Hawaii's Creative Industries

Update Report 2018

Department of Business, Economic Development and Tourism

March 2019

Hawaii Department of Business, Economic Development & Tourism

March 2019

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CREATIVE INDUSTRIES HAWAII OVERVIEW

The State of Hawaii's **Creative Industries Division (CID**) in the Department of Business Economic Development and Tourism (DBEDT) is the lead agency which advocates and expands business opportunities for those sectors which comprise Hawaii's creative economy.

Comprising the **Hawaii Film Office (HFO)** – responsible for the overall management of the state's off-shore and local film industry development – and the **Arts and Culture Development Branch (ACDB)**, **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.

Hawaii Film Industry Metrics:

- **2017** calendar year, $**319.9 million** in estimated production expenditures generated **$553.4 million** of economic impact, **$34.5 million** in state taxes and **3,295 jobs** statewide.

Through CID/DBEDT initiatives such as **Creative Lab**, coupled with state-of-the-art infrastructure development, the agency is further strengthening Hawaii'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.

Creative Lab Hawaii Milestones to Date:

- **15 original songs** licensed for network TV and cable series
- **4 original songs** sold outright to global entertainment studios
- **2 original songs** licensed for yearlong ad campaigns
- **3 feature films** produced and **2 feature films** in pre-production
- **9 TV and feature film scripts** optioned by producers or L.A. talent agencies
- **6 web series** produced, some national/international award-winners
- **1 mobile game app**

CID/DBEDT is positioning the state to be a national and global leader in creative sector development as well as a hub for creative media and film production in the Pacific.

Hawaii's Creative Industries Metrics 2017:

- **53,993 jobs**, **3,823** businesses
- **6.2%** of the state **total civilian jobs**
- **$3.6 billion Gross Domestic Product (GDP)** = **4.1%** of total State of Hawaii **GDP**
- **+ 9.7% growth between 2007 and 2017**

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. This effort was largely based on similar work done in Massachusetts. The 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.

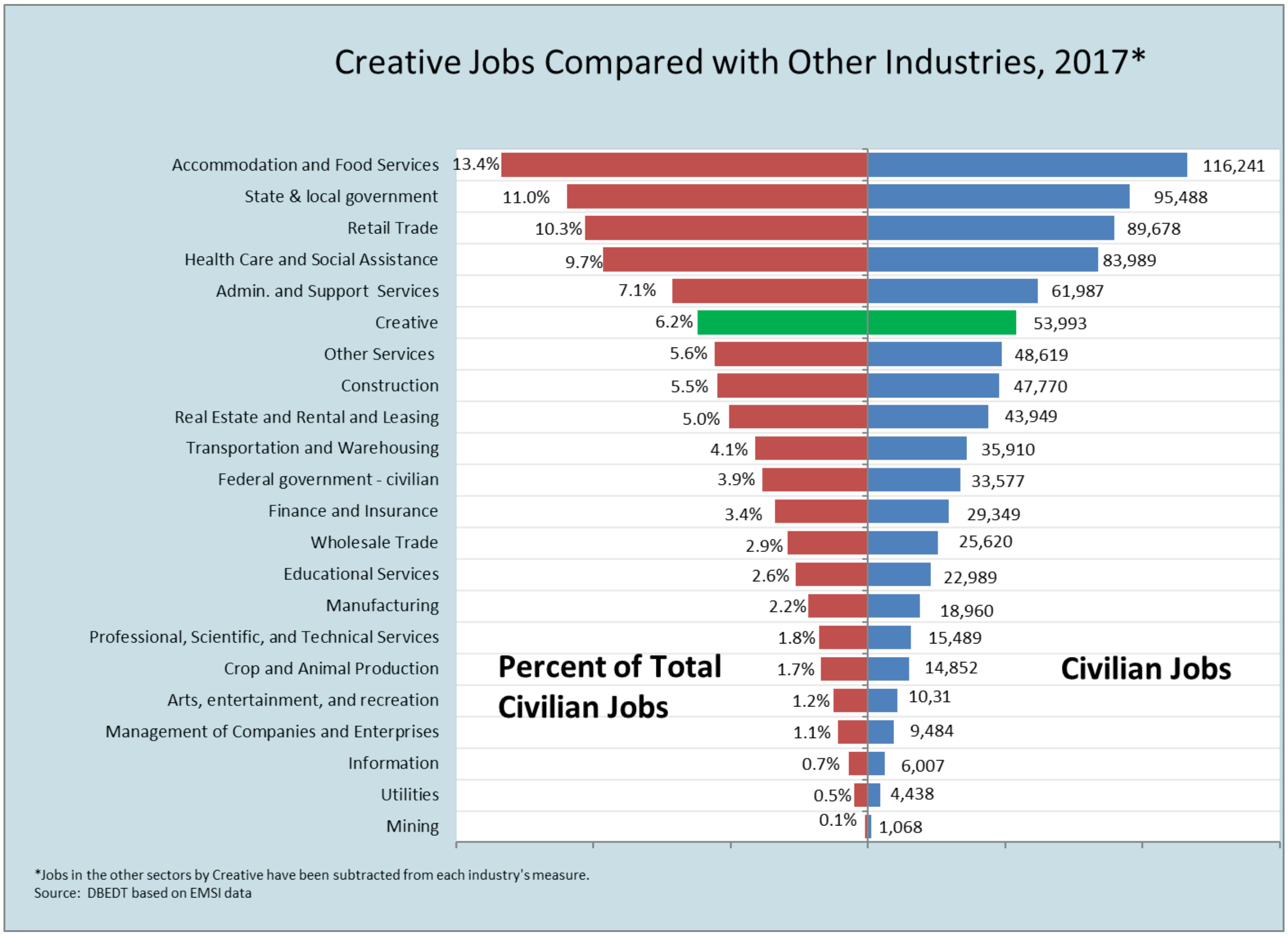
Industry Groups in the Creative Sector

The table below provides an overview of the 13 industry groups in the updated creative sector, and their 2017 job count, based on the current definition of the sector. In total, the creative industries accounted for about 53,993 jobs in Hawaii for 2017. This was up 9.7% from 2007. The earnings average was $48,806 in 2017.

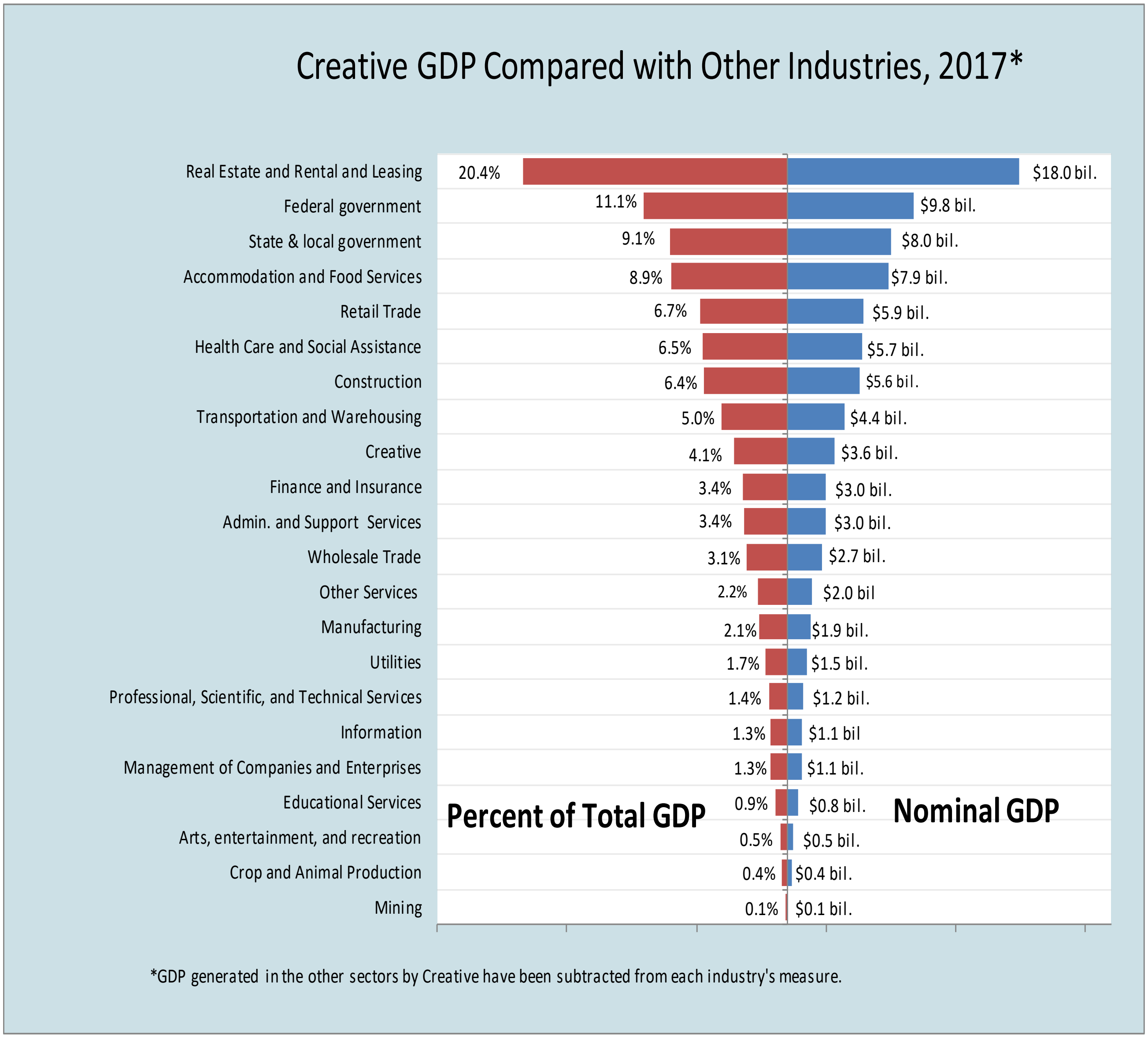
CREATIVE INDUSTRY PRODUCTION GROUPS	
Industry Group	**2017 Job**
Marketing, Photography & Related	12,974
Performing and Creative Arts	9,853
Business Consulting	5,353
Engineering and Research & Development	5,291
Computer and Digital Media Products	5,243
Cultural Activities	3,491
Film, TV, Video Production/Distrib	2,214
Design Services	2,186
Architecture	2,024
Publishing & Information	1,951
Music	1,433
Radio and TV Broadcasting	1,102
Art Education	878
Total Creative Industry	**53,993**
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 2017, the sector had 53,993 jobs and accounted for 6.2 % 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 4.1% of Hawaii's total GDP in 2017, with a value added of $3.6 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 shown in the following figure (the full report explains this mapping process in more detail).

