Market Scan Package:
National Information Technology
National Health Information
City-Level Information Technology [Chicago, Cincinnati, Houston]
Executive Summary

Bridges to Career Opportunities

The Bridges to Career Opportunities (BCO) program is an initiative from the Family Income and Wealth Building department of LISC. The aim of the program is to help community partners (Financial Opportunity Centers – FOC) develop and implement “bridge” programs that focus on skill building and training. The programs are designed to boost unemployed/underemployed adults’ basic skills. Accenture’s Corporate Citizenship team produced an IT and Health Information market report per LISC request, that will assist in the development of the Bridges to Career Opportunities IT program. Locations for market scans were selected by surveying the nation in search of highest demand for: IT non-advanced degree, high school/GED, entry-level positions. The locations were then filtered by cities with operating LISC and FOC offices. The initial market scan was performed in Chicago, and focused on selecting IT certifications and occupations to target. This is the market scan package and includes the following: national IT scan, national Health Information scan, and city IT scans (Chicago, Cincinnati, Houston).

BCO Beneficiaries: 0-2 years experience and high school or equivalent education
The top three industries based on GDP (including the public sector) in the USA are: Government, Real Estate / Rental Leasing, and Manufacturing. Government, Healthcare, and Retail Trade offer the most employment opportunities. IT occupations are present across all industries.

A small portion of IT positions are available to individuals with only a high school diploma or equivalent. Available positions shrink further if participants have limited to no experience in the field. The Bridge program will aim to increase skill-sets of beneficiaries to be able to obtain these positions.

The highest demanded entry-level IT occupation for potential Bridge to Career Opportunities (BCO) program participants is the Computer User Support Specialist. This occupation has several potential career paths and serves as a promising entry to launch an IT career.

Job postings for the Computer User Support Specialist role highlighted particular entry-level certifications in demand by employers. The recommended certifications based off demand, occupation relevance, while providing foundational skills for all IT occupations are the CompTIA A+ Certification or the CompTIA IT Fundamentals.

A large portion of Health Information positions are available to individuals with only a high school diploma or equivalent. Many entry-level occupations still encouraged attendance and/or completion at technical school or associate’s degree programs.

According to Burning Glass job postings data from 2015, the top 3 demanded Health Information occupations for 0-2 years experience and high school education level or equivalent, are the: Medical Secretary, Medical Records & Health Information Technician, and Medical Assistant.

The Medical Secretary occupation has limited certification needs. Job postings for the Medical Records & Health Information Technician role highlighted particular entry-level certifications in demand by employers. The recommended certifications based off demand, occupation relevance, while providing foundational skills for a variety of Health IT occupations are the CPC and RHIT certifications. Certifications require 2 years experience and/or associate’s degree level of education.
National IT
Industry assessments help give a picture of the market landscape, but aren't comprehensive to occupations within those industries. IT occupations are found within each industry and participants can pursue IT careers in a variety of organizations, based on available opportunities and career goals.

2014: National NAICS Industries by GDP (in billions) - including Information Industry

- Government: 2,274.6, 13%
- Real estate, rental, leasing (NAICS 53): 2,247.7, 13%
- Manufacturing (NAICS 31-33): 2,097.7, 12%
- Health care and social assistance (NAICS 62): 1,226.9, 7%
- Finance and insurance (NAICS 52): 1,222.9, 7%
- Information (NAICS 51): 824.7, 5%

Source: 2014 Bureau of Economic Analysis, US Department of Commerce
Employment in USA’s Top Industries

IT occupations are found within each industry and participants can pursue IT careers in a variety of organizations based on available opportunities and career goals.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>25,000</td>
<td>-8%</td>
<td>-3%</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>15,000</td>
<td>2%</td>
<td>7%</td>
</tr>
<tr>
<td>Retail trade</td>
<td>10,000</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>7,500</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>5,000</td>
<td>27%</td>
<td>32%</td>
</tr>
<tr>
<td>Administrative and waste management services</td>
<td>2,500</td>
<td>32%</td>
<td>37%</td>
</tr>
<tr>
<td>Professional, scientific, and technical services</td>
<td>2,000</td>
<td>27%</td>
<td>32%</td>
</tr>
<tr>
<td>Other services, except government</td>
<td>1,500</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Construction</td>
<td>1,000</td>
<td>17%</td>
<td>22%</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>500</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Information</td>
<td>200</td>
<td>7%</td>
<td>12%</td>
</tr>
</tbody>
</table>

*including Information (NAICS 51) for IT relevance*

Projected Employment by 2024

The Computer User Support Specialist serves as an optimal entry into IT occupations based on Bureau of Labor Statistics projected growth, occupations contained in its future career pathway, as well as factoring in its minor barriers to entry.

