STATE OF THE SECTOR

DIGITAL MEDIA INDUSTRY AND RELATED OCCUPATIONS
2017

![Greater New Orleans Inc. Regional Economic Development logo] **GREATER NEW ORLEANS** INC REGIONAL ECONOMIC DEVELOPMENT

JPMorgan Chase & Co.

EXECUTIVE SUMMARY

In a little over a decade, Greater New Orleans has risen from "totally analog" status, to being recognized as the fastest growing digital region in America. In 2017 New Orleans was ranked #1 for technology job growth in America, and then in November, DXC technology put an exclamation point on this ranking by announcing that it would be locating a 2,000 job "Digital Transformation Center" in New Orleans – the single biggest economic development job announcement in Louisiana history.

Without question, Greater New Orleans is now a fast emerging technology hub. But this rapid ascension, fueled not only by new companies, but also by growth of world-class indigenous firms, is creating unprecedented demand for technology workers. It is imperative that we understand this demand at a granular level, so that our educational institutions can provide the most relevant instruction, our residents can equip themselves with the most in-demand skills, and our companies can then grow, fueled by local talent.

Thus, this report is the fifth in a series of State of the Sector workforce reports illuminating the scope and context of labor demand from our region's key industries, this time Digital Media. I would like to give a special thanks to JPMorgan Chase & Co. for providing the support that made it possible to do this work.

Michael Hecht
President and CEO

IMPACT OF DXC TECHNOLOGY

Over the next decade, one of the driving factors of growth in the digital media industry in Greater New Orleans will be the establishment of the DXC Technology "Digital Transformation Center." Formed through a merger of CSC and Hewlett Packard Enterprise Services in April 2017, DXC Technology is the world's leading independent, end-to-end IT services company. DXC will hire 300 IT and business enterprise professionals during 2018, with plans to create 2,000 jobs by 2025. These jobs will include Systems Administrators, IT Analysts, Computer Programmers, and more. The announcement by DXC Technology represents the single largest economic development jobs announcement in the history of Louisiana, and establishes the Greater New Orleans region as one of the fastest growing digital media hubs in the country.

In order to meet the growing demand for digital media-related jobs that will be brought to the region by DXC, the State of Louisiana will invest $25M in higher education initiatives to increase the number of STEM-related programs and degrees. Built off the success of prior private-sector workforce collaborations, the partnership between DXC and Louisiana universities will be the state's largest higher-education investment in a workforce partnership.

Coupled with an already bustling digital media industry, DXC's investment in New Orleans will represent high-wage, high-growth opportunities for our region's workforce and will help to ensure that our economy remains vibrant for years to come.

EXECUTIVE SUMMARY

HIGH-GROWTH OPPORTUNITIES → Since 2006, the digital media related industries and occupations have grown by nearly 22% in the Greater New Orleans region, outpacing the national growth rate.

WELL-PAYING, HIGH-SKILL JOBS → 66% of jobs are high-skill, with an average hourly wage for high-skill jobs being $34.58, which represents an important opportunity for wealth creation.

CAREER PATHWAYS → Multiple career pathways catering to a wide-range of skills are available throughout the industry.

PATH FORWARD → GNO, Inc. will work to cultivate and increase the number and scalability of training providers in the region to ensure that the providers are able to keep up with the demand for a skilled and trained workforce.

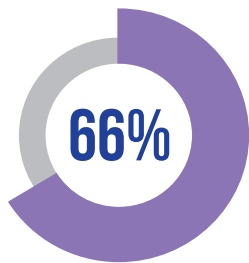**Source:** Emsi 2017.3, GNO, Inc. research

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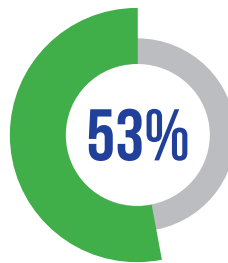
DIGITAL MEDIA AT A GLANCE

2016 JOBS: 16,459 IN THE GREATER NEW ORLEANS REGION
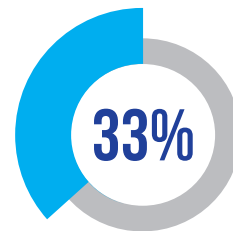
26%*
2016-2026 NEW JOB GROWTH

