

**Program Endorsement Brief: 0506.40/Small Business and Entrepreneurship and
0509.70/E-Commerce (Business Emphasis)
Business of Electronic Gaming Certificate
Mobile Applications Entrepreneur Certificate
Orange County Center of Excellence, May 2020**

Summary Analysis

The Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to the Business of Electronic Gaming and Mobile Applications Entrepreneur certificates. Both of these proposed programs are designed to train students in foundational business and entrepreneurship skills to help them either start their own business or enter traditional employment in several businesses and, more specifically, the electronic gaming industry. While both proposed programs include some programming coursework, the programs will primarily focus on business and entrepreneurship skills, such as business management, business operations, and marketing, that can be applied to traditional employment in all industries, the electronic gaming industry, and self-employment and business ownership.

To better understand the occupations students would be able to enter upon successful completion of this certificate, this report provides supply and demand data for traditional employment and self-employment in two middle-skill occupations: Business Operation Specialists, All Other (SOC 13-1199), Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹

Though these programs are designed to train students to start their own business or become self-employed, it is important to consider the skills employers request in online job postings to better understand the transferability of foundational business and entrepreneurial skills to traditional employment. For that reason, this report includes an analysis of the knowledge, skills, and abilities (KSAs) requested in online job postings for business and entrepreneurial skills across all occupations and industries as well as specifically in postings from electronic gaming companies. Analyzing job postings for these skills will provide a better understanding of the local need for qualified workers, the skills requested for these roles, and educational requirements and preferences.

This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

¹ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Based on the available data there appears to be a supply gap for these occupations in the region. Additionally, there appears to be a need for business and entrepreneurship skills in online job postings. **Therefore, the COE endorses this proposed program, but notes that only a small percentage of jobs available fall specifically within the electronic gaming industry.** Reasons include:

Demand:

- Over the next five years, there is projected to be **13,981 jobs available annually** in the region due to new job growth and replacements, **which is more than the 447 awards conferred annually** by educational institutions in the region.
 - However, the Business Operations Specialists, All Other (13-1199) SOC code includes a variety of emerging occupations, including energy auditors, and customs brokers. Since the SOC code does not solely represent occupations related to online merchants or other related business operations positions, **the number of annual job openings is likely overstated.**
 - Staff patterns and self-employment data from Emsi shows that, of the 13,981 annual openings, **0.7% (105) will be in the electronic gaming industry and 4% (627) will be for self-employed workers.**
- Over the past 12 months, there were **407,262 online job postings that requested skills related to business and entrepreneurship.**
 - Of the 407,262 postings, **1,732 (.04%) were posted by electronic gaming companies.**
- The national-level educational attainment data indicates between **24% and 31.3% of workers in the field have completed some college or an associate degree as their highest level of education.**
 - However, of the 69% of business and entrepreneurship job postings that included a requested level of education; **74% (206,423) requested a bachelor's degree and 22% requested a high school diploma, vocational training, or associate degree.**
- **Typical entry-level hourly wages** for these occupations throughout the region are between **\$17.96 and \$25.04, which are higher than the California Family Needs Calculator** hourly wage (living wage) for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County)²
 - However, **typical entry-level hourly wages for self-employed workers** throughout the region are between **\$10.49 and \$14.65, which is below the living wage for both counties.**
 - **Experienced self-employed workers** in these occupations can expect to **earn between \$41.90 and \$84.74 which is significantly higher than the living wage estimate for both counties.**

² Living wage data was pulled from California Family Needs Calculator on 4/30/20. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

Supply:

- There are **27 community colleges** in the region that have programs related to these occupations, conferring an average of **367 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there were an average of **80 awards conferred annually** in related training programs by non-community college institutions, all of which were generated by **7 individual four-year colleges throughout** the region.

Occupational Demand

Occupational Demand Across all Industries

Exhibit 1 shows the five-year occupational demand projections for the two middle-skill occupations in this report. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to decrease by 0.17% through 2023. However, there will be more than 13,980 job openings per year through 2023 due to retirements and workers leaving the field. It is important to note that the Business Operation Specialists, All Other (13-1199) SOC code includes a variety of emerging occupations, including energy auditors and customs brokers, and not solely those that are most relevant to the electronic gaming business. Therefore, the data in the following exhibits is overstated for Business Operations Specialists, All Other.

