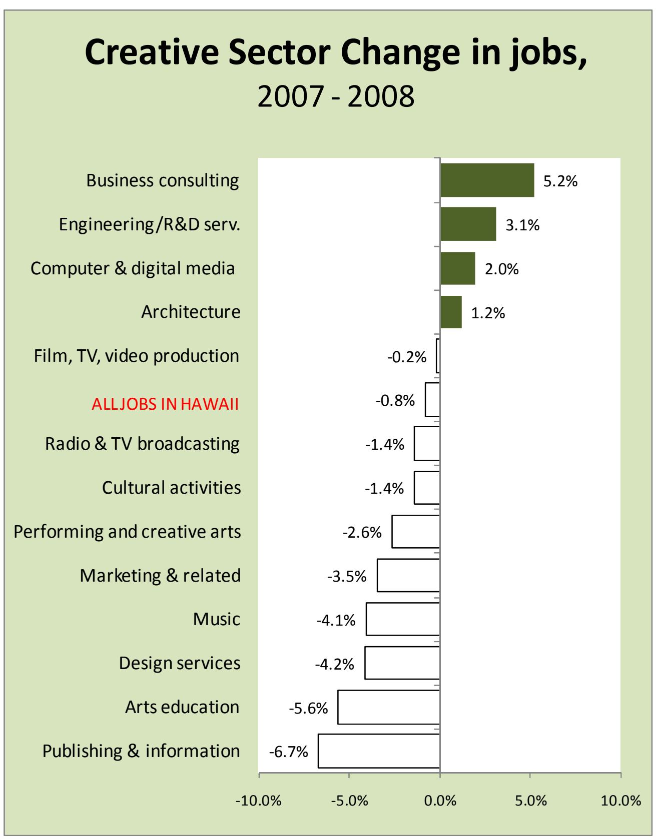
FIGURE 1



Creative Sector Jobs Growth

Just in terms of jobs growth, the creative industries portfolio seems to have performed well over the 2002 to 2008 period (Figure 1). Fully 11 of the 14 NAICS-based, target industry groups showed net job growth over the period. Of the targets, 6 registered as *high growth* industry groups by outperforming the overall state jobs growth rate of 13%. Design services topped the list in terms of job growth. This was followed by business consulting and engineering/R&D services.

FIGURE 2



The 3 industry groups losing jobs over the period were Radio/TV broadcasting, publishing & information and the production side of film and TV.

While this study is focused more on the longer term trends in the creative sector, it is of interest to look at how jobs in the sector have been impacted so far by the current economic downturn. Figure 2 shows how the creative industry groups performed in terms of job change in the latest year for data, 2007 to 2008.

The creative sector, like nearly all of Hawaii's industries, has experienced setbacks due to the very severe national recession that began in late 2007. Only four creative groups managed positive growth in 2008, with five industry groups performing better than the state average of a -0.8% job loss. The strongest performers in terms of job growth in 2008 were business consulting, engineering/R&D and computer/digital media.

Publishing and information experienced the most significant jobs loss in 2008 followed closely by arts education, design service and music. Industries like music, performing arts and cultural activities that are tied more closely to the visitor industry tended to be impacted greater than industries with more independent markets, like engineering, computer services and business consulting.

National Competitiveness of the Creative Sector

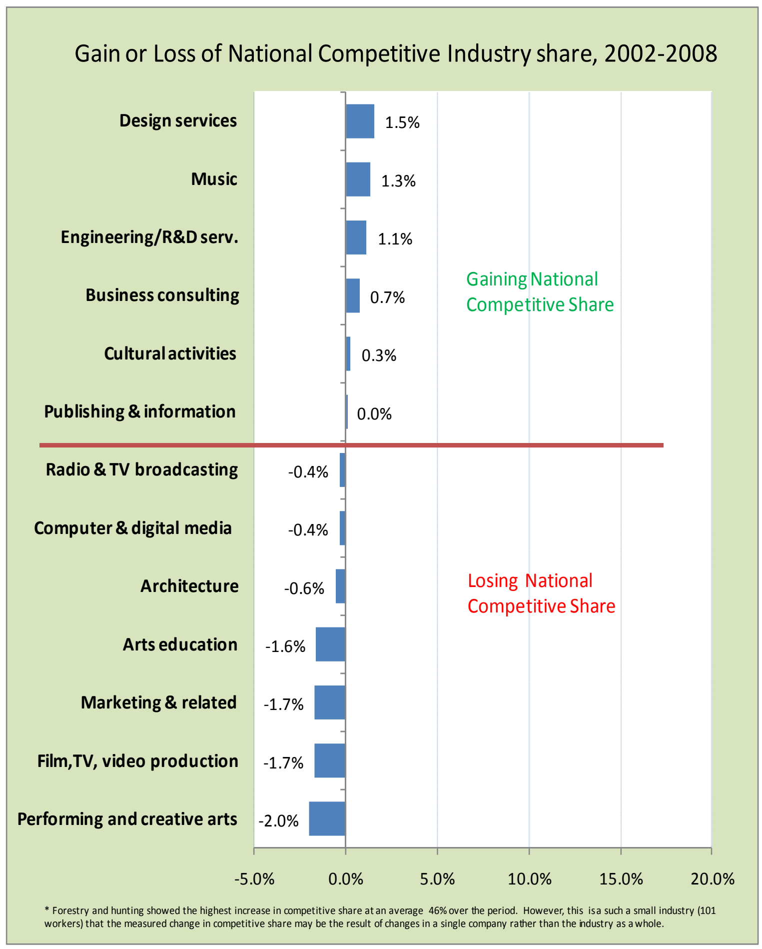
Job growth helps show the creative industries' competitiveness within Hawaii's economy. Another measure that can help shed light on creative sector industries is their performance compared to the same national industry. If a creative industry is growing faster in Hawaii than nationally, it is effectively increasing its competitive share of the national industry. If the industry is growing more slowly in Hawaii its national industry share is declining. [7]

Figure 3 shows how much more or less Hawaii's creative industries grew per year on average than the same industries nationally. For instance, over the 2002 to 2008 period, jobs in the Design Services industry group grew an average of 1.5% more yearly in Hawaii than the same industry nationally. Thus, design services gained competitive national industry share. On the other hand, even though the performing and creative arts industry group grew jobs over the period, it lost national industry share (an average 2.0% per year below national industry growth).

Industries like computer and digital media, architecture, marketing, and arts education also lost competitive national market share even though they increased their statewide job counts.

Industries that have both a positive job growth and increase in competitive national industry share, represent the best performing industry groups over a period of time. Industry groups with the more positive competitive share metric are probably showing a higher comparative advantage over most of the national industry.

FIGURE 3



[7] A more complete discussion of the performance metrics and framework for analysis is contained in the DBEDT report Benchmarking Hawaii's Emerging Industries, available for download at http://hawaii.gov/dbedt/info/economic/data_reports/emerging-industries/.

Industry Concentration – Hawaii's Creative Specialties

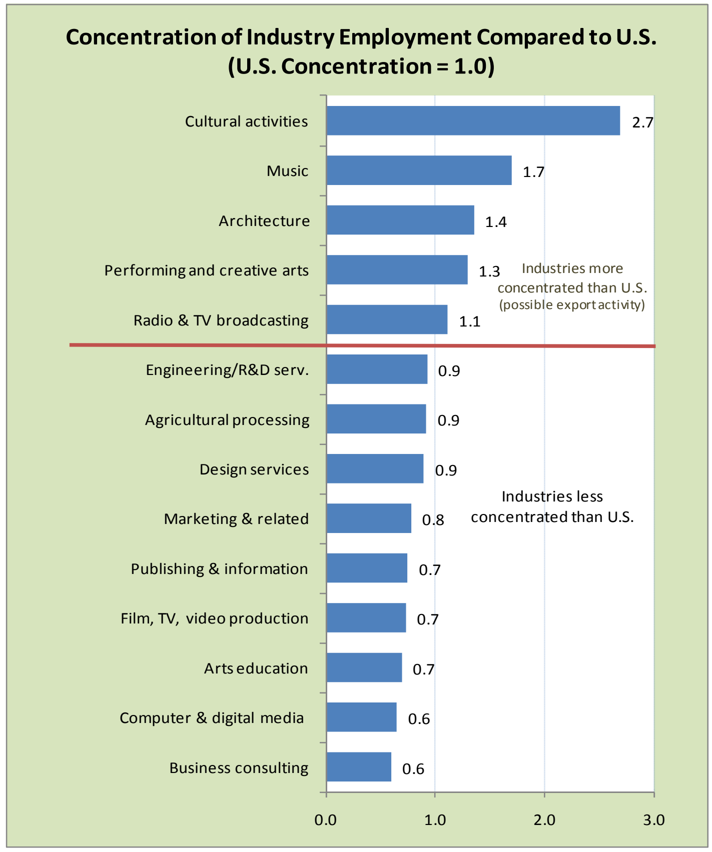
A third performance metric that helps in the evaluation of the creative industry portfolio is industry job concentration (Figure 4). This is a measure of how much Hawaii specializes in the industry and it helps shed light on the industries' export orientation.