$31.06/HR
AVERAGE WAGES

66%
OF DIGITAL MEDIA RELATED INDUSTRY AND OCCUPATION JOBS REQUIRE HIGH-SKILLS

53%
OF DIGITAL MEDIA RELATED INDUSTRY AND OCCUPATION JOBS ARE OUTSIDE DIGITAL MEDIA RELATED INDUSTRIES

33%
OF DIGITAL MEDIA RELATED OCCUPATIONAL JOBS ARE HELD BY THOSE UNDER 34 YEARS OLD

Note: The traditional jobs growth projections provided by Emsi are based on static models which analyze historical trends only. These projections do not take into account technological advances, or expected/anticipated structural shifts in the industry, including recent job announcements. In addition to the Emsi static growth projections the growth figure above takes into account the expected 2,000 jobs that DXC Technology will create over the next decade. For more information see page 19.

Source: Emsi 2017.3, GNO, Inc. research

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BREAKDOWN OF THE DIGITAL MEDIA INDUSTRY

Digital media related jobs are not confined to a limited set of industries as is seen in other more traditional industries. Capturing the total jobs number in digital media related industries and occupations requires an analysis across every industry in the region.

As such, the digital media industry can be placed into three "buckets" that when combined together form the digital media related industries and occupations.

The first bucket is digital media related jobs in digital media related industries, for example, a web developer at a software development company.

The second bucket are digital media related jobs in non-digital media related industries, for example a computer user support specialist at a hospital. Together, these two buckets form what are referred to in the report as digital media related occupations across all industries.

The third and final bucket, are the non-digital media related jobs in digital media related industries, for example an accountant at a videogame studio. The third bucket, along with the first bucket are what this report refers to as the digital media specific industry.

PERCENT OF DIGITAL MEDIA JOBS IN DIGITAL MEDIA INDUSTRY: **19%**

PERCENT OF JOBS IN NON-DIGITAL MEDIA INDUSTRIES: **53%**

PERCENT OF NON-DIGITAL MEDIA RELATED JOBS IN THE DIGITAL INDUSTRY: **29%**

Source: Emsi 2017.3, GNO, Inc. research

DIGITAL MEDIA SPECIFIC INDUSTRY GROWTH

INDUSTRY	2016 Jobs	2026 Jobs	2016 - 2026 % Change
Computer Facilities Management Services	345	2,473	617%
Other Specialized Design Services	152	212	39%
Teleproduction and Other Postproduction Services	70	96	37%
Computer Systems Design Services	1,478	1,967	33%
Sound Recording Studios	57	74	30%
Internet Publishing and Broadcasting and Web Search Portals	235	304	29%
Motion Picture and Video Production	2,452	3,085	26%
Graphic Design Services	375	451	20%
Software Publishers	178	209	17%
Industrial Design Services	25	29	16%
Other Computer Related Services	648	748	15%
Custom Computer Programming Services	1,766	2,016	14%
Other Sound Recording Industries	22	25	14%
Data Processing, Hosting, and Related Services	475	410	(14%)

Source: Emsi 2017.3, GNO, Inc. research

Over the next decade, digital media related industries will grow by 46%, which is 40% higher than the regional growth rate across all industries.

Regionally, the projected fastest sub-industries are computer facilities management services specialized design services, teleproduction and other postproduction services, and computer systems design services. In fact, all but one sub-industry are projected to have double digit percentage growth over the next decade.

TOP NON-DIGITAL MEDIA RELATED INDUSTRIES EMPLOYING DIGITAL MEDIA RELATED JOBS

Industry	Digital Media Jobs in Industry (2016)	% of Digital Media Jobs as a % of Total Given Industry (2016)
Corporate, Subsidiary, and Regional Managing Offices	679	8.7%
Federal Government Civilian, Excluding Postal Service	500	4.9%
Colleges, Universities, and Professional Schools	425	3.6%
Engineering Services	280	5.1%
Colleges, Universities, and Professional Schools (State Government)	275	2.9%
Temporary Help Services	260	2.5%
Local Government, Excluding Education and Hospitals	248	1.1%
Wired Telecommunications Carriers	199	11.3%
General Medical and Surgical Hospitals	184	0.9%

Source: Emsi 2017.3, GNO, Inc. research

Today, digital media occupations are in virtually every industry. In fact, 53% of all digital media jobs are in a non-digital media related industry. Furthermore, over 14% of all industries in the region are comprised of 10 or more digital media related jobs, and over 60% of all industries in the region employ at least one digital media related job.