This report includes employment projection data by Emsi which uses EDD information. Emsi's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy, during the projection period, will be at approximately full employment. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	97,861	97,237	(624)	(0.64%)	10,140
Orange	36,378	36,771	392	1%	3,841
Total	134,240	134,008	(232)	(0.17%)	13,981

Occupational Demand in the Electronic Gaming Industry

To better understand the demand for these occupations in the electronic gaming industry, Exhibit 2, on the following page, shows the five-year occupational demand projections for the two middle-skill occupations in this report within the Software Publishers industry (NAICS code 511210). This industry includes companies like Activision, Blizzard Entertainment, and Electronic Arts. The number of jobs related to these occupations within this industry is projected to increase by 21% through 2023 which equates to over 100 job openings per year.

³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

The figures presented in Exhibit 2 were created using staffing patterns data from Emsi, which isolates the number of jobs for an occupation within a selected industry. The annual openings data was calculated by adding the number of annual replacements and the number of annual new jobs for each occupation. Annual replacements were calculated by multiplying the annual replacement rate, which is the percent of the occupation estimated to be retiring or permanently leaving an occupation, and the number of 2018 jobs. Annual new jobs are calculated by taking the 2018-2023 change and dividing it by five, the number of years in the time period.

Exhibit 2 Electronic gaming industry occupational demand in Los Angeles and Orange Counties

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	427	539	111	26%	63
Orange	342	395	52	15%	42
Total	769	933	165	21%	105

Self-Employed Occupational Demand

Exhibit 3 shows the five-year occupational demand projections for self-employed workers in the two above middle-skill occupations in this report. In Los Angeles/Orange County, the number of self-employed jobs related to this occupation is projected to decrease by 9% through 2023. There will be over 600 job openings per year through 2023 due to retirements and workers leaving the field.

Exhibit 3: Self-employed demand in Los Angeles and Orange Counties

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	4,453	4,028	(424)	(10%)	461
Orange	1,610	1,460	(150)	(9%)	167
Total	6,062	5,488	(574)	(9%)	627

Wages

Wages for Traditionally Employed Workers

Typical entry-level hourly wages for these middle-skill occupations are between \$17.54 and \$25.23 in Los Angeles County and between \$19.13 and \$24.57 in Orange County. Entry-level wages for these occupations are higher than the California Family Needs Calculator hourly wage (living wage) for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County). Experienced workers can expect to earn between \$42.22 and \$47.59.

Wages for Self-Employed Workers

Typical entry-level hourly wages for self-employed workers in these middle-skill occupations are between \$10.50 and \$14.67 in Los Angeles County and between \$10.47 and \$14.60 in Orange County. Entry-level hourly wages for these occupations are below the living wage for one adult in the region. Median hourly wages for self-employed workers in these occupations are between \$21.08 and \$33.11 in Los Angeles County and \$21.02 and \$32.96 in Orange County, which is

above the living wage for one adult in each county. Experienced self-employed workers can expect to earn between \$41.90 and \$84.74.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products and a bachelor’s degree for Business Operations Specialists, All Other. The national-level educational attainment data indicates between 24% and 31.3% of workers in the field have completed some college or an associate degree as their highest level of education. The requested level of education included in online job postings is included in the following Job Postings sections.

Job Postings

To identify online job postings that request business and entrepreneurial skills, skill cluster filters were used within Burning Glass, an online job postings analysis tool. According to Burning Glass, “skill clusters represent groups of related skills in a single category.” The most relevant skill clusters for business and entrepreneurship were identified by using the “Business Functions” skills listed in the national standards from the National Consortium for Entrepreneurship Education.⁴ Based on those national standards, Exhibit 4 shows the skill clusters that were used as filters in an analysis of online job postings as well as descriptions for each skill cluster.

Exhibit 4: Skill cluster filters for online job postings analysis

Skill Category	Skill Cluster	Description
Business	Business Management	Skills include business administration and change management.
	Business Strategy	Includes skills like forecasting, business and strategic planning, industry analysis, and more.
	Operations Management	Includes skills like operations management, key performance Indicators, and feasibility studies.
Finance	Budget Management	Contains skills like budget planning, budget analysis, and budget modeling.
	Financial Analysis	Contains skills like financial analysis, variance analysis, financial modeling and financial planning.
	Financial Management	Includes skill like financial management, capital expenditures, financial operation, and fiscal management.
Human Resources	Employee Training	Skills include on-boarding, staff education, employee and management training.
	Human Resource Management and Planning	Includes skills like human resource management, leadership development, organizational development, and HR policies.
	Recruitment	Skills contain recruiting, applicant tracking system, staffing, talent acquisition and technical recruiting.

