Hawaii's Creative Industries

Update Report 2016

Department of Business, Economic Development and Tourism

June 2016

Hawaii Department of Business, Economic Development & Tourism

June 2016

Table of Contents

CREATIVE INDUSTRIES HAWAII OVERVIEW

The State of Hawaii's **Creative Industries Division (CID**) is the lead agency dedicated to advocating for Hawaii's creative entrepreneurs which in turn accelerates the growth of Hawaii's Creative Economy.

Comprised of the **Hawaii Film Office (HFO)** responsible for the overall management of the state's off-shore and local film industry development and **Creative and Cultural Industries Office (CCIO), CID** is responsible for initiatives which support talent, infrastructure, policy development and investment strategies for the statewide creative industries spectrum, increasing the capacity for entrepreneurial success while maintaining the State's global reputation as a premiere location filming destination.

Through CID initiatives such as **Creative Lab**, coupled with state-of-the-art infrastructure development, the division is further strengthening the State's creative clusters in film, arts, culture, music, design, literary arts, publishing, creative and interactive media – all integral components of Hawaii's creative and innovation economy.

Hawaii's Creative Industries Metrics 2015:

- **49,597 jobs**, **3,615** businesses
- **5.9%** of the state **total civilian jobs**
- **$3.3 billion Gross Domestic Product (GDP)** = **4.2%** of total State of Hawaii **GDP**
- **+ 8.9% growth between 2005 and 2015**

Hawaii Film Industry Metrics:

- From 2006 to 2015 estimated production expenditures reached **$2.2 billion,** a cumulative total of **$3.8 billion** of output during this period.
- 2015 calendar year, $**243.5 million** in estimated production expenditures generated **$422.2 million** of total output, **$26.7 million** in state taxes and **2,668 jobs** statewide.
- **$500,000** per year in revenues generated through lease rents of **Hawaii Film Studio** deposited into the General Fund = **$5 million** from **2005-2015**.

Through establishing these metrics in film and the creative sectors, CID and DBEDT's Research and Economic Analysis Division (READ) defined the base, emerging, declining and transitioning sectors performance from 2005-2015, helping to guide a statewide programmatic and overall policy direction.

Hawaii's creative portfolio, coupled with its long standing reputation as a film production destination, is the foundation on which Hawaii's creative economy is built. CID is positioning the state to be a national and global leader in creative sector development as well as a hub for creative media and production in the Pacific.

EXECUTIVE SUMMARY

Developing Hawaii's creative industries has become an important economic development strategy. Hawaii's cultural diversity and its Hawaiian host culture are brand differentiators, attracting millions of visitors to our destination, while supporting a thriving creative industries cluster. The uniqueness of Hawaii's creative, artistic and cultural sectors helps Hawaii's creative products compete in worldwide markets, while also supporting visitor spending and developing the foundation of Hawaii's creative economy. In addition, the creative industries and their workforce represent key sources of ideas, content creation for global export and provide the talent for Hawaii's emerging technology and knowledge based industry sectors.

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 up 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 adopted the same definition of the creative industries as defined in the July 2012 report. The creative sector now overlaps some elements of the technology sector.

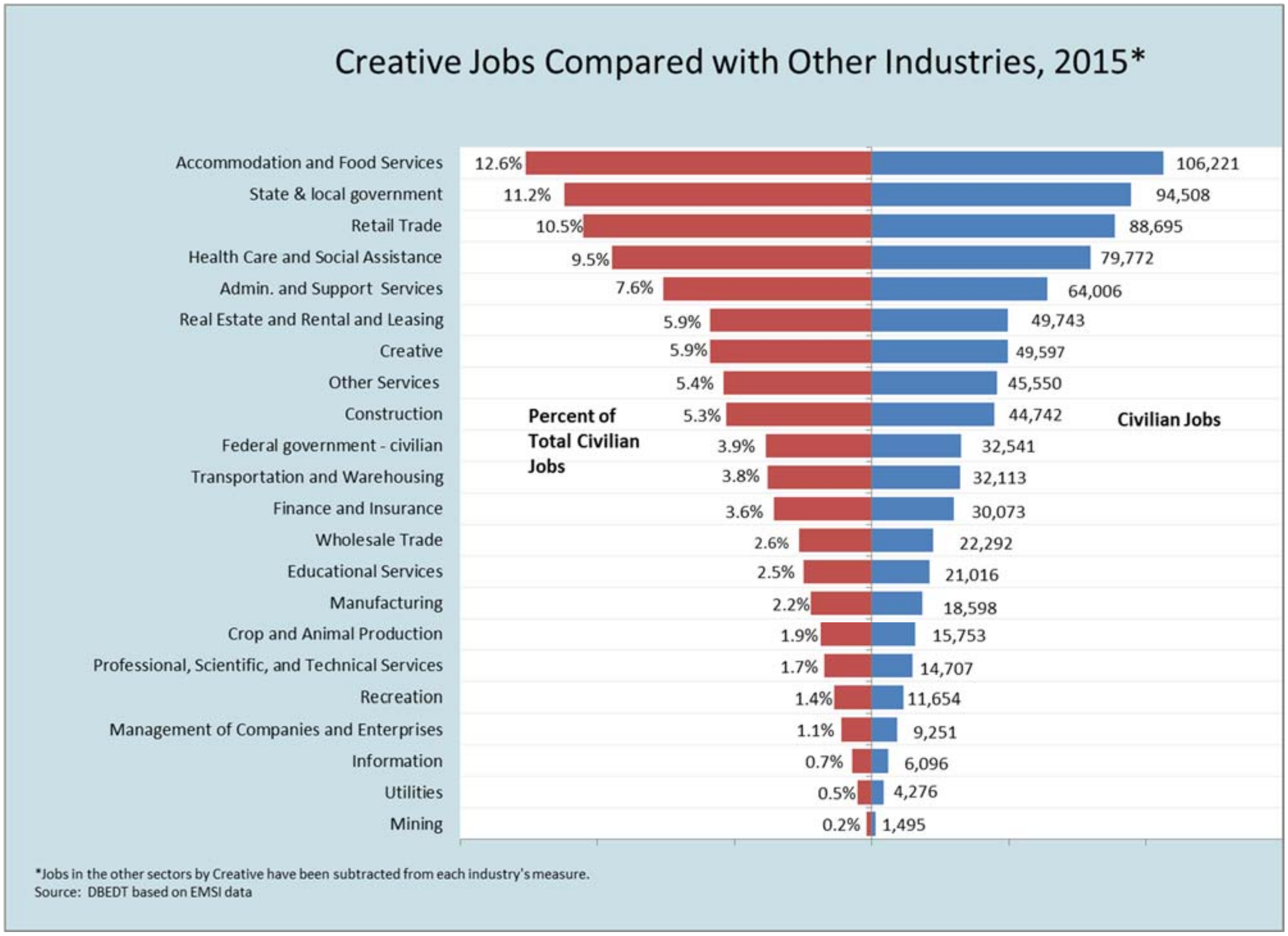
Industry Groups in the Creative Sector

The table below provides an overview of the 13 industry groups in the updated creative sector, and their 2015 job count, based on the current definition of the sector. In total, the creative industries accounted for about 49,597 jobs in Hawaii for 2015. This was up 8.9% from 2005, and up 1.8% from 2008. The earnings average was $49,774.

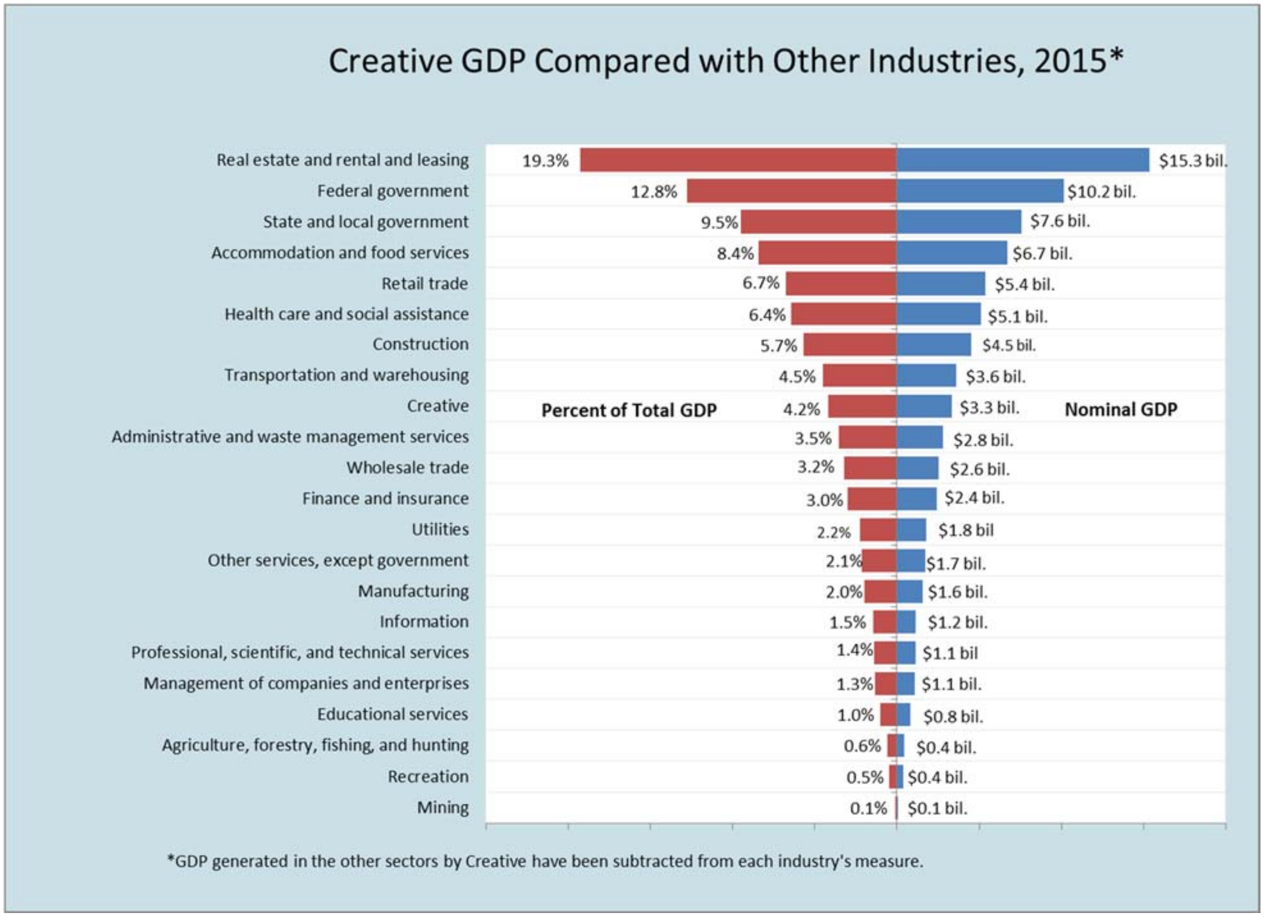
CREATIVE INDUSTRY PRODUCTION GROUPS	
Industry Group	**2015 Job**
Marketing, Photography & Related	11,098
Performing and Creative Arts	9,087
Engineering and Research & Development	5,542
Business Consulting	5,035
Computer and Digital Media Products	4,808
Cultural Activities	3,480
Publishing & Information	2,073
Design Services	2,061
Architecture	1,937
Music	1,482
Radio and TV Broadcasting	1,133
Film, TV, Video Production/Distrib	1,047
Art Education	815
Total Creative Industry	**49,597**
Source: DBEDT, READ.	

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.

The creative sector is a leading sector for job creation. In 2015, the sector had 49,597 jobs and accounted for 5.9 % of the state's total civilian jobs. Not only does this sector create jobs directly, but it also spawns innovations that drive job creation in other sectors.