CREATIVE INDUSTRY GROUPS MAPPED BY PERFORMANCE, 2007-2017					
Total Jobs, 2017: 53,993					
Average Annual Earnings, 2017: $48,806					
Net Change in Jobs, 2007-2017: 9.7%					
Transitioning Group: 52.0% of Jobs			**Base-Growth Group: 10.6% of Jobs**		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Marketing, Photography & Related	22.2%	$28,020	Cultural Activities	106.5%	$50,943
Music	23.4%	$34,179	Film, TV, Video Production/Distrib	40.5%	$57,515
Design Services	4.4%	$29,168			
Business Consulting	23.3%	$60,640			
Art Education	38.2%	$10,815			
Computer and Digital Media Products	9.92%	$87,459			
Declining Group: 37.5% of Jobs			**Emerging Group: 0.0% of Jobs**		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Performing and Creative Arts	-0.7%	$20,719			
Engineering and Research & Development	-4.5%	$99,535			
Architecture	-11.7%	$77,548			
Radio and TV Broadcasting	-20.8%	$64,986			
Publishing & Information	-39.1%	$52,133			

Source: DBEDT compilation based on EMSI data.

The highest performing industries in the creative sector for the 2007 to 2017 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 4,752 jobs to the state's economy between 2007 and 2017. This amounted to a 9.7% increase in jobs, higher than the 7.1% growth in Hawaii's civilian economy as a whole for the period. The leading performer of the overall portfolio was the cultural activities group. The 2017 earnings average for the creative industry's portfolio was $48,806, which was lower than the statewide average of $54,965.

High Performing Creative Industry Groups

Only two creative industry groups, cultural activities and film, TV, video production and distribution registered as high performing base-growth industries for the 2007 to 2017 period.

No group was in the emerging category.

Streetlight Cadence, winner of two consecutive Na Hoku Hanohano Awards for Alternative Album of the Year and 2017 Creative Lab Music Immersive finalists. Photo credit Streetlight Cadence

Other Creative Industries' Performance

Six of the creative sector industry groups were in the transitioning category for the 2007 to 2017 period. These ranged from design services, which increased only 4.4% in jobs, to art education, which grew jobs by 38.2%. 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 five creative industry groups that lost jobs during the 2007 to 2017 period fell into the declining quadrant of the performance maps; these were engineering and research & development, performing and creative arts, architecture, radio and TV broadcasting, and publishing & information.

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.

CID was a co-sponsor for Hawaii fashion designer Manaola's debut at New York Fashion week 2017. Photo credit Manaola

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]

The much-anticipated MAGNUM P.I. re-boot, starring Jay Hernandez as Thomas Magnum, began filming in Hawai'i earlier this year. The MAGNUM P.I. cast and crew participated a traditional Hawaiian ceremony—which is done for all film productions in the Islands—to start the series off right. Kahu Kordell Kekoa, former chaplain of Kamehameha Schools (above far right) presided over the blessing which included Peter Lenkov (above far left) executive producer for both MAGNUM P.I. and HAWAII FIVE-0. Photo: Norman Shapiro/CBS ©2018 CBS Broadcasting, Inc. All Rights Reserved.

[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]

The hit reboot of HAWAII FIVE-0, starring Alex O'Loughlin as the iconic Steve McGarrett, is now celebrating its 9th successful season of filming in the Hawaiian Islands and supported by the Hawai'i Film Office. Photo: Justin Stephens/CBS ©2018 CBS Broadcasting Inc. All Rights Reserved.

[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.

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 a continuation of a series of reports, updating Hawaii's Creative Industries Report with the latest data.

Data Sources

A major feature of the 2007, 2010, 2012, 2014, 2015, 2016, 2017 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 permits 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.

Bernie Su, Emmy Award winning web series creator of the "Lizzie Bennet Diaries" mentoring Creative Lab Hawaii Web Series participants

[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 2017 job count, based on the current definition of the sector. In total, the creative industries accounted for about 53,993 jobs in Hawaii for 2017. This was up 9.7% from 2007. The earnings average was $48,806.

TABLE 1

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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, jobs associated with 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.

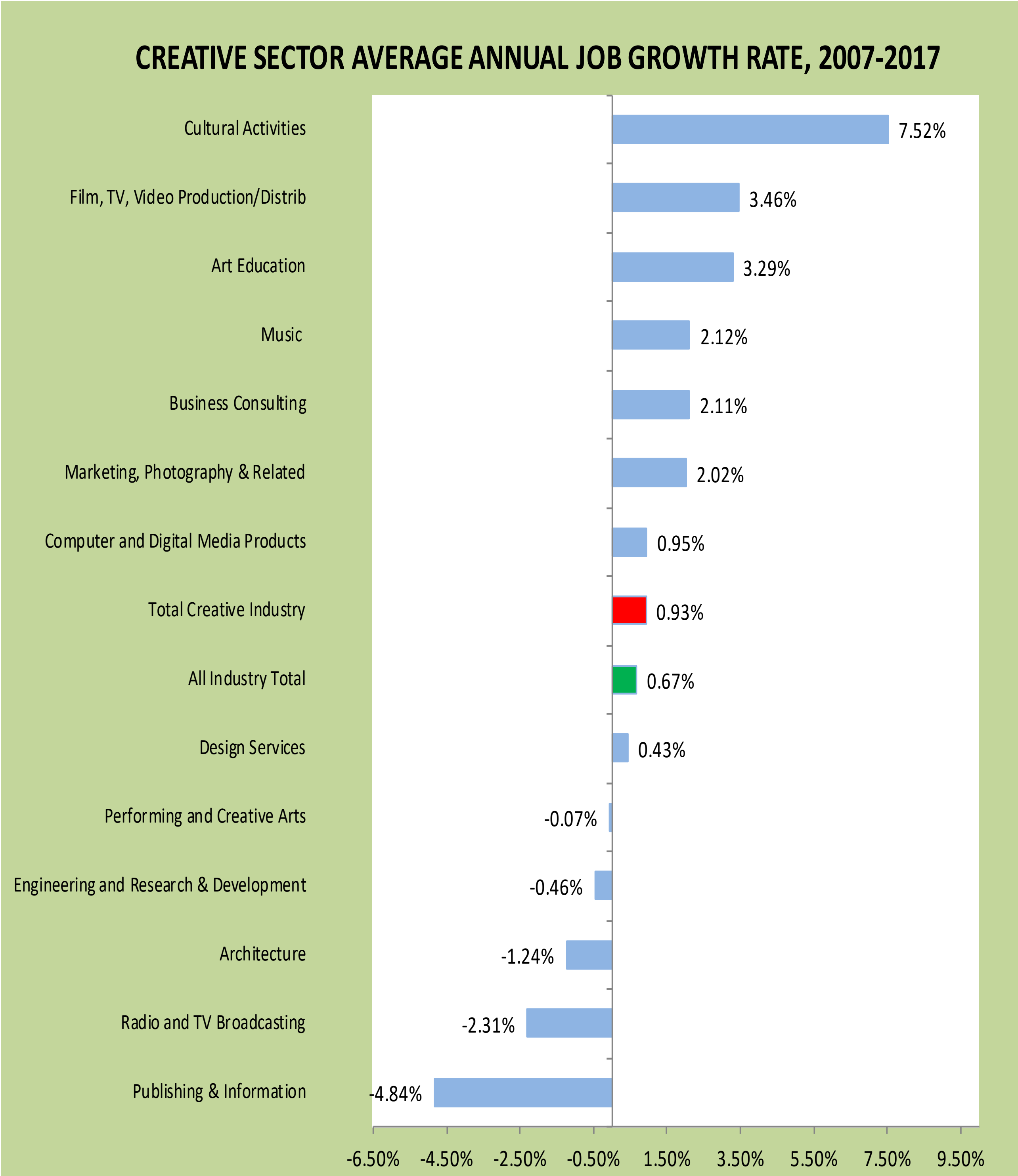
Creative Sector Job Growth

In terms of job growth, the creative industries portfolio seems to have performed above the average over the 2007 to 2017 period (Figure 1). Eight 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 0.67%. Cultural activities topped the list with 7.52% annual growth. This was followed by film, TV, video production/distribution, art education, music, business consulting, marketing, photography & related, and computer and digital media products.

The five industry groups that lost jobs over the same period were publishing & information, radio and TV broadcasting, architecture, engineering and research & development, and performing and creative arts.

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, 2017. Photo credit Tommy Shih and Hawaii Business Magazine.