Export activity brings new money into the state and is a basis for long-term industry growth. Unfortunately, estimates of industry exports are not part of standard industry data programs. Thus, it is not clear how much of its output in a given creative industry is exporting, if any.

However, it is possible to identify *likely* export industries by measuring the concentration of their employment in the state's economy. An industry that employs a significantly higher proportion of jobs in Hawaii than does the same industry nationally is relatively more concentrated and is likely to be exporting at least some of its output.

Concentration is measured by a metric call the Location Quotient, or LQ for short. The LQ for an industry at the U.S. level is fixed at 1.0. Hawaii industries with an LQ measure more than 1.0 are more concentrated in the economy than the same U.S. industry. Those below 1.0 are less concentrated.

FIGURE 4.



For instance, the measure for cultural activities in Figure 4 means that employment in Hawaii's cultural industry group is 2.7 times more concentrated than for the U.S. as a whole. This suggests that cultural activities are relatively more important to Hawaii and that the state may be exporting a significant amount of the industry's output. On the other hand, business consulting in Hawaii with, an LQ of just 0.6, has only about half the employment concentration of the same U.S. industry group. It is possible that business consulting may be exporting some of its output. But it has a long way to go to demonstrate the strong comparative advantage shown by the more concentrated industries above the 1.0 level.

In addition to cultural activities, music, architecture, performing/creative arts and radio/TV broadcasting had concentrations in Hawaii's economy that were higher than the same industries nationally. These more concentrated industries are probably helping to drive Hawaii's economy. Industries that are not as concentrated in Hawaii as they are nationally may also be exporting some of their output. However, they are probably serving mainly local demand.

The Performance Map Framework: Identifying Emerging Creative Industries

A framework to better understand the overall implications of these key performance measures would be very helpful, especially one that can clarify the notion of emerging industries and how they can be measured. A closely related framework in the economic development research tool box is the industry life cycle model. This model breaks industries in the economy into four generalized stages of life, starting with an *emerging* phase, moving to a *base-growth* industry phase, followed by a mature or *transitioning* phase and finally a *declining* phase. Of course, not all industries fit nicely into this notion, especially over short periods of time. However, with some qualifications, this notion of development stages can help us evaluate the status of the creative industry portfolio.

Using the three performance metrics from Figures 1, 3 and 4, the creative industry groups can be placed into one of four life-cycle quadrants according to the criteria shown in Table 2.

TABLE 2. PERFORMANCE MAP CRITERIA

TRANSITIONING	BASE-GROWTH
• Positive job growth • Losing competitive national industry share.	• Positive job growth • Highly concentrated in the economy • Increasing competitive national industry share
DECLINING	**EMERGING**
• Losing jobs over period	• Positive job growth • Current low concentration in the economy • Increasing competitive national industry share

Emerging Quadrant: These are industries that are potentially in the early, take-off stage. They have been performing well by showing both job growth and an increase in their competitive share of the national industry. However, these industries have yet to achieve a concentration in the state's economy equal to the same industry nationally. An *emerging* creative industry is one that has apparently found a competitive niche in the economy and is gaining in competitive national industry share. At some point, if the process continues, the industry's concentration will exceed the national level and the emerging industry will graduate to a base-growth industry in the state's economy.

Base-Growth Quadrant: These are industries that have become likely economic drivers. They are growing their job counts and are increasing their competitive national industry share. Moreover, they have exceeded the national level of industry concentration in the economy and are probably exporting at least a proportion of their output.

Transitioning Quadrant: Transitioning creative industries are still maintaining or growing their workforce, however they are losing competitive national industry share (growing more slowly than the same industry nationally). This is typical of mature industries that are still important to the economy but are having difficulty maintaining national market share. They are considered transitioning because they could either continue to lose industry share and eventually fall into decline, or reinvigorate themselves and begin to regain industry share and continue growing. Also in this quadrant may be former emerging industries that never reached base-growth status before losing competitive national industry share and some previously declining industries that are fighting back into competitiveness.

Declining Industry Criteria: The declining quadrant contains industry groups showing the poorest performance over the period. All of these creative industry groups have lost jobs to some extent between 2002 and 2008. Most industries that are losing jobs are also losing competitive national industry share. But while they are declining in jobs for the period, these industries are not necessarily dying industries. A number of temporary circumstances may have put some of Hawaii's creative industries into the declining quadrant for the period studied. Their appearance in the declining quadrant is a red flag that warrants more careful analysis to understand the problem.

It must be emphasized that the performance map framework is more of a guide to understanding an industry's situation rather than a conclusion about the value of the industry to the state. It provides a starting point for assessing the strengths and weaknesses of the industries in the portfolio. Also, within industries that are experiencing mixed or poor performance there may be pockets of very successful firms.

III. CREATIVE INDUSTRY PORTFOLIO PERFORMANCE

Figure 5 shows how the individual, NAICS-measurable creative industry groups fell on the performance map based on the 2002 to 2008 performance measures. Combined, the NAICS-measureable creative industry groups accounted for about 44,650 jobs in Hawaii's economy during 2008.

FIGURE 5

Creative Industry Groups Mapped by Performance, 2002-2008

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Ave. change in jobs 2002-2008:	**(6%)**		**Ave. change in jobs 2002-2008:**	**26%**	
Average 2008 Earnings for Group:		**$55,402**	**Average 2008 Earnings for Group:**		**$66,735**

Overall, the creative industry groups added about 3,950 jobs to the state's economy between 2002 and 2008. This amounted to a 9.7 percent increase in jobs, somewhat under the more vigorous, 13.3 percent growth in Hawaii's civilian economy as a whole for the period. Much of the slight underperformance of the overall portfolio can be traced to the 6% overall decline among the broadcasting, information and film/TV groups, as well as the modest 6% growth among the transitioning creative industry groups, which pulled down the average for the portfolio. Despite its underperformance in job growth, the earnings average of the creative industry portfolio of nearly $49,950 in 2008 was well above the statewide average of $43,900.

High Performing Creative Industry Groups

Two creative industry groups, cultural activities and music, registered as high performing base-growth industries for the 2002 to 2008 period. However, their combined jobs growth amounted to a below-Hawaii-average, 12% for the period. The two industries earnings average was $37,950, also under the state average.

The industry groups in the emerging category did much better. Composed of design services, business consulting & engineering/Scientific R&D, this group grew jobs 26% for the period. This quadrant also had the highest earnings average at $66,735.

Other Creative Industries' Performance

Most of the creative sector industry groups (five) fell into the transitioning category for the 2002 to 2008 period. These ranged from the performing and creative arts, which just barely avoided the declining category, to arts education, which grew jobs by 19%. However, while these industry groups grew, it was not as vigorous as the same industries nationally. As a result, they some lost ground to the nation in terms of competitive industry share. Architecture and performing/creative arts were more concentrated in Hawaii's economy than the same industries nationally, suggesting that these activities were still helping to drive the economy despite their competitive performance. The remaining industries in the transitioning quadrant showed lower than national concentration. That suggests they may have been former emerging industries that have lost some competitive steam in the 2002 to 2008 period.

Finally, three creative industry groups that lost jobs in the 2002 to 2008 period fell into the declining quadrant of the performance map. Broadcasting, information, and Film/TV all lost jobs for the period. Broadcasting and film/TV also lost national competitive industry share (Figure 3), while publishing/information held its national share. This is because the same national industry lost jobs at about the same rate.

It is important to note that the independence of these creative groups is not yet clear. The performance of some groups may reflect strong or weak markets driving other industries for which the creative target is simply a supplier. For instance the high performance of cultural activities in the performance map probably reflects the strong tourism demand over the period, rather than a specific local or export market for cultural products. Likewise, some targets may perform poorly because they are tied to another industry that has experienced difficulties.

Hard-to-Measure Creative Activities

As discussed earlier, a number of creative activities cannot be easily or meaningfully defined in the NAICS industry system. These activities — mainly the digital media and broader film industry — represent either markets, or a series of partial NAICS industries. In Section V the available information for these hard-to-measure activities will be presented to the extent available. However, most of the employment engaged in these market activities is probably captured in one or more of the producing industries that we are able to define and measure. The goal will be to eventually parse the producing industry employment into the important market sectors they support.

