

THE ART OF EMPLOYMENT:

How Liberal Arts Graduates Can Improve Their Labor Market Prospects





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INTRODUCTION

In today's tepid labor market, employers are seeking candidates with a combination of both workforce-specific skills and broad-based knowledge. Many recent graduates are struggling to satisfy employer demands, and Liberal Arts and non-professional degree graduates in particular are finding scant employment opportunities upon graduation. According to a recent report from the Georgetown Center on Education and the Workforce, Liberal Arts and Humanities (9.0%), Social Science (10.3%) and Arts (9.8%) graduates have among the highest unemployment rates of all college

graduates.¹ (The overall unemployment rate for recent graduates is 7%.)² The persistent employment challenges for recent graduates present an important

By coupling a field-specific skill set with the soft skills that form the foundation of a liberal education, Liberal Arts graduates can nearly double the number of jobs available to them.

question for Liberal Arts colleges and their students: how can Liberal Arts graduates improve their employment prospects?

To answer this question, Burning Glass Technologies undertook an analysis that examines the availability of entry-level jobs and the skills required to get them, while focusing specifically on where graduates of Liberal Arts and other non-professional degree programs fit

into the entry-level job market. This analysis revealed that by coupling a field-specific skill set with the soft skills that form the foundation of a liberal education, Liberal Arts graduates can nearly double the number of jobs available to them.

In the last 12 months (July 2012 - June 2013), Burning Glass found there were 955,000 job postings open to recent Liberal Arts graduates. Burning Glass then identified 8 skill sets - Marketing, Sales, Business, Social Media, Graphic Design, Data Analysis, Computer

Programming and IT Networking - which can be acquired with a modest amount of coursework, such as a minor, or through internships. By developing one or more

of these skill sets, Liberal Arts graduates can enhance their competitiveness for the 955,000 jobs they already qualify for and tap into an additional 862,000 jobs, nearly doubling the number of jobs available to them. These newly-available positions fall into occupations such as marketing specialist, operations analyst and computer programmer, and offer an approximately \$6,000 annual salary premium over jobs traditionally open to Liberal Arts graduates.

| | Entry-Level Job Postings | Average Entry-Level Salary | Percent of Bachelor's Entry-Level Jobs |
|--|-----------------------------|----------------------------------|--|
| Jobs Traditionally Open to Liberal Arts Graduates | 954,996 | \$42,731 | 25% |
| Jobs Open to Liberal Arts Graduates with Additional Technical Skills | 861,572 | \$49,052 | 23% |
| Total Entry Level Jobs Accessible to Liberal Arts Graduates | 1,816,568 | \$45,729 | 48%* |

^{*}The remaining 52% of entry-level jobs are in occupations that require specialized degrees or certifications – such as nurses, engineers, and accountants – and therefore aren't open to Liberal Arts graduates without considerable additional study.

FINDINGS

These additional occupations offer

a \$6,000 annual salary premium

over the less-technical jobs

By analyzing the experience, skills, education, and licensing requirements of each online job posting, Burning Glass identified nearly one million postings open to Liberal Arts graduates in the past 12 months. These postings request 3 years or less of experience and fall into occupational categories that typically require or prefer a college degree but do not require specialized

technical skills, such as Recruiters, Administrative Assistants, Store Managers, and Account Representatives.

Because these jobs typically demand no formal qualifications beyond a bachelor's degree of any kind – and even lesser academic credentials will sometimes suffice – the 607,000 broad-based king students who graduate from Liberal Arts programs³ relatively small every year are also competing with a multitude of Bachelor's and Associate's level graduates, existing significantly in

workers with experience in the field, and underemployed job seekers.

The broad-based skills that a Liberal Arts education offers are highly-valued in the labor market, and can help Liberal Arts graduates differentiate themselves from rival job seekers. Employers report the greatest

disparity between the skills they demand and those that recent graduates possess for written and oral communication skills, adaptability, and problem solving⁴ – all staples of a Liberal

Arts education. However, it is important to note that employers desire candidates with both field-specific and broad-based knowledge and skills.⁵ By adding a relatively small dose of field-specific skills to a Liberal Arts program of study, students can significantly improve and broaden their labor market prospects.

Technical Skills Double the Jobs Available to Recent Graduates

Burning Glass Technologies identified sets of technical skills in high-demand among employers which graduates can acquire to enhance their resumes and qualify for additional occupations. These skills sets are Marketing, Sales, Business, Social Media, Graphic Design, Data Analysis, Computer Programming and IT Networking. These workplace-focused technical skills are ones that can be easily integrated into students' college experiences, enabling them to enhance significantly their labor market prospects without dramatically altering their chosen program of study. In

general, the skill sets selected can be learned though internships and other active learning experiences, or through coursework equivalent to a minor.

By acquiring one or more of these technical skill sets, Liberal Arts graduates can compete for an additional 862,000 jobs in occupations that require more specialized expertise – such as business analysts, marketing specialists, and search engine optimization strategists. These additional occupations offer a \$6,000 annual salary premium over the less-technical jobs traditionally open to Liberal Arts graduates.

Skills Serve as Either Core Competencies or "Complementary" Skill Sets

Burning Glass defines a skill set as core to an occupation when it represents a core competency for the position. For example, graphic designers are hired largely on the basis of their design skills. A skill set is defined as complementary for an occupation when the skills, in isolation, won't secure the position, but possessing the skill set still makes the candidate more compelling to employers. For example, marketing specialist roles

often value design skills so that a candidate can create newsletters, websites, and other collateral, but candidates are hired largely on the basis of their marketing skills. Candidates targeting occupations where a skill set is core must typically achieve a higher degree of proficiency than for occupations where that skill set is complementary.

Table 1: Posting and Salary Data by Skill Set

| Skill Set | Total Postings | Core Skill | Complementary Skill | Average Salary | Salary Premium | Growth of Jobs Requiring this Skill Set |
|--|----------------|------------|------------------------|-------------------|-------------------|---|
| IT Networking and Support: Skills supporting the installation, maintenance, and troubleshooting of information technology systems and personal computers | 66,429 | 87% | 13% | \$43,789 | \$1,058 | Faster than the labor market |
| Sales: Skills supporting the selling and promotion of products and services, and the management of customer relationships | 567,855 | 84% | 16% | N/A* | N/A* | About the same |
| Computer Programming: Major programming languages used in the development of computer programs and applications | 52,822 | 79% | 21% | \$60,484 | \$17,753 | Slower** |
| Data Analysis and Management: Skills relating to the collection, management, and analysis of data | 136,757 | 44% | 56% | \$55,434 | \$12,703 | Faster |
| Marketing: Skills relating to firm-level and product-level marketing strategy | 359,916 | 18% | 82% | \$43,067 | \$336 | Faster |
| Graphic Design: Skills and software relating to the design of interfaces across multiple media. | 134,090 | 16% | 84% | \$51,919 | \$9,188 | Faster |
| General Business: Skills relating to the administration and operations of organizations. | 577,787 | 15% | 85% | \$53,875 | \$11,144 | Faster |
| Social Media: Skills needed for the strategic utilization of various social media platforms. | 399,577 | 1% | 99% | \$46,155 | \$3,424 | Much faster |

^{*}Because compensation for sales-related jobs is usually commission-based and quite volatile, it is not accurately reflected in online job postings. As such, salary figures are not reported for jobs requiring sales-related skills.