Key
- = High Entry Level Opportunities
- = In Computer User Support Specialist Career Pathway
- = Considerable preparation needed
- = Highest % Growth across IT occupations

Top IT Occupations in USA based on Employment by 2024

- Software Developers, Applications
- Computer Systems Analysts
- Computer User Support Specialists
- Software Developers, Systems Software
- Network and Computer Systems Administrators
- Web Developers

Projected Employment 2024: 19%
Employment 2014: 21%
% Change Employment Nationwide by 2024: 13%

% Growth is Nationwide by the Department of Labor and Bureau of Labor Statistics
Source: Burning Glass Labor Insights

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The Bureau of Labor Statistics (BLS) has reported the following national job growth projections for IT occupations, IT associated industries, and the overall market as nationwide growth by 2024. Postings are for high school level education and 0-2 years experience across the nation.
Below is a table showing top trending IT occupations for 2015 and the top employers by job postings for the year regardless of experience or education level. These positions and companies can be targets for the future careers of the participants.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015 Postings</strong></td>
<td><strong>2015 Postings</strong></td>
<td><strong>2015 Postings</strong></td>
<td><strong>2015 Postings</strong></td>
<td><strong>2015 Postings</strong></td>
<td><strong>2015 Postings</strong></td>
<td><strong>2015 Postings</strong></td>
</tr>
<tr>
<td>986,900</td>
<td>209,905</td>
<td>188,867</td>
<td>178,668</td>
<td>176,363</td>
<td>159,802</td>
<td>146,969</td>
</tr>
<tr>
<td><strong>Company</strong></td>
<td><strong>Posts</strong></td>
<td><strong>Company</strong></td>
<td><strong>Posts</strong></td>
<td><strong>Company</strong></td>
<td><strong>Posts</strong></td>
<td><strong>Company</strong></td>
</tr>
<tr>
<td>Oracle</td>
<td>8,541</td>
<td>Oracle</td>
<td>6,811</td>
<td>General Dynamics</td>
<td>2,491</td>
<td>Oracle</td>
</tr>
<tr>
<td>Accenture</td>
<td>8,292</td>
<td>Accenture</td>
<td>4,020</td>
<td>Computer Sciences Corporation</td>
<td>1,215</td>
<td>Accenture</td>
</tr>
<tr>
<td>IBM</td>
<td>5,008</td>
<td>Anthem Blue Cross</td>
<td>1,713</td>
<td>Northrop Grumman</td>
<td>1,029</td>
<td>Accenture</td>
</tr>
<tr>
<td>Amazon.com</td>
<td>4,742</td>
<td>Deloitte</td>
<td>1,639</td>
<td>Oracle</td>
<td>1,013</td>
<td>Accenture</td>
</tr>
<tr>
<td>UnitedHealth Group</td>
<td>4,347</td>
<td>UnitedHealth Group</td>
<td>1,461</td>
<td>Accenture</td>
<td>965</td>
<td>General Dynamics</td>
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<td>1,713</td>
<td>Northrop Grumman</td>
<td>1,029</td>
<td>UnitedHealth Group</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
In 2015, the following employers had the most job postings for individuals with a high school diploma or equivalent and less than two years of experience. These employers serve as a starting point for participants to target when entering the IT field.

<table>
<thead>
<tr>
<th>Top IT Employers</th>
<th># of Job Postings</th>
<th>Top Occupation at Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Buy</td>
<td>9,025</td>
<td>Computer User Support Specialist</td>
</tr>
<tr>
<td>R&amp;E Automated Systems</td>
<td>957</td>
<td>Computer Programmer</td>
</tr>
<tr>
<td>IBM</td>
<td>945</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>UnitedHealth Group</td>
<td>534</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>Big Lots Incorporated</td>
<td>366</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>Vodastra Technologies - Onsite It Services</td>
<td>337</td>
<td>Computer User Support Specialist</td>
</tr>
<tr>
<td>Teletech</td>
<td>278</td>
<td>Computer User Support Specialist</td>
</tr>
<tr>
<td>H&amp;R Block</td>
<td>254</td>
<td>Network / Systems Support Specialist</td>
</tr>
<tr>
<td>General Electric Company</td>
<td>184</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>Xerox</td>
<td>173</td>
<td>Computer User Support Specialist</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
The Department of Labor (DOL) has developed an IT Competency Model that identifies possible knowledge, skills, and abilities needed for workers to perform successfully in the IT field. Information for upper Tiers are specific to occupation and can be found through DOL O*Net OnLine. Employees in the field do not need to possess all competencies identified within.