IV. CREATIVE INDUSTRY PERFORMANCE BY COUNTY

The following tables summarize the 2002 to 2008 county performance of the statewide creative industries with 100 or more jobs (paid employment and self-employed/sole proprietors). The performance of industry groups below 100 jobs tends to be volatile and affected by statistical factors.[8] Performance has been organized by *Best Performing Targets* (registering as base-growth & emerging industry groups) and *Other Targeted Industry Performance* (those that fell into the transitioning and declining categories).

City & County of Honolulu

Honolulu accounted for 32,502 of the state's creative sector jobs in 2008, a 5.9% increase from 2002. As shown in Table 3, four creative industry groups were high performing in Honolulu County in the 2002 to 2008 period. These high performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding national growth for the industry.

TABLE 3

CREATIVE INDUSTRY PERFORMANCE WITH RESPECT TO NATION, HONOLULU

Industry Group Description	Performance Class	2008 Jobs	Job Growth 2002-08	County Ave. Earnings	Nation Job Growth	Nation Ave. Earnings
Best Performing Targets						
Business Consulting	Emerging	3,436	31%	$58,142	24%	$75,186
Engineering and R&D	Emerging	5,117	23%	$80,946	17%	$93,373
Design Services	Emerging	994	22%	$40,256	17%	$48,143
Cultural Activities	Base-Growth	1,795	17%	$47,160	13%	$40,194
Other Targeted Industry Performance						
Computer & Digital Media	Transitioning	5,989	14%	$70,065	19%	$94,662
Architecture	Transitioning	1,809	7%	$68,627	14%	$66,960
Arts Education	Transitioning	214	6%	$12,894	31%	$14,898
Publishing & Information	Declining	2,202	-4%	$66,606	-2%	$68,948
Performing and Creative Arts	Declining	4,620	-4%	$14,157	13%	$18,680
Marketing & Related	Declining	3,685	-5%	$43,991	12%	$63,537
Radio and television Broadcasting	Declining	1,099	-7%	$63,574	0%	$76,455
Film, TV, Video Production	Declining	1,161	-10%	$33,135	2%	$81,256
Music	Declining	518	-37%	$26,281	-2%	$37,505

NOTE: Excludes industries with fewer than 100 jobs in 2008

Busi-

[8] Such as a single firm changing its NAICS reporting category.

ness consulting had the fastest growth among the best performers, followed by engineering/R&D, design services and cultural activities. All but design services had an annual earnings average more than the state average. Music, film/TV production, broadcasting, marketing, performing arts, and information all lost jobs in Honolulu County over the 2002 to 2008 period.

Maui County

Maui County had 6,277 creative sector jobs in 2008, a 26.8% increase from 2002. As shown in Table 4, there were 11 creative industry groups among the statewide portfolio with more than 100 jobs in Maui County. Six of the industry groups were high performing as either base-growth or emerging industries.

TABLE 4.

CREATIVE INDUSTRY PERFORMANCE WITH RESPECT TO NATION, MAUI COUNTY

Industry Group Description	Performance Class	2008 Jobs	Job Growth 2002-08	County Ave. Earnings	Nation Job Growth	Nation Ave. Earnings
Best Performing Targets						
Music	Base-Growth	430	400%	$29,555	-2%	$37,505
Design Services	Base-Growth	251	52%	$28,697	17%	$48,143
Radio and television Broadcasting	Emerging	133	45%	$22,107	0%	$76,455
Engineering and R & D	Emerging	463	36%	$73,176	17%	$93,373
Computer & Digital Media	Emerging	269	27%	$51,591	19%	$94,662
Publishing & Information	Emerging	323	3%	$42,816	-2%	$68,948
Other Targeted Industry Performance						
Marketing & Related	Transitioning	629	11%	$27,842	14%	$63,537
Performing and Creative Arts	Transitioning	2,226	6%	$16,202	13%	$18,680
Architecture	Transitioning	216	4%	$47,488	14%	$66,960
Cultural Activities	Declining	172	-2%	$25,413	13%	$40,194
Business Consulting	Declining	279	-17%	$27,005	24%	$75,186

NOTE: Excludes industries with fewer than 100 jobs in 2008

Music was the fastest growing creative group in Maui County, followed by design services broadcasting, engineering, computer/digital media and information. At the other end of the performance ranking, business consulting and cultural activities showed declines in jobs over the period.

Kauai County

Kauai County accounted for 2,197 creative sector jobs in 2008, 12.4% more than in 2002. However, only six creative industry groups had employment of 100 or better on Kauai in 2008 (Table 5). Three of the groups registered as high performing by growing jobs over the six-year period and increasing their competitive share relative to the same industry groups nationally.

Computer and digital media showed the highest growth among the creative industry groups on Kauai. Only the publishing and information group experienced job losses for the period.

TABLE 5.

CREATIVE INDUSTRY PERFORMANCE WITH RESPECT TO NATION, KAUAI COUNTY						
Industry Group Description	Performance Class	2008 Jobs	Job Growth 2002-08	County Ave. Earnings	Nation Job Growth	Nation Ave. Earnings
Best Performing Targets						
Computer & Digital Media	Emerging	159	75%	$31,315	19%	$94,662
Marketing & Related	Emerging	202	46%	$20,874	12%	$63,537
Business Consulting	Emerging	155	27%	$22,126	24%	$75,186
Other Targeted Industry Performance						
Performing and Creative Arts	Transitioning	633	8%	$9,545	13%	$18,680
Cultural Activities	Transitioning	174	5%	$33,858	13%	$40,194
Publishing & Information	Declining	107	-24%	$49,539	-2%	$68,948

NOTE: Excludes industries with fewer than 100 jobs in 2008

Hawaii County

Hawaii County had 3,673 creative sector jobs in 2008, a 17.5% increase from 2002. Ten of the creative industry groups had employment of 100 or better in Hawaii County for 2008 (Table 6).

TABLE 6.

CREATVE INDUSTRY PERFORMANCE WITH RESPECT TO NATION, HAWAII COUNTY						
Industry Group Description	Performance Class	2008 Jobs	Job Growth 2002-08	County Ave. Earnings	Nation Job Growth	Nation Ave. Earnings
Best Performing Targets						
Music	Base-Growth	136	62%	$15,904	-2%	$37,505
Business Consulting	Emerging	414	41%	$33,335	24%	$75,186
Marketing & Related	Emerging	411	40%	$17,696	12%	$63,537
Architecture	Emerging	163	36%	$50,984	14%	$66,960
Design Services	Emerging	132	32%	$40,644	17%	$48,143
Publishing & Information	Emerging	271	27%	$34,245	-2%	$68,948
Cultural Activities	Base-Growth	171	27%	$29,675	13%	$40,194
Computer & Digital Media	Emerging	250	23%	$38,896	19%	$94,662
Engineering and R & D	Emerging	567	18%	$77,094	17%	$93,373
Other Targeted Industry Performance						
Performing and Creative Arts	Transitioning	1,106	6%	$13,567	13%	$18,680

NOTE: Excludes industries with fewer than 100 jobs in 2008

Of the ten industry groups, nine were high performing, registering as emerging or base growth industries and none of the ten lost jobs over the period. As in Maui County, the music industry group showed the highest jobs growth in Hawaii County's creative industries portfolio. All of the high performing creative industry groups in Hawaii County grew jobs faster than the overall state jobs growth for the period. However, only two industry groups, architecture and engineering/R&D, had earnings averages above the overall state earnings average.

V. CREATIVE INDUSTRY PERFORMANCE BY MAJOR GROUPS

This section takes a closer look at the performance of the industry groups in the creative industries portfolio. Detailed data are shown for selected industry groups in this section. However, complete data for all groups may be found in the appendix to this report.

States have increasingly come to realize in recent years that solely promoting technology does not necessarily generate the creative innovation upon which technology depends. It is the creative input that helps focus the commercial development and application technology, as well as providing content, such as in digital entertainment. Beyond technology, creative activity generates major export products and services in its own right and is essential to differentiating Hawaii's visitor product from other sun and surf destinations.

The diversity of creative activity has made the sector a difficult one to define for measurement purposes. As discussed earlier, an effort to establish an improved definition, the DBEDT Research Division worked with the Creative Industries Division in 2009 to better measure the sector in light of similar efforts in other states. Based on that collaboration an updated measurement for the sector was developed, using as a model the definition established in Massachusetts.

Table 7 shows the major industry groups of the redefined creative sector and their primary performance metrics.