FIGURE 1



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]

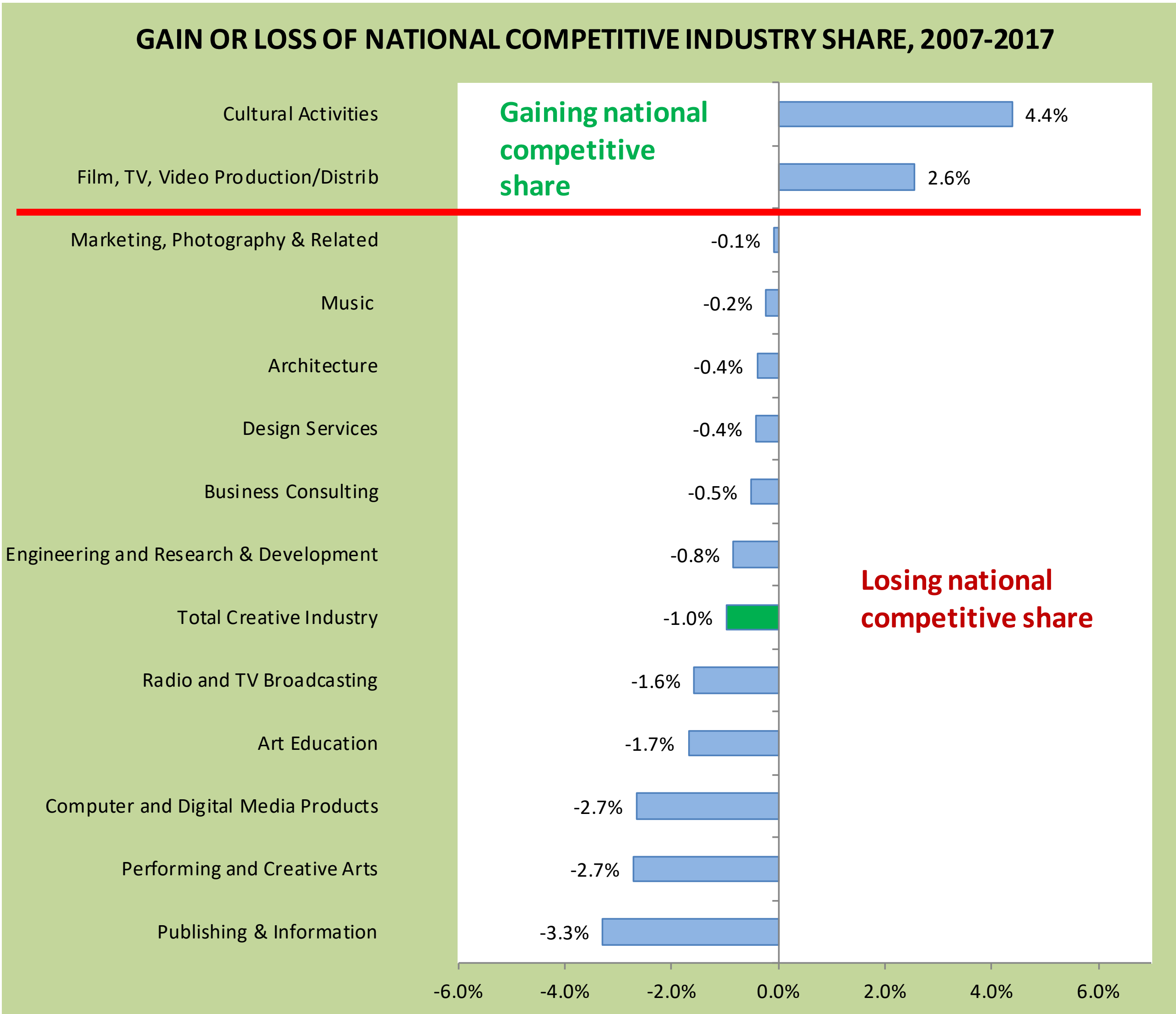
Figure 2 shows how much more or less Hawaii's creative industries grew per year on average than the same industries nationally. For instance, over the 2007 to 2017 period, jobs in the cultural activities industry group grew an average of 4.4% more annually in Hawaii than the same industry nationwide. 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 2.7% below the national industry growth rate.

Industries like design services, art education, business consulting, music, computer and digital media products, 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.

Textile designer, Jana Lam, is a Creative Lab Hawaii Fashion Immersive fellow and Honolulu Magazine's Fashion Week Pitch Panel winner. Her work is carried at her Hawaii Studio and at boutiques throughout the islands. Photo Credit: Photo credit Nella Media Group

[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 2



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 3). This is a measure of how much Hawaii specializes in the industry and 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 3 means that employment in Hawaii's cultural industry group is 3.5 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. While it is possible that business consulting may be exporting some of its output, it has a long way to go to demonstrate the strong comparative advantage shown by the more concentrated industries above the 1.0 level.

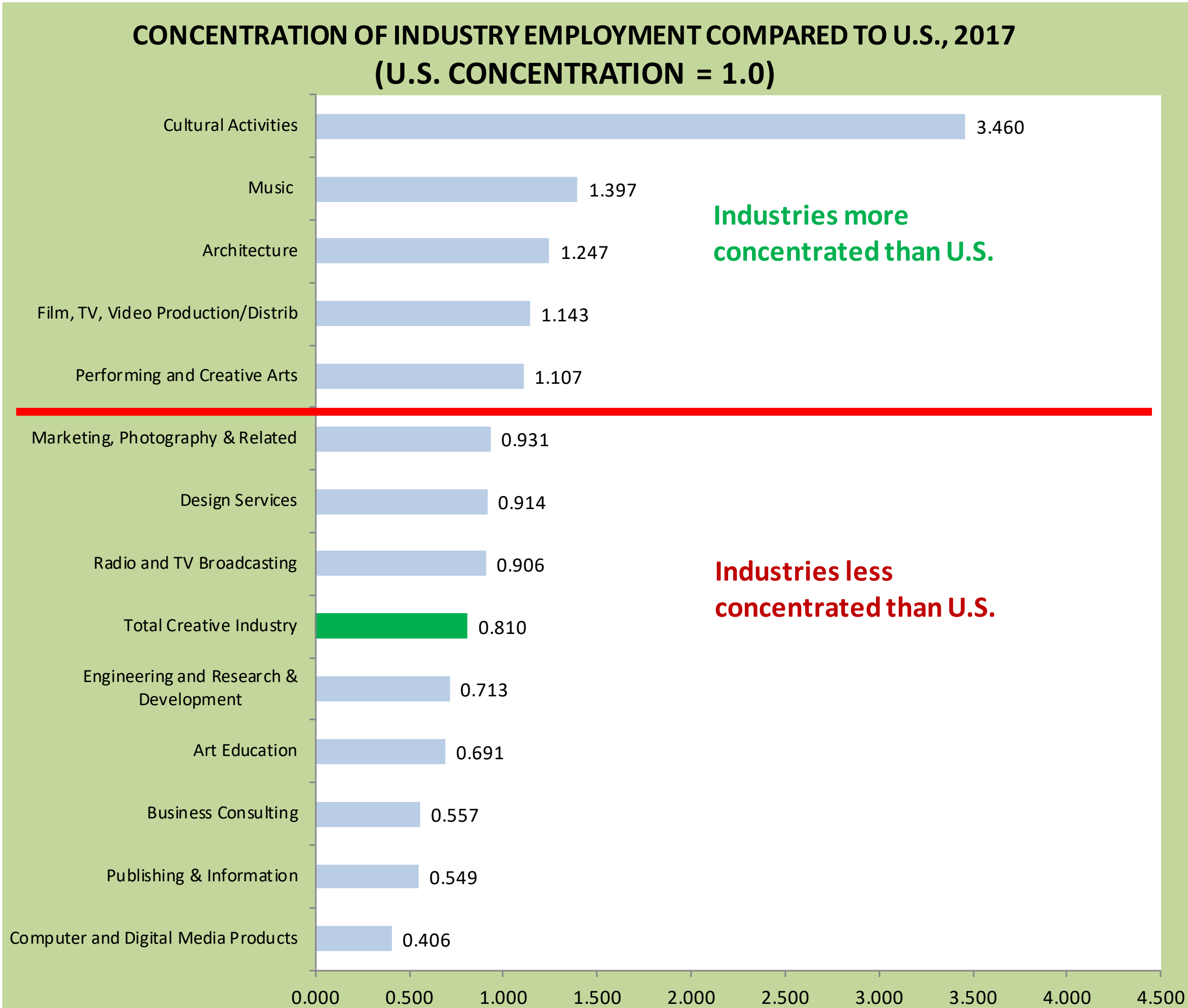
In addition to cultural activities, music, architecture, film, TV, video production/distribution, and performing/creative arts had concentrations in Hawaii's economy that were higher than the same industries nationally. These more concentrated industries are probably helping to drive Hawaii's economy. 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

HAWAIʻI

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 3



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, 2 and 3, 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 2007 and 2017. 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 2007 to 2017 performance measures. Combined, the NAICS-based creative industry groups accounted for about 53,993 jobs in Hawaii's economy during 2017.

TABLE 3

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No group was in the emerging category.

Other Creative Industries' Performance

Six of the creative sector industry groups were in the transitioning category for the 2007 to 2017 period. These ranged from design services, which increased only 4.4% in jobs to art education, which grew jobs by 38.2%. 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 five creative industry groups that lost jobs during the 2007 to 2017 period fell into the declining quadrant of the performance maps; these were engineering and research & development, performing and creative arts, architecture, radio and TV broadcasting, and publishing & information. 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.