⁴ <https://www.entre-ed.org/national-eship-standards>

Skill Category	Skill Cluster	Description
Marketing and Public Relations	General Marketing	Includes skills like marketing, product marketing, and direct marketing, technical services marketing, corporate and global marketing.
	Market Analysis	Includes market research, market trends, competitive analysis, market analysis, market dynamics and analytics skills.
	Marketing Management	Includes skills like marketing materials market planning, marketing communications, marketing programs, and marketing management.

To better understand the skills requested by electronic gaming companies, the following sections analyze online job postings listed by companies across all industries along with those listed by nearly 30 electronic gaming companies. The full list of electronic gaming companies included in the online job postings filter is listed in Appendix B. Additionally, the following sections will also analyze the skills requested by education level to better understand the differences in skills requested for more entry-level positions versus those requested for mid-level positions. Due to the small number of postings from electronic gaming companies, the analysis by education level will be conducted on all online job postings for each skill cluster.

Over the past 12 months, there were 407,262 online job postings that requested skills that fall within one of the twelve skill clusters analyzed in this report. Of those, 69% (280,050) included a requested level of education; 206,423 (74%) requested a bachelor's degree and 22% requested a high school diploma, vocational training, or associate degree.

Of the 407,262 postings, 1,732 (.04%) postings were posted by electronic gaming companies. Exhibit 5 shows the number of online job postings for each skill category.

It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

Exhibit 5: Number of online job postings by skill category

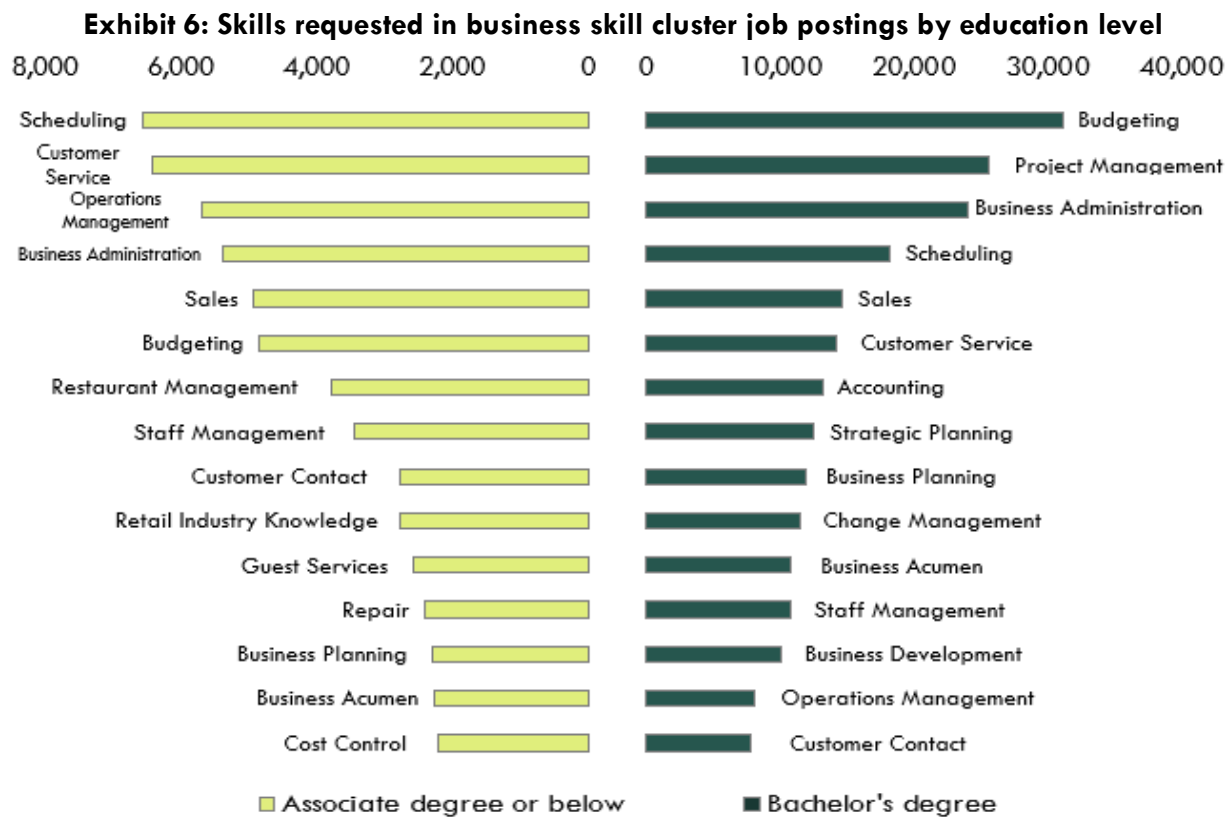
Skill Category	All Postings	Electronic Gaming Postings
Business	156,127	700
Finance	185,763	759
Human Resources	93,593	300
Marketing and Public Relations	89,460	651