TABLE 7. EMPLOYMENT AND GROWTH IN HAWAII'S CREATIVE SECTOR

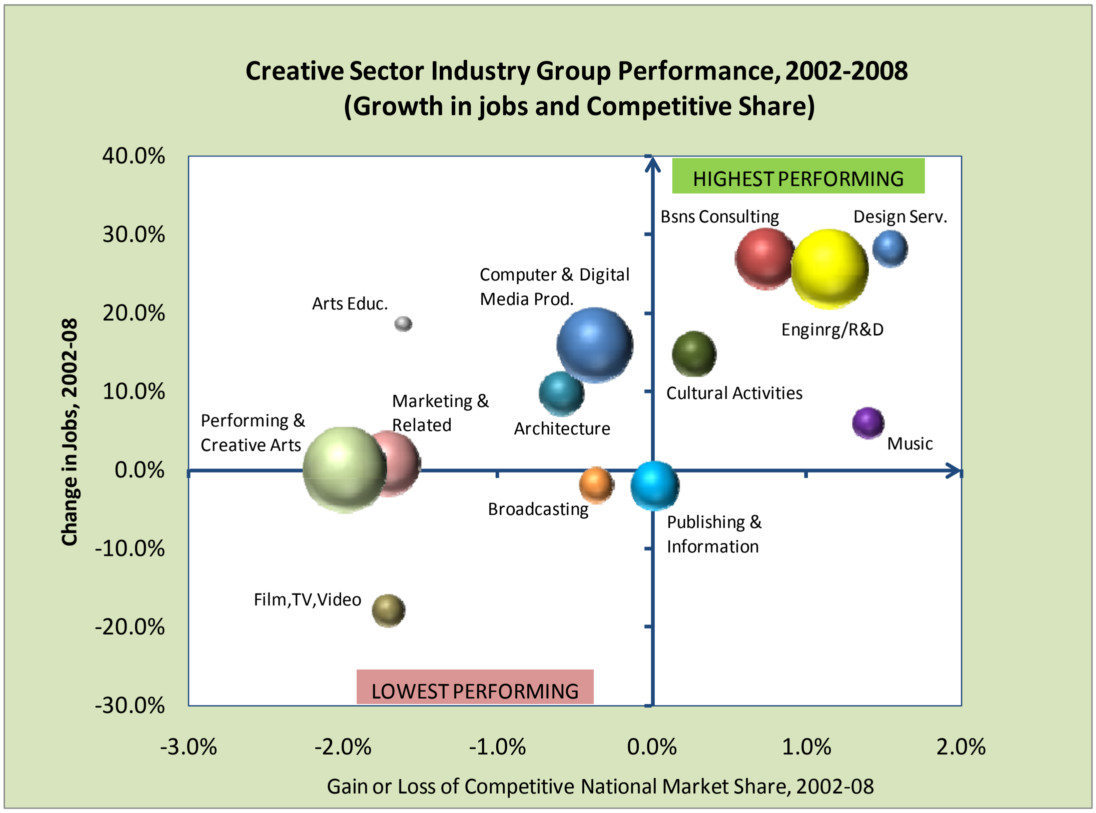
	Jobs				Ave Earnings 2008		Performance Metrics		
	Hawaii		Percent change				Compet Share	Industry Concentration (Loc Quotient)	
Group/Industry	2002	2008	Hawaii 2002-08	U.S. 2002-08	Hawaii	U.S.	2002-08	2008	Change 2002-08
CREATIVE SECTOR	**40,718**	**44,649**	**9.7%**	**14.1%**	**$ 49,947**	**$ 70,179**	**-0.7%**	**0.89**	**-0.08**
Performing and Creative Arts	8,523	8,531	0.1%	13.1%	$ 14,393	$ 18,680	-2.0%	1.29	-0.23
Engineering, Research & Devel	5,842	7,336	25.6%	17.5%	$ 79,672	$ 93,373	1.1%	0.92	0.02
Computer & Digital Media	5,744	6,657	15.9%	18.6%	$ 68,244	$ 94,662	-0.4%	0.65	-0.04
Marketing & Related Serv.	4,882	4,918	0.7%	11.8%	$ 40,027	$ 63,537	-1.7%	0.78	-0.12
Business Consulting	3,379	4,291	27.0%	24.4%	$ 52,948	$ 75,186	0.7%	0.60	-0.01
Publishing & Information	2,946	2,887	-2.0%	-1.9%	$ 63,183	$ 68,948	0.0%	0.75	-0.03
Cultural Activities	2,014	2,311	14.7%	13.2%	$ 43,557	$ 40,194	0.3%	2.69	-0.08
Architecture	2,077	2,280	9.8%	13.8%	$ 64,145	$ 66,960	-0.6%	1.35	-0.11
Design Services	1,134	1,453	28.1%	17.5%	$ 42,135	$ 48,143	1.5%	0.89	0.04
Radio/TV Broadcasting	1,387	1,361	-1.9%	0.4%	$ 58,442	$ 76,455	-0.4%	1.11	-0.07
Film, TV & Video Prod	1,500	1,231	-17.9%	2.0%	$ 33,793	$ 81,256	-1.7%	0.73	-0.22
Music	1,048	1,106	5.5%	-2.5%	$ 26,229	$ 37,505	1.3%	1.69	0.06
Arts Education	242	287	18.6%	30.9%	$ 13,190	$ 14,898	-1.6%	0.69	-0.10

Source: DBEDT compilation based on EMSI data.

As discussed in Section III, the creative sector includes about 44,650 jobs in 13 industry groups. The annual earnings average for the sector was nearly $49,950 in 2008. Most of the 13 industry groups are composed of several smaller industries that are shown in more detail in the following subsections.

Figure 6 provides a visual perspective of performance among the major producing side industry groups of the creative sector between 2002 and 2008. The size of the bubbles reflects the relative size of the industry groups. Each industry group's percent change in jobs is shown vertically, with the increase or decrease in competitive share shown horizontally as a percent of jobs.

FIGURE 6. CREATIVE INDUSTRIES SECTOR PERFORMANCE CHART



The performance chart shows that most of the creative sector industry groups increased in terms of jobs over the period, some quite impressively. However, low growth or decline in several larger groups brought the average for the sector down to a 10% net growth over the period, about 3 percentage points below growth experienced in the economy as a whole.

Large industry groups that declined in terms of competitive national market share also impacted the sector. Overall the Creative industry sector experienced a slight, 0.7% annual loss of competitive growth, compared to the same sector nationally.

Performing and Creative Arts

This group is composed of several areas of the arts including selected performing arts, creative arts (visual and literary), and supporting industries such as promoters, agents, managers and art dealers. The group does not include musicians, who are included with the music industry group and museums, which are included in cultural activities, both of which are discussed later on.

Performing and creative arts is the largest single industry group in the creative sector with about 8,500 employees and self employed in 2008. The group saw nearly no net growth from 2002 to 2008. From 2002 to 2005 the group grew by nearly 1,000 jobs but lost nearly all of that gain by 2008. Declines in jobs were centered among agents and managers, art dealers and theater groups. Gains in jobs over the period were made in dance companies, promoters and independent artists, writers and performers. However these gains were anemic compared to the economy as a whole, with the best gain being 3.0% among dance companies for the period. The earnings average for workers in the performing and creative arts group was only $14,400 in 2008. Since many of the jobs in this group are part time, the average earnings do not represent a full-time labor force.

The performing and creative arts group is very concentrated in Hawaii, with about 30% more jobs proportionately than for the industry nationally. This probably reflects the interdependence between Hawaii's rich artistic and cultural resources and the tourism sector. That interdependence probably also explains part of the under-performance of the industry group in the last several years during which the tourism cycle peaked and began to decline. Beyond tourism, this sector also provides a channel for the input of artistic creativity to a range of other innovation activity, including film, various forms of digital media, architecture and applied design.

Engineering/Scientific Research and Development

The second largest component of Hawaii's creative sector is engineering and scientific research and development, with about 7,300 jobs. This group overlaps the technology and the creative sectors. It is included in the creative sector because innovation and creativity are major drivers in the application of engineering and in transforming emerging technologies into commercial products and services. As in technology, social science research is also an activity in creative R&D.

As in the technology sector, engineering/R&D as a creative group performed very well over the 2002 to 2008 period. Jobs increased by nearly 26% and the group gained in competitive national market share. The only lagging activity in the industry group was social science and humanities research, in which jobs declined about 9% for the period. Detailed data may be found in the Appendix.

Computer and Digital Media

The computer and digital media industry group also includes many of the same activities as in the computer services group in the technology sector. However, in addition to the core computer technology services, the creative sector places heavy emphasis on the rapidly developing and evolving marriage of digital technology with traditional entertainment, cultural and artistic content. This marriage is variously referred to as *digital media*, *creative media* and sometimes *new media.* Evolving digital technology not only revolutionizes the delivery of traditional content such as music and movies. It also pushes the bounds of possible content well beyond those traditional formats into animation, games and a myriad of internet based services. This in turn creates new commercial opportunities for programmers, artists, designers, musicians and authors.