As shown in the following figure, the creative sector directly accounted for 4.2 % of Hawaii's GDP in 2015, with a value added of $3.3 billion. If the tourism sector is consolidated with the tourist related portions of accommodation and food services, retail trade, transportation and warehousing and other industries, the creative sector is the 5th largest private sector in the economy. This would place it next to real estate, tourism, health care and social assistance, and construction. If the government sector is included and the tourism related sectors are not consolidated, then the creative industry is the 9th largest sector in the economy.



Source: DBEDT, READ

Performance of the Creative Industries Portfolio

The primary purpose of this report is to measure the performance of the industry groups within the creative industries portfolio. 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: job 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 following figure (the full report explains this mapping process in more detail).

CREATIVE INDUSTRY GROUPS MAPPED BY PERFORMANCE, 2005-2015					
Total Jobs, 2015: 49,597					
Average Annual Earnings, 2015: $49,774					
Net Change in Jobs, 2005-2015: 8.9%					
Transitioning Group: 75.9% of Jobs			**Base-Growth Group: 10.0% of Jobs**		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Business Consulting	32.8%	$58,726	Cultural Activities	131.5%	$48,025
Design Services	15.3%	$26,607	Music	39.4%	$40,865
Engineering and Research & Development	8.5%	$95,765			
Marketing, Photography & Related	12.3%	$27,013			
Performing and Creative Arts	0.7%	$25,261			
Computer and Digital Media Products	7.0%	$89,294			
Declining Group: 12.5% of Jobs			**Emerging Group: 1.6% of Jobs**		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Architecture	-8.1%	$72,359	Art Education	40.5%	$14,180
Radio and TV Broadcasting	-17.9%	$64,006			
Publishing & Information	-33.3%	$50,121			
Film, TV, Video Production/Distrib	-39.0%	$54,648			

Source: DBEDT compilation based on EMSI data.

The highest performing industries in the creative sector for the 2005 to 2015 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 that they are gaining in competitiveness. In addition, the *Base-Growth* industries show a higher proportion of jobs in Hawaii's economy than the nation's overall economy. This suggests they are likely to be exporting some proportion of their output, either directly or indirectly. Furthermore, while relatively small, these industries are significant drivers for the state's economy. *Emerging* industry groups are not as concentrated in Hawaii's economy, but their otherwise high performance suggests that 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 reached a plateau in terms of competitiveness. Finally, *declining* industries have lost jobs during the period of the analysis. In some cases, this may be the result of unusual factors. In other cases, like information and broadcasting, it may reflect outsourcing of services beyond Hawaii and/or significant increases in productivity arising from emerging technology, which 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 4,058 jobs to the state's economy between 2005 and 2015. This amounted to an 8.9 % increase in jobs, higher than the 8.5 % growth in Hawaii's civilian economy as a whole for the period. The leading performers of the overall portfolio were the cultural activities and music groups. The 2015 earnings average for the creative industry's portfolio was $49,774, which was lower than the statewide average of $52,048.

High Performing Creative Industry Groups

Only two creative industry groups, cultural activities and music, registered as high performing base-growth industries for the 2005 to 2015 period.

Only one group, art education, fells into the emerging category. This group also performed well in job creation.

2015 Na Hoku Hanohano Awards Alternative Album of the Year, Streelight Cadence, Hawaii Musician/Band. Photo credit Soul Session USA

Other Creative Industries' Performance

Six of the creative sector industry groups fell into the transitioning category for the 2005 to 2015 period. These ranged from the performing and creative arts, which increased 0.7% in jobs to business consulting, which grew jobs by 32.8%. However, while these industry groups grew, their growth rate was below the same industries nationally. As a result, they lost some ground to the nation in terms of competitive industry share.

Finally, the four creative industry groups that lost jobs during the 2005 to 2015 period fell into the declining quadrant of the performance maps; these were radio & TV broadcasting, publishing & information, film, TV, video production/distribution, and architecture.

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 is especially important for the digital media and the broader film industry, which are 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.

GVS Connect announced the new broadband fiber service with a live real-time demonstration from Kona, Hawaii, to a screening room filled with Hollywood studio executives at Warner Bros. Studios in Los Angeles. Photo Credit Psalm Oines

I. INTRODUCTION

Development of Hawaii's key creative activities has become an important focus of 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.

Second, the depth of Hawaii's creative and cultural talent and unique artistic content helps Hawaii's creative products compete in global 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. Furthermore, visitors absorb the creative products of Hawaii in context and share their discovery in the many markets from which they have come.

Third, the creative industries and their workforce are key sources of ideas, content and talent for Hawaii's emerging technology sector. Advancement in science and technology has made it possible for 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 smart phone, tablet, and 3D TV 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.

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.[1]

CID weaves clusters of music, film and television together to support cross promotion and monetization between sectors such as Hawaii artists inclusion in CBS TV's Hawaii 5-0 on screen, soundtrack and CD/downloads. Photo credit CBS.

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

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
- 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.[2]

Actor Chris Pratt in a scene from the "Jurassic World" filmed in Hawaii.
Photo credit Universal Pictures and Amblin Entertainment

In addition to including more technology-based creative activities, 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. A report based on that framework was done in June 2010. This report is the sixth in the series, an update of the March 2015 Hawaii's Creative Industries Report.

[2] 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.

Data Sources

A major feature of the 2007, 2010, 2012, 2014, 2015 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.[3] The data for this report were developed for a recent DBEDT study on innovation industries, which included the creative sector. They consist primarily of jobs and labor earnings that are available annually for detailed industries.[4] 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.

Meg LeFauve, screenwriter of the Academy Award winning animated film " Inside Out" at Creative Lab Hawaii @ HIFF 2016 with Michael Palmieri, Executive Director of Creative Lab Hawaii.
Photo credit Kardan Photography

[3] 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/ .

[4] 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 creative sector, and their 2015 job count, based on the current definition of the sector. In total, the creative industries accounted for about 49,597 jobs in Hawaii for 2015. This was up 8.9% from 2005, and up 1.8% from 2008. The earnings average was $49,774.

TABLE 1

CREATIVE INDUSTRY PRODUCTION GROUPS	
Industry Group	**2015 Job**
Marketing, Photography & Related	11,098
Performing and Creative Arts	9,087
Engineering and Research & Development	5,542
Business Consulting	5,035
Computer and Digital Media Products	4,808
Cultural Activities	3,480
Publishing & Information	2,073
Design Services	2,061
Architecture	1,937
Music	1,482
Radio and TV Broadcasting	1,133
Film, TV, Video Production/Distrib	1,047
Art Education	815
Total Creative Industry	**49,597**
Source: DBEDT, READ.	

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 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.

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 should 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. The main groups of interest include film/TV, music, cultural activities, performing arts and computer services related to digital media.

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.

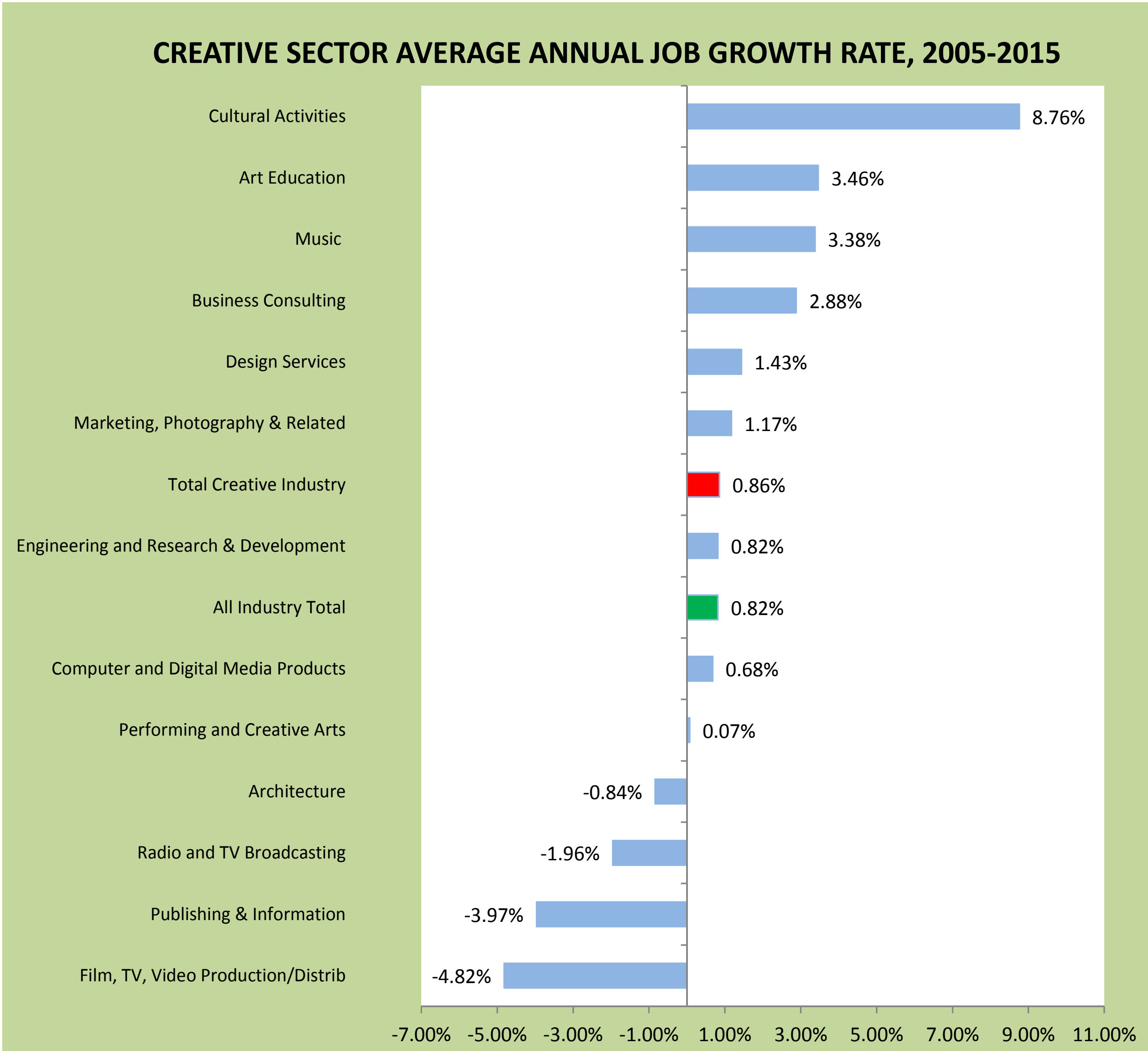
Creative Sector Job Growth

In terms of job growth, the creative industries portfolio seems to have performed slightly above the average over the 2005 to 2015 period (Figure 1). Nine of the thirteen NAICS-based, target industry groups showed net job growth over the period. Seven groups outperformed the overall state jobs annual growth rate of 0.82%. Cultural activities topped the list with 8.76% annual growth. This was followed by art education, music, business consulting, design services, marketing, photography & related, and engineering/R&D services.

The four industry groups that lost jobs over the period were film, TV, video production/distribution, publishing & information, radio/TV broadcasting, and architecture.

Setting the stage for creative entrepreneurs, the participants in CID/DBEDT's Creative Lab Hawaii 2013-15 gather at the famed Hawaii Theatre for Hawaii Business Magazine, 2016. Photo credit Tommy Shih and Hawaii Business Magazine.