Business Skills in Online Job Postings

All Postings—Over the past 12 months, there were 156,127 online job postings that requested skills that are included in the business management, business strategy, and operations management skill clusters. The top job titles were account manager, operations manager, and

restaurant manager. The top employers, by number of job postings, were Anthem Blue Cross, Marriot International, Northrop Grumman, and Disney. The top skills were budgeting, project management, scheduling, and business administration. Of the 156,127 online job postings, 76% (118,657) included a requested level of education. Of those, 75% (88,992) requested a bachelor's degree and 17% (20,172) requested a high school diploma, vocational training, or an associate degree.

To better understand the skills requested by education level, Exhibit 6, on the following page, shows the top 15 skills for postings that requested a bachelor's degree versus those that requested a high school diploma, vocational training, or an associate degree. There are several skills in common, such as sales, which was the fifth most requested skill for both educational levels. However, postings that request an associate degree or less include skills like restaurant management and retail industry knowledge, suggesting that these positions are more closely related to positions in the service industry. Postings that request a bachelor's degree include skills like project management and business development.



Electronic Gaming Postings—Over the past 12 months, there were 700 online job postings listed by electronic gaming companies that requested skills that are included in the business management, business strategy, and operations management skill clusters. The top job titles were production manager, business analyst, and marketing manager. The top employers, by number of job postings, were Sony Electronics Incorporated, Activision, and Blizzard Entertainment. The top skills were project management, budgeting, change management, and Key Performance Indicators (KPIs). Of the 700 online job postings, 74% included a requested level of education. Of

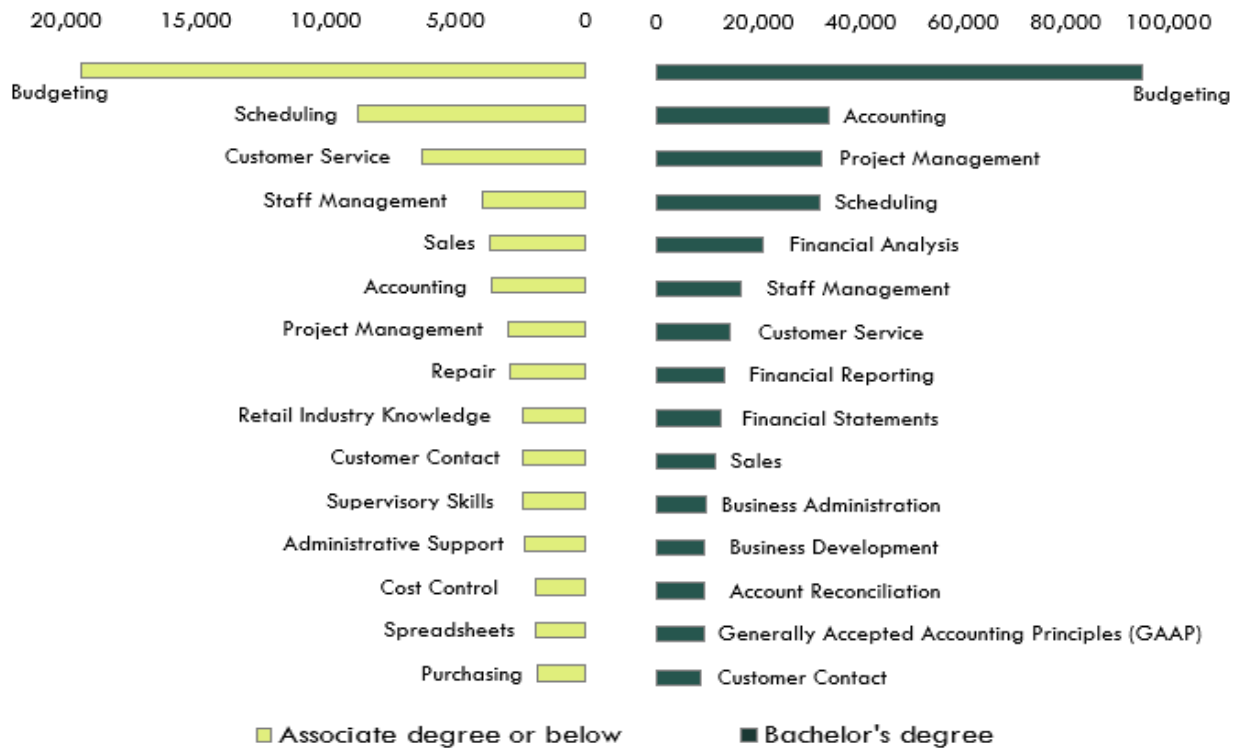
those, 90.9% (472) requested a bachelor’s degree; only 1.5% (8) requested a high school diploma, vocational training, or an associate degree.