DISTRIBUTION OF SKILLS

Although the typical entry level of education associated with the skill distribution in the digital media related industries and occupations is higher than the skill distribution across all occupations in the region, employers have indicated a willingness to hire employees who have the right skill set and experience regardless of their educational background.

What are middle- and high-skill jobs?
We define middle-skills jobs as those that generally require some education or training beyond a high school diploma but less than a bachelor's degree. These postsecondary education and training requirements can include an associate's degree, industry recognized credentials, on-the-job training, previous work experiences, or generally "some college" but less than a bachelor's degree. High-skill jobs require a bachelor's degree or higher. Basic jobs require no formal educational requirements. Although the educational barrier to entry is low, this is not to say these occupations do not require skills and certifications to enter the workforce.

2016 SKILL DISTRIBUTION

66%

32%

2%
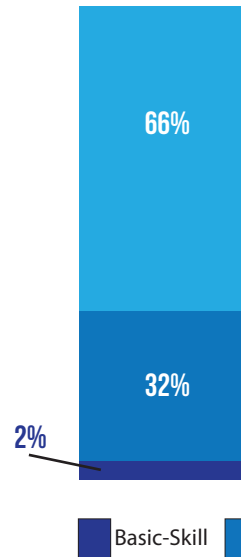
HOW DOES THIS COMPARE TO THE GNO ECONOMY?

22%

46%

32%
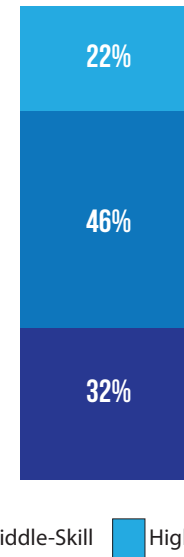
- Basic-Skill
- Middle-Skill
- High-Skill

Source: Emsi 2017.3, GNO, Inc. research

TOP MIDDLE-SKILL JOBS

Description	Employed in Industry Group (2016)	Change (2016-2026)	% of Total Jobs in Industry Group (2016)	Median Hourly Earnings	Typical Entry Level Education
Computer User Support Specialists*	1,555	192	9.4%	$20.54	Some college, no degree
Actors	625	88	3.8%	$18.77	Some college, no degree
Web Developers*	357	77	2.2%	$23.19	Associate's degree
Sales Representatives, Services, All Other	256	53	1.6%	$20.21	High school diploma or equivalent
Office Clerks, General	246	33	1.5%	$11.51	High school diploma or equivalent
Media and Communication Workers, All Other*	126	30	0.8%	$20.35	High school diploma or equivalent
Audio and Video Equipment Technicians*	78	30	0.5%	$22.96	Postsecondary nondegree award
Computer Network Support Specialists*	547	27	3.3%	$23.84	Associate's degree
Customer Service Representatives	145	24	0.8%	$14.13	High school diploma or equivalent
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	110	18	0.6%	$15.45	High school diploma or equivalent

Indicate a digital media related occupation

Source: Emsi 2017.3, GNO, Inc. research

NOTE: The job projections for top middle-skill jobs do not include jobs related to DXC Technology

47% OF ALL MIDDLE-SKILL JOBS ARE IN NON-DIGITAL MEDIA RELATED OCCUPATIONS

TOP HIGH-SKILL JOBS

| Description	Employed in Industry Group (2016)	Change (2016-2026)	% of Total Jobs in Industry Group (2016)	Median Hourly Earnings	Typical Entry Level Education
Software Developers, Applications*	820	206	5%	$37.40	Bachelor's degree
Computer Systems Analysts*	752	193	4.5%	$29.79	Bachelor's degree
Producers and Directors*	467	149	2.8%	$24.08	Bachelor's degree
Computer and Information Systems Managers*	739	121	4.5%	$48.90	Bachelor's degree
Graphic Designers*	1,021	109	6.2%	$19.79	Bachelor's degree
Software Developers, Systems Software*	500	98	3.3%	$32.61	Bachelor's degree
Film and Video Editors*	220	81	1.3%	$25.46	Bachelor's degree
Network and Computer Systems Administrators*	1,308	68	7.9%	$28.80	Bachelor's degree
General and Operations Managers	272	49	1.6%	$43.02	Bachelor's degree
Multimedia Artists and Animators*	230	45	1.4%	$24.56	Bachelor's degree