As Table 8 shows, the computer and digital media sector overlaps the similar group in the technology sector, varying by only the inclusion of software publishers. The group includes both programming and software activities and support activities such as systems design and computer facilities.

TABLE 8. COMPUTER AND DIGITAL MEDIA INDUSTRY GROUP EMPLOYMENT

Group/Industry	Jobs: Hawaii 2002	Jobs: Hawaii 2008	Jobs: Percent change Hawaii 2002-08	Jobs: Percent change U.S. 2002-08	Ave Earnings 2008 Hawaii	Ave Earnings 2008 U.S.	Performance Metrics: Compet Share 2002-08	Industry Concentration (Loc Quotient) 2008	Industry Concentration (Loc Quotient) Change 2002-08
Computer & Digital Media	**5,744**	**6,657**	**15.9%**	**18.6%**	**$ 68,244**	**$ 94,662**	**-0.4%**	**0.65**	**-0.04**
Computer systems design services	1,662	2,661	**60.1%**	**34.9%**	$ 73,599	$ 88,751	3.4%	0.67	**0.08**
Computer facilities management services	2,151	2,050	**-4.7%**	**-4.5%**	$ 50,563	$ 71,469	0.0%	5.66	**-0.26**
Custom computer programming services	1,521	1,828	**20.2%**	**19.9%**	$ 79,523	$ 92,596	0.1%	0.47	**-0.02**
Software publishers	157	74	**-52.9%**	**8.8%**	$ 93,039	$ 132,901	-9.5%	0.05	**-0.08**
Other computer related services	253	44	**-82.6%**	**-18.8%**	$ 57,806	$ 76,666	-16.5%	0.07	**-0.25**

As a whole, the sector grew 16% over the 2002 to 2008 period, about 3 percentage points faster than Hawaii's economy as a whole. Overall, the group slipped very slightly in terms of competitive national market share. However, declines in computer facilities management, software publishing and other computer related jobs were the main reason for the overall slip in competitive share. Both computer programming and systems design showed exceptional strength in job growth throughout the period and increased in competitive share.

The average earnings in the sector were relatively high, at $68,200 in 2008. The lowest paying activity, computer facilities management, averaged $50,600, while the highest, software publishing, averaged $93,000.

While not a measurable activity within this industry group, digital media is a direct and indirect product of computer activity. Directly, computer programming and support activities integrate content from various sources into entertainment and information packages. Indirectly, computer activity provides specialized input into other products like film and sound recordings.

As will be noted in the music industry group section, evolving digital technology is an opportunity for artists and small programming/content developers to compete in a market that has been usually dominated by large firms. Using digital technology, film, music, speech, literature, historical documentation, games, educational instruction, as well as computer programs and data, can share a similar, digitized format and be distributed and consumed on common platforms. These platforms are quickly evolving beyond computers and iPods to multipurpose cell phones and direct internet broadcasts. New products for this market are evolving as fast as new platforms are developed. Examples of such products are shown in Table 9.

TABLE 9.

Examples of Digital Media Products	
Video games and interactive virtual worlds	Blogs and social websites
Multimedia CD-ROM publishing	Email and attachments
Digital music publishing and distribution	Podcasting New media
Mobile devices and content	Internet Art
Software for the various devices and content	Interactive television
Web sites including 'brochureware'	Hypertext fiction
Electronic kiosks	Mashups (combining bits and pieces of existing digital content into original content.)

Measuring digital media is similar in difficulty to measuring emerging energy activity. There are a multitude of firms in numerous industries that dedicate some fraction of their work to that particular market. It is likely that the NAICS computer services industry will contain more of these firms than other industries. But there are probably firms serving this market in other NAICS industries such as the music, film production, and information industries. Work is needed to better identify and measure the mix and scope of these firms across industries and digital markets.

Marketing and Related Activities

Marketing and related activities in Hawaii play an important role in bringing Hawaii's goods and services to the attention of national and international markets. Marketing, advertising, public relations and media specialists account for 60% of this sector's workforce of about 4,900. This represented about a 1% increase from 2002 and compares to a 12% increase in the national workforce of this industry group. Jobs in some areas such as public relations firms, display advertising, and media specialists grew faster than their national counterparts and faster than Hawaii's economy as a whole. However, losses of jobs in advertising, (especially direct mail) marketing research/polling and commercial photography brought the overall growth rate down.

The slower growth for Hawaii's marketing and related activities compared with the same activities nationally resulted in a decline in overall competitive national industry share. However, thanks to their higher growth, public relations, media specialists and display advertising showed gains in national industry share.

The annual earnings average for the industry group is just over $40,000, slightly below the state average. Earnings ranged from an average $79, 300 in public relations to $25,300 in studio photography. Both of these activities were growth areas in the 2002 to 2008 period. Among other growth areas; marketing consulting averaged $42,200, media specialty firms averaged $56,700 and display advertising averaged $61,900.

The marketing and related activities group is a very competitive business from both a creative and business development perspective. Since geography is less of an advantage in these activities, Hawaii companies in the marketing and related group must continuously show that their creativity and knowledge of the Hawaii product outweighs the greater reach and possible economies held by nationwide advertising and related firms.

Business Consulting

Business consulting was a thriving activity over the 2002 to 2008 period with 4,300 jobs in 2008, up 27% from 2002. This was more than twice the growth rate of Hawaii's overall job count and exceeded the growth rate for business consulting nationally. As a result, the industry group absorbed competitive national industry share.

Management and environmental consulting are the two largest components of the business consulting industry group, accounting for about two-thirds of the group's jobs. Management consulting was also the fastest growing activity in the group, with a jobs growth of nearly 98% for the period. Technical consulting services grew 36% in jobs over the period, while process and logistical consulting showed the only decline, losing nearly 54% of its workforce over the period. The reason for this decline is not clear and it is possible that the decline may have resulted from some companies changing their NAICS classification over the period to another consulting specialty.

The annual earnings average for business consulting was more than $52,900. This ranged from $62,700 among management consulting firms to $40,000 for technical consulting firms.

Publishing and Information

As a whole, publishing and information showed a 2% decline in jobs from 2002 to 2008, about the same as for the nation as a whole. The industry group is dominated by newspaper publishing, which accounted for two-thirds of the industry group's jobs in 2008. Newspaper publishing showed a 6% decline in jobs over the period, but this was considerably below the 11% decline nationally. The rise of the internet as a source of information is certainly a major factor in the decline of traditional publishing. In Hawaii internet publishing and broadcasting increased jobs by more than 150% from 2002 to 2008. However, this is fewer than half of the jobs than were *lost* in newspaper publishing.

Some traditional publishing activities showed healthy growth during the period. Directory and mailing list publishers, periodical publishers and book publishers in Hawaii all added jobs at a rate faster than the economy as a whole and even faster than the same activities nationally.

The annual earnings average for publishing and information in Hawaii was $63,200 in 2008. This ranged from an exceptionally high $172,300 for directory and mailing list publishing firms, to $38,800 for jobs among web search portal firms. The newspaper publishing earnings average was $57,300 in 2008, while the average for internet broadcasting was $50,700.

Cultural Activities

The cultural activities industry group accounted for 2,300 jobs in 2008 and included museums, historical sites, zoos, botanical gardens and grant making foundations. As a group, cultural activities registered a 15% increase in jobs over the 2002 to 2008 period, slightly better than the state's economy as a whole and faster than the same set of activities nationally. As a result the cultural industry group gained some competitive national industry share. The annual earnings average for the cultural activities group was $43,600 in 2008. This ranged from $24,000 for historical sites, to $67,500 for grant making establishments.

Architecture

Architecture is one of the more visible examples of the creative sector. In particular, a unique style of Hawaiian architecture has developed over the last several decades, weaving themes from old and new Hawaii into designs suited for the state's climate and life style. More recently, architecture has become a leading source of creativity in addressing the need to conserve energy and provide for alternate energy sources in Hawaii's residential and commercial structures.

Architecture employed an estimate 2,300 people in 2008, up about 10 percent from 2002. This is below the average growth for the state's workforce as a whole and below the growth rate for the architecture industry nationally. Most of the industry group's jobs (about 83%) were among structural architectural services, while the remainder of the jobs was in landscape architecture. Landscape architecture registered very strong growth in the 2002 to 2008 period, with a 41% increase in jobs.

The annual earnings average in architecture was $64,100 in 2008 with structural architecture at $67,300 and landscape architecture averaging $49,200; both activities were over the statewide earnings average.