Kimie Miner, 2018 Na Hoku Hanohano award winner for Female Vocalist of the Year and Song of the Year and also a 2016 Creative Lab Music Immersive finalist, is the founder of the Haku Collective, a mentorship program for students that teaches the craft of songwriting. Photo credit Nella Media Group

IV. CREATIVE INDUSTRY PERFORMANCE BY COUNTY

The following tables summarize the 2007 to 2017 county performance for 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 were in the transitioning and declining categories).

City & County of Honolulu

Honolulu accounted for 38,517 of the state's creative industry jobs in 2017, an 1.0% annual increase from 2007. The annual job growth was -0.4% from 2007 to 2008. After experiencing severe setbacks due to the national economic recession that began in late 2007, the average annual growth rate was up to 1.2% during 2008-2017. As shown in Table 4, two creative industry groups were high performing in Honolulu County in the 2007 to 2017 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 and Film, TV, Video Production/Distribution. Four creative industry groups lost jobs in Honolulu County over the 2007 to 2017 period: Publishing & Information, Radio and Television Broadcasting, Architecture, and Engineering and R&D.

TABLE 4. CREATIVE INDUSTRY JOBS, HONOLULU

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2007	2008	2016	2017	2007-2008	2008-2017	2016-2017	2007-2017
Cultural Activities	Base-Growth	1,483	1,504	3,287	3,169	1.4%	8.6%	-3.6%	7.9%
Film, TV, Video Production/Distrib	Base-Growth	1,361	1,257	1,594	1,994	-7.6%	5.3%	25.1%	3.9%
Business Consulting	Transitioning	3,269	3,420	4,077	4,194	4.6%	2.3%	2.9%	2.5%
Marketing, Photography & Related	Transitioning	7,341	7,333	8,600	8,799	-0.1%	2.0%	2.3%	1.8%
Design Services	Transitioning	1,369	1,330	1,365	1,395	-2.9%	0.5%	2.2%	0.2%
Art Education	Transitioning	461	463	648	682	0.5%	4.4%	5.3%	4.0%
Music	Transitioning	558	581	567	613	4.1%	0.6%	8.2%	0.9%
Performing and Creative Arts	Transitioning	5,140	5,056	5,163	5,258	-1.6%	0.4%	1.8%	0.2%
Computer and Digital Media Products	Transitioning	4,108	4,119	4,071	4,285	0.3%	0.4%	5.2%	0.4%
Engineering and R&D	Declining	4,378	4,475	4,350	4,265	2.2%	-0.5%	-2.0%	-0.3%
Architecture	Declining	1,779	1,793	1,592	1,586	0.8%	-1.4%	-0.4%	-1.1%
Radio and TV Broadcasting	Declining	1,129	1,116	888	899	-1.2%	-2.4%	1.3%	-2.3%
Publishing & Information	Declining	2,424	2,207	1,433	1,378	-8.9%	-5.1%	-3.8%	-5.5%
Total Creative Industry	Transitioning	34,799	34,653	37,634	38,517	-0.4%	1.2%	2.3%	1.0%

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 1.0% annual growth rate was slightly higher than the state's 0.9%, but lower than the national average of 1.9%. 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, 2007-2017

Industry Group	Performance Class	Job Change 2007-2017	Average Annual Job Growth (%)			Avg. Annual Earnings (2017)		
			County	State	U.S.	County	State	U.S.
Cultural Activities	Base-Growth	1,686	7.9%	7.5%	3.1%	51,061	50,943	54,793
Film, TV, Video Production/Distrib	Base-Growth	633	3.9%	3.5%	0.9%	59,683	57,515	100,954
Business Consulting	Transitioning	925	2.5%	2.1%	2.6%	66,481	60,640	79,730
Marketing, Photography & Related	Transitioning	1,459	1.8%	2.0%	2.1%	29,709	28,020	48,600
Design Services	Transitioning	25	0.2%	0.4%	0.9%	30,164	29,168	39,398
Art Education	Transitioning	221	4.0%	3.3%	5.0%	10,212	10,815	10,684
Music	Transitioning	55	0.9%	2.1%	2.3%	48,132	34,179	40,514
Performing and Creative Arts	Transitioning	118	0.2%	-0.1%	2.6%	21,256	20,719	26,404
Computer and Digital Media Products	Transitioning	177	0.4%	1.0%	3.6%	91,875	87,459	121,594
Engineering and R&D	Declining	-113	-0.3%	-0.5%	0.4%	100,814	99,535	108,750
Architecture	Declining	-192	-1.1%	-1.2%	-0.8%	85,213	77,548	73,199
Radio and TV Broadcasting	Declining	-230	-2.3%	-2.3%	-0.7%	69,888	64,986	86,348
Publishing & Information	Declining	-1,045	-5.5%	-4.8%	-1.5%	56,976	52,133	118,764
Total Creative Industry	Transitioning	3,719	1.0%	0.9%	1.9%	54,820	48,806	76,145

Source: DBEDT compilation based on EMSI data.

Hawaii County

Hawaii County accounted for 5,983 of the state's creative industry jobs in 2017, an 1.3% average annual increase from 2007. The annual job growth was -3.0% from 2007 to 2008, but increased 1.7% from 2008 to 2017. As shown in Table 6, six creative industry groups were high performing in Hawaii County during the 2007 to 2017 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, Cultural Activities, Design Services, Architecture, Engineering and R&D, and Computer and Digital Media Products. Three creative industry groups lost jobs in Hawaii County over the 2007 to 2017 period.

TABLE 6. CREATIVE INDUSTRY JOBS, HAWAII COUNTY

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2007	2008	2016	2017	2007-2008	2008-2017	2016-2017	2007-2017
Music	Base-Growth	162	156	211	222	-3.4%	4.0%	5.3%	3.2%
Cultural Activities	Base-Growth	118	102	183	193	-13.5%	7.3%	5.7%	5.0%
Design Services	Base-Growth	307	285	339	353	-7.2%	2.4%	3.9%	1.4%
Architecture	Base-Growth	169	181	189	191	7.2%	0.6%	1.0%	1.3%
Engineering and R&D	Emerging	562	571	626	622	1.6%	1.0%	-0.6%	1.0%
Computer and Digital Media Products	Emerging	266	264	362	381	-0.6%	4.2%	5.1%	3.7%
Film, TV, Video Production/Distrib	Transitioning	83	60	86	88	-28.3%	4.5%	3.4%	0.6%
Marketing, Photography & Related	Transitioning	1,258	1,219	1,410	1,478	-3.1%	2.2%	4.8%	1.6%
Performing and Creative Arts	Transitioning	1,364	1,312	1,517	1,563	-3.8%	2.0%	3.1%	1.4%
Art Education	Transitioning	55	56	70	75	2.7%	3.3%	7.3%	3.2%
Business Consulting	Declining	529	537	487	491	1.5%	-1.0%	0.9%	-0.7%
Radio and TV Broadcasting	Declining	90	79	77	83	-12.2%	0.5%	7.7%	-0.9%
Publishing & Information	Declining	313	297	236	243	-5.2%	-2.2%	2.9%	-2.5%
Total Creative Industry	Transitioning	5,275	5,118	5,792	5,983	-3.0%	1.7%	3.3%	1.3%

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 1.3% annual growth rate was slightly higher than the state's 0.9% but lower than the national average of 1.9%. 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, 2007-2017

Industry Group	Performance Class	Job Change 2007-2017	Average Annual Job Growth (%)			Avg. Annual Earnings (2017)		
			County	State	U.S.	County	State	U.S.
Music	Base-Growth	60	3.2%	2.1%	2.3%	24,109	34,179	40,514
Cultural Activities	Base-Growth	75	5.0%	7.5%	3.1%	53,379	50,943	54,793
Design Services	Base-Growth	46	1.4%	0.4%	0.9%	25,185	29,168	39,398
Architecture	Base-Growth	23	1.3%	-1.2%	-0.8%	52,964	77,548	73,199
Engineering and R&D	Emerging	61	1.0%	-0.5%	0.4%	97,198	99,535	108,750
Computer and Digital Media Products	Emerging	115	3.7%	1.0%	3.6%	52,820	87,459	121,594
Film, TV, Video Production/Distrib	Transitioning	5	0.6%	3.5%	0.9%	35,934	57,515	100,954
Marketing, Photography & Related	Transitioning	220	1.6%	2.0%	2.1%	22,296	28,020	48,600
Performing and Creative Arts	Transitioning	200	1.4%	-0.1%	2.6%	19,278	20,719	26,404
Art Education	Transitioning	20	3.2%	3.3%	5.0%	10,351	10,815	10,684
Business Consulting	Declining	-38	-0.7%	2.1%	2.6%	36,442	60,640	79,730
Radio and TV Broadcasting	Declining	-8	-0.9%	-2.3%	-0.7%	36,269	64,986	86,348
Publishing & Information	Declining	-70	-2.5%	-4.8%	-1.5%	34,962	52,133	118,764
Total Creative Industry	Transitioning	708	1.3%	0.9%	1.9%	35,382	48,806	76,145

Source: DBEDT compilation based on EMSI data.

Maui County

Maui County accounted for 6,701 of the state's creative industry jobs in 2017, a -0.1% average annual increase from 2007. The annual job growth was -5.1% from 2007 to 2008. After experiencing severe setbacks due to the national economic recession that began in late 2007, the average annual growth rate was up to 0.4% during 2008-2017. As shown in Table 8, four creative industry groups were high performing in Maui County in the 2007 to 2017 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: Marketing, Photography & Related, Cultural Activities, Film, TV, Video Production/Distribution, and Computer and Digital Media Products. Six creative industry groups lost jobs in Maui County over the 2007 to 2017 period, Engineering and R&D, Performing and Creative Arts, Publishing & Information, Architecture, Art Education, and Radio and TV Broadcasting.