Finance Skills in Online Job Postings

All Companies— Over the past 12 months, there were 185,763 online job postings listed by electronic gaming companies that requested skills that are included in the budget management, financial analysis, and financial management skill clusters. The top job titles were financial analyst, project manager, and staff accountant. The top employers, by number of job postings, were Anthem Blue Cross, Marriot International, Northrop Grumman, and Deloitte. The top skills were budgeting, scheduling, project management, and accounting. Of the 185,763 online job postings, 74.2% (137,974) included a requested level of education. Of those, 79% (108,899) requested a bachelor’s degree and 17% requested a high school diploma, vocational training, or an associate degree.

To better understand the skills requested by education level, Exhibit 7 shows the top 15 skills for postings that requested a bachelor’s degree versus those that requested a high school diploma, vocational training, or an associate degree. There are several skills in common, such as budgeting, which was the most requested skill for both education levels. Posting’s that request an associate degree or less include skills like administrative support, spreadsheets, and purchasing, suggesting that these positions are more closely related to administrative and support roles. Postings that request a bachelor’s degree include skills like financial analysis, account reconciliation, and Generally Accepted Accounting Principles (GAAP).

Exhibit 7: Skills requested in finance skill cluster job postings by education level



Electronic Gaming Companies—Over the past 12 months, there were 759 online job postings listed by electronic gaming companies that requested skills that are included in the budget

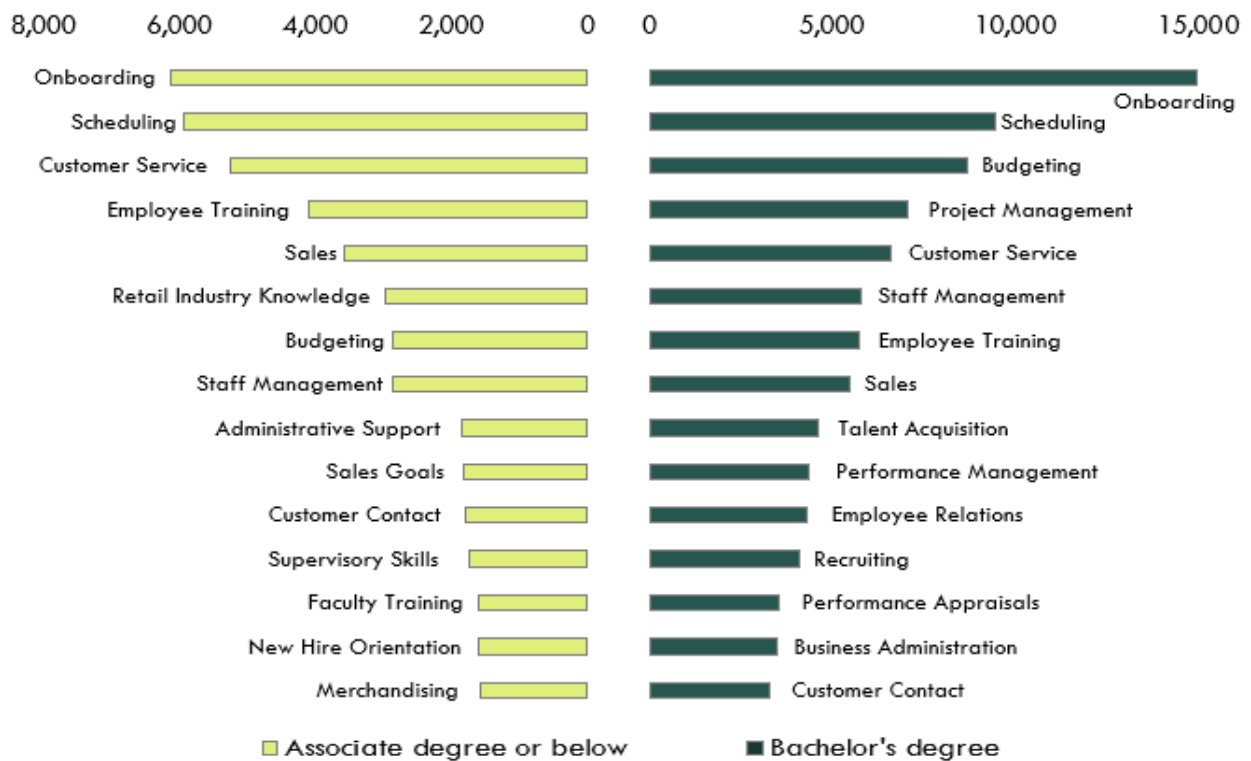
management, financial analysis, and financial management skill clusters. The top job titles were marketing manager, financial analyst, and administrative assistant. The top employers, by number of job postings, were Sony Electronics Incorporated, Activision, and Blizzard Entertainment. The top skills were budgeting, project management, and scheduling. Of the 759 online job postings, 74% (492) included a requested level of education. Of those, 94% (463) requested a bachelor's degree; only 1.2% (6) requested a high school diploma, vocational training, or an associate degree.