FIGURE 1



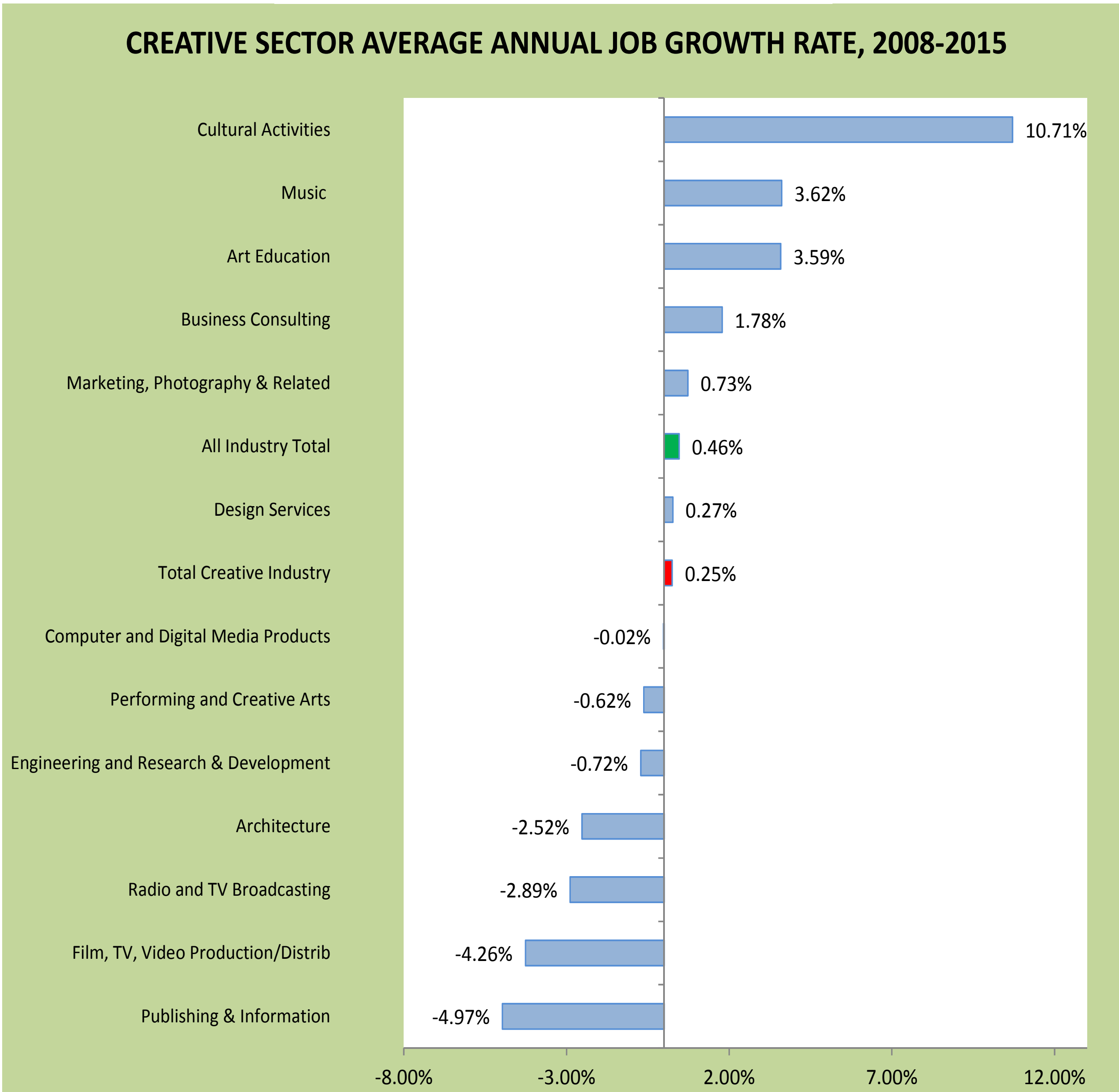
Source: DBEDT compilation based on EMSI data.

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 for the 2008 to 2015 period.

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 six creative groups managed positive growth during 2008-2015 period. The strongest performers in terms of job growth during 2008-2015 period were cultural activities, music, art education, and business consulting.

Publishing and information experienced the most significant jobs loss in this period, followed by film, TV, video production/distribution, radio and TV broadcasting, architecture, engineering and R&D, performing and creative arts, and computer and digital media products.

FIGURE 2



Source: DBEDT compilation based on EMSI data.

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 Hawaii's creative industry growth rate is higher than the national growth rate, Hawaii's creative industry 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. [5]

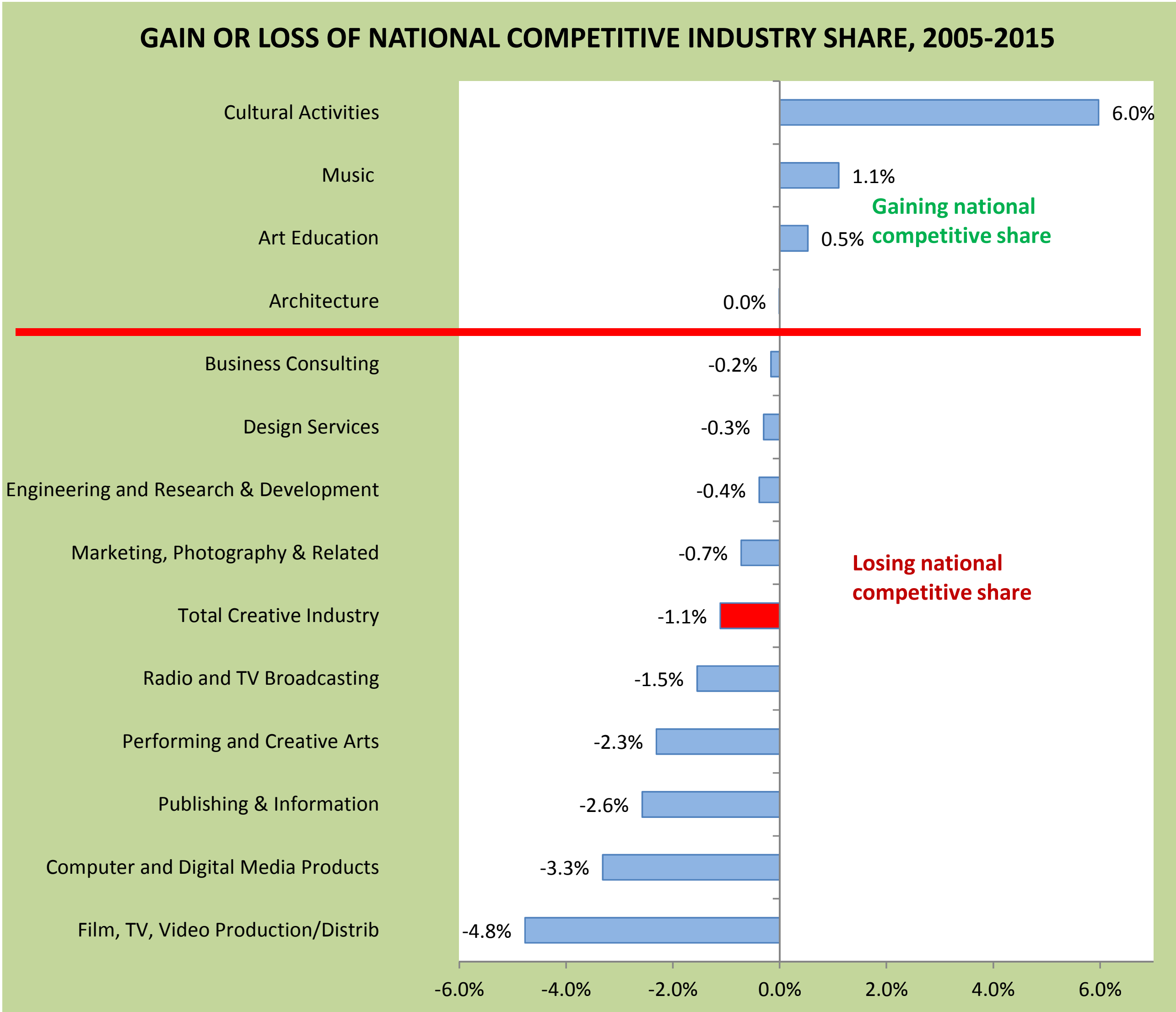
Figure 3 shows how much more or less Hawaii's creative industries grew per year on average than the same industries nationally. For instance, over the 2005 to 2015 period, jobs in the cultural activities industry group grew an average of 6.0% more annually in Hawaii than the same industry nationwide. Thus, Hawaii's cultural activities industry group gained competitive national industry share. On the other hand, even though the computer and digital media products industry group grew jobs over this period, it lost national industry share due to an average annual growth rate that was 3.3% below the national industry growth rate.

Industries like business consulting, design services, engineering and research & development, performing and creative arts, and marketing, photography & related also lost competitive national market share even though they increased their statewide job counts. Industries that have both positive job growth and an increase in competitive national industry share, represent the best performing industry groups over a given period of time. Industry groups with the higher competitive share metric are probably showing a higher comparative advantage compared with the national industry.

Hawaii's Creative Industries Division Co-Sponsors the television and internet program Showcase Hawaii featuring segments interviewing business mentors in fashion, music, art, publishing & interactive media.

[5] 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/.

FIGURE 3



Source: DBEDT compilation based on EMSI data.

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 output in a given creative industry is exported.

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.

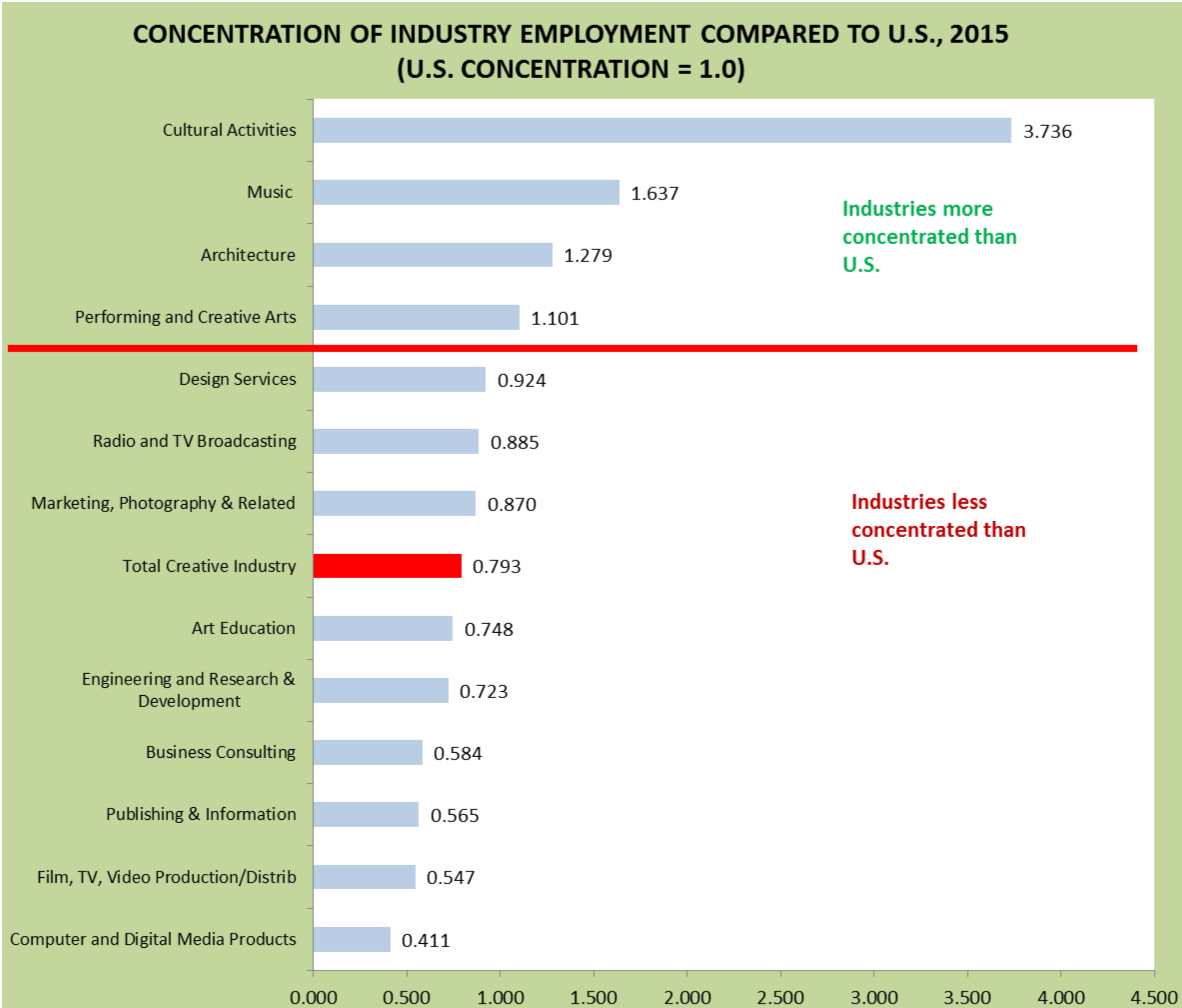
Industry concentration is measured by a metric called the Location Quotient, or LQ for short. The LQ for an industry at the U.S. level is fixed at 1.0. Hawaii industries with an LQ measure more than 1.0 are more concentrated in the economy than the same industry for the U.S. as a whole. Those below 1.0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

For instance, the measure for cultural activities in Figure 4 means that employment in Hawaii's cultural industry group is 3.7 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 industry group for the U.S. as a whole. 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, and performing/creative arts 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.