### Tier 5: Industry-Sector Technical Competencies – User and Customer Support

- **Understanding different user groups**
- **Ability to communicate with and solve user’s problems**
- **Understand IT Structure of an IT business or product plan**
- **Assess user implications of new IT solutions**
- **Knowledge of importance relating to IT continuity within a business**
- **Provide training on new hardware/software**
- **Describe how call centers typically operate**

### Knowledge of:

- **Computers and Electronics**
  - Circuit boards
  - Processors
  - Chips
  - Electronic Equipment
  - Computer Hardware and Software
  - Applications
  - Programming

- **Customer and Personal Service**
  - Customer needs assessment
  - High service standards
  - Evaluate customer satisfaction

- **Telecommunications**
  - Transmission
  - Broadcasting
  - Switching
  - Control
  - Operation

- **Clerical**
  - Word processing
  - File mgmt.
  - Stenography
  - Form Design

- **Administration and Mgmt.**
  - Strategy
  - Planning
  - Leadership
  - HR Modeling

- **Engineering and Technology**
  - Engineering Science
  - Engineering Technology
  - Principles
  - Techniques
  - Procedures
  - Equipment

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Source: Department of Labor: Competency Model Clearinghouse
Skill Profile: Computer User Support Specialist

Customer service, repair and consumer electronics skills are the most commonly listed for entry-level Computer User Support Specialists nationwide. These important skills have been confirmed through preliminary validation communication with Accenture Local Technical Support.

<table>
<thead>
<tr>
<th>Baseline Skills</th>
<th>Specialized Skills</th>
<th>Technical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service</td>
<td>Repair</td>
<td>Microsoft Windows</td>
</tr>
<tr>
<td>65.3%</td>
<td>59.9%</td>
<td>21.1%</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>Consumer Electronics</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>33.2%</td>
<td>43.2%</td>
<td>20.9%</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>Computer Repair</td>
<td>Microsoft Excel</td>
</tr>
<tr>
<td>25.4%</td>
<td>33.7%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Microsoft Windows</td>
<td>Technical Support</td>
<td>Microsoft Operating Systems</td>
</tr>
<tr>
<td>21.1%</td>
<td>33.7%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Microsoft Office</td>
<td>Help Desk Support</td>
<td>Transmission Control Protocol / Internet Protocol</td>
</tr>
<tr>
<td>20.9%</td>
<td>21.6%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Software Installation</td>
<td>Virtual Private Networking (VPN)</td>
</tr>
<tr>
<td>18.3%</td>
<td>20.7%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Writing</td>
<td>Computer Installation and Setup</td>
<td>Microsoft Powerpoint</td>
</tr>
<tr>
<td>15.9%</td>
<td>12.5%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Organizational Skills</td>
<td>Administrative Functions</td>
<td>ITIL</td>
</tr>
<tr>
<td>15.5%</td>
<td>11.2%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>Printers</td>
<td>Microsoft Word</td>
</tr>
<tr>
<td>9.7%</td>
<td>11.0%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Research</td>
<td>PC Support</td>
<td>LINUX</td>
</tr>
<tr>
<td>8.0%</td>
<td>9.6%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>It Support</td>
<td>Cisco</td>
</tr>
<tr>
<td>7.8%</td>
<td>6.9%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Detail-Oriented</td>
<td>Personal Computers</td>
<td>SQL</td>
</tr>
<tr>
<td>7.5%</td>
<td>6.4%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Multi-Tasking</td>
<td>Troubleshooting Technical Issues</td>
<td>Citrix</td>
</tr>
<tr>
<td>7.3%</td>
<td>5.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Time Management</td>
<td>Technical Training</td>
<td>Microsoft Outlook</td>
</tr>
<tr>
<td>6.3%</td>
<td>4.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Typing</td>
<td>Microsoft Operating Systems</td>
<td>Domain Name System (DNS)</td>
</tr>
<tr>
<td>5.1%</td>
<td>4.5%</td>
<td>1.5%</td>
</tr>
<tr>
<td>English</td>
<td>Record Keeping</td>
<td>Microsoft Exchange</td>
</tr>
<tr>
<td>4.9%</td>
<td>4.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Supervisory Skills</td>
<td>Hardware Experience</td>
<td>Word Processing</td>
</tr>
<tr>
<td>4.9%</td>
<td>4.2%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Telephone Skills</td>
<td>Hardware and Software Configuration</td>
<td>Microsoft Vista</td>
</tr>
<tr>
<td>4.7%</td>
<td>4.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Listening</td>
<td>Computer Hardware/Hardware Knowledge</td>
<td>Microsoft Sharepoint</td>
</tr>
<tr>
<td>3.6%</td>
<td>4.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Telecommunications</td>
<td>UNIX</td>
</tr>
<tr>
<td>3.5%</td>
<td>3.9%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

*Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015*
Certifications: Computer User Support Specialist

Of the 17,508 postings in 2015, 80% did not list a required certification in the job posting. IT certifications can highlight applicants validated skill sets to potential employers, but are not required to enter the IT job market.

*Note: Percentages are based on number of postings containing a certification. Multiple certifications may be listed on one posting, resulting in total percentages over 100%. Top certifications are shown in graph.

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Recommended beginner/novice IT certifications (IT Fundamentals, A+, and Microsoft Technology Associate) serve as an optimal entry point into IT certifications to provide participants with highly applicable IT foundational skills that further can be built on.

### IT Certifications by Vendor

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Entry Level</th>
<th>Associate Level</th>
<th>No Prerequisites</th>
<th>A+ Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco</td>
<td>Cisco Certified Technician</td>
<td>Cisco Certified Network Associate</td>
<td>Cisco Certified Network Associate</td>
<td>Cisco Certified Technician</td>
</tr>
<tr>
<td>CompTIA</td>
<td>IT Fundamentals</td>
<td>A+</td>
<td>Network+ (N+)</td>
<td>Security+</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Microsoft Certified Professional</td>
<td>Microsoft Certified Solutions Expert</td>
<td>Microsoft Certified Solutions Developer</td>
<td>Microsoft Certified Technology Associate</td>
</tr>
</tbody>
</table>

- Green star = recommended for beginner/novice; highly applicable to most IT career pathways
- Black star = high demand for IT entry-level roles not requiring advanced degree

Source: Cisco, CompTIA, Microsoft
Help Desk / Entry-level Computer Support Specialists can be trained to obtain several different IT positions and can serve as an optimal entry into the greater IT field.
### Expanded IT Support Career Pathways

The computer user support pathway contains a progression of salary, education, skills, and credentials. This is one potential pathway, and several variations may occur.

<table>
<thead>
<tr>
<th>Career Path</th>
<th>National Salary Range</th>
<th>Common Education Level</th>
<th>Relevant Certifications</th>
<th>Relevant Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI Architect / Engineer</td>
<td>$82,000 – 155,000</td>
<td>Bachelor’s +</td>
<td>TOGAF, Salesforce, Developer</td>
<td>PMP - Comm. Skills - SQL - Oracle</td>
</tr>
<tr>
<td>Computer Systems Analyst</td>
<td>$50,780 – 129,980</td>
<td>23% H.S., 77%</td>
<td>CISA, CISSP, PMP - Comm. Skills - Oracle - SQL</td>
<td></td>
</tr>
<tr>
<td>Advanced Computer Support</td>
<td>$47,610 – 80,180</td>
<td>31% H.S., 69%</td>
<td>Server+, Network+, Mobility+ - Problem Solving - Repair - Microsoft Windows</td>
<td></td>
</tr>
<tr>
<td>Help Desk Manager</td>
<td>$47,610 – 80,180</td>
<td></td>
<td>Bachelor’s, A+, Network+MCP - Managing - Instructing</td>
<td></td>
</tr>
<tr>
<td>Help Desk Manager</td>
<td>$28,280 – 47,610</td>
<td></td>
<td>Bachelor’s, A+, Network+MCP - Managing - Instructing</td>
<td></td>
</tr>
<tr>
<td>Cyber Security Analyst / Specialist</td>
<td>$50,300 – 88,890</td>
<td>6% H.S., 94%</td>
<td>CCIS, CISM, Security+ -Information Security -Firewalls</td>
<td></td>
</tr>
<tr>
<td>Network Support</td>
<td>$35,870 – 104,010</td>
<td>17% H.S., 83%</td>
<td>CCNA, CCNP, CCIE - Planning - Network Engineering</td>
<td></td>
</tr>
<tr>
<td>Network / Systems Engineer</td>
<td>$46,220 – 120,000</td>
<td>Bachelor’s</td>
<td>MCSE, CCNA, Security+ -Research - System Admin. - LINUX</td>
<td></td>
</tr>
<tr>
<td>Cyber Security Engineer / Architect</td>
<td>$88,890 – 140,460</td>
<td>Bachelor’s</td>
<td>CCNP, CCDP, CCIE -Project Mgmt. - LINUX</td>
<td></td>
</tr>
<tr>
<td>Cyber Security Manager</td>
<td>$78,470 – 161,250</td>
<td>Bachelor’s</td>
<td>PMP, CISSP, CISA -Firewalls - UNIX</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**
- CompTIA
- Burning Glass Technologies & SlideShare
- Glassdoor.com
- O Net Online & Bureau of Labor Statistics