TABLE 8. CREATIVE INDUSTRY JOBS, MAUI COUNTY

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2007	2008	2016	2017	2007-2008	2008-2017	2016-2017	2007-2017
Marketing, Photography & Related	Base-Growth	1,417	1,365	1,679	1,745	-3.7%	2.8%	3.9%	2.1%
Cultural Activities	Emerging	41	47	72	74	14.6%	5.0%	2.1%	5.9%
Film, TV, Video Production/Distrib	Emerging	63	41	90	100	-35.6%	10.5%	11.1%	4.7%
Computer and Digital Media Products	Emerging	248	280	427	413	12.6%	4.4%	-3.3%	5.2%
Design Services	Transitioning	297	301	312	314	1.3%	0.5%	0.6%	0.6%
Music	Transitioning	419	387	490	507	-7.6%	3.0%	3.4%	1.9%
Business Consulting	Transitioning	394	362	448	462	-8.1%	2.7%	3.2%	1.6%
Art Education	Declining	96	89	87	85	-7.0%	-0.6%	-2.4%	-1.2%
Performing and Creative Arts	Declining	2,726	2,472	2,233	2,213	-9.3%	-1.2%	-0.9%	-2.1%
Architecture	Declining	226	231	172	177	2.1%	-2.9%	2.9%	-2.4%
Radio and TV Broadcasting	Declining	109	141	86	84	29.2%	-5.6%	-2.4%	-2.6%
Publishing & Information	Declining	348	339	251	252	-2.7%	-3.3%	0.1%	-3.2%
Engineering and R&D	Declining	402	387	297	276	-3.8%	-3.7%	-7.0%	-3.7%
Total Creative Industry	Declining	6,787	6,441	6,644	6,701	-5.1%	0.4%	0.9%	-0.1%

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 -0.1% annual growth rate was lower than the state's 0.9% and the national average of 1.9%. 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, 2007-2017

Industry Group	Performance Class	Job Change 2007-2017	Average Annual Job Growth (%)			Avg. Annual Earnings (2017)		
			County	State	U.S.	County	State	U.S.
Marketing, Photography & Related	Base-Growth	328	2.1%	2.0%	2.1%	25,271	28,020	48,600
Cultural Activities	Emerging	32	5.9%	7.5%	3.1%	51,732	50,943	54,793
Film, TV, Video Production/Distrib	Emerging	37	4.7%	3.5%	0.9%	37,994	57,515	100,954
Computer and Digital Media Products	Emerging	165	5.2%	1.0%	3.6%	75,158	87,459	121,594
Design Services	Transitioning	17	0.6%	0.4%	0.9%	30,399	29,168	39,398
Music	Transitioning	88	1.9%	2.1%	2.3%	24,752	34,179	40,514
Business Consulting	Transitioning	68	1.6%	2.1%	2.6%	44,929	60,640	79,730
Art Education	Declining	-11	-1.2%	3.3%	5.0%	16,724	10,815	10,684
Performing and Creative Arts	Declining	-512	-2.1%	-0.1%	2.6%	21,152	20,719	26,404
Architecture	Declining	-49	-2.4%	-1.2%	-0.8%	49,974	77,548	73,199
Radio and TV Broadcasting	Declining	-25	-2.6%	-2.3%	-0.7%	49,028	64,986	86,348
Publishing & Information	Declining	-96	-3.2%	-4.8%	-1.5%	42,426	52,133	118,764
Engineering and R&D	Declining	-126	-3.7%	-0.5%	0.4%	78,454	99,535	108,750
Total Creative Industry	Declining	-86	-0.1%	0.9%	1.9%	32,700	48,806	76,145

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 June hosts the Annual Kauai Fashion Weekend.

Kauai County

Kauai County accounted for 2,601 of the state's creative industry jobs in 2017, an 1.1% annual increase from 2007. The annual job growth was 1.0% from 2007 to 2008. The average annual growth rate was increased to 1.2% during 2008-2017. As shown in Table 10, two creative industry groups were high performing in Kauai County in the 2007 to 2017 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, and Marketing, Photography & Related. Five creative industry groups lost jobs in Kauai County over the 2007 to 2017 period.

TABLE 10. CREATIVE INDUSTRY JOBS, KAUAI COUNTY

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2007	2008	2016	2017	2007-2008	2008-2017	2016-2017	2007-2017
Music	Base-Growth	21	30	78	90	39.7%	13.1%	15.1%	15.5%
Marketing, Photography & Related	Base-Growth	594	632	792	805	6.4%	2.7%	1.7%	3.1%
Business Consulting	Transitioning	150	144	185	193	-4.1%	3.3%	4.3%	2.5%
Design Services	Transitioning	120	106	121	125	-12.1%	1.8%	3.2%	0.4%
Art Education	Transitioning	24	26	32	36	7.5%	4.0%	14.1%	4.3%
Performing and Creative Arts	Transitioning	689	694	803	819	0.7%	1.9%	2.0%	1.7%
Cultural Activities	Transitioning	48	54	67	54	11.9%	0.0%	-19.1%	1.1%
Computer and Digital Media Products	Transitioning	145	169	138	147	16.6%	-1.5%	6.5%	0.1%
Engineering and R&D	Declining	171	166	107	120	-2.6%	-3.6%	11.7%	-3.5%
Publishing & Information	Declining	112	107	74	74	-4.3%	-4.0%	0.3%	-4.0%
Architecture	Declining	120	113	69	70	-5.5%	-5.3%	1.2%	-5.3%
Radio and TV Broadcasting	Declining	63	57	34	36	-9.7%	-4.9%	8.5%	-5.4%
Film, TV, Video Production/Distrib	Declining	65	48	33	32	-26.3%	-4.6%	-3.8%	-7.0%
Total Creative Industry	Transitioning	2,323	2,346	2,532	2,601	1.0%	1.2%	2.7%	1.1%

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 1.1 average annual growth rate was higher than the state's 0.9% but lower than the national average of 1.9%. For average earnings, Kauai County was lower than the state and much lower than the national average.

TABLE 11. KAUAI COUNTY CREATIVE INDUSTRY PERFORMANCE COMPARED WITH NATION AND STATE, 2007-2017

Industry Group	Performance Class	Job Change 2007-2017	Average Annual Job Growth (%)			Avg. Annual Earnings (2017)		
			County	State	U.S.	County	State	U.S.
Music	Base-Growth	69	15.5%	2.1%	2.3%	16,465	34,179	40,514
Marketing, Photography & Related	Base-Growth	212	3.1%	2.0%	2.1%	24,364	28,020	48,600
Business Consulting	Transitioning	42	2.5%	2.1%	2.6%	29,388	60,640	79,730
Design Services	Transitioning	4	0.4%	0.4%	0.9%	26,186	29,168	39,398
Art Education	Transitioning	13	4.3%	3.3%	5.0%	9,316	10,815	10,684
Performing and Creative Arts	Transitioning	130	1.7%	-0.1%	2.6%	18,854	20,719	26,404
Cultural Activities	Transitioning	6	1.1%	7.5%	3.1%	34,461	50,943	54,793
Computer and Digital Media Products	Transitioning	2	0.1%	1.0%	3.6%	73,319	87,459	121,594
Engineering and R&D	Declining	-51	-3.5%	-0.5%	0.4%	103,194	99,535	108,750
Publishing & Information	Declining	-38	-4.0%	-4.8%	-1.5%	51,185	52,133	118,764
Architecture	Declining	-50	-5.3%	-1.2%	-0.8%	40,596	77,548	73,199
Radio and TV Broadcasting	Declining	-27	-5.4%	-2.3%	-0.7%	45,954	64,986	86,348
Film, TV, Video Production/Distrib	Declining	-34	-7.0%	3.5%	0.9%	42,606	57,515	100,954
Total Creative Industry	Transitioning	278	1.1%	0.9%	1.9%	30,940	48,806	76,145

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, 2007-2017		Annual Earnings 2017		Performance Metrics		
	2007	2017	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2007-2017	Location Quotient (LQ), 2017	Change in LQ, 2007-2017
TOTAL HAWAII CREATIVE INDUSTRY	**49,241**	**53,993**	**0.9%**	**1.9%**	**48,806**	**76,145**	**-1.0%**	**0.81**	**-0.06**
Marketing, Photography & Related	10,622	12,974	2.0%	2.1%	28,020	48,600	-0.1%	0.93	0.02
Performing and Creative Arts	9,921	9,853	-0.1%	2.6%	20,719	26,404	-2.7%	1.10	-0.30
Business Consulting	4,343	5,353	2.1%	2.6%	60,640	79,730	-0.5%	0.56	-0.01
Engineering and Research & Development	5,542	5,291	-0.5%	0.4%	99,535	108,750	-0.8%	0.71	-0.04
Computer and Digital Media Products	4,770	5,243	1.0%	3.6%	87,459	121,594	-2.7%	0.41	-0.11
Cultural Activities	1,690	3,491	7.5%	3.1%	50,943	54,793	4.4%	3.45	1.23
Film, TV, Video Production/Distrib	1,576	2,214	3.5%	0.9%	57,515	100,954	2.6%	1.16	0.28
Design Services	2,094	2,186	0.4%	0.9%	29,168	39,398	-0.4%	0.91	-0.01
Architecture	2,293	2,024	-1.2%	-0.8%	77,548	73,199	-0.4%	1.26	-0.02
Publishing & Information	3,202	1,951	-4.8%	-1.5%	52,133	118,764	-3.3%	0.54	-0.20
Music	1,161	1,433	2.1%	2.3%	34,179	40,514	-0.2%	1.43	0.01
Radio and TV Broadcasting	1,391	1,102	-2.3%	-0.7%	64,986	86,348	-1.6%	0.89	-0.13
Art Education	635	878	3.3%	5.0%	10,815	10,684	-1.7%	0.63	-0.09

Source: DBEDT compilation based on EMSI data.