Design Services

Design Services employed about 1,500 people in 2008. About 58% of these jobs were among graphic design firms, while another 38% were in interior design. Specialty design service activity accounted for a tiny, 4% of the group's total jobs, but was the fastest growing of the three activities in the group.

Overall, jobs grew by 28% in the design industry group. Interior design jobs grew 31% while graphic design jobs grew 20%. Specialty design jobs increased by 400% over the period but that amounts to fewer than 60 jobs and the growth may reflect some reporting changes. Still this will be an activity to watch in the coming years to see if the momentum is sustained.

The annual earnings average for the design group was $42,100 in 2008. Graphic design had the lowest average at $31,200 followed by interior design at an average of $51,500. The highest paying were the small specialty design activities, registering a high, $113,600 average.

Radio & TV Broadcasting

Like publishing, broadcasting has been impacted by the rise of the internet as an information and entertainment alternative. Radio and TV broadcasting shrank by 2% to about 1,360 jobs over the 2002 to 2008 period. Nationally, the industry group did only marginally better, managing a one-half percent growth in jobs. Television broadcasting lost nearly 4% of its workforce over the period to just under 690 jobs in 2008. Radio stations stayed about the same over the period with about 510 jobs. Radio networks, the only other activity in the industry group also stayed the same at just under 170 jobs. The annual earnings average for broadcasting was about $58,400 in 2008. This ranged from $69,200 for television to $43,400 for radio stations.

Film, TV, and Video Production

Film and television production in Hawaii has been an important contributor to both jobs and income in the state, as well as to the visitor industry through the worldwide exposure these productions have enjoyed. As Table 10 shows, the film industry generated $146 million in Hawaii-based production expenditures for 2008 by preliminary estimate. This was down from the exceptionally high total of $229 million for 2008 and about the same as at the beginning of the 2002 base period.

TABLE 10.

Film, TV and Video Production Employment and Expenditures, 2002-2008							
	2002	2003	2004	2005	2006	2007	2008
Employment	1,500	1,188	1,635	1,605	1,227	1,233	1,231
Expenditures in Hawaii	$147 mil	$84 mil	$164 mil	$117 mil	$140 mil	$229 mil	$146 mil

Sources: Expenditures; Hawaii Film Office. Employment; DBEDT Research & Economic Analysis Division.

Unfortunately, the NAICS industries for film and TV production do not include creative and business services beyond the direct production jobs and certain production support services. As a result, the employment data represent only the core jobs in film/TV and video activity. Other sources of industry jobs such as actors, musicians, writers, food service and other specialties are compiled in statistics for other NAICS industries. However, those data do not differentiate film/TV project jobs from other activity. (Many jobs may be short in duration as some projects require only a few weeks of production in the islands. Based on shoot days and number of reported hires the Creative Industries Division estimates full-time equivalent production jobs in 2008 at 1,319).

Jobs recorded for the industry in the NAICS-based, Department of Labor statistics are shown in Table 11.

TABLE_11. FILM & TV PRODUCTION INDUSTRY PERFORMANCE, 2002 TO 2008

	Jobs				Ave Earnings 2008		Performance Metrics		
	Hawaii		Percent change				Compet Share	Industry Concentration (Loc Quotient)	
Group/Industry	2002	2008	Hawaii 2002-08	U.S. 2002-08	Hawaii	U.S.	2002-08	2008	Change 2002-08
Film, TV, Video Production	**1,500**	**1,231**	**-17.9%**	**2.0%**	**$ 33,793**	**$ 81,256**	**-1.7%**	**0.73**	**-0.22**
Motion picture and video production	1,447	1,155	**-20.2%**	**11.5%**	$ 33,138	$ 79,808	-3.6%	1.09	**-0.50**
Teleproduction and postproduction services	8	33	**312.5%**	**7.3%**	$ 48,624	$ 94,251	41.3%	0.39	**0.28**
Cable and other subscription programming	21	32	**52.4%**	**-5.5%**	$ 45,207	$ 85,340	8.3%	0.07	**0.03**
Motion picture and video distribution	24	11	**-54.2%**	**-22.5%**	$ 24,863	$ 116,169	-6.1%	0.27	**-0.21**

These represent jobs among Hawaii companies and enterprises involved in the direct production of Hawaii film and TV products. Direct film and TV production activity involved about 1,200 jobs in 2008, down about 18% from 2002. Some gains were made over the period in the development of programming for cable and subscription distribution and in teleproductions and post production services. But these gains could not counter the more than 20% decline in motion picture and video production jobs. Nationally, this group of industries showed a 2% increase in jobs over the period, with motion picture and TV production showing a nearly 12% gain.

However, volatility in year to year film production employment is a major factor clouding the long term trend. For instance, if 2003 were used as a base for measurement when the industry had just 1,188 jobs, the industry group would have shown an overall gain in jobs by 2008. Likewise, the high point for employment in the 2002 to 2008 period was 1,635 jobs in 2004, more than 30% over the 2008 count. Thus, the combination of limited data and exceptional volatility from year to year make this a very difficult industry to assess over a short period of time.

The production side of film and TV activity is also on the lower end of the earnings scale compared to other creative industries. The annual earnings average for the group as a whole was $33,800 in 2008, more than $10,000 under the state average and less than the national average for the industry group. The highest earnings average was in teleproductions and post production services at $48,600. The lowest earnings were in film production at an average $33,100 for 2008. This low average may reflect less than full time employment among jobs in the industry.

Music

Hawaii has always had a unique music arts culture based on Hawaiian heritage, but it has expanded to embrace trends in music worldwide. The range of talented musicians in Hawaii has been an important attraction for visitors as well as a staple of the island's culture. Until the digital age, the problem of taking Hawaii's unique music to the world at large had been the difficulties of breaking into a national recording industry that was mainstream-oriented and the high investment cost of producing and distributing recorded music without the backing of major music labels. The dynamics changed with the digital age, which has made production of high quality recording affordable to individual artists and new distribution systems that allow artists to promote and sell their music through the internet and music downloading services. A major breakthrough in promoting Hawaiian music was made several years ago with the establishment of a special Grammy Awards category devoted to the genre.

There were about 1,100 employed and self-employed workers in Hawaii's music industry in 2008, most of them performers. As Table 12 shows, employment in Hawaii's music industry showed modest growth over the 2002 to 2008 period, increasing nearly 6% overall. By contrast, jobs in this industry group nationally shrank by 3%.

TABLE_12. EMPLOYMENT IN HAWAII'S MUSIC INDUSTRY GROUP

Group/Industry	Jobs: Hawaii 2002	Jobs: Hawaii 2008	Percent change: Hawaii 2002-08	Percent change: U.S. 2002-08	Ave Earnings 2008: Hawaii	Ave Earnings 2008: U.S.	Performance Metrics: Compet Share 2002-08	Industry Concentration (Loc Quotient): 2008	Industry Concentration (Loc Quotient): Change 2002-08
Music	**1,048**	**1,106**	**5.5%**	**-2.5%**	**$ 26,229**	**$ 37,505**	**1.3%**	**1.69**	**0.06**
Musical groups and artists	793	848	**6.9%**	**2.3%**	$ 27,473	$ 38,184	0.7%	3.03	**0.00**
Musical instrument and supplies stores	158	143	**-9.5%**	**-5.3%**	$ 26,389	$ 29,341	-0.4%	0.71	**-0.07**
Sound recording studios	40	49	**22.5%**	**-8.4%**	$ 14,559	$ 28,942	6.8%	0.83	**0.18**
Integrated record production and distribution	43	42	**-2.3%**	**-13.2%**	$ 18,831	$ 72,763	2.8%	1.49	**0.11**
Record production	3	12	**300.0%**	**7.3%**	$ 20,429	$ 78,209	29.3%	0.69	**0.50**
Other sound recording industries	8	10	**25.0%**	**-30.9%**	$ 13,934	$ 33,009	12.7%	0.36	**0.15**
Music publishers	3	2	**-33.3%**	**30.8%**	$ 24,863	$ 47,152	-7.5%	0.05	**-0.05**

The centerpiece of this industry group — musical groups and artists — grew by about 7%. Sound recording studios also showed some increase, although the small size of the activity means that changes in that industry difficult to interpret. Retail activity devoted to musical instruments and supplies showed a small decline in jobs.

Annual earnings in the music industry reflect generally part-time professions. The average for the industry group as a whole was $26,200 in 2008. Earnings for the same industry groups nationally were higher than in Hawaii, but generally below the average for the economy, except for record production.