Creative Lab Hawaii, founded in 2012 by the Hawaii State Department of Business, Economic Development, and Tourism's Creative Industries Division (CID), is a key facet of DBEDT's HI Growth Initiative, Creative Lab fosters the talent development in Hawaii's innovation ecosystem to increase export, attract investment and build the state's creative entrepreneurial capacity.

FIGURE 4



Source: DBEDT compilation based on EMSI data.

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 for the U.S. as a whole. An *emerging* creative industry is one that has 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 potential 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 Quadrant: The declining quadrant contains industry groups showing job losses over the period. All of these creative industry groups have lost jobs to some extent between 2004 and 2014. Most industries that are losing jobs are also losing competitive national industry share. However, 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 understand 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

Table 3 shows how the individual, NAICS-based creative industry groups fell on the performance map based on the 2005 to 2015 performance measures. Combined, the NAICS-based creative industry groups accounted for about 49,597 jobs in Hawaii's economy during 2015.

TABLE 3

CREATIVE INDUSTRY GROUPS MAPPED BY PERFORMANCE, 2005-2015					
Total Jobs, 2015: 49,597					
Average Annual Earnings, 2015: $49,774					
Net Change in Jobs, 2005-2015: 8.9%					
Transitioning Group: 75.9% of Jobs			**Base-Growth Group: 10.0% of Jobs**		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Business Consulting	32.8%	$58,726	Cultural Activities	131.5%	$48,025
Design Services	15.3%	$26,607	Music	39.4%	$40,865
Engineering and Research & Development	8.5%	$95,765			
Marketing, Photography & Related	12.3%	$27,013			
Performing and Creative Arts	0.7%	$25,261			
Computer and Digital Media Products	7.0%	$89,294			
Declining Group: 12.5% of Jobs			**Emerging Group: 1.6% of Jobs**		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Architecture	-8.1%	$72,359	Art Education	40.5%	$14,180
Radio and TV Broadcasting	-17.9%	$64,006			
Publishing & Information	-33.3%	$50,121			
Film, TV, Video Production/Distrib	-39.0%	$54,648			

Source: DBEDT compilation based on EMSI data.

Overall, the creative industry groups added about 4,058 jobs to the state's economy between 2005 and 2015. This amounted to an 8.9 % increase in jobs, slightly higher than the 8.5 % growth in Hawaii's civilian economy as a whole for the period. The leading performers of the overall portfolio were the cultural activities and music groups. The 2015 earnings average of the creative industry portfolio of $49,774 was lower than the statewide average of $52,048.

High Performing Creative Industry Groups

Two creative industry groups, cultural activities and music, registered as high performing base-growth industries for the 2005 to 2015 period.

Only one group, art education, fells into the emerging category. This group also performed well in job creation.

Other Creative Industries' Performance

Six of the creative sector industry groups fell into the transitioning category for the 2005 to 2015 period. These ranged from the performing and creative arts which increased 0.7% in jobs to business consulting, which grew jobs by 32.8%. However, while these industry groups grew, it was not as vigorous as the same industries nationally. As a result, they lost some ground to the nation in terms of competitive industry share.

Finally, four creative industry groups that lost jobs in the 2005 to 2015 period fell into the declining quadrant of the performance map. Radio & TV broadcasting, publishing & information, film, TV, video production/distribution, and architecture all lost jobs for the period. 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.

Na Hoku Hanohano Awards: Favorite Entertainer of the Year, Jake Shimabukuro,
Ukulele virtuoso and composer and one of the Nation's Turnaround Schools Hawaii Artists
inspiring students at three Oahu elementary schools.

IV. CREATIVE INDUSTRY PERFORMANCE BY COUNTY

The following tables summarize the 2005 to 2015 county performance of the statewide creative industries (paid employment and self-employed/sole proprietors). 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 36,002 of the state's creative industry jobs in 2015, a 0.7% annual increase from 2005. The average annual job growth was 1.6% from 2005 to 2008. After experiencing severe setbacks due to the national economic recession that began in late 2007, the average annual growth rate was down to 0.4% during 2008-2015. As shown in Table 4, three creative industry groups were high performing in Honolulu County in the 2005 to 2015 period. These high performing groups not only grew jobs during the period, but also increased their competitive share of the activity by exceeding the national growth rate for the industry. These included: Cultural Activities, Art Education, and Business Consulting. Five creative industry groups lost jobs in Honolulu County over the 2005 to 2015 period: Architecture, Music, Radio and Television Broadcasting, Film, TV, Video Production/Distribution, and Publishing & Information.

TABLE 4. CREATIVE INDUSTRY JOBS, HONOLULU

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2005	2008	2014	2015	2005-2008	2008-2015	2014-2015	2005-2015
Cultural Activities	Base-Growth	1,313	1,503	3,115	3,283	4.6%	11.8%	5.4%	9.6%
Art Education	Emerging	447	470	587	621	1.7%	4.0%	5.7%	3.3%
Business Consulting	Emerging	2,903	3,446	3,860	4,016	5.9%	2.2%	4.0%	3.3%
Engineering and R&D	Transitioning	4,056	4,620	4,458	4,475	4.4%	-0.5%	0.4%	1.0%
Design Services	Transitioning	1,212	1,350	1,331	1,337	3.7%	-0.1%	0.4%	1.0%
Marketing, Photography & Related	Transitioning	7,152	7,435	7,854	7,778	1.3%	0.6%	-1.0%	0.8%
Performing and Creative Arts	Transitioning	4,865	5,154	5,018	5,040	1.9%	-0.3%	0.4%	0.4%
Computer and Digital Media Products	Transitioning	3,917	4,120	4,005	3,990	1.7%	-0.5%	-0.4%	0.2%
Architecture	Declining	1,696	1,803	1,582	1,579	2.1%	-1.9%	-0.2%	-0.7%
Music	Declining	830	585	662	681	-11.0%	2.2%	2.9%	-2.0%
Radio and TV Broadcasting	Declining	1,159	1,117	941	907	-1.2%	-2.9%	-3.6%	-2.4%
Film, TV, Video Production/Distrib	Declining	1,559	1,262	1,045	935	-6.8%	-4.2%	-10.5%	-5.0%
Publishing & Information	Declining	2,388	2,215	1,474	1,360	-2.5%	-6.7%	-7.7%	-5.5%
Total Creative Industry	Transitioning	33,498	35,082	35,933	36,002	1.6%	0.4%	0.2%	0.7%

Source: DBEDT compilation based on EMSI data.

The comparisons of Honolulu County creative industry's job and earnings growth with the state and nation are listed in Table 5. For job growth, Honolulu County's 0.7% annual growth rate was lower than the state's 0.9%, and also lower than the national average of 2.0%. For average earnings, Honolulu County was higher than the state, but much lower than the national average.

TABLE 5. HONOLULU COUNTY CREATIVE INDUSTRY PERFORMANCE COMPARED WITH NATION AND STATE, 2005-2015

Industry Group	Performance Class	Job Change 2005-2015	Average Annual Job Growth (%)			Avg. Annual Earnings (2015)		
			County	State	U.S.	County	State	U.S.
Cultural Activities	Base-Growth	1,970	9.6%	8.8%	2.8%	48,964	48,025	51,685
Art Education	Emerging	173	3.3%	3.5%	2.9%	13,341	14,180	14,139
Business Consulting	Emerging	1,113	3.3%	2.9%	3.0%	62,751	58,726	76,869
Engineering and R&D	Transitioning	420	1.0%	0.8%	1.2%	98,921	95,765	107,679
Design Services	Transitioning	124	1.0%	1.4%	1.7%	27,084	26,607	37,490
Marketing, Photography & Related	Transitioning	626	0.8%	1.2%	1.9%	30,170	27,013	48,466
Performing and Creative Arts	Transitioning	174	0.4%	0.1%	2.4%	24,186	25,261	26,793
Computer and Digital Media Products	Transitioning	73	0.2%	0.7%	4.0%	91,765	89,294	112,825
Architecture	Declining	-117	-0.7%	-0.8%	-0.8%	79,724	72,359	67,919
Music	Declining	-149	-2.0%	3.4%	2.3%	57,848	40,865	39,271
Radio and TV Broadcasting	Declining	-252	-2.4%	-2.0%	-0.4%	67,558	64,006	81,550
Film, TV, Video Production/Distrib	Declining	-624	-5.0%	-4.8%	0.0%	56,881	54,648	100,737
Publishing & Information	Declining	-1,027	-5.5%	-4.0%	-1.4%	53,506	50,121	100,855
Total Creative Industry	Transitioning	2,505	0.7%	0.9%	2.0%	54,970	49,774	73,562

Source: DBEDT compilation based on EMSI data.

Hawaii County

Hawaii County accounted for 4,981 of the state's creative industry jobs in 2015, a 1.9% average annual increase from 2005. The average annual job growth was 6.1% from 2005 to 2008, but it has decreased to only 0.2% from 2008 to 2015. As shown in Table 6, seven creative industry groups were high performing in Hawaii County in the 2005 to 2015 period. These high performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding the national growth rate for the industry. These included: Music, Design Services, Architecture, Marketing, Photography & Related, Publishing & Information, Engineering and R&D, and Art Education. Three creative industry groups lost jobs in Hawaii County over the 2005 to 2015 period.

TABLE 6. CREATIVE INDUSTRY JOBS, HAWAII COUNTY

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2005	2008	2014	2015	2005-2008	2008-2015	2014-2015	2005-2015
Music	Base-Growth	57	164	185	196	42.6%	2.6%	5.9%	13.2%
Design Services	Base-Growth	222	275	272	282	7.4%	0.4%	3.7%	2.4%
Architecture	Emerging	137	173	145	149	8.2%	-2.2%	2.3%	0.8%
Marketing, Photography & Related	Emerging	918	1,150	1,166	1,189	7.8%	0.5%	2.0%	2.6%
Publishing & Information	Emerging	251	297	297	293	5.8%	-0.2%	-1.3%	1.6%
Engineering and R&D	Emerging	493	571	593	602	5.0%	0.8%	1.5%	2.0%
Art Education	Emerging	42	53	71	72	8.4%	4.4%	1.5%	5.6%
Computer and Digital Media Products	Transitioning	196	247	263	268	7.9%	1.2%	1.9%	3.2%
Business Consulting	Transitioning	403	506	463	481	7.9%	-0.7%	3.9%	1.8%
Performing and Creative Arts	Transitioning	1,167	1,239	1,248	1,263	2.0%	0.3%	1.2%	0.8%
Film, TV, Video Production/Distrib	Declining	53	68	52	51	9.1%	-4.0%	-1.0%	-0.2%
Cultural Activities	Declining	96	106	80	76	3.5%	-4.6%	-4.3%	-2.3%
Radio and TV Broadcasting	Declining	93	78	58	59	-5.9%	-3.9%	1.6%	-4.5%
Total Creative Industry	Transitioning	4,128	4,927	4,892	4,981	6.1%	0.2%	1.8%	1.9%

Source: DBEDT compilation based on EMSI data.