As discussed in Section III, the creative sector includes about 53,993 jobs in 13 industry groups. The average annual earnings for the sector was $48,806 in 2017. 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

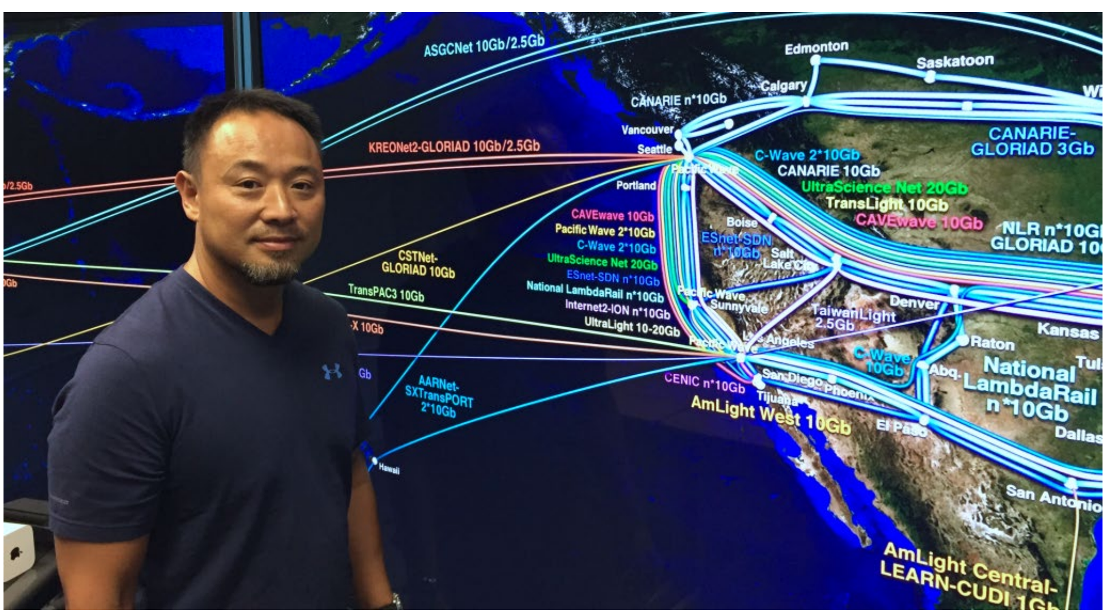
This group is composed of several areas of the arts including selected performing arts, creative arts (visual and literary), and supporting industries such as promoters, agents, managers and art dealers. The group does not include musicians, who are included with the music industry group and museums, 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 9,853 employees in 2017, including self-employed workers. Declines in jobs were centered among theater companies and dinner theaters, agents and managers for artists, athletes, and entertainers, and art dealers. Gains in jobs over the period were made in promoters, dance company, independent artists, writers, and performers, and other performing arts companies. The earnings average for workers in the performing and creative arts group was only $20,719 in 2017. 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 5,291 jobs in 2017. 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.

Jobs in the engineering/R&D group decreased by 0.5% annually from 2007 to 2017. The average annual earnings of this group was $99,535, 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, 2007-2017		Annual Earnings 2017		Performance Metrics		
	2007	2017	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2007-2017	Location Quotient (LQ), 2017	Change in LQ, 2007-2017
Computer and Digital Media Products	4,770	5,243	1.0%	3.6%	87,459	121,594	-2.7%	0.41	-0.11
Software Publishers	142	306	8.0%	4.1%	65,404	163,405	3.9%	0.15	0.05
Custom Computer Programming Services	2,068	1,833	-1.2%	3.2%	87,070	115,594	-4.4%	0.35	-0.18
Computer Systems Design Services	2,560	3,105	1.9%	3.8%	89,862	111,708	-1.8%	0.57	-0.09

Source: DBEDT compilation based on EMSI data.

As a whole, jobs in this sector grew at an average annual rate of 1.0% over the 2007 to 2017 period. Overall, the group lost in terms of competitive national share. Two of the three sub-sectors lost in terms of competitive national share.

The average earnings in the sector were relatively high, at $87,459 in 2017. The lowest paying activity, software publishers, averaged $65,404, while the highest, computer system design services, averaged $89,862.

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	Post production
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. Photography studios, portrait, marketing, advertising, public relations, media specialists, and other professional, scientific, and technical services account for most of this sector's workforce of about 12,974. As the largest sector in Hawaii's creative industries, this sector's jobs increased 2.0% annually from 2007 to 2017, compared to the 2.1% annual growth in the national workforce of this industry group. Jobs in some areas such as outdoor 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 outdoor advertising showed gains in national industry share.

The annual earnings average for the industry group was $28,020, below the state average. Earnings ranged from an average $62,598 in public relations agencies to $21,794 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 Hawaii's 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 2007 to 2017 period with 5,353 jobs in 2017, up 2.1% annually from 2007. This was more than two times the growth rate of Hawaii's overall job count.

Administrative management and general management consulting services, environmental consulting services, and other scientific and technical consulting services are the three largest components of the business consulting industry group, accounting for about 85% of the group's jobs. Administrative management and general management consulting services was one of the fastest growing activities in the group, with job growth of 3.0% for the period.

The annual earnings average for business consulting was $60,640. This ranged from $63,123 for other scientific and technical consulting services to $45,709 for process, physical distribution, and logistics consulting services.

Publishing and Information

As a whole, publishing and information showed a 4.8% annual decline in jobs from 2007 to 2017, which was worse than the national level. This industry group is dominated by newspaper publishing, which accounted for about 47% of the industry group's jobs in 2017. Newspaper publishing showed a 6.5% annual decline in jobs over the period, and this was about the same as the 6.4% 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 1.9% annually from 2007 to 2017, with 246 employees in 2017.

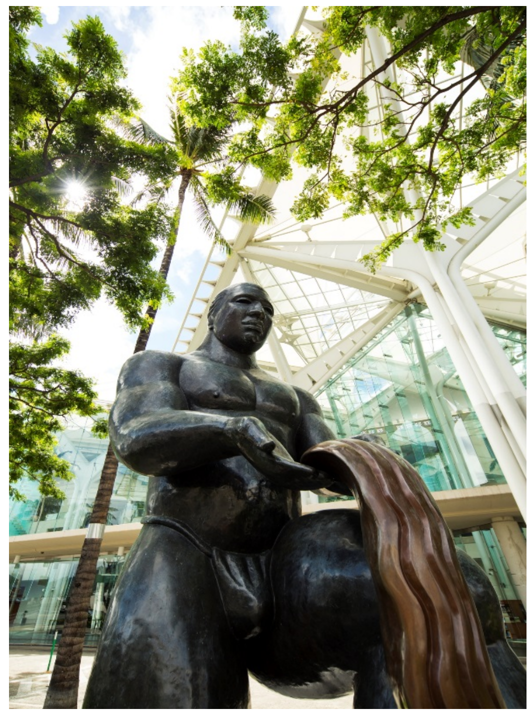
The annual earnings average for publishing and information in Hawaii was $52,133 in 2017. This ranged from $78,951 for directory and mailing list publishers to $21,183 for all other information services. The newspaper publishing earnings average was $58,271 in 2017, while the average for internet broadcasting was $36,278.

Cultural Activities

The cultural activities industry group accounted for 3,491 jobs in 2017 and included museums, historical sites, nature parks and other similar institutions, and grant making foundations. As a group, cultural activities registered an 7.5% annual increase in jobs over the 2007 to 2017 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 $50,943 in 2017. This ranged from $31,061 for museums to $90,475 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 2,024 people in 2017 and had a negative 1.2% annual growth since 2007. This was below the average growth for the state's workforce as a whole, and worse than 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 0.2% annual job growth from 2007 to 2017.

The annual earnings average in architecture was $77,548 in 2017, with structural architecture at $82,594 and landscape architecture averaging $58,947.

Design Services

Design services employed about 2,186 people in 2017. About 49% of these jobs were among graphic design firms, while another 31% were in interior design. Overall, jobs grew by 0.4% annually in the design industry group since 2007. Interior design jobs grew 1.0% and graphic design jobs grew 1.3% annually.

The annual earnings average for the design group was $29,168 in 2017. Drafting services had the lowest average at $21,562, and industrial design services had the highest at $122,742.

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 2.3% annually to about 1,102 jobs over the 2007 to 2017 period. Nationally, the industry group did better, managing a 0.7% annual decline in jobs. Television broadcasting lost 2.5% of its workforce annually over the period to just 506 jobs in 2017.