^{**}While computer jobs open to Liberal Arts graduates are growing more slowly than the labor market overall, more specialized programming roles such as software engineers are growing more rapidly.

THE ART OF EMPLOYMENT

Table 2: Sample Skills and Occupations by Skill Set

| 61:11.6 | 6 61.11 | Sample Occupations | | |
|--|--|---|--|--|
| Skill Set | Sample Skills | Skill Set is Core | Skill Set is "Complementary" | |
| IT Networking and Support: Skills supporting the installation, maintenance, and troubleshooting of information technology systems and personal computers | Technical Support Troubleshooting Computer Installation/Setup Hardware/Software Installation System/Network Configuration Microsoft Windows/Office | Computer Support Specialist Network/Systems Support Specialist | Audio / Visual Technician Webmaster / Administrator | |
| Sales: Skills supporting the selling and promotion of products and services, and the management of customer relationships | General Sales Retail Sales Business Development Merchandising Customer Relationship Management | Sales Representative Account Manager/Representative Real Estate Agent/Broker | Store Manager | |
| Computer Programming: Major programming languages used in the development of computer programs and applications | C++ Java JavaScript .NET XML SQL Microsoft C# | Computer Programmer Web Developer | Network/Systems Support Specialist Web Designer | |
| Data Analysis and Management: Skills relating to the collection, management, and analysis of data | Data Analysis Data management SQL SAS Surveys | Financial Analyst Market Research Analyst | Business/Management Analyst Researcher/Research Associate | |
| Marketing: Skills relating to firm-level and product-level marketing strategy | Marketing Market Research Product Marketing Product Management Marketing Materials | Marketing Specialist Market Research Analyst Advertising Sales Representative | Graphic Designer Communications Coordinator | |
| Graphic Design: Skills and software relating to the design of interfaces across multiple media. | Graphic Design Website Design Adobe Photoshop InDesign Multimedia | Graphic Designer Web Designer Multimedia Designer | Marketing Specialist Webmaster/Administrator | |
| General Business: Skills relating to the administration and operations of organizations. | Business Administration Business Process Business Development Business Analysis Enterprise Resource Planning | Business/Management Analyst Supply Chain/Logistics Analyst | Account Executive Market Research Analyst | |
| Social Media: Skills needed for the strategic utilization of various social media platforms. | Social Media Social Networking Blogging | Social Media Strategist/Specialist Search Engine Optimization Specialist | Recruiter Marketing Coordinator/Assistant | |

IMPLICATIONS

For Colleges and Universities: While Liberal Arts graduates struggle to find their place in the labor market, our analysis suggests several steps colleges and universities can take to help students improve their job prospects. Importantly, there is much that schools can do to help students to improve their labor market success even within the context of a traditional Liberal Arts program. Specifically, schools should focus on the following

Help Students Understand the Skills Required by Employers

Taking career preparation into account while selecting courses or a college major is the exception rather than the norm for college students, especially students in programs that are not career-directed. A recent National Association of Colleges and Employers study revealed that fewer than 10% of college students spoke to a career counselor about their choice of major. Colleges, through their career services functions, can give students access to better tools and information about jobs available to graduates of various programs of study and the skills required to get those jobs.

Build Labor Market Skills through Complementary Coursework

Schools can encourage Liberal Arts students to enroll in courses that enhance their labor market value as electives outside of core Liberal Arts requirements. Most schools already offer courses that enable students to build graphic design, data analysis, or computer programming skills, and those with business programs also address general business and marketing areas.

Other students and schools are leveraging "boot camp" programs that provide intensive training in business, finance, or other workplace-focused skills, and Massive Online Open Course providers (MOOCs) provide new opportunities for students to reach beyond the course offerings of their own institution in order to develop key skills.

Build Labor Market Skills through Internships and **Active Learning**

Internships are increasingly critical for helping recent graduates transition successfully into the labor market. A Chronicle of Higher Education survey found that internships and employment during school were the two most important factors to employers in their hiring decisions, ranking above college major, GPA, and college reputation.⁸ Further, many of the skills employers demand are best learned outside of the classroom, through internships, community service, student leadership, or other active learning experiences. Relevant internships and employment can help students develop the workplace-specific skills that complement a broad-based Liberal Arts background.

For Students: By taking a strategic approach to career preparation early in their college careers, graduates can enter the labor market with vastly improved job prospects. Specifically, students can develop an awareness of the labor market and build in-demand skill sets through coursework, internships, and other active-learning experiences alongside their core Liberal Arts studies.

In addition to emphasizing the skills developed through liberal arts programs – such as communication skills, research skills, and critical thinking – students can build workforce-specific competencies that will increase their labor market value. Students can seek to complete complementary coursework at their own institutions or through MOOC providers, which offer free non-credit opportunities, or by enrolling in a professional skills boot camp or bridge program. Given the premium employers place on experience, students should endeavor to find internships, jobs, or other active-learning experiences where they can build and demonstrate proficiency in the technical skills employers demand.

About Burning Glass:

Burning Glass Technologies, a Boston-based labor market analytics firm, has developed technologies to build detailed awareness of what is happening in the labor market in real time. We achieve this by collecting and analyzing job postings from job sites across the internet including job boards, government sites, and employer sites. Our software deploys advanced, proprietary text mining to "read" each job description, allowing us to analyze jobs titles, experience level, educational requirements and even the particular skills that each employer is seeking.

Our tools are playing a growing role in informing the global conversation on education and the workforce by providing researchers, policy makers, educators, and employers with detailed real-time awareness into skill gaps and labor market demand. Burning Glass's job seeker tools power several government workforce systems and have been shown to have substantive impact on reemployment outcomes and on labor market literacy.

With headquarters in Boston's historic Faneuil Hall, Burning Glass is proud to serve a client base that spans six continents, including education institutions, government workforce agencies, academic research centers, global recruitment and staffing agencies, major employers, and leading job boards.

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¹ Carnevale, A. P., & Cheah, B. (2013). *Hard Times, College Majors, Unemployment and Earnings 2013: Not All College Degrees Are Created Equal.* Retrieved from http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/HardTimes.2013.2.pdf

² U.S. Census Bureau. Current Population Survey. April 2013.

³ U.S. Department of Education, National Center for Education Statistics. Integrated Postsecondary Education Data System (IPEDS). Fall 2010.

⁴ Chronicle of Higher Education, American Public Media's Marketplace. (December, 2012). *The Role of Higher Education in Career Development: Employer Perceptions*. Retrieved from http://chronicle.com/items/biz/pdf/Employers%20Survey.pdf

⁵ The Association of American Colleges and Universities. (2013). *It Takes More Than A Major: Employer Priorities for College Learning and Student Success*. Retrieved from http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf

⁶ National Association of Colleges and Employers. The Class of 2012 Student Survey Report. 2012.

⁷ U.S. Census Bureau. American Community Survey. 2011. (Note: Recent bachelor's graduates are defined as bachelor's graduates under 25.)