Indicate a digital media related occupation

NOTE: The job projections for top middle-skill jobs do not include jobs related to DXC Technology

83% OF HIGH-SKILL JOBS ARE IN DIGITAL MEDIA RELATED OCCUPATIONS

DEMOGRAPHICS

Demographically, digital media related jobs as a whole are more diverse in Greater New Orleans than they are nationally. New Orleans has a higher percentage of women who are employed in the industry, a higher percentage of African American workers, and a higher percentage of workers under 34.

GENDER

30% FEMALE

70% MALE

OCCUPATIONAL AGE

Age	Percentage
14-24	6%
25-34	27%
35-44	28%
45-54	23%
56-64	14%
65+	3%
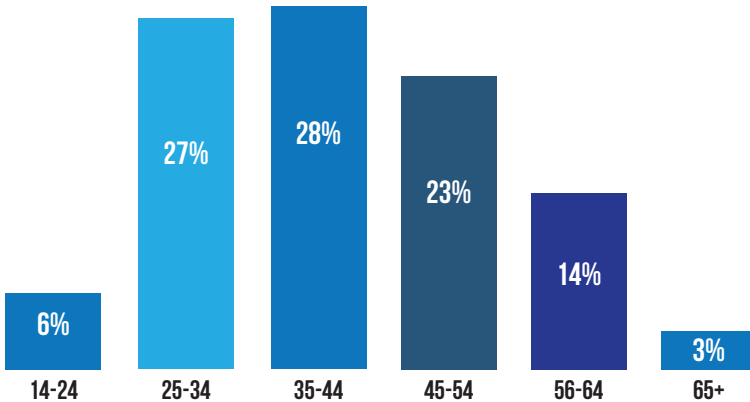
OCCUPATIONAL RACE

WHITE **73%**	AFRICAN AMERICAN **18%**
ASIAN **5%**	HISPANIC OR LATINO **4%**
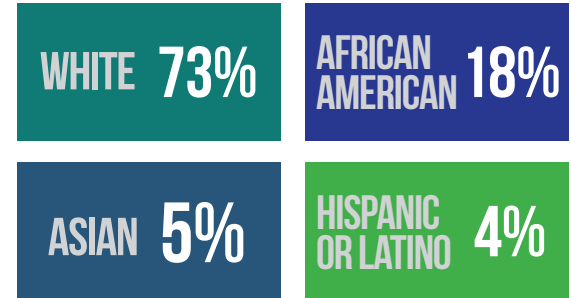
Source: Emsi 2017.3, GNO, Inc. research
Note: Demographic Statistics are only for digital media related occupations.

REGIONAL TRAINING INSTITUTIONS

In 2016, 865 students from universities and colleges across the region completed degrees in a field related to a digital media occupation. Of these completions, over 70% were bachelor's or master's degrees. Furthermore, 27% of completions were an award less than a bachelor's degree. Reflecting growth in the industry, educational completion rates have increased by 77% since 2010.

In addition to the traditional two- and four-year colleges and universities in the region, coding schools play an important role in preparing the workforce to meet the needs of the digital media industry.

Tech Talent South
Private school

Operation Spark
Non-profit organization

IN-DEMAND SKILLS

TECHNICAL SKILLS

Based on feedback from digital media companies throughout the region, there are many software languages that are being utilized throughout the industry. However, regional employers have indicated that they place a higher priority on certain languages when compared to others.

JavaScript – JavaScript is an object-based programming language used to implement interactive objects on web-pages. These objects can include videos, 3D graphics, and interactive displays. Understanding this language is the most in-demand skill for jobs working in website development.

Structured Query Language (SQL) – SQL is a computer language used in the management of data in a relational database including the adding, updating, and deleting rows of database tables. SQL is useful for any application that interfaces with data.