The comparisons of Hawaii County creative industry's job and earnings growth with the state and nation are listed in Table 7. For job growth, Hawaii County's 1.9% annual growth rate was higher than the state's 0.9% but lower than the national average of 2.0%. For average earnings, Hawaii County was lower than the state, and much lower than the national average.

TABLE 7. HAWAII COUNTY CREATIVE INDUSTRY PERFORMANCE COMPARED WITH NATION AND STATE, 2005-2015

Industry Group	Performance Class	Job Change 2005-2015	Average Annual Job Growth (%)			Avg. Annual Earnings (2015)		
			County	State	U.S.	County	State	U.S.
Music	Base-Growth	139	13.2%	3.4%	2.3%	27,732	40,865	39,271
Design Services	Base-Growth	60	2.4%	1.4%	1.7%	23,150	26,607	37,490
Architecture	Emerging	12	0.8%	-0.8%	-0.8%	43,576	72,359	67,919
Marketing, Photography & Related	Emerging	270	2.6%	1.2%	1.9%	17,558	27,013	48,466
Publishing & Information	Emerging	42	1.6%	-4.0%	-1.4%	38,939	50,121	100,855
Engineering and R&D	Emerging	109	2.0%	0.8%	1.2%	83,924	95,765	107,679
Art Education	Emerging	30	5.6%	3.5%	2.9%	15,927	14,180	14,139
Computer and Digital Media Products	Transitioning	72	3.2%	0.7%	4.0%	69,084	89,294	112,825
Business Consulting	Transitioning	78	1.8%	2.9%	3.0%	38,115	58,726	76,869
Performing and Creative Arts	Transitioning	96	0.8%	0.1%	2.4%	21,334	25,261	26,793
Film, TV, Video Production/Distrib	Declining	-1	-0.2%	-4.8%	0.0%	42,783	54,648	100,737
Cultural Activities	Declining	-19	-2.3%	8.8%	2.8%	29,779	48,025	51,685
Radio and TV Broadcasting	Declining	-35	-4.5%	-2.0%	-0.4%	35,365	64,006	81,550
Total Creative Industry	Transitioning	854	1.9%	0.9%	2.0%	35,314	49,774	73,562

Source: DBEDT compilation based on EMSI data.

Maui County

Maui County accounted for 6,224 of the state's creative industry jobs in 2015, a 0.5% average annual increase from 2005. The average annual job growth was 2.8% from 2005 to 2008. After experiencing severe setbacks due to the national economic recession that began in late 2007, the average annual growth rate was down to negative 0.4% during 2008-2015. As shown in Table 8, four creative industry groups were high performing in Maui County in the 2005 to 2015 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. These included: Music, Design Services, Radio and Television Broadcasting, and Computer and Digital Media Products. Five creative industry groups lost jobs in Maui County over the 2005 to 2015 period, Publishing & Information, Performing and Creative Arts, Engineering and R&D, Architecture, and Film, TV, Video Production/Distribution.

TABLE 8. CREATIVE INDUSTRY JOBS, MAUI COUNTY

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2005	2008	2014	2015	2005-2008	2008-2015	2014-2015	2005-2015
Music	Base-Growth	137	399	473	559	42.8%	4.9%	18.4%	15.1%
Design Services	Base-Growth	260	296	328	336	4.3%	1.8%	2.4%	2.6%
Radio and TV Broadcasting	Emerging	72	140	117	120	24.7%	-2.3%	2.6%	5.1%
Computer and Digital Media Products	Emerging	238	275	392	406	4.8%	5.7%	3.5%	5.5%
Marketing, Photography & Related	Transitioning	1,330	1,339	1,392	1,380	0.2%	0.4%	-0.9%	0.4%
Art Education	Transitioning	74	88	86	84	6.1%	-0.6%	-1.9%	1.3%
Business Consulting	Transitioning	358	352	384	396	-0.6%	1.7%	3.3%	1.0%
Cultural Activities	Transitioning	42	41	48	44	-0.4%	0.9%	-8.5%	0.5%
Publishing & Information	Declining	342	344	329	324	0.1%	-0.9%	-1.7%	-0.6%
Performing and Creative Arts	Declining	2,352	2,424	2,036	2,080	1.0%	-2.2%	2.2%	-1.2%
Engineering and R&D	Declining	413	434	314	308	1.7%	-4.8%	-2.0%	-2.9%
Architecture	Declining	193	228	147	143	5.7%	-6.4%	-2.5%	-3.0%
Film, TV, Video Production/Distrib	Declining	82	53	51	45	-13.5%	-2.5%	-12.0%	-5.9%
Total Creative Industry	Transitioning	5,894	6,412	6,096	6,224	2.8%	-0.4%	2.1%	0.5%

Source: DBEDT compilation based on EMSI data.

The comparisons of Maui County creative industry's job and earnings growth with the state and nation are listed in Table 9. For job growth, Maui County's 0.5% annual growth rate was lower than the state's 0.9% and the national average of 2.0%. For average earnings, Maui County was lower than the state, and much lower than the national average.

TABLE 9. MAUI COUNTY CREATIVE INDUSTRY PERFORMANCE COMPARED WITH NATION AND STATE, 2005-2015

Industry Group	Performance Class	Job Change 2005-2015	Average Annual Job Growth (%)			Avg. Annual Earnings (2015)		
			County	State	U.S.	County	State	U.S.
Music	Base-Growth	422	15.1%	3.4%	2.3%	24,248	40,865	39,271
Design Services	Base-Growth	76	2.6%	1.4%	1.7%	27,780	26,607	37,490
Radio and TV Broadcasting	Emerging	47	5.1%	-2.0%	-0.4%	41,377	64,006	81,550
Computer and Digital Media Products	Emerging	167	5.5%	0.7%	4.0%	87,929	89,294	112,825
Marketing, Photography & Related	Transitioning	50	0.4%	1.2%	1.9%	20,211	27,013	48,466
Art Education	Transitioning	10	1.3%	3.5%	2.9%	17,291	14,180	14,139
Business Consulting	Transitioning	39	1.0%	2.9%	3.0%	50,243	58,726	76,869
Cultural Activities	Transitioning	2	0.5%	8.8%	2.8%	43,871	48,025	51,685
Publishing & Information	Declining	-19	-0.6%	-4.0%	-1.4%	43,806	50,121	100,855
Performing and Creative Arts	Declining	-271	-1.2%	0.1%	2.4%	31,467	25,261	26,793
Engineering and R&D	Declining	-105	-2.9%	0.8%	1.2%	64,602	95,765	107,679
Architecture	Declining	-50	-3.0%	-0.8%	-0.8%	40,356	72,359	67,919
Film, TV, Video Production/Distrib	Declining	-38	-5.9%	-4.8%	0.0%	37,144	54,648	100,737
Total Creative Industry	Transitioning	330	0.5%	0.9%	2.0%	36,359	49,774	73,562

Source: DBEDT compilation based on EMSI data.

The Maui Film Festival's Celestial Cinema showcases work of Hollywood and Hawaii Filmmakers and attracts hundreds of celebrities, filmmakers, global media and visitors on the green in Wailea.

The statewide design and fashion industries are coming into their own. Kauai now has a thriving design/fashion industry, and each May hosts the Annual Kauai Fashion Weekend, along with Hawaii Fashion Month and Honolulu Fashion Week held each November.

Kauai County

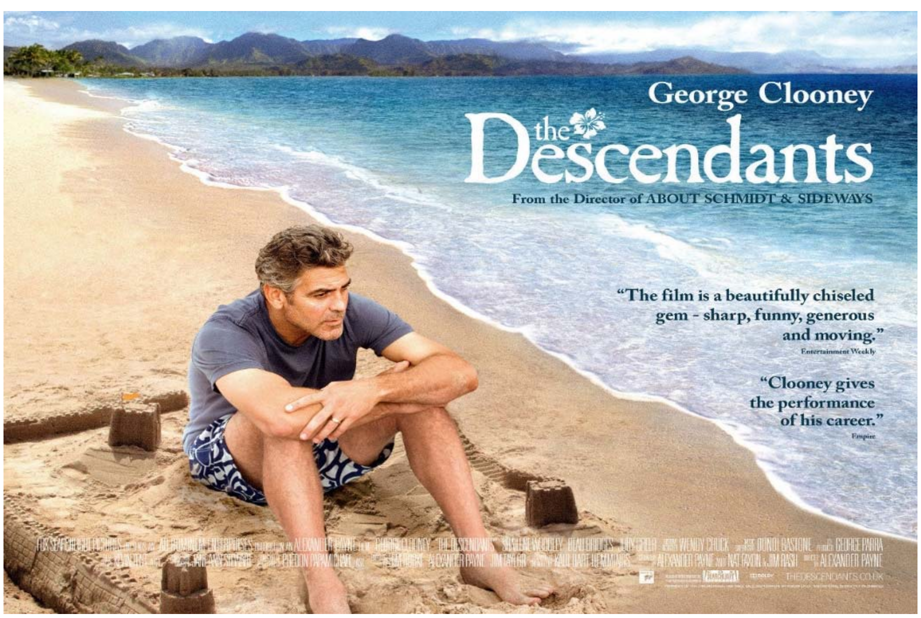
Kauai County accounted for 2,350 of the state's creative industry jobs in 2015, a 1.2% annual increase from 2005. The average annual job growth was 3.8% from 2005 to 2008. After experiencing setbacks due to the national economic recession that began in late 2007, the average annual growth rate was down to 0.1% during 2008-2015. As shown in Table 10, three creative industry groups were high performing in Kauai County in the 2005 to 2015 period. These high performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding the national growth rate for the industry. These included: Cultural Activities, Marketing, Photography & Related, and Art Education. Six creative industry groups lost jobs in Kauai County over the 2005 to 2015 period.

TABLE 10. CREATIVE INDUSTRY JOBS, KAUAI COUNTY

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2005	2008	2014	2015	2005-2008	2008-2015	2014-2015	2005-2015
Cultural Activities	Base-Growth	59	57	78	77	-0.7%	4.4%	-1.1%	2.8%
Marketing, Photography & Related	Base-Growth	485	621	676	689	8.6%	1.5%	2.1%	3.6%
Art Education	Emerging	17	25	36	38	13.8%	6.2%	6.3%	8.5%
Music	Transitioning	60	36	66	72	-15.7%	10.4%	9.2%	1.8%
Design Services	Transitioning	102	103	108	110	0.0%	1.0%	1.9%	0.7%
Business Consulting	Transitioning	121	141	147	146	5.2%	0.6%	-0.5%	1.9%
Performing and Creative Arts	Transitioning	638	674	704	705	1.8%	0.6%	0.1%	1.0%
Radio and TV Broadcasting	Declining	63	55	55	55	-4.2%	-0.1%	0.5%	-1.4%
Engineering and R&D	Declining	147	187	128	128	8.4%	-5.3%	-0.3%	-1.4%
Publishing & Information	Declining	133	104	111	114	-7.9%	1.4%	3.5%	-1.5%
Computer and Digital Media Products	Declining	139	168	124	115	6.6%	-5.3%	-7.2%	-1.9%
Architecture	Declining	80	111	67	65	11.4%	-7.3%	-2.5%	-2.0%
Film, TV, Video Production/Distrib	Declining	44	54	37	35	7.4%	-6.1%	-5.9%	-2.2%
Total Creative Industry	Transitioning	2,088	2,337	2,336	2,350	3.8%	0.1%	0.6%	1.2%

Source: DBEDT compilation based on EMSI data.

The comparisons of Kauai County creative industry's job and earnings growth with the state and nation are listed in Table 11. For job growth, Kauai County's 1.2 average annual growth rate was higher than the state's 0.9% but lower than the national average of 2.0%. For average earnings, Kauai County was lower than the state and much lower than the national average.