⁸ Chronicle of Higher Education, American Public Media's Marketplace. (December, 2012). *The Role of Higher Education in Career Development: Employer Perceptions*. Retrieved from http://chronicle.com/items/biz/pdf/Employers%20Survey.pdf

Skill Set Details

In the sections that follow, we delve into each skill set by detailing the jobs that use those skills and exploring what it takes to get those jobs. For each skill set we provide the following data:

- **Basic Statistics** on the total **number of job postings** over the last 12 months to gauge the magnitude of the opportunity each skill set offers, along with **salary information** to assess its value in the entry-level job market.
- **Key Skills** employers most commonly request in each skill set. This is the mix of soft skills and specialized skills that students should develop to maximize their employability in that area.
- Occupational Statistics lists the occupations that call for each skill set, whether the skill set is core or "Complementary", and the total number of postings for each occupation over the last year.

Skill Set Details: IT Networking and Support

| IT NETWORKING AND SUPPORT OVERVIEW | | |
|--|------------------------------|--|
| Total BA+ Entry-Level Postings | 66,429 | |
| Postings for Which Skills Represent Core Competencies | 58,066 (87%) | |
| Postings for Which Skills Represent Complementary Competencies | 8,363 (13%) | |
| Average Entry-Level Salary | \$43,789 | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$1,058 | |
| Growth Measure: 2010-Last 12 Months | Higher than the labor market | |

Unlike many other skill sets considered for this analysis, most IT networking and support skills demanded by employers can be readily learned in the classroom. These skills range from basic computer troubleshooting and repair to system and network configuration and administration. Many IT networking and support jobs also require knowledge of specific software and operating systems, such as Linux, Oracle, and

Cisco.

OCCUPATIONAL SPOTLIGHT

Webmaster/Administrator

Maintains websites for companies and organizations. Updates content, checks for broken links or problems with operating the site. May respond to user comments.

Webmaster/Administrator Key Skills

Web Site Design and Development Web Servers E-Commerce Web Analytics **Operating Systems** Content Management Web Application Development System Administration Website Management

Social Media Search Engine Optimization Graphic Design Information Systems

Over the last year, there were 66,429 entry-level postings for jobs open to liberal arts graduates that call for IT networking and support skills, the bulk of which were for Computer Support Specialists. The average advertised starting salary for all entry-level jobs requiring IT networking and support skills that are open to liberal arts graduates was \$43,789, which is \$1,058 above the average entry-level salary for low specialization jobs available to liberal arts graduates.

Key Skills for IT Networking and Support

Cisco Computer Repair/Maintenance Hardware and Software Installation **JAVA** LINUX Oracle **Problem Solving** SOL System and Network Configuration/Administration Technical Support/Trouble Shooting **Telecommunications** UNIX

| IT NETWORKING AND SUPPORT OCCUPATIONAL STATISTICS | | | | |
|---|--------------------------------------|--|--------------------------------|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | Average Entry- Level Salary | Premium vs. Average Low Specialization Entry-Level Salary |
| Core | Computer Support Specialist | 51,855 | \$42,315 | -\$416 |
| | Network / Systems Support Specialist | 6,211 | \$55,960 | \$13,228 |
| | Core Occupations | 58,066 | \$43,775 | \$1,044 |
| Complementary | Audio / Visual Technician | 3,665 | \$41,512 | -\$1,219 |
| | Computer Operator | 2,320 | \$34,332 | -\$8,399 |
| | Webmaster / Administrator | 2,181 | \$58,656 | \$15,925 |
| | Complementary Occupations | 8,363 | \$43,890 | \$1,158 |
| Total | All Occupations | 66,429 | \$43,789 | \$1,058 |

Skill Set Details: Sales

| SALES OVERVIEW | | |
|--|------------------------------------|--|
| Total BA+ Entry-Level Postings | 567,855 | |
| Postings for Which Skills Represent Core Competencies | 476,093 (84%) | |
| Postings for Which Skills Represent Complementary Competencies | 91,762 (16%) | |
| Average Entry-Level Salary | NA | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | NA | |
| Growth Measure: 2010-Last 12 Months | About the same as the labor market | |

Some schools may offer courses covering the fundamentals of sales; however, there are no true substitutes for on-the-job experience when it comes to developing strong sales instincts. There are related skills for which proficiency is more clearly defined and teachable, such as retail sales and customer relationship management (CRM) — the latter of which often includes experience working with CRM software such as Salesforce.com.

Over the last 12 months, these skills mapped to 567,855 BA+ entry-level postings for which liberal arts graduates could be eligible for, making it the second-largest cluster just behind general business. In contrast to the general

business cluster, however, the bulk of these postings – 476,093 in total, or 83% – were for jobs for which sales ability is a core competency, making it by far the largest cluster in terms of core entry-level postings available to liberal arts graduates.

OCCUPATIONAL SPOTLIGHT

Account Executive

Manages communications with business clients that buy services from a company, such as advertising or banking services, or manages sales accounts. Works with a set of clients over time, and recruits new clients. Promotes products developed specifically for a client, such as an advertising campaign, or matches clients with available services or products.

Account Executive Key Skills

Sales

Outside Sales

Cold Calling

Account Management

Business Development

Sales Management

Product Sales and Delivery

Customer Relationship Management

(CRM)

Business Planning

Forecasting

Sales Planning

Presentation Skills

Sales Support

Direct Sales

Key Sales Skills

Business Development

Scheduling/Time Management

Business Planning
Customer Service
Merchandising
Presentation Skills
Purchasing
Relationship Building/Customer Relationship Management (CRM)
Sales (e.g. inside, outside, and retail sales)
Sales Management

| | SALES OCCUPATIONAL STATISTICS | | | |
|----------------|---|--|--|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | | |
| Core | Sales Representative | 156,582 | | |
| | Retail Sales Associate | 59,578 | | |
| | Account Manager / Representative | 52,495 | | |
| | Sales Consultant | 42,162 | | |
| | Account Executive | 40,874 | | |
| | Insurance Sales Agent | 20,980 | | |
| | Financial Services Sales Agent | 17,007 | | |
| | Sales Supervisor | 14,638 | | |
| | Product Demonstrator | 11,787 | | |
| | Medical / Pharmaceutical Sales Representative | 11,235 | | |
| | Sales Assistant | 9,728 | | |
| | Real Estate Agent / Broker | 9,232 | | |
| | Personal Banker / Banking Sales Staff | 7,572 | | |
| | Parts Specialist / Salesperson | 6,736 | | |
| | Advertising Sales Representative | 5,278 | | |
| | Telemarketer | 5,276 | | |
| | Technical Sales Representative | 2,856 | | |
| | Door - to - Door Sales Worker | 1,343 | | |
| | Core Occupations | 476,093 | | |
| Complementary | Retail Supervisor | 52,996 | | |
| | Store Manager | 30,060 | | |
| | Admissions Counselor | 5,556 | | |
| | Call Center Manager | 2,212 | | |
| | Complementary Occupations | 91,762 | | |
| Total | All Occupations | 567,855 | | |

Note: Because compensation for sales-related jobs is usually commission-based and quite volatile, it is not accurately reflected in online job postings. As such, salary figures are not reported for jobs requiring sales-related skills.