PHP: Hypertext Preprocessor (PHP) – PHP is a web scripting language that allows for PHP code to be embedded into HTML in order to create interactive web-pages.

Java – Java is a programming language that allows supplemental programs to be downloaded and used through an internet browser utilizing a function that would otherwise be unavailable. Java is most commonly used for mobile applications, web development, database connectivity, networking, and image processing.

C sharp (C#) – C# is an object-oriented programming language developed by Microsoft to support the flow of information services across web-based platforms. Knowledge of C# is useful in the development of video games, web applications, service oriented applications, and enterprise software.

SOFT SKILLS

While software languages are vital to advance up the career ladder in many digital media occupations, employers also indicated that that non-technical soft-skills are also vital to a successful career in the industry. These skills include time management, customer service, project management, and writing and communication.

CAREER LADDER — SOFTWARE DEVELOPMENT

Unlike more traditional industries, which see workers progress through differing roles through promotions and advancement, the career ladder for many job types in the digital media industry are less straightforward. As a result, workers may advance in the digital media industry – increasing their title, roles, responsibilities, and wages – but the occupational (SOC) code (a federal job classification system) will often times remain the same regardless of their advancement.

SOFTWARE ENGINEER

A software engineer is responsible for developing software by designing, installing, maintaining, and evaluating what is necessary for computers and other similar devices to function. The roles, responsibilities, and skills necessary vary depending on the industry and experience of the worker. Additionally, senior software engineers can transition into a more client-facing management position instead of progressing to a lead software engineer. These position titles can include sales engineer, engagement lead, and chief technical 0fficer.

JOBS: 1,320
2016-2026 NEW JOBS: 304
TYPICAL ENTRY LEVEL EDUCATION: BACHELOR'S DEGREE

Salary Source: Glassdoor

NOTE: The job projections for top middle-skill jobs do not include jobs related to DXC Technology

Average salaries are based on employee salary reports for the location and job title.

JUNIOR SOFTWARE ENGINEER
Average Salary: $65,963
SOFTWARE ENGINEER
Average Salary: $84,241

SENIOR SOFTWARE ENGINEER
Average Salary: $97,752
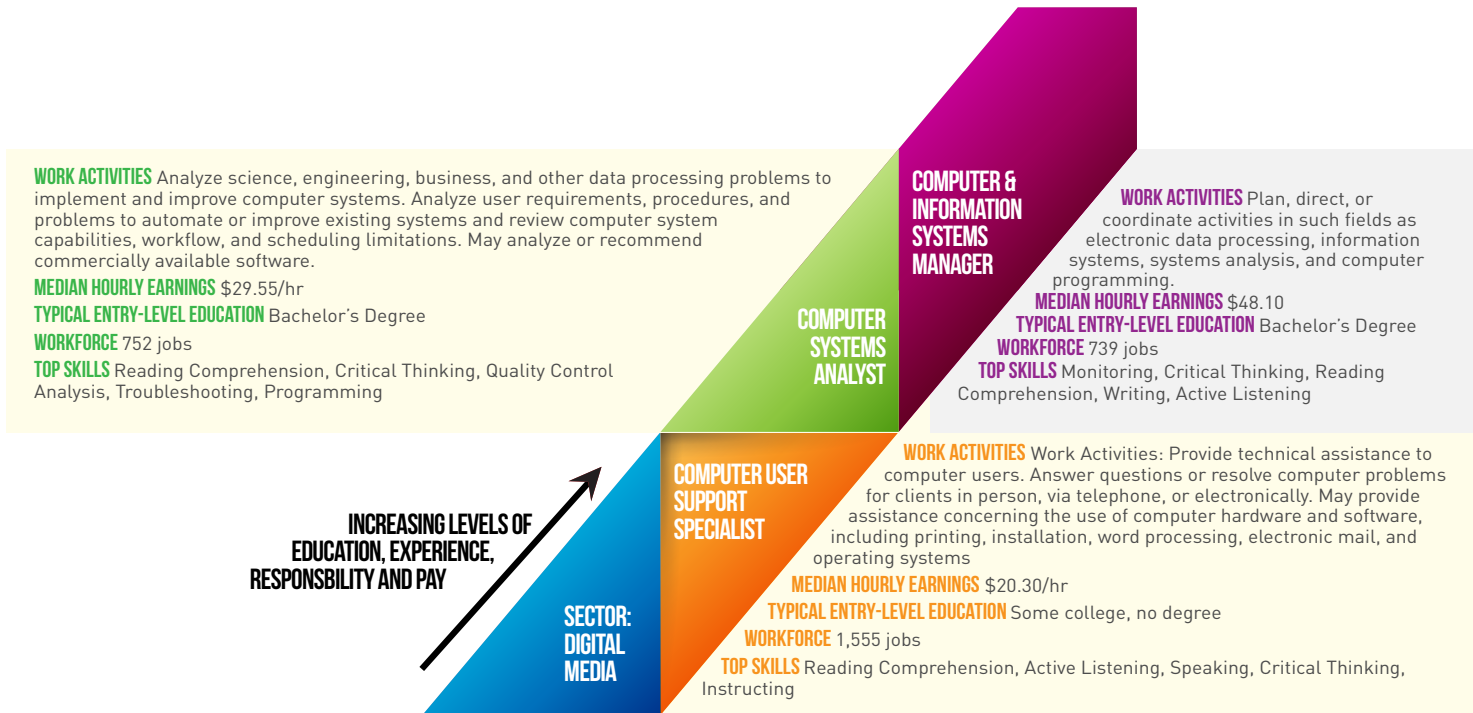### LEAD SOFTWARE ENGINEER
Average Salary: $102,664