The Descendants, based on a book by Hawaii author Kaui Hart Hemmings, filmed on location on Kauai and Oahu, featured an all Hawaiian music soundtrack.

Image Courtesy of Fox Searchlight

TABLE 11. KAUAI COUNTY CREATIVE INDUSTRY PERFORMANCE COMPARED WITH NATION AND STATE, 2005-2015

Industry Group	Performance Class	Job Change 2005-2015	Average Annual Job Growth (%)			Avg. Annual Earnings (2015)		
			County	State	U.S.	County	State	U.S.
Cultural Activities	Base-Growth	19	2.8%	8.8%	2.8%	27,733	48,025	51,685
Marketing, Photography & Related	Base-Growth	205	3.6%	1.2%	1.9%	17,262	27,013	48,466
Art Education	Emerging	21	8.5%	3.5%	2.9%	17,700	14,180	14,139
Music	Transitioning	12	1.8%	3.4%	2.3%	21,753	40,865	39,271
Design Services	Transitioning	7	0.7%	1.4%	1.7%	25,456	26,607	37,490
Business Consulting	Transitioning	26	1.9%	2.9%	3.0%	38,559	58,726	76,869
Performing and Creative Arts	Transitioning	67	1.0%	0.1%	2.4%	19,457	25,261	26,793
Radio and TV Broadcasting	Declining	-8	-1.4%	-2.0%	-0.4%	66,202	64,006	81,550
Engineering and R&D	Declining	-19	-1.4%	0.8%	1.2%	103,981	95,765	107,679
Publishing & Information	Declining	-19	-1.5%	-4.0%	-1.4%	48,208	50,121	100,855
Computer and Digital Media Products	Declining	-24	-1.9%	0.7%	4.0%	48,223	89,294	112,825
Architecture	Declining	-15	-2.0%	-0.8%	-0.8%	30,979	72,359	67,919
Film, TV, Video Production/Distrib	Declining	-9	-2.2%	-4.8%	0.0%	28,837	54,648	100,737
Total Creative Industry	Transitioning	263	1.2%	0.9%	2.0%	29,729	49,774	73,562

Source: DBEDT compilation based on EMSI data.

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 this collaboration, an updated measurement for the sector was developed using the definition established in Massachusetts as a model.

Table 12 shows the major industry groups of the creative sector and their primary performance metrics.

TABLE 12. EMPLOYMENT AND GROWTH IN HAWAII'S CREATIVE INDUSTRY

Group & Industry	Hawaii Jobs		Avg. Job Growth Rate, 2005-2015		Annual Earnings 2015		Performance Metrics		
	2005	2015	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2005-2015	Location Quotient (LQ), 2015	Change in LQ, 2005-2015
TOTAL HAWAII CREATIVE INDUSTRY	**45,539**	**49,597**	**0.9%**	**2.0%**	**49,774**	**73,562**	**-1.1%**	**0.79**	**-0.08**
Marketing, Photography & Related	9,878	11,098	1.2%	1.9%	27,013	48,466	-0.7%	0.87	-0.05
Performing and Creative Arts	9,025	9,087	0.1%	2.4%	25,261	26,793	-2.3%	1.10	-0.26
Engineering and Research & Development	5,109	5,542	0.8%	1.2%	95,765	107,679	-0.4%	0.72	-0.02
Business Consulting	3,790	5,035	2.9%	3.0%	58,726	76,869	-0.2%	0.58	0.00
Computer and Digital Media Products	4,494	4,808	0.7%	4.0%	89,294	112,825	-3.3%	0.41	-0.15
Cultural Activities	1,503	3,480	8.8%	2.8%	48,025	51,685	6.0%	3.74	1.64
Publishing & Information	3,108	2,073	-4.0%	-1.4%	50,121	100,855	-2.6%	0.57	-0.16
Design Services	1,787	2,061	1.4%	1.7%	26,607	37,490	-0.3%	0.92	-0.02
Architecture	2,107	1,937	-0.8%	-0.8%	72,359	67,919	0.0%	1.28	0.01
Music	1,064	1,482	3.4%	2.3%	40,865	39,271	1.1%	1.64	0.19
Radio and TV Broadcasting	1,381	1,133	-2.0%	-0.4%	64,006	81,550	-1.5%	0.88	-0.14
Film, TV, Video Production/Distrib	1,715	1,047	-4.8%	0.0%	54,648	100,737	-4.8%	0.55	-0.33
Art Education	580	815	3.5%	2.9%	14,180	14,139	0.5%	0.75	0.05

Source: DBEDT compilation based on EMSI data.

As discussed in Section III, the creative sector includes about 49,597 jobs in 13 industry groups. The average annual earnings for the sector was $49,774 in 2015. Most of the 13 industry groups are composed of several smaller industries that are shown in more detail in the following subsections.

Performing and Creative Arts

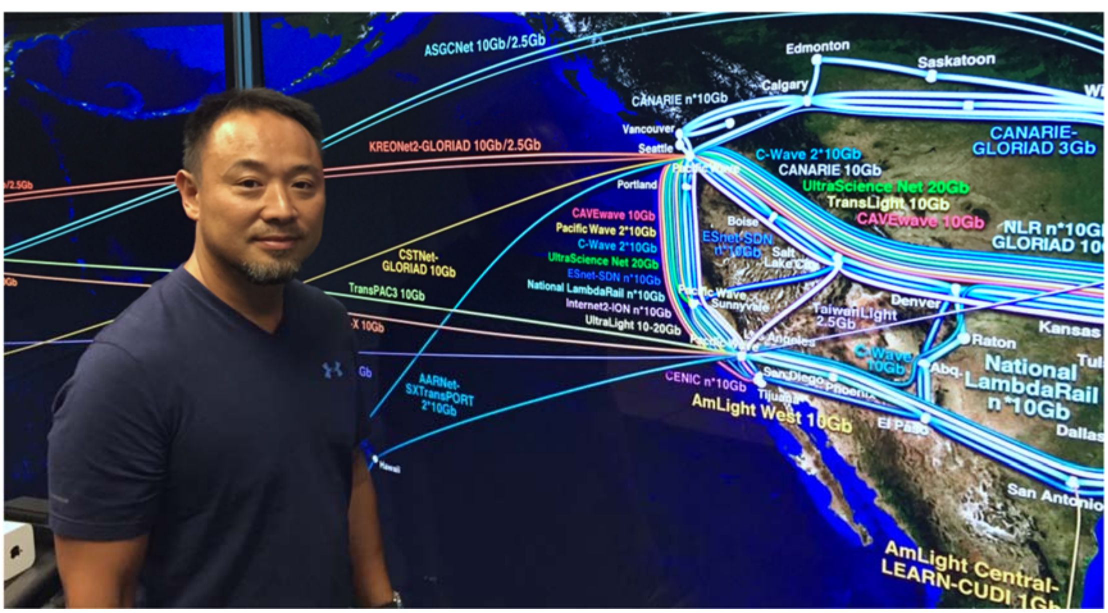
This group is composed of several areas of the arts including selected performing arts, creative arts (visual and literary), and supporting industries such as promoters, agents, managers and art dealers. The group does not include musicians, who are included with the music industry group and museums,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

Performing and creative arts is the second largest single industry group in the creative sector with about 9,087 employees in 2015, including self-employed workers. Declines in jobs were centered among agents and managers for artists, athletes, and entertainers, independent artists, writers, and performers, art dealers, and dance companies. Gains in jobs over the period were made in promoters, and other performing arts companies. The earnings average for workers in the performing and creative arts group was only $25,261 in 2015. 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 10% 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 activities, including film, various forms of digital media, architecture and applied design.

Engineering/Scientific Research and Development

One of the leading components of Hawaii's creative sector is engineering and scientific research and development, with about 5,542 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.



Co-Principal Investigator Jason Leigh, director of the University of Hawai'i at Mānoa's Laboratory for Advanced Visualization and Applications (LAVA). Photo credit LAVA, UH Mānoa.

As in the technology sector, engineering/R&D as a creative group performed well over the 2005 to 2015 period. Jobs increased by 0.8% annually. The only lagging activity in the industry group was social science and humanities research, in which jobs declined. The average annual earnings of this group was $95,765, the highest among the whole creative industry sector. Detailed data can 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 13 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 13. COMPUTER AND DIGITAL MEDIA INDUSTRY GROUP EMPLOYMENT

Group & Industry	Hawaii Jobs		Avg. Job Growth Rate, 2005-2015		Annual Earnings, 2015		Performance Metrics		
	2005	2015	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2005-2015	Location Quotient (LQ), 2015	Change in LQ, 2005-2015
Computer and Digital Media Products	4,494	4,808	0.7%	4.0%	89,294	112,825	-3.3%	0.41	-0.15
Software Publishers	190	210	1.0%	3.0%	79,747	151,134	-2.0%	0.12	-0.02
Custom Computer Programming Services	1,904	1,855	-0.3%	3.9%	86,292	105,681	-4.1%	0.38	-0.18
Computer Systems Design Services	2,399	2,743	1.3%	4.5%	92,146	106,382	-3.2%	0.55	-0.19

Source: DBEDT compilation based on EMSI data.

As a whole, jobs in this sector grew at an average annual rate of 0.7% over the 2005 to 2015 period. Overall, the group lost in terms of competitive national share. All the sub-sectors lost in terms of competitive national share.

The average earnings in the sector were relatively high, at $89,294 in 2015. The lowest paying activity, software publishers, averaged $79,947, while the highest, computer system design services, averaged $92,146.

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, video, 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 to smart phones, tablets, smart TV 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 14.

TABLE 14. EXAMPLES OF DIGITAL MEDIA PRODUCTS

Video games and interactive media (including alternative reality games, augmented & virtual reality)	Internet of things (wearables, appliances, connected cars, food tech)
Mobile & social games	Video content for online sharing
Digital music publishing and distribution	Social media content
Application development for mobile and web	Transmedia content
Electronic books	Podcasting and episodic content
Computer animation and graphics	Hypertext fiction
Digital marketing and communications	Multimedia publishing
Medical imaging /animation	Live streaming events
Location/GPS and venue-based interactive media	Digital & motion comics/graphic novels
Digital first-run series	iTV (interactive TV, second screen synched content)
Mobile videography/filmmaking (e.g. smartphone, drone-based)	Web site development and design
Rendering services	Visual effects

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, Photography and Related Activities

Marketing, photography 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, media specialists, and other professional, scientific, and technical services account for most of this sector's workforce of about 11,098. As the largest sector in Hawaii's creative industries, this sector's jobs increased 1.2% annually from 2005 to 2015, compared to the 1.9% annual growth in the national workforce of this industry group. Jobs in some areas such as display advertising and commercial photography grew faster than their national counterparts and faster than Hawaii's economy as a whole. However, losses of jobs in advertising (especially direct mail) and marketing research reduced the overall growth rate.

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, photography studios, portrait, commercial photography, and display advertising showed gains in national industry share.

The annual earnings average for the industry group was $27,013, below the state average. Earnings ranged from an average $78,737 in public relations agencies to $11,916 in the commercial photography.

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 2005 to 2015 period with 5,035 jobs in 2015, up 2.9% annually from 2005. This was more than three times the growth rate of Hawaii's overall job count and very close to the growth rate for business consulting nationally.

Management, environmental consulting, and other scientific and technical consulting services are the three largest components of the business consulting industry group, accounting for about 83% of the group's jobs. Management was one of the fastest growing activities in the group, with job growth of 4.8% for the period. Administrative management and general management consulting services and other management consulting services both grew more than 3.0% annually in jobs over the period.

The annual earnings average for business consulting was $58,726. This ranged from $69,160 for other management consulting services to $43,132 for process, physical distribution, and logistics consulting services.