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Industry assessments help give a picture of the market landscape, but aren’t comprehensive to all occupations within those industries. Health Information occupations are found within the Healthcare and Social Assistance industry, which is the fourth largest in the nation when measuring on GDP.

2014: National NAICS Industries by GDP (in billions) - including Information Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>GDP (in billions)</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>2,274.6</td>
<td>13%</td>
</tr>
<tr>
<td>Real estate, rental, leasing (NAICS 53)</td>
<td>2,247.7</td>
<td>13%</td>
</tr>
<tr>
<td>Manufacturing (NAICS 31-33)</td>
<td>2,097.7</td>
<td>12%</td>
</tr>
<tr>
<td>Health care and social assistance (NAICS 62)</td>
<td>1,226.9</td>
<td>7%</td>
</tr>
<tr>
<td>Finance and insurance (NAICS 52)</td>
<td>1,222.9</td>
<td>7%</td>
</tr>
<tr>
<td>Information (NAICS 51)</td>
<td>824.7</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: 2014 Bureau of Economic Analysis, US Department of Commerce
Employment in USA’s Top Industries

Healthcare and Social Assistance provide the second highest employment opportunities and it also has the highest future growth rate (21%).

Health Information can be broken down into three main sub-categories.

**Health Information**
Data related to a person’s medical history:
- Patient History
- Lab Results
- X-Rays
- Clinical Information
- Doctor Notes

**Health Information Management (HIM)**
The practice of data:
- Acquisition
- Analysis
- Protection

**Health IT (HIT)**
The framework and exchange of Health Information through data:
- Management
- Storage
- Support

**Health Informatics**
A science that defines how health information is captured, transmitted, and utilized.
- Medical/Bio Informatics
- Nursing Informatics
- Public Health Informatics
- Applied Informatics

Source: ahima.org
Projected Employment Growth by 2024

Health Administration and HIT roles are expected to grow faster than average employment through 2024. Top areas for health entry-level and middle-skills employment are: Medical Assistants, Medical Secretaries, and Receptionists/Clerks.

Top Health Administrative and HIT Occupations in USA based on Jobs Added by 2024

- **Medical Assistants**
- **Medical Secretaries**
- **Receptionists and Information Clerks**
- **Medical Records and Health Information Technicians**
- **Health Technologists and Technicians, All Other**

**Key**
- = High Entry-Level Opportunities based on 2015 postings
- = Includes clinical and administrative duties
- = Highest Growth across Health occupation group

**Health Technologists Occupations:**
- Neurodiagnostic Technologists
- Ophthalmic Medical Technologists
- Radiologic Technicians
- Surgical Assistants

Source: Burning Glass Labor Insights
Bureau of Labor Statistics
http://www.bls.gov/oes/current/ind_emp_chart/ind_emp_chart.htm
Current Occupation Demand

Burning Glass Labor Statistics gathers job postings from the Healthcare and Social Assistance industry and produces the following trending entry-level occupations (0-2 years experience / H.S. or equivalent education). The Bureau of Labor Statistics (BLS) national job growth by 2024 are included for each.

National Projected Job Growth by 2024 for Trending Entry-Level Health Occupations by Job Postings

- Medical Assistants
- Medical Secretaries
- Medical Records and Health Information Technicians
- Health Technologists and Technicians, All Other
- Customer Service Representative
- Office Clerks, General
- Receptionists and Information Clerks
- Total U.S. Job Growth %
- Health care and social assistance % Growth

% Growth is Nationwide by the Department of Labor and Bureau of Labor Statistics
Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Below is a table showing nationwide top trending health administrative and HIT occupations from 2015 and the top employers by job postings for the year for entry-level roles. Occupations are in order by number of jobs posted in 2015.