Human Resources Skills in Online Job Postings

All Companies—Over the past 12 months, there were 93,593 online job postings listed by electronic gaming companies that requested skills that are included in the employee training, human resource management and planning, and recruitment skill clusters. The top job titles were recruiter, human resources manager, and human resources generalist. The top employers, by number of job postings, were Marriot International, Bank of America, and Lowe's Companies, Inc. The top skills were onboarding, scheduling, and customer service. Of the 93,593 online job postings, 64% (59,485) included a requested level of education. Of those, 62% (36,713) requested a bachelor's degree and 33% requested a high school diploma, vocational training, or an associate degree.

To better understand the skills requested by education level, Exhibit 8, on the following page, shows the top 15 skills for postings that requested a bachelor's degree versus those that requested a high school diploma, vocational training, or an associate degree. Three skills, onboarding, scheduling, and customer service are included in the top five skills for both educational levels. Onboarding and scheduling are the top two skills for both levels. While there are several skills in common, postings that request an associate degree or less include skills like administrative support and new hire orientation suggesting that these positions are more closely related to administrative and support roles. Postings that request a bachelor's degree include skills like performance management, employee relations, and performance appraisals, suggesting that these positions are heavily involved with managerial positions.,

Exhibit 8: Skills requested in human resources skill cluster job postings by education level



Electronic Gaming Companies—Over the past 12 months, there were 300 online job postings listed by electronic gaming companies that requested skills that are included in the employee training, human resource management and planning, and recruitment skill clusters. The top job titles were recruiting coordinator, human resources manager, and recruiter. The top employers, by number of job postings, were Activision, Blizzard Entertainment, and Riot Games. The top skills were onboarding, talent acquisition, and scheduling. Of the 300 online job postings, 67% (300) included a requested level of education. Of those, 91% (183) requested a bachelor’s degree; only 2% (6) requested a high school diploma, vocational training, or an associate degree.