Skill Set Details: Computer Programing

| COMPUTER PROGRAMMING OVERVIEW | | |
|--|-----------------------------|--|
| Total BA+ Entry-Level Postings | 52,822 | |
| Postings for Which Skills Represent Core Competencies | 41,682 (79%) | |
| Postings for Which Skills Represent Complementary Competencies | 11,140 (21%) | |
| Average Entry-Level Salary | \$60,484 | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$17,753 | |
| Growth Measure: 2010-Last 12 Months | Lower than the labor market | |

The skills required for computer programming jobs are generally programming languages that can be learned through course work, but most successful programmers build up a strong portfolio of coding experience outside of class. This bodes well for liberal arts graduates with strong programming experience, as they can qualify for programming jobs without a formal programming education. However, growth in the number of programming-related jobs open to liberal arts graduates is lagging behind other skill sets profiled in this analysis, as employer demand has begun to

shift towards software developers and engineers with more specialized educational credentials.

Nevertheless, there is still strong demand for entry-level occupations that require programming skills and are open to liberal arts graduates. In the past 12 months, there were a total of 52,822 unique postings for these jobs, and they boasted an average advertised entry-level salary of \$60,484, making this the most lucrative skill cluster with a \$17,753 premium over the average entry-level salary for low-specialization entry-level jobs.

OCCUPATIONAL SPOTLIGHT

Computer Programmer

Writes code, or instructions that a computer can follow, to create software programs. Follows program designs created by software developers, and assists with software program design work. Updates and expands programs, tests for errors and fix errors. Uses different computer languages as needed to write programs.

Computer Programmer Key Skills

SQL JAVA .NET

Oracle

Microsoft C#

Extensible Markup Language (XML)

JavaScript

SQL Server

UNIX C++

Linux

SAS

Relational Databases

Debugging

Key Computer Programming Skills

Analytical Skills
C++

Database Management Software (e.g. Oracle and SQL Server)
Extensible Markup Language (XML)
JAVA
JavaScript
Microsoft C#
.NET Programming
Problem Solving
Quality Assurance and Control
Website Design

SQL

| | COMPUTER PROGRAMMING OCCUPATIONAL STATISTICS | | | |
|----------------|--|--|-------------------------------|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | Average Entry-Level Salary | Premium vs. Average Low Specialization Entry-Level Salary |
| Core | Web Developer | 19,862 | \$63,284 | \$20,553 |
| | Computer Programmer | 19,219 | \$61,075 | \$18,344 |
| | Video Game Designer | 420 | \$56,042 | \$13,310 |
| | Webmaster / Administrator | 2,181 | \$58,656 | \$15,925 |
| | Core Occupations | 41,682 | \$61,950 | \$19,219 |
| Complementary | Network / Systems Support Specialist | 6,211 | \$55,960 | \$13,228 |
| | Web Designer | 2,587 | \$56,387 | \$13,656 |
| | Multimedia Designer / Animator | 2,342 | \$50,915 | \$8,183 |
| | Complementary Occupations | 11,140 | \$54,999 | \$12,268 |
| Total | All Occupations | 52,822 | \$60,484 | \$17,753 |

Skill Set Details: Data Analysis and Management

| DATA ANALYSIS AND MANAGEMENT OVERVIEW | | |
|--|------------------------------|--|
| Total BA+ Entry-Level Postings | 136,757 | |
| Postings for Which Skills Represent Core Competencies | 60,553 (44%) | |
| Postings for Which Skills Represent Complementary Competencies | 76,204 (56%) | |
| Average Entry-Level Salary | \$55,434 | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$12,703 | |
| Growth Measure: 2010-Last 12 Months | Higher than the labor market | |

The skills that data-intensive jobs require include knowledge of various statistical methods, general research expertise, and software skills needed to manage and manipulate large amounts of data. As business focuses on data and analytics, many existing occupations have absorbed increasingly data-

intensive activities into their core scope of duties. Most of these skills can be learned in the classroom and honed in

quantitatively-inclined internships.

In the last 12 months, these skills accounted for 136,757 unique entry-level postings open to Liberal Arts graduates. The average advertised entry-level salary across these occupations was \$55,434 - a \$12,703 premium over the

OCCUPATIONAL SPOTLIGHT

Operations Analyst

Analyzes systems and processes in an organization or business and uses findings to help solve problems and improve management. Uses advanced statistical and mathematical models and computer software to analyze a wide variety of data; collaborates with other analysts and with the management of an organization.

Operations Analyst Key Skills

Operations Analysis Accounting **Business Process** Data Analysis **Process Improvement Business Operations** Information Systems **Business Analysis** Financial Analysis

Key Data Analysis and Management Skills

average starting salary for all low specialization entry-level jobs available to liberal arts graduates.

Business Process Data Analysis Data Management Database Management Software (e.g. Oracle and SQL Server) **Problem Solving Quality Assurance and Control** Research SAS SQL Surveys

DATA ANALYSIS AND MANAGEMENT OCCUPATIONAL STATISTICS Premium vs. Estimated BA+ Average Low Average Entry-**Skill Function** Occupation Entry-Level Level Salary Specialization Postings Entry-Level Salary Core Financial Analyst 53,114 \$57,670 \$14,938 Market Research Analyst 7,190 \$60,113 \$17,382 \$14,400 **Core Occupations** 60,553 \$57,131 Complementary **Business / Management Analyst** 42,492 NA NA 13,926 \$48,308 Compensation / Benefits Analyst \$5,577 **Operations Analyst** 10,205 \$58,052 \$15,321 Supply Chain Analyst / Specialist 3,377 \$53,688 \$10,957 Researcher / Research Associate 2,584 \$39,970 -\$2,762 **Pricing Analyst** 1,861 \$61,003 \$18,271 **Complementary Occupations** 76,204 \$51,990 \$9,259 **All Occupations** 136,757 \$55,434 \$12,703

Skill Set Details: Marketing

| MARKETING OVERVIEW | | |
|--|------------------------------|--|
| Total BA+ Entry-Level Postings | 359,916 | |
| Postings for Which Skills Represent Core Competencies | 65,954 (18%) | |
| Postings for Which Skills Represent Complementary Competencies | 293,962 (82%) | |
| Average Entry-Level Salary | \$43,067 | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$336 | |
| Growth Measure: 2010-Last 12 Months | Higher than the labor market | |

Marketing skills can be developed through coursework, but on-the-job experience – typically gained through internships – is often the strongest way to develop and demonstrate marketing expertise. Specific marketing skills range from general marketing know-how to market research and product marketing skills. Marketing can be combined with other skills sets such as graphic design, social media, or data analysis to help students specialize and stand out within this broad field.

OCCUPATIONAL SPOTLIGHT

Marketing Coordinator/Assistant

Coordinates marketing and advertising activities for a company. Works to promote a company image and assists with developing and implementing marketing strategies. Interacts with customers and vendors, selects advertising outlets, and organizes materials and logistics for trade events or conferences.