Arts Education

Arts education — music, theater, dance, visual and literary art — is pervasive in public and private elementary and secondary schools, and in institutions of higher education. Within the public sector the size and trends in arts are difficult to discern due to a lack of information. However, in the private sector there are more than 40 small establishments and numerous self-employed educators in the state specializing in various forms of arts education. The total number of persons engaged in this small industry was nearly 290 in 2008, up about 19% from 2002. These activities grew faster (31%) at the national level for the period. Average annual earnings amounted to only $13,190 for Hawaii in 2008 and just $15,000 at the national level. This suggests that part time work is the norm in the industry.

Until more can be learned about the extent and trends in education serving the arts and other creative disciplines, this small industry may serve as a barometer for interest in education supporting the creative sector.

VI. CONCLUSIONS AND NEXT STEPS

Development of Hawaii's key creative activities is a valuable economic development strategy. Hawaii's cultural diversity and its Hawaiian host culture are major attractions for millions of visitors and their spending. The uniqueness of Hawaii's creative, artistic and cultural content helps Hawaii's creative products compete in worldwide markets. And, the creative industries and their workforce are key sources of ideas, content and talent for Hawaii's emerging technology sector.

The four-quadrant performance map has helped to organize the industry groups of the updated creative sector by their growth, competitiveness and concentration in the economy.

Five industry groups ranked as emerging or full-fledged base-growth activities in the creative sector, including; cultural activities, music, design services, business consulting, and engineering/R&D activity.

Five other industry groups ranked as transitioning, meaning that while they have been growing jobs, there could be performance issues that are affecting the competitiveness of the activities. These groups were; arts education, computer & digital media, architecture, marketing and performing/creative arts.

Finally, three industry groups lost jobs over the 2002-2008 period and consequently fell into the declining quadrant for this time period. These were broadcasting, publishing/ information and film/TV production. In broadcasting and information, productivity may be playing a role in reducing the need for labor to deliver the same level of service as in years past. For film/ TV, the NAICS industries in the group probably capture just a proportion of total film activity, which extends into performing arts and other specialized industries.

Work should continue to flesh out the dimensions and opportunities of the commercial markets served by the NAICS-based creative industry groups. This particularly includes digital media and the broader film industry, which is only partially captured in the NAICS film production industry. Also needing closer study is the link between specific creative activity and emerging technologies in information, communications, entertainment, and the broad range of commercial applications that are being driven by innovation. Learning how creative activity utilizes and supports emerging technology can help clarify the skill sets and educational elements that will help make Hawaii a leader in innovation.

DBEDT Research is currently compiling information on the occupations and skill sets of Hawaii's targeted industry portfolio including the creative sector. This should help better identify opportunities and barriers for growth among the industries that are related to workforce training.

APPENDIX: DETAILED INDUSTRY DATA

		Hawaii Jobs & Earnings									Competitive Metrics			U.S. Comparables	
NAICS Code	Group and Industry Description	2002	2003	2004	2005	2006	2007	2008	% Change in Jobs 2002-08	Ave. Ann. Earnings 2008	Compet. Share Chng 02-08	Locat-ion Quotient (LQ)	Change in LQ 02-08	% Change in Jobs 2002-08	Ave. Ann. Earnings 2008
	CREATIVE SECTOR	**40,718**	**41,467**	**43,467**	**45,195**	**45,136**	**44,857**	**44,649**	**9.7%**	**$49,947**	**-0.7%**	**0.89**	**-0.08**	**14.1%**	**$70,179**
	Performing and Creative Arts	**8,523**	**8,667**	**9,243**	**9,532**	**9,182**	**8,762**	**8,531**	**0.1%**	**$14,393**	**-2.0%**	**1.29**	**-0.23**	**13.1%**	**$18,680**
711510	Independent artists, writers, and performers	6,016	6,051	6,478	6,820	6,444	6,153	6,104	1.5%	$10,423	-1.6%	1.27	-0.19	12.1%	$13,917
453920	Art dealers	836	897	936	936	891	891	822	-1.7%	$29,199	0.3%	3.05	-0.09	-3.0%	$28,077
711110	Theater companies and dinner theaters	470	507	504	472	512	462	455	-3.2%	$19,416	-2.2%	1.02	-0.20	10.8%	$25,096
711310	Promoters with facilities	429	418	487	477	478	431	397	-7.5%	$23,168	-6.5%	0.78	-0.44	38.1%	$31,311
711410	Agents and managers for public figures	458	463	470	453	409	398	353	-22.9%	$13,518	-7.0%	1.07	-0.64	18.0%	$40,500
711320	Promoters without facilities	180	172	168	151	172	218	262	45.6%	$42,236	6.9%	1.47	0.39	2.2%	$36,324
711120	Dance companies	134	159	200	223	276	209	138	3.0%	$9,377	-1.7%	2.18	-0.80	34.8%	$31,499
	Engineering and R & D	**5,842**	**6,211**	**6,518**	**6,717**	**6,941**	**7,115**	**7,336**	**25.6%**	**$79,672**	**1.1%**	**0.92**	**0.02**	**17.5%**	**$93,373**
541330	Engineering services	3,128	3,264	3,468	3,466	3,621	3,759	3,732	19.3%	$79,839	0.2%	0.76	-0.03	18.2%	$85,031
541710	Physical, engineering and biological research	2,177	2,428	2,563	2,791	2,877	2,861	3,115	43.1%	$82,393	3.1%	1.13	0.14	20.3%	$110,652
541720	Social science and humanities research	537	519	487	460	443	495	489	-8.9%	$61,058	0.3%	1.58	-0.05	-9.8%	$70,740
	Computer Services & digital media	**5,744**	**6,021**	**6,319**	**6,451**	**6,773**	**6,529**	**6,657**	**15.9%**	**$68,244**	**-0.4%**	**0.65**	**-0.04**	**18.6%**	**$94,662**
541512	Computer systems design services	1,662	1,978	2,249	2,490	2,758	2,552	2,661	60.1%	$73,599	3.4%	0.67	0.08	34.9%	$88,751
541513	Computer facilities management services	2,151	2,145	2,075	2,042	2,008	2,026	2,050	-4.7%	$50,563	0.0%	5.66	-0.26	-4.5%	$71,469
541511	Custom computer programming services	1,521	1,581	1,671	1,688	1,817	1,822	1,828	20.2%	$79,523	0.1%	0.47	-0.02	19.9%	$92,596
511210	Software publishers	157	113	125	170	144	79	74	-52.9%	$93,039	-9.5%	0.05	-0.08	8.8%	$132,901
541519	Other computer related services	253	204	199	61	46	50	44	-82.6%	$57,806	-16.5%	0.07	-0.25	-18.8%	$76,666
	Marketing & Related	**4,882**	**5,003**	**5,177**	**5,164**	**5,275**	**5,095**	**4,918**	**0.7%**	**$40,027**	**-1.7%**	**0.78**	**-0.12**	**11.8%**	**$63,537**
541921	Photography studios, portrait	1,286	1,371	1,499	1,501	1,605	1,553	1,460	13.5%	$25,255	0.2%	1.80	-0.06	12.6%	$24,947
541810	Advertising agencies	1,053	1,043	1,013	934	924	887	839	-20.3%	$58,879	-4.4%	0.61	-0.22	4.0%	$87,976
541890	Other services related to advertising	736	782	719	608	600	643	700	-4.9%	$25,836	-2.6%	1.33	-0.33	13.7%	$40,179
541613	Marketing consulting services	558	538	569	721	731	673	627	12.4%	$42,161	-5.4%	0.50	-0.23	57.1%	$64,682
541820	Public relations agencies	290	288	326	367	407	397	415	43.1%	$79,275	5.3%	1.10	0.25	6.1%	$92,498
541910	Marketing research and public opinion polling	409	453	468	439	450	426	391	-4.4%	$25,601	-0.2%	0.60	-0.04	-2.3%	$63,466
541850	Display advertising	88	125	194	190	197	177	150	70.5%	$61,878	8.0%	0.52	0.11	28.2%	$55,003
541840	Media representatives	90	96	95	106	103	108	109	21.1%	$56,683	3.0%	0.45	0.06	1.8%	$81,614
541922	Commercial photography	154	88	79	86	93	101	106	-31.2%	$34,419	-5.1%	0.79	-0.51	8.3%	$58,530
541860	Direct mail advertising	139	122	105	94	90	80	75	-46.0%	$29,026	-6.7%	0.15	-0.09	-16.9%	$56,139
541870	Advertising material distribution services	59	63	82	100	63	45	41	-30.5%	$38,859	-3.4%	0.33	-0.18	3.5%	$49,041
541830	Media buying agencies	20	34	28	18	12	5	5	-75.0%	$54,850	-17.3%	0.06	-0.29	32.2%	$90,780
	Business Consulting	**3,379**	**3,158**	**3,314**	**4,211**	**3,970**	**4,079**	**4,291**	**27.0%**	**$52,948**	**0.7%**	**0.60**	**-0.01**	**24.4%**	**$75,186**
541611	Administrative management consulting services	827	811	969	1,352	1,395	1,522	1,633	97.5%	$62,734	8.9%	0.54	0.18	24.9%	$83,589
541620	Environmental consulting services	1,085	951	983	1,229	1,168	1,200	1,237	14.0%	$47,745	0.3%	1.90	-0.10	14.9%	$57,840
541690	Other technical consulting services	450	492	498	610	573	572	612	36.0%	$40,003	-10.6%	0.52	-0.44	140.6%	$66,164
541612	Human resource consulting services	400	370	398	540	450	414	404	1.0%	$60,758	1.4%	0.45	-0.01	-1.8%	$75,696
541614	Process and logistics consulting services	526	461	392	377	264	232	243	-53.8%	$36,207	-15.9%	0.33	-0.64	29.4%	$67,574
541618	Other management consulting services	91	73	74	103	120	139	162	78.0%	$48,568	13.5%	0.22	0.10	-11.8%	$77,500
	Publishing & Information1	**2,946**	**3,033**	**3,069**	**3,079**	**3,062**	**3,094**	**2,887**	**-2.0%**	**$63,183**	**0.0%**	**0.75**	**-0.03**	**-1.9%**	**$68,948**
511110	Newspaper publishers	2,065	2,091	2,111	2,077	2,040	2,027	1,948	-5.7%	$57,342	0.9%	1.12	0.02	-10.9%	$46,628
511120	Periodical publishers	393	401	403	416	441	461	469	19.3%	$58,549	3.7%	0.63	0.10	-4.4%	$86,208
511140	Directory and mailing list publishers	136	132	144	162	143	160	178	30.9%	$172,345	6.2%	0.75	0.19	-6.9%	$75,369
516110	Internet publishing and broadcasting	34	32	36	41	59	79	86	152.9%	$50,675	11.9%	0.35	0.15	37.1%	$92,941
511130	Book publishers	66	67	78	86	91	88	78	18.2%	$42,415	3.1%	0.19	0.02	0.6%	$75,800
518112	Web search portals	31	29	27	40	28	31	35	12.9%	$38,813	-12.5%	0.19	-0.25	151.6%	$159,420
519190	All other information services	37	46	23	23	25	29	30	-18.9%	$24,059	-4.8%	0.41	-0.29	31.5%	$42,437
511191	Greeting card publishers	37	54	52	44	49	22	26	-29.7%	$37,707	2.1%	0.40	-0.12	-11.9%	$75,771
519110	News syndicates	31	60	53	67	63	54	20	-35.5%	$46,958	0.9%	0.27	-0.26	20.8%	$90,993
511199	All other publishers	116	121	142	123	123	143	17	-85.3%	$53,196	-9.1%	0.22	-1.21	-9.1%	$55,943
	Cultural Activities	**2,014**	**2,109**	**2,048**	**2,104**	**2,212**	**2,344**	**2,311**	**14.7%**	**$43,557**	**0.3%**	**2.69**	**-0.08**	**13.2%**	**$40,194**
813211	Grantmaking foundations	703	733	663	610	645	736	773	10.0%	$67,500	0.2%	2.88	-0.14	10.6%	$54,103
712110	Museums	638	666	674	690	700	724	703	10.2%	$34,751	-0.3%	1.90	-0.12	12.2%	$36,159
712130	Zoos and botanical gardens	492	521	526	598	657	670	623	26.6%	$30,426	0.7%	4.05	-0.05	22.7%	$30,457
712120	Historical sites	181	189	185	206	210	214	212	17.1%	$24,048	1.3%	3.21	0.09	9.2%	$28,994
	Architecture	**2,077**	**2,176**	**2,076**	**2,135**	**2,197**	**2,253**	**2,280**	**9.8%**	**$64,145**	**-0.6%**	**1.35**	**-0.11**	**13.8%**	**$66,960**
541310	Architectural services	1,797	1,867	1,755	1,794	1,814	1,853	1,884	4.8%	$67,291	-1.6%	1.46	-0.22	15.4%	$74,162
541320	Landscape architectural services	280	309	321	341	383	400	396	41.4%	$49,175	4.5%	1.00	0.20	8.8%	$43,318
	Design Services	1,134	1,203	1,341	1,433	1,513	1,516	1,453	28.1%	$42,135	1.5%	0.89	0.04	17.5%	$48,143