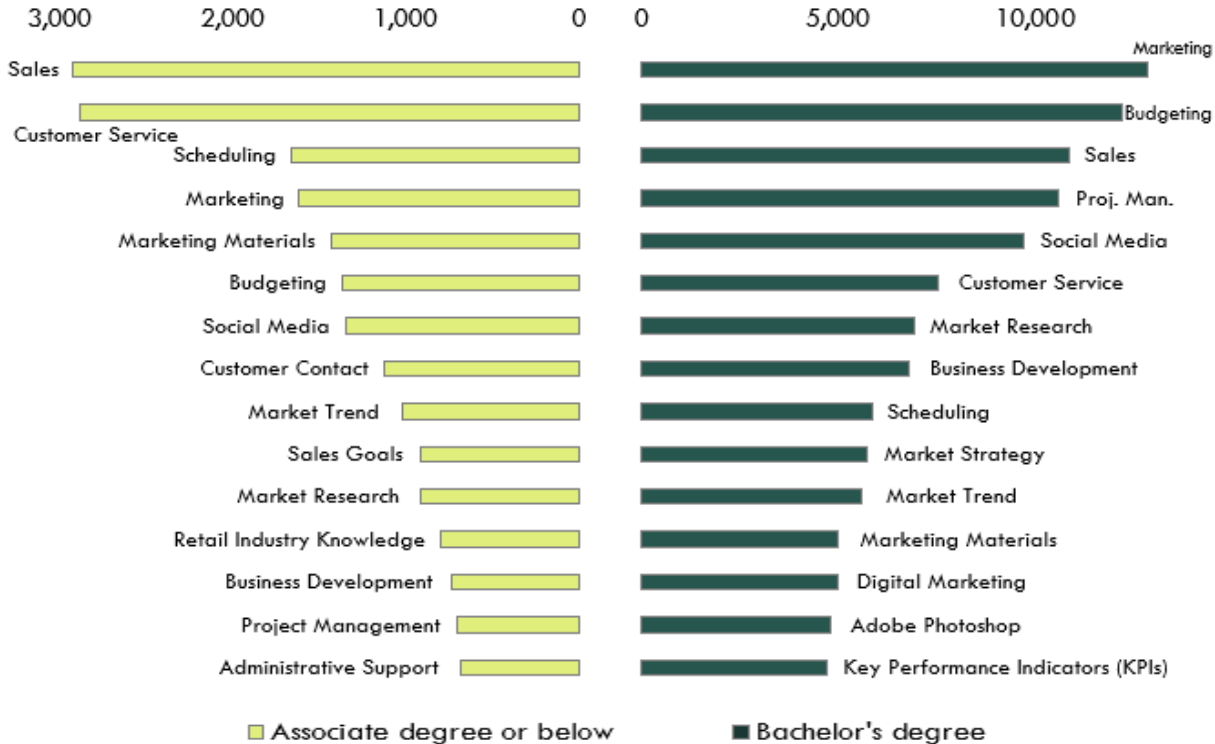
Marketing and Public Relations Skills in Online Job Postings

All Companies—Over the past 12 months, there were 89,460 online job postings listed by electronic gaming companies that requested skills that are included in the general marketing, market analysis, and marketing management skill clusters. The top job titles were marketing manager, marketing coordinator, and marketing specialist. The top employers, by number of job postings, were Global Channel Management, Inc., Anthem Blue Cross, and Disney. The top skills were marketing, sales, and social media. Of the 89,460 online job postings, 63% (56,307) included a requested level of education. Of those, 82% (46,094) requested a bachelor’s degree and 14% requested a high school diploma, vocational training, or an associate degree.

To better understand the skills requested by education level, Exhibit 9, on the following page, shows the top 15 skills for postings that requested a bachelor’s degree versus those that requested a high school diploma, vocational training, or an associate degree. While there are several skills in common, postings that request an associate degree or less include skills like social media, customer contact, and administrative support that these positions are more closely related

to day-to-day marketing tasks and administrative support. Additionally, postings that request a bachelor's degree include skills like market strategy and Key Performance Indicators (KPIs), suggesting that these positions are more involved with strategic planning and analysis.

Exhibit 9: Skills requested in human resources skill cluster job postings by education level



Electronic Gaming Companies— Over the past 12 months, there were 651 online job postings listed by electronic gaming companies that requested skills that are included in the general marketing, market analysis, and marketing management skill clusters. The top job titles were marketing manager, administrative assistant, and marketing coordinator. The top employers, by number of job postings, were Sony Electronics Incorporated, Activision, and Blizzard Entertainment. The top skills were project management, content management, and marketing. Of the 651 online job postings, 69% (446) included a requested level of education. Of those, 94% (420) requested a bachelor's degree; only 0.6% (3) requested a high school diploma, vocational training, or an associate degree.

Supply

Community College Supply—Exhibit 10, on the following page, shows the three-year average number of awards conferred by community colleges in the related TOP codes: Small Business and Entrepreneurship (0506.40) and Marketing and Distribution (0509.00). While E-Commerce (business emphasis) (0509.70) is also related, no colleges throughout the region have conferred awards under this TOP code in the last three years. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

Exhibit 10: Regional community college awards (certificates and degrees), 2016-2019