Radio stations lost 1.2% annually over the period with about 499 jobs in 2017. Radio networks, the only other activity in the industry group lost 5.9% per year. The annual earnings average for broadcasting was about $64,986 in 2017. This ranged from $83,627 for television broadcasting, to $42,588 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 2007, 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, 2007 TO 2017

Group & Industry	Hawaii Jobs		Avg. Job Growth Rate, 2007-2017		Annual Earnings 2017		Performance Metrics		
	2007	2017	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2007-2017	Location Quotient (LQ), 2017	Change in LQ, 2007-2017
Film, TV, Video Production/Distrib	1,576	2,214	3.5%	0.9%	57,515	100,954	2.6%	1.16	0.28
Prerecorded Compact Disc (except Software), Tape, and Record Reproducing	0	0		-3.6%	0	165,456	3.6%	0.00	0.00
Motion Picture and Video Production	1,453	2,081	3.7%	2.5%	58,512	95,248	1.1%	1.44	0.18
Motion Picture and Video Distribution	17	6	-10.2%	0.0%	108,637	154,304	-10.2%	0.14	-0.25
Teleproduction and Other Postproduction Services	72	79	1.0%	2.2%	39,611	81,131	-1.3%	0.61	-0.06
Cable and Other Subscription Programming	34	47	3.4%	-4.7%	37,662	127,248	8.1%	0.17	0.10

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).

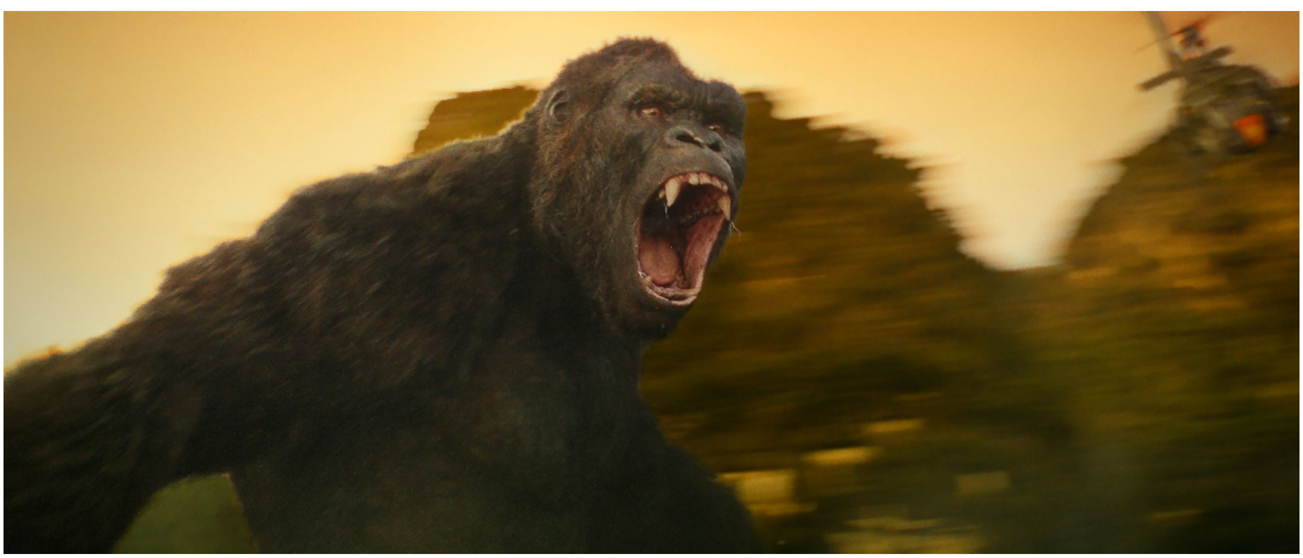
These represent jobs among Hawaii companies and enterprises involved in the direct production of Hawaii film and TV products. Direct film and TV production activities involved about 2,214 jobs in 2017 and increased 3.5% annually from 2007. Nationally, jobs in this group increased 0.9% annually over the period.

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 2007 to 2017.

TABLE 16. ESTIMATED FILM AND TELEVISION PRODUCTION: ECONOMIC IMPACT 2007 TO 2017
[In millions of dollars, except for employment which is in number of jobs]

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total production expenditures	225.0	168.2	173.2	384.1	184.9	245.6	228.5	221.5	243.5	244.6	319.9
Expenditures qualified for tax credit	128.2	81.2	86.2	292.1	127.7	189.1	163.7	162.3	199.6	199.0	268.6
Expenditures not qualified for tax credit	96.8	87.0	87.0	92.0	57.2	56.5	64.8	59.2	43.9	45.6	51.3
Economic Impact											
Output	390.1	291.6	300.3	665.9	320.6	425.8	396.2	384.0	422.2	423.2	553.4
Earnings	90.2	67.4	69.4	153.9	74.1	98.4	91.6	88.8	97.6	97.8	128.0
State taxes	24.7	18.4	19.0	42.1	20.3	26.9	25.1	24.3	26.7	26.4	34.5
Employment	3,188	2,308	2,301	4,942	2,304	2,963	2,670	2,506	2,668	2,593	3,295

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



KONG SKULL ISLAND, filmed in Hawai'i, continues the legacy of exciting high-profile monster movies filmed in the Hawaiian Islands. Photo courtesy of Warner Bros.

Music

Hawaii has always had a unique music arts culture based on Hawaiian heritage, but 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 hosted the first Creative Lab Music Immersive, June 2017.

The dynamics changed with the digital age, which has made production of high quality recordings 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 1,433 employed and self-employed workers in Hawaii's music industry in 2017, most of them performers. As Table 17 shows, employment in Hawaii's music industry increased 2.1% per year on average over the 2007 to 2017 period. By contrast, jobs in this industry group nationally grew by 2.3%.

Singer Songwriters Evan Khay and Faith Rivera record an original song at the Creative Lab Hawaii Music Immersive (CLMI). A song that Faith co-wrote during the CLMI was licensed and placed in the online trailer for the Fox television series "Empire".

TABLE 17. EMPLOYMENT IN MUSIC INDUSTRY GROUP

Group & Industry	Hawaii Jobs		Avg. Job Growth Rate, 2007-2017		Annual Earnings 2017		Performance Metrics		
	2007	2017	Hawaii	U.S.	Hawaii	U.S.	Competitive Share 2007-2017	Location Quotient (LQ), 2017	Change in LQ, 2007-2017
Music	1,161	1,433	2.1%	2.3%	34,179	40,514	-0.2%	1.43	0.01
Musical Instrument and Supplies Stores	159	177	1.0%	0.3%	32,889	32,502	0.8%	0.80	0.08
Record Production	45	36	-2.1%	0.6%	34,869	87,375	-2.7%	0.74	-0.21
Music Publishers	8	24	11.2%	1.1%	18,349	67,184	10.1%	0.59	0.37
Sound Recording Studios	62	35	-5.6%	0.1%	21,168	30,436	-5.7%	0.39	-0.30
Other Sound Recording Industries	17	7	-8.3%	-0.1%	24,648	48,920	-8.2%	0.26	-0.33
Musical Groups and Artists	870	1,154	2.9%	4.2%	35,134	38,860	-1.4%	2.02	-0.22

Source: DBEDT compilation based on EMSI data.

The centerpiece of this industry group — musical groups and artists — increased by about 2.9%. Musical instrument and supplies stores and music publishers showed some increase, although the small size of these activities means that changes in these industries are difficult to interpret. Sound recording studios and record production, and other sound recording industries 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 $34,179 in 2017. Earnings for the same industry groups nationally were higher than in Hawaii, and generally below the average for the economy as a whole.

Opening day at the 2018 Creative Lab Music Immersive. This five-day intensive program, which takes place on the Big Island of Hawaii provides participants with the opportunity to co-write and produce music for specific film or TV projects with a team of professional mentors.

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 64 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 878 in 2017, up about 3.3% annually from 2007. Nationally, this group of industries showed a 5.0% annual growth in jobs for the period. Average annual earnings amounted to only $10,815 for Hawaii in 2017 and $10,684 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 state organizations providing arts education through a collaboration with Department of Education, the Hawaii Arts Alliance and University of Hawaii as part of the ARTS First Program.

Turnaround Arts Hawaiʻi students performing at the 2018 John F. Kennedy Center Talent Show in Washington, D.C. with Turnaround Artist Paula Fuga. Turnaround Artists have worked with Kalihi Kai Elementary School, Kamaile Academy, and Waianae Elementary School. Photo courtesy of the Hawaiʻi Arts Alliance.

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 and storytelling 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.

Two industry groups ranked as base-growth activities in the creative sector. These growth industries included cultural activities and film, TV, video production/distribution.

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 design services, marketing, photography & related, music, business consulting, art education, and computer and digital media products.

Finally, five industry groups lost jobs over the 2007-2017 period and consequently fell into the declining quadrant for this time period. These were performing and creative arts, engineering and research & development, architecture, radio and TV broadcasting, 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 activities 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.