Marketing Coordinator/Assistant Key Skills

Social Media
Marketing Materials
Adobe Photoshop
Event Planning
Adobe Acrobat
Business Development
Sales
Newsletters
Adobe InDesign
Graphic Design
Marketing Communications

In the last 12 months, 359,916 entry-level job postings called for marketing skills – 65,954 of which were in occupations for which this skill set represented a core requirement. These jobs had an average advertised salary of \$43,067 – less than \$500 more than the average entry-level salary for non-specialized jobs. However, many occupations saw much higher entry-level salaries, such as Market Research Analysts who commanded an average advertised entry-level salary over \$15,000 more than the average salary for non-specialized entry-level occupations. Additionally, demand for marketing skills is growing faster than demand for jobs overall, offering a bright outlook in job opportunities for liberal arts graduates with marketing expertise.

Key Marketing Skills

Business Development
Competitive Analysis
Creating Marketing Materials/Newsletters
Creativity
Editing
Market Research
Market Strategy/Planning
Product Management/Development
Product Marketing
Social Media

| MARKETING OCCUPATIONAL STATISTICS | | | | | | | | | |
|-----------------------------------|---------------------------------------|--|--------------------------------|--|--|--|--|--|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | Average Entry- Level Salary | Premium vs. Average Low Specialization Entry-Level Salary | | | | | |
| Core | Marketing Specialist | 30,982 | \$59,514 | \$16,783 | | | | | |
| | Marketing Coordinator / Assistant | 14,380 | \$40,673 | -\$2,058 | | | | | |
| | Marketing Representative | 7,299 | \$33,010 | -\$9,722 | | | | | |
| | Market Research Analyst | 7,190 | \$58,237 | \$15,506 | | | | | |
| | Advertising Sales Representative | 5,278 | NA | NA | | | | | |
| | Social Media Strategist / Specialist | 825 | \$39,340 | -\$3,391 | | | | | |
| | Core Occupations | 65,954 | \$51,435 | \$8,704 | | | | | |
| Complementary | Sales Representative | 156,582 | NA | NA | | | | | |
| | Office / Administrative Assistant | 57,272 | \$31,929 | -\$10,802 | | | | | |
| | Business / Management Analyst | 42,492 | NA | NA | | | | | |
| | Graphic Designer / Desktop Publisher | 16,530 | \$42,979 | \$248 | | | | | |
| | Editor | 9,493 | 9,493 \$42,263 | | | | | | |
| | Search Engine Optimization Specialist | 5,028 | \$61,651 | \$18,920 | | | | | |
| | Copywriter | 2,470 | \$54,153 | \$11,422 | | | | | |
| | Communications Coordinator | 1,835 | \$43,428 | \$697 | | | | | |
| | Complementary Occupations | 293,962 | \$37,678 | -\$5,053 | | | | | |
| Total | All Occupations | 359,916 | \$43,067 | \$336 | | | | | |

Skill Set Details: Graphic Design

| GRAPHIC DESIGN OVERVIEW | | | | | | |
|--|------------------------------|--|--|--|--|--|
| Total BA+ Entry-Level Postings | 134,090 | | | | | |
| Postings for Which Skills Represent Core Competencies | 21,459 (16%) | | | | | |
| Postings for Which Skills Represent Complementary Competencies | 112,631 (84%) | | | | | |
| Average Entry-Level Salary | \$51,919 | | | | | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$9,188 | | | | | |
| Growth Measure: 2010-Last 12 Months | Higher than the labor market | | | | | |

While strong general design instincts and skills are necessary for job seekers to leverage this skill set in the labor market, many of the skills that complement design skills are technical in nature – such as Adobe Photoshop, InDesign, and Adobe Acrobat. This offers a clear roadmap for the skills students can add to their portfolios – either through courses, self-exploration, or on-the job experience – in order to boost their graphic design credentials.

There were 134,090 entry-level postings for jobs demanding these skills over the last 12 months, and 112,631 of these postings were in occupations for which graphic design skills are Complementary skills. The average advertised

OCCUPATIONAL SPOTLIGHT

Graphic Designer

Works with text and images to create design for printed material or web sites. Develops visual designs, such as a logo, that establish an identity or brand for an organization, business or campaign; uses design skills to improve the visual impact of advertising messages, reports, books or websites. May produce documents and printed materials using desktop publishing software and equipment. May work for a publishing company or provide printed business or marketing material for business clients.

Graphic Designer Key Skills

Graphic Design
Adobe Photoshop
Adobe InDesign
Adobe Acrobat
Web Site Design
Adobe Illustrator
Typesetting
Concept Development
Adobe Dreamweaver
Visual Design
Packaging

JavaScript

Art Direction Marketing Materials

starting salary across all of these "Complementary" jobs was \$51,919 – a \$9,188 premium over non-specialized entry-level positions. However, the average starting salary for jobs for which graphic design skills are core skills – the bulk of which are graphic designer jobs – was lower, at \$45,462. Demand for these skills has grown faster than demand in the overall online job market, suggesting there will be strong opportunities for graduates with graphic design expertise in the near future.

Key Graphic Design Skills

Adobe CreativeSuite
Creativity
Editing
Extensible Markup Language (XML)
Graphic Design
JAVA
JavaScript
jQuery
Marketing
Social Media
Web Site Design and Development

| Graphic Design Occupational Statistics | | | | | | | | | |
|--|--------------------------------------|--|--------------------------------|--|--|--|--|--|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | Average Entry- Level Salary | Premium vs. Average Low Specialization Entry-Level Salary | | | | | |
| Core | Graphic Designer / Desktop Publisher | 16,530 | \$42,979 | \$248 | | | | | |
| | Web Designer | 2,587 | \$56,387 | \$13,656 | | | | | |
| | Multimedia Designer / Animator | 2,342 | \$50,915 | \$8,183 | | | | | |
| | Core Occupations | 21,459 | \$45,462 | \$2,731 | | | | | |
| Complementary | Marketing Specialist | 30,982 | \$59,514 | \$16,783 | | | | | |
| | Web Developer | 19,862 | \$63,284 | \$20,553 | | | | | |
| | Marketing Coordinator / Assistant | 14,380 | \$40,673 | (\$2,058) | | | | | |
| | Editor | 9,493 | \$42,263 | (\$468) | | | | | |
| | Technical Writer | 7,983 | \$58,304 | \$15,573 | | | | | |
| | Journalist / Reporter | 6,340 | \$46,325 | \$3,594 | | | | | |
| | Producer | 6,167 | \$49,826 | \$7,094 | | | | | |
| | Photographer | 5,562 | \$38,455 | (\$4,276) | | | | | |
| | Copywriter | 2,470 | 2,470 \$54,153 | | | | | | |
| | Artist / Illustrator | 2,220 | \$50,917 | \$8,186 | | | | | |
| | Webmaster / Administrator | 2,181 | \$58,656 | \$15,925 | | | | | |
| | Communications Coordinator | 1,835 | \$43,428 | \$697 | | | | | |
| | Complementary Occupations | 112,631 | \$52,861 | \$10,129 | | | | | |
| Total | All Occupations | 134,090 | \$51,919 | \$9,188 | | | | | |

Skill Set Details: General Business

| GENERAL BUSINESS OVERVIEW | | | | | | |
|--|------------------------------|--|--|--|--|--|
| Total BA+ Entry-Level Postings | 577,787 | | | | | |
| Postings for Which Skills Represent Core Competencies | 85,512 (15%) | | | | | |
| Postings for Which Skills Represent Complementary Competencies | 492,275 (85%) | | | | | |
| Average Entry-Level Salary | \$53,875 | | | | | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$11,144 | | | | | |
| Growth Measure: 2010-Last 12 Months | Higher than the labor market | | | | | |

Business knowledge can be developed through additional coursework – such as a minor – but internships may offer the most reliable evidence to employers of relevant business experience. The specific business skills employers are demanding range from general business skills such as business development and business analysis, to more technical skills such as knowledge of enterprise resource planning software from Oracle and SAP and accounting.