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
0506.40	Small Business and Entrepreneurship	Cerritos	15	21	34	23
		Citrus	0	1	2	1
		Glendale	1	2	0	1
		LA City	8	3	7	6
		LA Pierce	0	0	4	1
		LA Trade	8	7	6	7
		Mt San Antonio	26	18	32	25
		Pasadena	2	5	3	3
		Rio Hondo	6	15	7	9
		Santa Monica	7	10	9	9
		West LA	3	3	5	4
		LA Subtotal	76	85	109	90
		Coastline	6	10	5	7
		Cypress	5	2	4	4
		Fullerton	1	3	4	3
		Golden West	0	3	2	2
		Irvine	29	18	48	32
		Saddleback	4	10	8	7
		Santa Ana	4	4	7	5
		Santiago Canyon	2	4	0	2
OC Subtotal	51	54	78	61		
Subtotal/Average			127	139	187	151
0509.00	Marketing and Distribution	Cerritos	0	11	25	12
		Compton	4	1	1	2
		East LA	1	4	9	5
		El Camino	18	13	14	15
		Glendale	3	0	1	1
		LA City	14	10	12	12
		LA Harbor	2	0	0	1
		LA Mission	1	2	0	1
		LA Pierce	4	8	4	5
		LA Trade	5	10	3	6
		LA Valley	10	16	28	18
		Long Beach	11	15	6	11
		Mt San Antonio	5	3	5	4
		Pasadena	0	0	3	1
		Rio Hondo	5	8	2	5

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		Santa Monica	5	20	20	15
		West LA	1	3	1	2
		LA Subtotal	89	124	134	116
		Cypress	5	4	4	4
		Fullerton	1	0	2	1
		Golden West	1	3	2	2
		Orange Coast	7	107	83	66
		Saddleback	3	10	16	10
		Santa Ana	1	0	3	1
		Santiago Canyon	7	24	17	16
		OC Subtotal	25	148	127	100
		Subtotal/Average	114	272	261	216
		Total/Average	241	411	448	367

Non-Community College Supply—It is important to consider the supply from four-year institutions in the region that provide training programs for these middle-skill occupations. Exhibit 11, on the following page, shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: E-Commerce/Electronic Commerce (52.0208), Entrepreneurship/Entrepreneurial Studies (52.0701), and Small Business Administration/Management (52.0703). Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, four-year colleges in the region conferred an average of 80 awards annually in related training programs.

Exhibit 14: Regional non-community college awards, 2014-2017

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
52.0208	E-Commerce/ Electronic Commerce	University of La Verne	5	3	0	3
		LA Subtotal	5	3	0	3
		University of Phoenix- California	1	1	0	1
		OC Subtotal	1	1	0	1
		Subtotal/Average	6	4	0	3
52.0701	Entrepreneurship /Entrepreneurial Studies	Loyola Marymount University	58	73	72	68
		Mount Saint Mary's University	3	0	0	1
		Mt Sierra College	7	6	3	5
		Pitzer College	0	1	0	0

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
		LA Subtotal	68	80	75	74
		California Intercontinental University	0	1	3	1
		University of Phoenix-California	2	0	0	1
		OC Subtotal	2	1	3	2
		Subtotal/Average	70	81	78	76
52.0703	Small Business Administration/Management	Pitzer College	0	1	0	0
		LA Subtotal	0	1	0	0
		Subtotal/Average	0	1	0	0
		Total/Average	76	86	78	80

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Business Operations Specialists, All Other (13-1199)	49,050	50,603	1,553	3%	5,092	\$25.23	\$34.23	\$47.93
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	48,811	46,634	(2,177)	(4%)	5,048	\$17.54	\$27.06	\$41.20
Total	97,861	97,237	(624)	(0.64%)	10,140			

Exhibit 5. Orange County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Business Operations Specialists, All Other (13-1199)	17,896	18,692	796	4%	1,910	\$24.57	\$33.34	\$46.68
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	18,483	18,079	(404)	(2%)	1,931	\$19.13	\$29.53	\$44.90
Total	36,378	36,771	392	1%	3,841			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Business Operations Specialists, All Other (13-1199)	66,946	69,295	2,349	4%	7,002	\$25.04	\$33.99	\$47.59
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	67,294	64,713	(2,581)	(4%)	6,979	\$17.96	\$27.72	\$42.22
Total	134,240	134,008	(232)	(0.17%)	13,981			

Appendix B: Electronic Gaming Companies Included in Online Job Postings Filter

- 2K Games
- Activision
- Atari Incorporated
- Blizzard Entertainment
- Bonfire Studios
- Carbine Studios
- Double Helix Games
- Electronic Arts Incorporated
- Google Inc.
- Insomniac Games
- Lucid Sight, Inc
- Maple Media
- Mythical Games
- Naughty Dog Incorporated
- Nintendo America Incorporated
- Nintendo of America
- Nintendo Software Technology
- Nintendo Technology Development
- Oculus Incorporated
- Oculus Vr
- Riot Games
- Rockstar Games Incorporated
- Sony Electronics Incorporated
- Survios
- Treyarch
- Twitch
- Versus Systems

Appendix C: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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