Creative Industries, Hawaii Film Office and Creative Lab Hawaii are key facets of the State's Creative and Innovation Industry Development, 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: 2007	2017	Avg. Job Growth Rate, 07-17	Annual Earnings, 2017	Performance Metrics: Compet. Share 07-17	Location Quotient (LQ)	Change in LQ, 07-17	US Comparable: Avg. Job Growth Rate, 07-17	Annual Earnings, 2017
	TOTAL HAWAII CREATIVE INDUSTRY	49,241	53,993	0.9%	48,806	-0.01	0.81	-0.06	1.9%	76,145
	Architecture	2,293	2,024	-1.2%	77,548	0.00	1.26	-0.02	-0.8%	73,199
541310	Architectural Services	1,870	1,592	-1.6%	82,594	-0.01	1.33	-0.06	-0.9%	82,280
541320	Landscape Architectural Services	423	432	0.2%	58,947	0.01	1.05	0.10	-0.5%	46,801
	Art Education	635	878	3.3%	10,815	-0.02	0.63	-0.09	5.0%	10,684
611610	Fine Arts Schools	635	878	3.3%	10,815	-0.02	0.63	-0.09	5.0%	10,684
	Business Consulting	4,343	5,353	2.1%	60,640	-0.01	0.56	-0.01	2.6%	79,730
541611	Administrative Management and General Managemer	2,070	2,784	3.0%	61,602	-0.01	0.54	-0.03	3.9%	84,583
541612	Human Resources Consulting Services	397	325	-2.0%	54,562	-0.01	0.54	-0.05	-0.8%	80,717
541614	Process, Physical Distribution, and Logistics Consultin	260	300	1.4%	45,709	-0.01	0.37	-0.03	2.4%	71,121
541618	Other Management Consulting Services	124	155	2.3%	58,801	0.01	0.20	0.01	1.8%	79,205
541620	Environmental Consulting Services	773	811	0.5%	62,643	0.00	1.22	0.01	0.6%	67,273
541690	Other Scientific and Technical Consulting Services	720	979	3.1%	63,123	0.01	0.59	0.08	1.8%	73,778
	Computer and Digital Media Products	4,770	5,243	1.0%	87,459	-0.03	0.41	-0.11	3.6%	121,594
511210	Software Publishers	142	306	8.0%	65,404	0.04	0.15	0.05	4.1%	163,405
541511	Custom Computer Programming Services	2,068	1,833	-1.2%	87,070	-0.04	0.35	-0.18	3.2%	115,594
541512	Computer Systems Design Services	2,560	3,105	1.9%	89,862	-0.02	0.57	-0.09	3.8%	111,708
	Cultural Activities	1,690	3,491	7.5%	50,943	0.04	3.45	1.23	3.1%	54,793
712110	Museums	751	1,997	10.3%	31,061	0.08	4.06	2.11	2.8%	43,667
712120	Historical Sites	222	347	4.6%	41,050	0.03	4.39	1.26	1.3%	33,396
712190	Nature Parks and Other Similar Institutions	15	45	11.4%	41,608	0.07	0.80	0.40	4.1%	35,135
813211	Grantmaking Foundations	702	1,102	4.6%	90,475	0.01	2.86	0.26	3.9%	76,237
	Design Services	2,094	2,186	0.4%	29,168	0.00	0.91	-0.01	0.9%	39,398
541340	Drafting Services	443	326	-3.0%	21,562	-0.01	1.86	-0.09	-2.3%	36,339
541410	Interior Design Services	615	682	1.0%	33,350	0.00	0.83	-0.01	1.4%	34,491
541420	Industrial Design Services	39	2	-25.6%	122,742	-0.27	0.01	-0.28	1.8%	71,194
541430	Graphic Design Services	947	1,077	1.3%	29,007	0.01	1.02	0.09	0.6%	37,618
541490	Other Specialized Design Services	49	99	7.2%	25,264	0.04	0.52	0.18	2.9%	47,141
	Engineering and Research & Development	5,542	5,291	-0.5%	99,535	-0.01	0.71	-0.04	0.4%	108,750
541330	Engineering Services	3,752	4,055	0.8%	103,750	0.00	0.80	0.05	0.4%	102,292
541715	Research and Development in the Physical, Engineerir	1,301	979	-2.8%	94,771	-0.03	0.48	-0.18	0.6%	129,605
541720	Research and Development in the Social Sciences and	489	257	-6.2%	51,150	-0.06	0.77	-0.57	-0.6%	79,058
	Film, TV, Video Production/Distrib	1,576	2,214	3.5%	57,515	0.03	1.16	0.28	0.9%	100,954
334613	Blank Magnetic and Optical Recording Media Manufac	0	0		0	0.04	0.00	0.00	-3.6%	165,456
512110	Motion Picture and Video Production	1,453	2,081	3.7%	58,512	0.01	1.44	0.18	2.5%	95,248
512120	Motion Picture and Video Distribution	17	6	-10.2%	108,637	-0.10	0.14	-0.25	0.0%	154,304
512191	Teleproduction and Other Postproduction Services	72	79	1.0%	39,611	-0.01	0.61	-0.06	2.2%	81,131
515210	Cable and Other Subscription Programming	34	47	3.4%	37,662	0.08	0.17	0.10	-4.7%	127,248
	Marketing, Photography & Related	10,622	12,974	2.0%	28,020	0.00	0.93	0.02	2.1%	48,600
541613	Marketing Consulting Services	905	1,505	5.2%	39,167	0.00	0.66	0.04	4.9%	64,096
541810	Advertising Agencies	808	508	-4.5%	56,606	-0.05	0.37	-0.26	0.9%	93,955
541820	Public Relations Agencies	418	313	-2.9%	62,598	-0.05	0.59	-0.38	2.4%	82,386
541830	Media Buying Agencies	29	15	-6.5%	36,743	-0.11	0.14	-0.26	4.4%	109,429
541840	Media Representatives	131	116	-1.3%	52,751	0.01	0.72	0.12	-2.8%	98,245
541850	Outdoor Advertising	129	462	13.6%	32,978	0.13	1.81	1.28	0.7%	61,903
541860	Direct Mail Advertising	68	47	-3.5%	38,129	0.00	0.17	0.01	-3.7%	60,712
541870	Advertising Material Distribution Services	46	18	-9.0%	52,744	-0.07	0.22	-0.21	-2.4%	50,289
541890	Other Services Related to Advertising	469	684	3.8%	23,777	0.01	1.00	0.16	2.4%	39,028
541910	Marketing Research and Public Opinion Polling	473	343	-3.2%	31,088	-0.02	0.50	-0.13	-0.7%	67,398
541921	Photography Studios, Portrait	1,595	2,044	2.5%	24,337	0.01	1.94	0.20	1.7%	20,550
541922	Commercial Photography	243	474	6.9%	21,794	0.01	1.23	0.15	5.8%	27,765
541990	All Other Professional, Scientific, and Technical Service	5,307	6,446	2.0%	22,438	0.00	1.07	-0.01	2.3%	31,241
	Music	1,161	1,433	2.1%	34,179	0.00	1.43	0.01	2.3%	40,514
451140	Musical Instrument and Supplies Stores	159	177	1.0%	32,889	0.01	0.80	0.08	0.3%	32,502
512250	Record Production and Distribution	45	36	-2.1%	34,869	-0.03	0.74	-0.21	0.6%	87,375
512230	Music Publishers	8	24	11.2%	18,349	0.10	0.59	0.37	1.1%	67,184
512240	Sound Recording Studios	62	35	-5.6%	21,168	-0.06	0.39	-0.30	0.1%	30,436
512290	Other Sound Recording Industries	17	7	-8.3%	24,648	-0.08	0.26	-0.33	-0.1%	48,920
711130	Musical Groups and Artists	870	1,154	2.9%	35,134	-0.01	2.02	-0.22	4.2%	38,860
	Performing and Creative Arts	9,921	9,853	-0.1%	20,719	-0.03	1.10	-0.30	2.6%	26,404
453920	Art Dealers	974	849	-1.4%	39,342	-0.01	2.55	-0.32	0.1%	33,817
711110	Theater Companies and Dinner Theaters	521	375	-3.2%	32,421	-0.06	0.71	-0.55	2.7%	29,819
711120	Dance Companies	268	350	2.7%	21,567	-0.02	3.11	-0.65	4.9%	29,968
711190	Other Performing Arts Companies	14	29	7.7%	8,463	0.05	0.44	0.18	2.3%	34,839
711310	Promoters of Performing Arts, Sports, and Similar Even	306	320	0.4%	20,056	-0.04	0.50	-0.24	4.8%	36,912
711320	Promoters of Performing Arts, Sports, and Similar Even	395	510	2.6%	24,663	-0.02	1.13	-0.25	5.0%	34,554
711410	Agents and Managers for Artists, Athletes, Entertainer	399	358	-1.1%	12,592	-0.03	0.91	-0.30	2.0%	49,649
711510	Independent Artists, Writers, and Performers	7,042	7,062	0.0%	18,025	-0.02	1.10	-0.27	2.5%	22,531
	Publishing & Information	3,202	1,951	-4.8%	52,133	-0.03	0.54	-0.20	-1.5%	118,764
511110	Newspaper Publishers	1,781	908	-6.5%	58,271	0.00	0.98	0.01	-6.4%	52,733
511120	Periodical Publishers	637	544	-1.6%	48,188	0.02	0.90	0.19	-3.6%	84,325
511130	Book Publishers	126	109	-1.4%	48,885	0.01	0.29	0.03	-2.4%	81,016
511140	Directory and Mailing List Publishers	159	68	-8.1%	78,951	0.00	0.60	-0.01	-7.7%	78,176
511191	Greeting Card Publishers	17	15	-1.7%	49,734	0.06	0.59	0.30	-8.0%	59,838
511199	All Other Publishers	146	17	-19.5%	64,539	-0.15	0.23	-1.05	-4.3%	56,863
519110	News Syndicates	69	14	-14.6%	34,697	-0.12	0.21	-0.57	-2.6%	117,963
519130	Internet Publishing and Broadcasting and Web Search	203	246	1.9%	36,278	-0.08	0.19	-0.22	10.4%	201,052
519190	All Other Information Services	64	30	-7.3%	21,183	-0.12	0.21	-0.45	4.4%	123,539
	Radio and TV Broadcasting	1,391	1,102	-2.3%	64,986	-0.02	0.89	-0.13	-0.7%	86,348
515111	Radio Networks	180	97	-5.9%	82,815	-0.04	0.79	-0.42	-1.6%	67,151
515112	Radio Stations	563	499	-1.2%	42,588	0.01	1.18	0.16	-2.4%	57,727
515120	Television Broadcasting	649	506	-2.5%	83,627	-0.03	0.74	-0.25	0.7%	107,351

Source: DBEDT compilation based on EMSI data.