CAREER LADDER — INFORMATION TECHNOLOGY

WORK ACTIVITIES Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.

MEDIAN HOURLY EARNINGS $29.55/hr

TYPICAL ENTRY-LEVEL EDUCATION Bachelor's Degree

WORKFORCE 752 jobs

TOP SKILLS Reading Comprehension, Critical Thinking, Quality Control Analysis, Troubleshooting, Programming

COMPUTER & INFORMATION SYSTEMS MANAGER

WORK ACTIVITIES Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.

MEDIAN HOURLY EARNINGS $48.10

TYPICAL ENTRY-LEVEL EDUCATION Bachelor's Degree

WORKFORCE 739 jobs

TOP SKILLS Monitoring, Critical Thinking, Reading Comprehension, Writing, Active Listening

COMPUTER SYSTEMS ANALYST

COMPUTER USER SUPPORT SPECIALIST

WORK ACTIVITIES Work Activities: Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, via telephone, or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems

MEDIAN HOURLY EARNINGS $20.30/hr

TYPICAL ENTRY-LEVEL EDUCATION Some college, no degree

WORKFORCE 1,555 jobs

TOP SKILLS Reading Comprehension, Active Listening, Speaking, Critical Thinking, Instructing

INCREASING LEVELS OF EDUCATION, EXPERIENCE, RESPONSBILITY AND PAY

SECTOR: DIGITAL MEDIA

INDUSTRY SPOTLIGHT - VIDEO GAME DEVELOPMENT

The digital media industry in the region has exceeded the national growth rate, due in no small part to the rise in video game development that is taking place in the region. Today, the region is home to prominent development studios – including Gameloft, High Voltage Software, inXile Entertainment, and TurboSquid. Together, these four companies employ over 150 people in the region.

Furthermore, in 2015, for the first time ever, New Orleans hosted the Major League Gaming World Finals, a 3-day video game event hosted by the longest running eSports league in the world.

PATH FORWARD

BUSINESS ATTRACTION AND RETENTION

GNO, Inc.'s core activity is to identify and pursue opportunities that generate job growth and wealth creation in the digital media industry. In order to successfully attract and retain businesses, GNO, Inc. works to ensure that business conditions are prime for digital media development.

This includes pursuing and promoting generous digital media tax incentives including the Technology Commercialization Credit and Jobs Program, the Digital Interactive Media and Software Development Incentive, and the Qualified Entertainment Company Incentive.

Furthermore, promoting the region as a digital media hub is also key to driving growth in the industry. In 2017, GNO, Inc. launched Game Fête, a day-long event that attracts gaming professionals from across the country to showcase the region's growing industry through participation in industry-focused panels and an atmosphere for networking.