Publishing and Information

As a whole, publishing and information showed a 4.0% annual decline in jobs from 2005 to 2015, which was worse than the national level. This industry group is dominated by newspaper publishing, which accounted for almost one-half of the industry group's jobs in 2015. Newspaper publishing showed a 6.2% annual decline in jobs over the period, and this was below the 5.8% annual 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 6.9% annually from 2005 to 2015, with 228 employees in 2015.

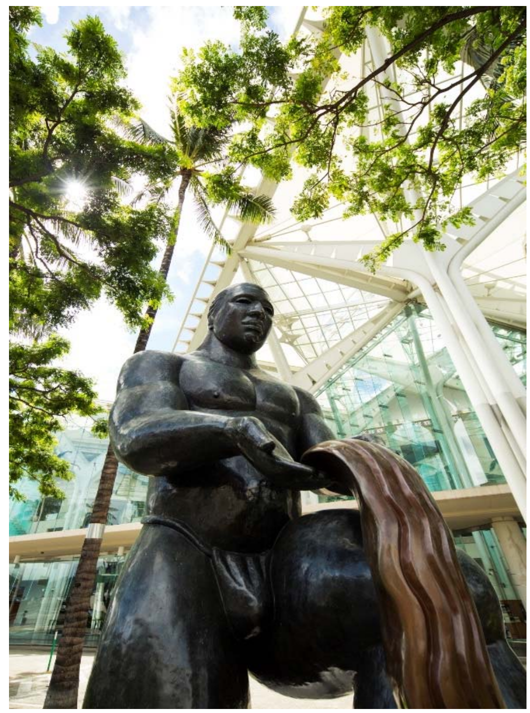
The annual earnings average for publishing and information in Hawaii was $50,121 in 2015. This ranged from $102,096 for all other publishers to $26,468 for all other information services. The newspaper publishing earnings average was $60,256 in 2015, while the average for internet broadcasting was $55,883.

Cultural Activities

The cultural activities industry group accounted for 3,480 jobs in 2015 and included museums, historical sites, nature parks and other similar Institutions, and grant making foundations. As a group, cultural activities registered an 8.8% annual increase in jobs over the 2005 to 2015 period, much better than the state's economy as a whole and the same set of activities nationally. As a result the cultural industry group gained competitive national industry share. The annual earnings average for the cultural activities group was $48,025 in 2015. This ranged from $26,278 for museums to $85,709 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 alternative energy sources in Hawaii's residential and commercial structures.



"The Water Giver" by Maui artist Shige Yamada at Hawaii Convention Center. Photo credit HVCB

Architecture employed 1,937 people in 2015 and had a negative 0.8% annual growth since 2005. This was below the average growth for the state's workforce as a whole, but same as the negative 0.8% annual growth for the architecture industry nationally. Most of the industry group's jobs were among structural architectural services, while the remainder of the jobs was in landscape architecture. Landscape architecture registered a 1.0% annual job growth from 2005 to 2015.

The annual earnings average in architecture was $72,359 in 2015, with structural architecture at $78,373 and landscape architecture averaging $47,762.

Design Services

Design services employed about 2,061 people in 2015. About 50% of these jobs were among graphic design firms, while another 30% were in interior design. Overall, jobs grew by 1.4% annually in the design industry group since 2005. Interior design jobs grew 3.8% and graphic design jobs grew 1.3% annually.

The annual earnings average for the design group was $26,607 in 2015. Drafting services had the lowest average at $17,137, followed by other specialized design services at $20,437, and graphic design services at an average of $24,435.

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 2.0% annually to about 1,133 jobs over the 2005 to 2015 period. Nationally, the industry group did better, managing a 0.4% annual decline in jobs. Television broadcasting lost 2.5% of its workforce annually over the period to just 529 jobs in 2015. Radio stations lost 0.2% annually over the period with about 507 jobs in 2015. Radio networks, the only other activity in the industry group lost 6.0% per year. The annual earnings average for broadcasting was about $64,006 in 2015. This ranged from $85,014 for television broadcasting, to $43,737 for radio stations.

Film, TV, and Video Production

Filmmakers from Hollywood and around the world are using Hawaii as a location for film, television, commercial, and digital media production. For decades, Hawaii's natural beauty has been the backdrop for popular films such as "From Here to Eternity," "South Pacific" and "Jurassic Park." Millions have also been captivated by iconic television shows like the original "Hawaii Five-O", "Magnum P.I.," and most recently the fresh remake of CBS Productions "Hawaii Five-O", all of which were shot entirely in the Islands.

The state has established tax incentives to attract productions to Hawaii. Since 2006, Act 88/89 incentives continue to lure a wave of major feature films to the Islands including Disney's "Pirates of the Caribbean: At World's End," Lionsgate's "The Hunger Games: Catching Fire", Paramount's "Indiana Jones and the Kingdom of the Crystal Skull" and Warner Bros. Pictures' "Godzilla". Most recently, producers of "Jurassic Park" returned to shoot the fourth installment of the successful franchise, "Jurassic World." Hawai`i now ranks among the top ten film destinations in the United States.

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 global exposure these productions have enjoyed.

TABLE 15. FILM & TV PRODUCTION INDUSTRY PERFORMANCE, 2005 TO 2015

Group & Industry	Hawaii Jobs		Avg. Job Growth Rate, 2005-2015		Annual Earnings, 2015		Performance Metrics		
	2005	2015	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2005-2015	Location Quotient (LQ), 2015	Change in LQ, 2005-2015
Film, TV, Video Production/Distrib	1,715	1,047	-4.8%	0.0%	54,648	100,737	-4.8%	0.55	-0.33
Prerecorded Compact Disc (except Software), Tape, and Record Reproducing	5	16	12.3%	-9.1%	22,968	111,830	21.3%	0.19	0.17
Motion Picture and Video Production	1,598	967	-4.9%	1.9%	62,354	96,491	-6.8%	0.71	-0.69
Motion Picture and Video Distribution	18	5	-11.8%	-2.1%	30,000	145,286	-9.8%	0.12	-0.23
Teleproduction and Other Postproduction Services	51	32	-4.4%	1.7%	51,819	79,647	-6.1%	0.27	-0.23
Cable and Other Subscription Programming	44	27	-4.9%	-3.2%	54,732	118,159	-1.7%	0.08	-0.02

Source: DBEDT compilation based on EMSI data.

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, the data does not differentiate film/TV project jobs from other activities. (Many jobs are short in duration and hiring is done only for the duration of the production, not full time. Jobs recorded for the industry in the NAICS-based statistics are shown in Table 15).

These represent jobs among Hawaii companies and enterprises involved in the direct production of Hawaii film and TV products. Direct film and TV production activities involved about 1,047 jobs in 2015 and decreased 4.8% annually from 2005. Nationally, jobs in this group remained about the same over the period, with motion picture and video production showing a 1.9% gain.

Volatility in the year to year film production employment is a major factor. The combination of limited data and extreme volatility from year to year make this a very difficult industry to assess over a short period of time. Based on film permits and tax credit applications, and additional data from the Hawaii Film Office, Table 16 shows the estimated jobs generated, as well as economic impacts of the industry from 2006 to 2015.

TABLE 16. ESTIMATED FILM AND TELEVISION PRODUCTION: ECONOMIC IMPACT 2006 TO 2015
[In millions of dollars, except for employment which is in number of jobs]

Category	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total production expenditures	107.2	225.0	168.2	173.2	384.1	184.9	245.6	228.5	221.5	243.5
Expenditures qualified for tax credit	37.4	128.2	81.2	86.2	292.1	127.7	189.1	163.7	162.3	199.6
Expenditures not qualified for tax credit	69.8	96.8	87.0	87.0	92.0	57.2	56.5	64.8	59.2	43.9
Economic Impact										
Output	185.9	390.1	291.6	300.3	665.9	320.6	425.8	396.2	384.0	422.2
Earnings	43.0	90.2	67.4	69.4	153.9	74.1	98.4	91.6	88.8	97.6
State taxes	11.8	24.7	18.4	19.0	42.1	20.3	26.9	25.1	24.3	26.7
Employment	1,569	3,188	2,308	2,301	4,942	2,304	2,963	2,670	2,506	2,668

Source: DBEDT Research and Economic Analysis Division and Creative Industry Division, records

Creative media companies like Hyperspective Studios, develop apps, branding, software, visual effects, film and editing resources at their facilities based in Manoa Innovation Center, Oahu. Photo courtesy of Hyperspective Studios

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.

Hawaii Songwriting Festival attracts artists, musicians, songwriters and music supervisors from around the world to Hawaii Island, and host the first Creative Lab Music Immersive, June 2016.

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.

There were about 1,482 employed and self-employed workers in Hawaii's music industry in 2015, most of them performers. As Table 17 shows, employment in Hawaii's music industry increased 3.4% per year on average over the 2005 to 2015 period. By contrast, jobs in this industry group nationally grew by 2.3%.

Hoku Award winning artist/composer/performer Keali'i Reichel is one of a few Hawaii artists that has performed at Carnegie Hall, and is a Kumu Hula of an internationally renown Hula Halau.

TABLE 17. EMPLOYMENT IN MUSIC INDUSTRY GROUP

Group & Industry	Hawaii Jobs		Avg. Job Growth Rate, 2005-2015		Annual Earnings, 2015		Performance Metrics		
	2005	2015	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2005-2015	Location Quotient (LQ), 2015	Change in LQ, 2005-2015
Music	1,064	1,482	3.4%	2.3%	40,865	39,271	1.1%	1.64	0.19
Musical Instrument and Supplies Stores	171	149	-1.4%	-0.8%	29,994	31,637	-0.6%	0.74	-0.04
Record Production	18	65	13.7%	-0.1%	45,725	65,660	13.8%	3.30	2.41
Integrated Record Production/Distributio	33	27	-2.1%	-1.7%	64,627	95,748	-0.4%	1.07	-0.03
Music Publishers	0	17	NA	0.8%	63,875	66,277	NA	0.42	0.42
Sound Recording Studios	71	53	-2.9%	-0.5%	38,985	35,272	-2.3%	0.69	-0.17
Other Sound Recording Industries	17	61	13.5%	-1.2%	42,000	46,409	14.7%	2.34	1.77
Musical Groups and Artists	753	1,110	4.0%	5.3%	36,759	36,633	-1.3%	2.15	-0.26

Source: DBEDT compilation based on EMSI data.

The centerpiece of this industry group — musical groups and artists — increased by about 4.0%. Record production and other sound recording showed some increase, although the small size of these activities means that changes in these industries are difficult to interpret. Retail activity devoted to musical instruments and supplies showed some decline in jobs.

Annual earnings in the music industry generally reflect part-time professions. The average for the industry group as a whole was $40,865 in 2015. Earnings for the same industry groups nationally were lower than in Hawaii, and generally below the average for the economy as a whole.

The Grammy Museum celebrates the rich cultural heritage of Hawaiian music and kicked off Hawaii's Mele Mei annual tradition with Mele Mei L.A.: HONORING THE HAWAIIAN SLACK KEY GUITAR TRADITION in 2015. Photo Credit Grammy Museum at L.A. Live

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 about 60 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 about 815 in 2015, up about 3.5% annually from 2005. Nationally, this group of industries showed a 2.9% annual growth in jobs for the period. Average annual earnings amounted to only $14,180 for Hawaii in 2015 and $14,139 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.

HAWAIʻI
STATE FOUNDATION on
CULTURE and the ARTS

SFCA Hawaii is one of the organizations providing arts education in Hawaii through a collaboration with Department of Education the Hawaii Arts Alliance and University of Hawaii as part of the ARTS First Program

Classroom teachers at the 2015 ARTS FIRST Summer Institute on Oahu learn about arts integration through active participation. Photo credit Vivien Lee and SFCA

CID/DBEDT developed a relationship with Pixar and set up a program with DOE teachers to field test the new Pixar in a Box curriculum which showcases the mathematics, science and engineering behind Pixar's characters and award-winning films.
Photo courtesy of Pixar/Disney

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. Additionally, 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.