Because business skills are desired across a multitude of occupations, developing business skills opens the greatest number of entry-level jobs to

OCCUPATIONAL SPOTLIGHT

Business/Management Analyst

Provides strategic management consulting to companies and businesses. Advises on ways to improve operations, increase efficiency, reduce costs and increase revenues; may recommend systems or organizational change. May specialize in an area of business practice or a specific industry; may also specialize in consulting with government agencies.

Business/Management Analyst Key Skills

Business Analysis
Business Process
Accounting
SQL
Process Improvement
Data Analysis
Business Administration
Business Development
Business Systems Analysis
Systems Development Life Cycle (SDLC)
Enterprise Resource Planning Software
(e.g. Oracle or SAP)
Financial Analysis
Forecasting
Systems Analysis

recent liberal arts graduates. In the last 12 months, there were 577,787 entry-level postings open to liberal arts graduates that demanded general business skills. These postings commanded an average entry-level salary of \$53,875, which is \$11,144 more than the average entry-level salary for non-specialized entry-level jobs.

General Business Key Skills

Accounting
Analytical Skills
Budgeting
Business Analysis
Business Development
Business Process
Contract Management
Enterprise Resource Planning Software (e.g. Oracle or SAP)
Presentation Skills
Purchasing/Procurement
SQL

| | GENERAL BUSINESS OCCUPATIONAL STATISTICS | | | | | | | | |
|----------------|---|--|--------------------------------|--|--|--|--|--|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | Average Entry- Level Salary | Premium vs. Average Low Specialization Entry-Level Salary | | | | | |
| Core | Business / Management Analyst | 42,492 | NA | NA | | | | | |
| | Supply Chain/Logistics Analyst | 27,395 | \$51,180 | \$8,449 | | | | | |
| | Operations Analyst | 10,205 | \$61,175 | \$18,444 | | | | | |
| | Purchasing Assistant | 5,420 | \$35,579 | (\$7,153) | | | | | |
| | Core Occupations | 85,512 | \$51,585 | \$8,854 | | | | | |
| Complementary | Sales Representative | 156,582 | NA | NA | | | | | |
| | Financial Analyst | 53,114 | \$56,981 | \$14,250 | | | | | |
| | Account Manager / Representative | 52,495 | \$58,890 | \$16,158 | | | | | |
| | Account Executive | 40,874 | NA | NA | | | | | |
| | Marketing Specialist | 30,982 | \$59,514 | \$16,783 | | | | | |
| | Buyer / Purchasing Agent | 22,615 | \$51,031 | \$8,300 | | | | | |
| | Human Resources / Labor Relations Specialist | 20,404 | \$52,892 | \$10,161 | | | | | |
| | Financial Services Sales Agent | 17,007 | NA | NA | | | | | |
| | Marketing Coordinator / Assistant | 14,380 | \$40,673 | (\$2,058) | | | | | |
| | Technical Sales Representative | 14,090 | NA | NA | | | | | |
| | Compensation / Benefits Analyst | 13,926 | \$48,347 | \$5,615 | | | | | |
| | Compliance Analyst | 9,109 | \$53,046 | \$10,315 | | | | | |
| | Technical Writer | 7,983 | \$58,304 | \$15,573 | | | | | |
| | Marketing Representative | 7,299 | \$33,010 | (\$9,722) | | | | | |
| | Market Research Analyst | 7,190 | \$58,237 | \$15,506 | | | | | |
| | Credit Analyst | 5,393 | NA | NA | | | | | |
| | Community Manager | 3,751 | \$45,810 | \$3,078 | | | | | |
| | Merchandising Manager | 2,428 | \$45,683 | \$2,952 | | | | | |
| | Transportation Manager | 2,426 | \$60,125 | \$17,394 | | | | | |
| | Medical Office / Practice Manager | 2,413 | \$51,976 | \$9,245 | | | | | |
| | Budget Analyst | 2,368 | \$59,245 | \$16,513 | | | | | |
| | Pricing Analyst | 1,861 | \$53,626 | \$10,895 | | | | | |
| | Complementary Occupations | 492,275 | \$54,390 | \$11,659 | | | | | |
| Total | All Occupations | 577,787 | \$53,875 | \$11,144 | | | | | |

Skill Set Details: Social Media

| SOCIAL MEDIA OVERVIEW | | | | | | | |
|--|-----------------------------------|--|--|--|--|--|--|
| Total BA+ Entry-Level Postings | 399,577 | | | | | | |
| Postings for Which Skills Represent Core Competencies | 5,853 (1%) | | | | | | |
| Postings for Which Skills Represent Complementary Competencies | 393,724 (99%) | | | | | | |
| Average Entry-Level Salary | \$46,155 | | | | | | |
| Average Salary Premium Over Low Specialization Entry-Level Jobs | \$3,424 | | | | | | |
| Growth Measure: 2010-Last 12 Months | Much higher than the labor market | | | | | | |

Nearly all recent college graduates have interacted with one or more social networks, but the degree of social media proficiency demanded by employers usually exceeds basic familiarity with Facebook or Twitter, and often braches out to include blogging and content management expertise. Although some colleges may offer courses covering social media marketing, there are many

OCCUPATIONAL SPOTLIGHT

Social Media Strategist/Specialist

Develops strategies for using social media and networking sites in company marketing and advertising.

Social Media Strategist/Specialist Key Skills

Blogging
Social Media Platforms
Social Media Marketing
Social Networking
LinkedIn
Journalism
Marketing
Social Media Campaign
Content Management
Digital Marketing
Social Media Integration
Media Strategy

Adobe Photoshop

Online Marketing

Social Media

social media-focused internships that may be the most effective way to develop the social media know-how that employers demand.

Over the last 12 months, these skills were demanded by 399,577 entry-level job postings open to liberal arts graduates, but only a small fraction of these postings were for core social media occupations. Instead, demand for social media skills as a complementary skill set is spreading to a diverse set of occupations, including marketing specialists, web developers and increasingly recruiters and sales roles. The average advertised entry-level salary across all of these occupations was \$46,155 – \$3,424 more than the average advertised starting salary for non-specialized entry-level positions.