APPENDIX: DETAILED INDUSTRY DATA

		Hawaii Jobs & Earnings									Competitive Metrics			U.S. Comparables	
NAICS Code	Group and Industry Description	2002	2003	2004	2005	2006	2007	2008	% Change in Jobs 2002-08	Ave. Ann. Earnings 2008	Compet. Share Chng 02-08	Locat-ion Quotient (LQ)	Change in LQ 02-08	% Change in Jobs 2002-08	Ave. Ann. Earnings 2008
541430	Graphic design services	704	737	807	853	889	872	846	20.2%	$31,151	2.2%	0.92	0.07	6.0%	$48,550
541410	Interior design services	419	451	514	555	593	596	549	31.0%	$51,509	0.2%	1.04	-0.04	30.0%	$44,029
541490	Other specialized design services	11	15	20	25	31	48	58	427.3%	$113,614	23.9%	0.33	0.22	61.8%	$58,343
	Radio and television Broadcasting	**1,387**	**1,349**	**1,371**	**1,366**	**1,350**	**1,380**	**1,361**	**-1.9%**	**$58,442**	**-0.4%**	**1.11**	**-0.07**	**0.4%**	**$76,455**
515120	Television broadcasting	712	703	700	707	669	694	687	-3.5%	$69,244	-0.7%	1.04	-0.09	0.8%	$89,515
515112	Radio stations	509	471	491	487	494	508	508	-0.2%	$43,421	0.1%	1.17	-0.05	-0.6%	$57,634
515111	Radio networks	166	175	180	172	187	178	166	0.0%	$59,709	-0.1%	1.31	-0.08	1.5%	$72,497
	Film, TV, Video Production	**1,500**	**1,188**	**1,635**	**1,605**	**1,227**	**1,233**	**1,231**	**-17.9%**	**$33,793**	**-1.7%**	**0.73**	**-0.22**	**2.0%**	**$81,256**
512110	Motion picture and video production	1,447	1,125	1,557	1,523	1,148	1,156	1,155	-20.2%	$33,138	-3.6%	1.09	-0.50	11.5%	$79,808
512191	Teleproduction and postproduction services	8	26	36	35	33	33	33	312.5%	$48,624	41.3%	0.39	0.28	7.3%	$94,251
515210	Cable and other subscription programming	21	23	28	30	31	31	32	52.4%	$45,207	8.3%	0.07	0.03	-5.5%	$85,340
512120	Motion picture and video distribution	24	14	14	17	15	13	11	-54.2%	$24,863	-6.1%	0.27	-0.21	-22.5%	$116,169
334612	Audio and video media reproduction	-	-	-	-	-	-	-	na	-	na	0.00	0.00	-38.8%	$43,462
	Music	**1,048**	**1,095**	**1,099**	**1,128**	**1,155**	**1,153**	**1,106**	**5.5%**	**$26,229**	**1.3%**	**1.69**	**0.06**	**-2.5%**	**$37,505**
711130	Musical groups and artists	793	771	760	808	860	885	848	6.9%	$27,473	0.7%	3.03	0.00	2.3%	$38,184
451140	Musical instrument and supplies stores	158	183	189	175	162	146	143	-9.5%	$26,389	-0.4%	0.71	-0.07	-5.3%	$29,341
512240	Sound recording studios	40	63	67	62	56	54	49	22.5%	$14,559	6.8%	0.83	0.18	-8.4%	$28,942
512220	Integrated record production and distribution	43	57	59	56	49	46	42	-2.3%	$18,831	2.8%	1.49	0.11	-13.2%	$72,763
512210	Record production	3	5	9	13	12	11	12	300.0%	$20,429	29.3%	0.69	0.50	7.3%	$78,209
512290	Other sound recording industries	8	12	11	12	14	9	10	25.0%	$13,934	12.7%	0.36	0.15	-30.9%	$33,009
512230	Music publishers	3	4	4	2	2	2	2	-33.3%	$24,863	-7.5%	0.05	-0.05	30.8%	$47,152
	Arts Education	**242**	**254**	**257**	**270**	**279**	**304**	**287**	**18.6%**	**$13,190**	**-1.6%**	**0.69**	**-0.10**	**30.9%**	**$14,898**
611610	Fine arts schools	242	254	257	270	279	304	287	18.6%	$13,190	-1.6%	0.69	-0.10	30.9%	$14,898