Three industry groups ranked as emerging and base-growth activities in the creative sector. These growth industries included cultural activities, music, and design services.

Six other industry groups were ranked as transitioning. These groups have been growing jobs but at a slower rate than the nation. This indicates there could be performance issues hindering the competitiveness of these activities. The transitioning groups were business consulting, design services, engineering/scientific R&D, marketing, performing and creative arts, and computer and digital media products.

Finally, four industry groups lost jobs over the 2005-2015 period and consequently fell into the declining quadrant for this time period. These were architecture, radio and TV broadcasting, film, TV, video production and distribution, and publishing & information. 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.

Future research should examine 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.

HIGROWTH

INSPIRE·ACCELERATE·INVEST

Creative Industries, Hawaii Film Office and Creative Lab are key facets of DBEDT's HI Growth Initiative building a continuum of talent, infrastructure and investment to transform Hawaii's economy to one based on innovation and creative economy.

APPENDIX: DETAILED INDUSTRY DATA

NAICS Code	Group & Industry	Hawaii Jobs and Earnings: 2005	2015	Ave. Job Growth Rate, 05-15	Annual Earnings, 2015	Performance Metrics: Compet.Share 05-15	Location Quotient (LQ)	Change in LQ, 05-15	US Comparable: Ave. Job Growth Rate, 05-15	Annual Earnings, 2015
	TOTAL HAWAII CREATIVE INDUSTRY	45,539	49,597	0.9%	49,774	-0.01	0.79	-0.08	2.0%	73,562
	Architecture	2,107	1,937	-0.8%	72,359	0.00	1.28	0.01	-0.8%	67,919
541310	Architectural Services	1,771	1,568	-1.2%	78,373	0.00	1.41	-0.03	-0.9%	77,793
541320	Landscape Architectural Services	335	369	1.0%	47,762	0.02	0.93	0.14	-0.6%	40,262
	Art Education	580	815	3.5%	14,180	0.01	0.75	0.05	2.9%	14,139
611610	Fine Arts Schools (Private)	580	815	3.5%	14,180	0.01	0.75	0.05	2.9%	14,139
	Business Consulting	3,790	5,035	2.9%	58,726	0.00	0.58	0.00	3.0%	76,869
541611	Admi. Management and General Manag. Consulting	1,694	2,713	4.8%	56,679	0.01	0.62	0.06	4.0%	82,412
541612	Human Resources Consulting Services	397	372	-0.6%	48,782	0.01	0.66	0.08	-1.9%	75,516
541614	Process, Physical Distri., and Logistics Consulting	251	324	2.6%	43,132	0.00	0.44	-0.01	3.0%	66,096
541618	Other Management Consulting Services	115	157	3.2%	69,160	0.04	0.27	0.08	-0.4%	83,359
541620	Environmental Consulting Services	663	715	0.8%	65,400	-0.01	1.08	-0.09	1.7%	62,198
541690	Other Scientific and Technical Consulting Services	671	754	1.2%	54,499	-0.04	0.44	-0.20	5.1%	71,168
	Computer and Digital Media Products	4,494	4,808	0.7%	89,294	-0.03	0.41	-0.15	4.0%	112,825
511210	Software Publishers	190	210	1.0%	79,747	-0.02	0.12	-0.02	3.0%	151,134
541511	Custom Computer Programming Services	1,904	1,855	-0.3%	86,292	-0.04	0.38	-0.18	3.9%	105,681
541512	Computer Systems Design Services	2,399	2,743	1.3%	92,146	-0.03	0.55	-0.19	4.5%	106,382
	Cultural Activities	1,503	3,480	8.8%	48,025	0.06	3.74	1.64	2.8%	51,685
712110	Museums	705	2,024	11.1%	26,278	0.09	4.65	2.70	2.0%	40,670
712120	Historical Sites	209	341	5.0%	33,230	0.03	4.12	1.08	2.0%	37,213
712190	Nature Parks and Other Similar Institutions	14	15	0.3%	35,268	-0.02	0.33	-0.07	2.4%	35,717
813211	Grantmaking Foundations	574	1,099	6.7%	85,709	0.03	2.99	0.68	4.1%	69,965
	Design Services	1,787	2,061	1.4%	26,607	0.00	0.92	-0.02	1.7%	37,490
541340	Drafting Services	397	302	-2.7%	17,137	0.00	1.83	0.06	-2.9%	30,523
541410	Interior Design Services	421	613	3.8%	33,332	0.02	0.85	0.13	2.3%	32,215
541420	Industrial Design Services	5	62	28.6%	35,453	0.26	0.43	0.39	2.5%	65,824
541430	Graphic Design Services	899	1,026	1.3%	24,435	-0.01	1.00	-0.05	1.9%	36,906
541490	Other Specialized Design Services	65	58	-1.1%	20,437	-0.05	0.35	-0.21	3.7%	46,680
	Engineering and Research & Development	5,109	5,542	0.8%	95,765	0.00	0.72	-0.02	1.2%	107,679
541330	Engineering Services	3,428	3,993	1.5%	97,609	0.00	0.79	0.04	1.1%	99,849
541712	R&D in the Physical, Engineering, and Life Sciences	1,242	1,245	0.0%	99,135	-0.02	0.55	-0.09	1.6%	129,345
541720	R&D in the Social Sciences and Humanities	439	305	-3.6%	50,680	-0.03	0.96	-0.34	-0.5%	77,213
	Film, TV, Video Production/Distrib	1,715	1,047	-4.8%	54,648	-0.05	0.55	-0.33	0.0%	100,737
334612	Prerecorded Compact Disc, Tape, and Record Reprod.	5	16	12.3%	22,968	0.21	0.19	0.17	-9.1%	111,830
512110	Motion Picture and Video Production	1,598	967	-4.9%	62,354	-0.07	0.71	-0.69	1.9%	96,491
512120	Motion Picture and Video Distribution	18	5	-11.8%	30,000	-0.10	0.12	-0.23	-2.1%	145,286
512191	Teleproduction and Other Postproduction Services	51	32	-4.4%	51,819	-0.06	0.27	-0.23	1.7%	79,647
515210	Cable and Other Subscription Programming	44	27	-4.9%	54,732	-0.02	0.08	-0.02	-3.2%	118,159
	Marketing, Photography & Related	9,878	11,098	1.2%	27,013	-0.01	0.87	-0.05	1.9%	48,466
541613	Marketing Consulting Services	804	1,071	2.9%	35,759	-0.03	0.52	-0.14	5.4%	62,656
541810	Advertising Agencies	787	492	-4.6%	68,957	-0.06	0.38	-0.31	1.4%	91,338
541820	Public Relations Agencies	339	419	2.2%	78,737	-0.01	0.83	-0.06	3.0%	82,077
541830	Media Buying Agencies	19	5	-12.3%	62,728	-0.17	0.05	-0.25	4.8%	118,452
541840	Media Representatives	129	89	-3.6%	62,728	-0.01	0.54	-0.07	-2.3%	92,063
541850	Display Advertising	117	321	10.6%	33,067	0.09	1.28	0.75	1.3%	55,722
541860	Direct Mail Advertising	76	67	-1.2%	39,859	0.02	0.24	0.05	-3.6%	56,556
541870	Advertising Material Distribution Services	82	12	-17.7%	33,370	-0.14	0.16	-0.60	-3.6%	50,801
541890	Other Services Related to Advertising	465	598	2.5%	23,668	0.00	0.87	-0.02	2.9%	31,718
541910	Marketing Research and Public Opinion Polling	443	362	-2.0%	19,640	-0.03	0.51	-0.16	0.8%	61,639
541921	Photography Studios, Portrait	1,342	1,895	3.5%	16,540	0.00	1.85	0.11	3.0%	13,817
541922	Commercial Photography	220	367	5.3%	11,916	0.01	1.31	0.13	4.3%	28,380
541990	All Other Professional, Scientific, and Technical	5,055	5,399	0.7%	22,061	-0.01	1.01	-0.04	1.2%	34,065
	Music	1,064	1,482	3.4%	40,865	0.01	1.64	0.19	2.3%	39,271
451140	Musical Instrument and Supplies Stores	171	149	-1.4%	29,994	-0.01	0.74	-0.04	-0.8%	31,637
512210	Record Production	18	65	13.7%	45,725	0.14	3.30	2.41	-0.1%	65,660
512220	Integrated Record Production/Distribution	33	27	-2.1%	64,627	0.00	1.07	-0.03	-1.7%	95,748
512230	Music Publishers	0	17	NA	63,875	NA	0.42	0.42	0.8%	66,277
512240	Sound Recording Studios	71	53	-2.9%	38,985	-0.02	0.69	-0.17	-0.5%	35,272
512290	Other Sound Recording Industries	17	61	13.5%	42,000	0.15	2.34	1.77	-1.2%	46,409
711130	Musical Groups and Artists	753	1,110	4.0%	36,759	-0.01	2.15	-0.26	5.3%	36,633
	Performing and Creative Arts	9,025	9,087	0.1%	25,261	-0.02	1.10	-0.26	2.4%	26,793
453920	Art Dealers	933	883	-0.5%	29,693	-0.01	2.81	-0.35	0.8%	30,678
711110	Theater Companies and Dinner Theaters	491	499	0.2%	25,366	-0.03	0.99	-0.36	3.4%	29,079
711120	Dance Companies	236	188	-2.3%	22,417	-0.09	1.86	-2.52	6.6%	28,388
711190	Other Performing Arts Companies	8	82	26.2%	14,886	0.21	1.33	1.12	5.1%	36,612
711310	Prom. of Arts, Sports, and Similar with Facilities	234	322	3.2%	26,216	-0.02	0.55	-0.11	5.3%	35,292
711320	Prom. of Arts, Sports, and Similar without Facilities	371	560	4.2%	41,454	0.00	1.32	0.02	4.2%	43,364
711410	Agents and Managers for Artists, Athletes, Entertainer	428	302	-3.4%	31,167	-0.05	0.80	-0.57	2.0%	56,367
711510	Independent Artists, Writers, and Performers	6,323	6,252	-0.1%	22,727	-0.02	1.06	-0.23	2.0%	22,331
	Publishing & Information	3,108	2,073	-4.0%	50,121	-0.03	0.57	-0.16	-1.4%	100,855
511110	Newspaper Publishers	1,811	960	-6.2%	60,256	0.00	0.90	-0.02	-5.8%	52,057
511120	Periodical Publishers	571	613	0.7%	39,192	0.03	0.90	0.24	-2.3%	83,889
511130	Book Publishers	143	130	-1.0%	44,981	0.01	0.33	0.04	-2.0%	80,417
511140	Directory and Mailing List Publishers	162	70	-8.1%	88,951	-0.03	0.50	-0.15	-5.5%	80,103
511191	Greeting Card Publishers	36	5	-18.0%	102,096	-0.10	0.18	-0.39	-7.7%	61,057
511199	All Other Publishers	127	5	-27.6%	102,096	-0.24	0.07	-1.09	-4.0%	53,250
519110	News Syndicates	89	18	-14.8%	61,052	-0.13	0.25	-0.75	-2.0%	109,916
519130	Internet Pub. and Broad. and Web Search Portals	118	228	6.9%	55,883	-0.06	0.21	-0.14	12.8%	175,200
519190	All Other Information Services	51	45	-1.2%	26,468	-0.02	0.39	-0.07	0.6%	65,848
	Radio and Television Broadcasting	1,381	1,133	-2.0%	64,006	-0.02	0.88	-0.14	-0.4%	81,550
515111	Radio Networks	180	97	-6.0%	76,205	-0.05	0.79	-0.52	-1.0%	65,359
515112	Radio Stations	519	507	-0.2%	43,737	0.01	1.05	0.14	-1.5%	53,908
515120	Television Broadcasting	682	529	-2.5%	85,014	-0.03	0.78	-0.27	0.6%	104,123

Source: DBEDT compilation based on EMSI data.