Social Media Key Skills

Adobe Photoshop
Business Development
Content Management
Creativity
Market Strategy
Marketing
Newsletters
Sales
Social Media/Social Networking
Writing (e.g. Blogging, Journalism, or Editing)

| SOCIAL MEDIA OCCUPATIONAL STATISTICS | | | | | | | | | |
|--------------------------------------|---------------------------------------|--|--------------------------------|--|--|--|--|--|--|
| Skill Function | Occupation | Estimated BA+ Entry-Level Postings | Average Entry- Level Salary | Premium vs. Average Low Specialization Entry-Level Salary | | | | | |
| Core | Search Engine Optimization Specialist | 5,028 | \$61,651 | \$18,920 | | | | | |
| | Social Media Strategist / Specialist | 825 | \$39,340 | (\$3,391) | | | | | |
| | Core Occupations | 5,853 | \$58,508 | \$15,776 | | | | | |
| Complementary | Sales Representative | 156,582 | NA | NA | | | | | |
| | Office / Administrative Assistant | 57,272 | \$31,929 | (\$10,802) | | | | | |
| | Account Executive | 40,874 | NA | NA | | | | | |
| | Recruiter | 36,438 | \$47,176 | \$4,445 | | | | | |
| | Marketing Specialist | 30,982 | \$59,514 | \$16,783 | | | | | |
| | Web Developer | 19,862 | \$63,284 | \$20,553 | | | | | |
| | Marketing Coordinator / Assistant | 14,380 | \$40,673 | (\$2,058) | | | | | |
| | Editor | 9,493 | \$42,263 | (\$468) | | | | | |
| | Journalist / Reporter | 6,340 | \$46,325 | \$3,594 | | | | | |
| | Producer | 6,167 | \$49,826 | \$7,094 | | | | | |
| | Writer | 5,725 | \$49,517 | \$6,786 | | | | | |
| | Community Manager | 3,751 | \$45,810 | \$3,078 | | | | | |
| | Copywriter | 2,470 | \$54,153 | \$11,422 | | | | | |
| | Communications Coordinator | 1,835 | \$43,428 | \$697 | | | | | |
| | Complementary Occupations | 393,724 | \$45,786 | \$3,054 | | | | | |
| Total | All Occupations | 399,577 | \$46,155 | \$3,424 | | | | | |

Appendix: Local Data for Top 20 Cities

Table 1: Entry-Level Postings Available to Liberal Arts Graduates in the 20 Largest MSAs

| Location | Postings Open to Liberal Arts Graduates With No Additional Training | Postings Liberal Arts Graduates Can Qualify for With Additional Technical Skills | Total Postings Open to Liberal Arts Graduates |
|-------------------|---|---|--|
| Nation | 954,996 | 861,572 | 1,816,688 |
| New York, NY | 101,750 | 80,212 | 181,962 |
| Los Angeles, CA | 66,747 | 45,952 | 112,699 |
| Washington, DC | 47,129 | 39,234 | 86,364 |
| Chicago, IL | 54,131 | 38,376 | 92,507 |
| Boston, MA | 21,220 | 21,301 | 42,521 |
| Dallas, TX | 45,616 | 32,757 | 78,374 |
| San Francisco, CA | 35,932 | 26,647 | 62,579 |
| Atlanta, GA | 40,799 | 26,016 | 66,815 |
| Philadelphia, PA | 38,940 | 25,599 | 64,539 |
| Houston, TX | 29,598 | 18,636 | 48,233 |
| Seattle, WA | 32,034 | 21,700 | 53,734 |
| Detroit, MI | 26,542 | 17,480 | 44,022 |
| San Jose, CA | 12,958 | 10,568 | 23,526 |
| Denver, CO | 22,722 | 16,111 | 38,832 |
| Miami, FL | 29,290 | 15,911 | 45,202 |
| Phoenix, AZ | 26,640 | 16,728 | 43,368 |
| Minneapolis, MN | 21,621 | 15,834 | 37,455 |
| Portland, OR | 18,441 | 12,031 | 30,472 |
| Baltimore, MD | 16,570 | 11,124 | 27,693 |
| San Diego, CA | 17,538 | 11,921 | 29,459 |

Table 2: Total Postings for Each Skill Set in the 20 Largest MSAs

| Location | IT Networking and Support | Sales | Computer Programming | Data Management and Analysis | Marketing | Graphic Design | General Business | Social Media |
|-------------------|---------------------------------|---------|-------------------------|------------------------------------|-----------|-------------------|---------------------|--------------|
| Nation | 66,429 | 567,855 | 52,822 | 136,757 | 359,916 | 134,090 | 577,789 | 399,577 |
| New York, NY | 7,581 | 66,437 | 4,281 | 16,461 | 40,931 | 14,337 | 53,228 | 47,391 |
| Los Angeles, CA | 4,189 | 43,285 | 3,212 | 5,919 | 25,434 | 8,247 | 28,240 | 30,483 |
| Washington, DC | 4,658 | 25,937 | 2,455 | 7,677 | 19,894 | 5,598 | 22,325 | 21,130 |
| Chicago, IL | 4,041 | 35,041 | 2,195 | 6,422 | 20,018 | 5,258 | 25,836 | 23,676 |
| Boston, MA | 2,087 | 11,074 | 1,271 | 4,171 | 11,218 | 4,114 | 13,125 | 13,365 |
| Dallas, TX | 4,152 | 30,003 | 1,618 | 4,880 | 15,871 | 3,435 | 20,868 | 19,419 |
| San Francisco, CA | 2,824 | 23,560 | 1,904 | 4,746 | 13,921 | 4,580 | 17,583 | 17,324 |
| Atlanta, GA | 3,305 | 27,484 | 1,679 | 3,940 | 15,587 | 3,598 | 19,191 | 18,210 |
| Philadelphia, PA | 2,840 | 26,009 | 1,277 | 4,333 | 12,781 | 2,800 | 17,268 | 14,546 |
| Houston, TX | 2,167 | 18,440 | 716 | 2,991 | 10,858 | 1,749 | 13,265 | 12,748 |
| Seattle, WA | 2,322 | 19,228 | 1,285 | 2,617 | 11,948 | 3,180 | 13,257 | 14,323 |
| Detroit, MI | 1,876 | 17,687 | 1,127 | 2,354 | 8,537 | 1,861 | 11,719 | 10,568 |
| San Jose, CA | 1,273 | 8,288 | 930 | 1,673 | 5,246 | 2,010 | 6,533 | 6,388 |
| Denver, CO | 2,093 | 13,712 | 572 | 2,293 | 8,562 | 1,508 | 10,184 | 10,292 |
| Miami, FL | 1,407 | 20,156 | 603 | 2,026 | 9,702 | 2,013 | 11,344 | 12,088 |
| Phoenix, AZ | 1,863 | 17,091 | 754 | 2,157 | 9,163 | 1,840 | 11,026 | 10,774 |
| Minneapolis, MN | 1,727 | 13,889 | 797 | 2,369 | 8,349 | 1,789 | 10,303 | 9,596 |
| Portland, OR | 1,300 | 11,273 | 545 | 1,406 | 6,764 | 1,495 | 7,478 | 8,079 |
| Baltimore, MD | 1,290 | 9,673 | 823 | 1,471 | 6,321 | 1,414 | 6,907 | 7,568 |
| San Diego, CA | 1,398 | 11,124 | 738 | 1,484 | 6,574 | 1,897 | 7,414 | 7,806 |