WORKFORCE DEVELOPMENT

Connecting specific program and training needs of employers with colleges and universities capable of providing customized solutions for workforce needs is vital in growing the digital media industry. Building off of past successes facilitating partnerships with the University of New Orleans and GE Digital – via the Software Engineering Apprenticeship Program (SWEAP) – GNO, Inc. is dedicated to being a go-to resource for all industry.

STREAMLINED INDUSTRY-RECOGNIZED CREDENTIALS

As a leading education and workforce intermediary in the New Orleans landscape, YouthForce NOLA (YFN) is actively identifying, advocating for, and building out industry-based credentials and curriculum in New Orleans high schools.

With Louisiana's Jumpstart Career Pathways now in place in public schools across the state, the next generation of digital media talent has an opportunity to be exposed to and trained in cutting edge technology skills.

Locally, YFN is leading the charge in ensuring these pathways are connected to the needs of the digital media industry. GNO, Inc. also works closely with career and technical education leaders throughout the region to identify best solutions.

DIGITAL MEDIA ALLIANCE

Cultivating connections in the digital media industry is essential for growth. As such, GNO, Inc. has spearheaded the development of the Digital Media Alliance (DMA). The DMA is comprised of local technology leaders who support efforts to build the digital media sector in Greater New Orleans. Meetings include discussions on workforce, policy, and additional growth issues that the industry is facing in the region.

METHODOLOGY & APPENDIX

METHODOLOGY

In order to capture the full breadth of jobs within the digital media industry, we created a cross-walk between industry-related NAICS codes and occupational SOC codes. The criteria for selecting relevant NAICS codes was if an employer's main output is related to a digital media related product, and the criteria for relevant SOC codes was if the occupation heavily relied on, or produced digital media related products.

In order to arrive at the total job numbers, we utilized the relevant NAICS codes to obtain the occupations employed in said digital media related industries. We then utilized all of the digital media related SOC codes and added them to the occupations employed by industry, eliminating the previous digital media related SOC codes to prevent double counting.

JOBS

The base for jobs projections in this report is derived using Emsi's industry projections. These projections are built utilizing historical data points from the previous 5, 10, and 15 years, and the projected growth or decline is tempered in order to prevent extreme change. National Industry-Occupation Employment Matrix (NIOEM) and individual state projections are then incorporated and adjusted accordingly. It is important to note that these projections are based on historical trends.

These projections do not take into account unexpected events such as technological advances, or any expected/anticipated structural shits, including planned job increases or relocations. In addition to the Emsi static growth projections, the growth figures in this report also take into account the expected 2,000 jobs that DXC Technology will create over the next decade.

We define jobs as any full- or part-time employee considered one of the following:
Non-QCEW: Jobs that fall under employer-employee relationship but are not covered by QCEW

QCEW: Any employee who is covered by state unemployment insurance (UI) laws and federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program.

Self-Employed: Jobs for persons where self-employment accounts for the worker's primary source of income.

Note: Due to data limitations any occupations that employ less than 10 were not included in the overall job figures.

The **Greater New Orleans Region** is comprised of Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Tammany, Tangipahoa, and Washington parishes. All information included in the State of the Sector takes into account this region unless otherwise noted.

Typical Entry Level of Education, work experience in a related occupation, and typical on-the-job training are derived from the Bureau of Labor Statistics (BLS). The BLS determines the typical entry level of education based on both quantitative and qualitative analysis. The source of quantitative data are derived from educational attainment data from the Census Bureau, data of education from the Occupational Information Network (O*NET), and data on postsecondary program completions from the National Center for Education Statistics. Qualitative information was derived from educators, employers, workers, training professionals, and representative of trade associations and unions.

Note: While there may be multiple paths to entry depending on multiple circumstances, multiple paths to entry are not captured by this classification system.

Average Hourly Earnings include base rate pay, cost of living allowances, guaranteed pay, hazardous pay, incentive pay, including commissions and bonuses, on-call pay, and tips. The average hourly earnings to do capture benefits.

Digital copy available at www.gnoinc.org/stateofthesector

GREATER NEW ORLEANS
INC
REGIONAL ECONOMIC DEVELOPMENT

1100 Poydras St., Suite 3475 | New Orleans, LA 70163 | 504.527.6900
gnoinc.org | @gnoinc | facebook.com/gnoinc