Table 3: Relative Rank of Top 20 MSAs by Total Postings in Each Skill Set

| MSA | IT Networking and Support | Sales | Computer Programming | Data Management and Analysis | Marketing | Graphic Design | General Business | Social Media |
|-------------------|---------------------------------|-------|-------------------------|------------------------------------|-----------|-------------------|---------------------|--------------|
| New York, NY | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Los Angeles, CA | 3 | 2 | 2 | 4 | 2 | 2 | 2 | 2 |
| Washington, DC | 2 | 7 | 3 | 2 | 4 | 3 | 4 | 4 |
| Chicago, IL | 5 | 3 | 4 | 3 | 3 | 4 | 3 | 3 |
| Boston, MA | 12 | 18 | 10 | 8 | 10 | 6 | 11 | 10 |
| Dallas, TX | 4 | 4 | 7 | 5 | 5 | 8 | 5 | 5 |
| San Francisco, CA | 8 | 8 | 5 | 6 | 7 | 5 | 7 | 7 |
| Atlanta, GA | 6 | 5 | 6 | 9 | 6 | 7 | 6 | 6 |
| Philadelphia, PA | 7 | 6 | 9 | 7 | 8 | 10 | 8 | 8 |
| Houston, TX | 10 | 11 | 17 | 10 | 11 | 17 | 9 | 11 |
| Seattle, WA | 9 | 10 | 8 | 11 | 9 | 9 | 10 | 9 |
| Detroit, MI | 13 | 12 | 11 | 13 | 15 | 14 | 12 | 14 |
| San Jose, CA | 20 | 20 | 12 | 17 | 20 | 12 | 20 | 20 |
| Denver, CO | 11 | 15 | 19 | 14 | 14 | 18 | 16 | 15 |
| Miami, FL | 16 | 9 | 18 | 16 | 12 | 11 | 13 | 12 |
| Phoenix, AZ | 14 | 13 | 15 | 15 | 13 | 15 | 14 | 13 |
| Minneapolis, MN | 15 | 14 | 14 | 12 | 16 | 16 | 15 | 16 |
| Portland, OR | 18 | 16 | 20 | 20 | 17 | 19 | 17 | 17 |
| Baltimore, MD | 19 | 19 | 13 | 19 | 19 | 20 | 19 | 19 |
| San Diego, CA | 17 | 17 | 16 | 18 | 18 | 13 | 18 | 18 |

Table 4: Postings per 1,000 Recent Bachelor's Graduates of Any Major for Each Skill Set in the 20 Largest MSAs

| Location | IT Networking and Support | Sales | Computer Programming | Data Management and Analysis | Marketing | Graphic Design | General Business | Social Media |
|-------------------|------------------------------|-------|-------------------------|------------------------------------|-----------|-------------------|---------------------|--------------|
| Nationwide | 27 | 234 | 22 | 56 | 148 | 55 | 238 | 164 |
| New York, NY | 31 | 270 | 17 | 67 | 166 | 58 | 216 | 193 |
| Los Angeles, CA | 34 | 348 | 26 | 48 | 205 | 66 | 227 | 245 |
| Washington, DC | 55 | 308 | 29 | 91 | 236 | 66 | 265 | 251 |
| Chicago, IL | 36 | 316 | 20 | 58 | 180 | 47 | 233 | 213 |
| Boston, MA | 29 | 153 | 18 | 58 | 155 | 57 | 181 | 185 |
| Dallas, TX | 89 | 642 | 35 | 104 | 339 | 73 | 446 | 415 |
| San Francisco, CA | 55 | 458 | 37 | 92 | 271 | 89 | 342 | 337 |
| Atlanta, GA | 76 | 633 | 39 | 91 | 359 | 83 | 442 | 419 |
| Philadelphia, PA | 41 | 374 | 18 | 62 | 184 | 40 | 248 | 209 |
| Houston, TX | 57 | 483 | 19 | 78 | 284 | 46 | 347 | 334 |
| Seattle, WA | 62 | 516 | 34 | 70 | 320 | 85 | 356 | 384 |
| Detroit, MI | 61 | 575 | 37 | 77 | 278 | 61 | 381 | 344 |
| San Jose, CA | 67 | 435 | 49 | 88 | 275 | 105 | 343 | 335 |
| Denver, CO | 81 | 533 | 22 | 89 | 333 | 59 | 396 | 400 |
| Miami, FL | 39 | 555 | 17 | 56 | 267 | 55 | 313 | 333 |
| Phoenix, AZ | 67 | 618 | 27 | 78 | 331 | 67 | 399 | 390 |
| Minneapolis, MN | 43 | 343 | 20 | 59 | 206 | 44 | 255 | 237 |
| Portland, OR | 75 | 653 | 32 | 81 | 392 | 87 | 433 | 468 |
| Baltimore, MD | 40 | 299 | 25 | 45 | 195 | 44 | 213 | 234 |
| San Diego, CA | 51 | 408 | 27 | 54 | 241 | 70 | 272 | 286 |

THE ART OF EMPLOYMENT

Table 5: Relative Rank of Top 20 MSAs by Postings per 1,000 Recent Bachelor's Graduates of any Major in Each Skill Set

| MSA | IT Networking and Support | Sales | Computer Programming | Data Management and Analysis | Marketing | Graphic Design | General Business | Social Media |
|-------------------|------------------------------|-------|-------------------------|------------------------------------|-----------|-------------------|---------------------|-----------------|
| New York, NY | 19 | 19 | 19 | 12 | 19 | 13 | 18 | 19 |
| Los Angeles, CA | 18 | 14 | 11 | 19 | 15 | 10 | 17 | 14 |
| Washington, DC | 10 | 17 | 8 | 3 | 13 | 9 | 13 | 13 |
| Chicago, IL | 17 | 16 | 14 | 15 | 18 | 16 | 16 | 17 |
| Boston, MA | 20 | 20 | 18 | 16 | 20 | 14 | 20 | 20 |
| Dallas, TX | 1 | 2 | 5 | 1 | 3 | 6 | 1 | 3 |
| San Francisco, CA | 11 | 10 | 3 | 2 | 10 | 2 | 10 | 8 |
| Atlanta, GA | 3 | 3 | 2 | 4 | 2 | 5 | 2 | 2 |
| Philadelphia, PA | 14 | 13 | 17 | 13 | 17 | 20 | 15 | 18 |
| Houston, TX | 9 | 9 | 16 | 8 | 7 | 17 | 8 | 10 |
| Seattle, WA | 7 | 8 | 6 | 11 | 6 | 4 | 7 | 6 |
| Detroit, MI | 8 | 5 | 4 | 10 | 8 | 11 | 6 | 7 |
| San Jose, CA | 6 | 11 | 1 | 6 | 9 | 1 | 9 | 9 |
| Denver, CO | 2 | 7 | 13 | 5 | 4 | 12 | 5 | 4 |
| Miami, FL | 16 | 6 | 20 | 17 | 11 | 15 | 11 | 11 |
| Phoenix, AZ | 5 | 4 | 9 | 9 | 5 | 8 | 4 | 5 |
| Minneapolis, MN | 13 | 15 | 15 | 14 | 14 | 18 | 14 | 15 |
| Portland, OR | 4 | 1 | 7 | 7 | 1 | 3 | 3 | 1 |
| Baltimore, MD | 15 | 18 | 12 | 20 | 16 | 19 | 19 | 16 |
| San Diego, CA | 12 | 12 | 10 | 18 | 12 | 7 | 12 | 12 |