<table>
<thead>
<tr>
<th>1) Medical Assistants</th>
<th>2) Medical Secretaries</th>
<th>3) Medical Records and Health Information Technicians</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015 Health Postings</strong></td>
<td><strong>2015 Health Postings</strong></td>
<td><strong>2015 Health Postings</strong></td>
</tr>
<tr>
<td>21,570</td>
<td>20,366</td>
<td>15,116</td>
</tr>
<tr>
<td><strong>Company</strong></td>
<td><strong>Posts</strong></td>
<td><strong>Company</strong></td>
</tr>
<tr>
<td>Department of Veterans Affairs</td>
<td>1,187</td>
<td>Banfield Pet Hospital</td>
</tr>
<tr>
<td>Providence Health Services</td>
<td>722</td>
<td>Providence Health Services</td>
</tr>
<tr>
<td>United-Health Group</td>
<td>521</td>
<td>Catholic Health Initiatives</td>
</tr>
<tr>
<td>Centura Health</td>
<td>393</td>
<td>Norton Healthcare</td>
</tr>
<tr>
<td>Humana</td>
<td>362</td>
<td>Cleveland Clinic</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Medical Secretary, Medical Records and Health Information Technician, and Medical Assistant occupations all share foundational skills. The Medical Assistant role has a dual focus: Clinical and Administration duties. Clinical skills will not be covered in the bridge training program.

Clinical Skills will not be covered in the Health Administration and Health IT training program. Many of the foundational skills covered in the bridge program will be applicable to the Medical Assistant role and participants can pursue the occupation if desired.

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
BLS: Occupational Outlook Handbook
O*Net OnLine
Occupation Summary: Work Environment and Tasks

The following figure provides a summary, common work duties/tasks, and a general work context/environment for the Medical Secretary and the Medical Records and Health Information Technician occupations.

Medical Secretary (O*Net: 43-6013)

Summary: Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures.

General Duties:
- Scheduling appointments
- Billing patients
- Recording Medical Charts and reports

Detailed Work Activities:
- Collect deposits, payments or fees
- Maintain medical records
- Answer telephones
- Greet patients and visitors
- Relay information between personnel

Work Context:
Contact with others, telephone and email, team oriented, face-to-face discussions, importance of being exact/accurate, time pressure, repetitive motions/tasks

Medical Records and Health Information Technician (O*Net: 29-2071)

Summary: Compile, process and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system.

General Duties:
- Review records for completeness
- Retrieve patient medical records
- Data entry in medical records

Detailed Work Activities:
- Record patient medical histories
- Process healthcare paperwork
- Perform clerical work in medical setting
- Prepare official health records
- Maintain medical facility records

Work Context:
Importance of being exact/accurate, repeating same tasks, spend time indoors/sitting, face-to-face discussions, telephone and email, work with team

Source: O*Net OnLine
Health Information Entry-Level Job Titles within the SOC Code Occupations

Entry-level health information roles are attainable with high school or equivalent education, no certifications, and 0-2 years work experience. Many of these entry level roles perform front desk work at a healthcare facility involved in data entry, medical records filing and retrieval, and claims and billing.

Entry-Level Jobs found within SOC

SOC Code Occupations:
Medical Secretary (43-6013) & Medical Records and Health Information Technician (29-2071)

Source: Burning Glass, Jan 1-Dec 31, 2015
AHIMA.org O*Net OnLine
Skill Profile: Medical Secretary

Communication Skills, Appointment Setting, and Administrative Support are the most common listed skills for entry-level Medical Secretaries across the country. Important to note that Medical Secretaries will sometimes perform medical coding duties.

<table>
<thead>
<tr>
<th>Baseline Skills</th>
<th>Specialized Skills</th>
<th>Technical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Skills 46.7%</td>
<td>Appointment Setting 38.8%</td>
<td>Microsoft Excel 21.8%</td>
</tr>
<tr>
<td>Computer Skills 37.0%</td>
<td>Administrative Support 37.7%</td>
<td>Microsoft Word 16.2%</td>
</tr>
<tr>
<td>Typing 35.4%</td>
<td>Scheduling 36.9%</td>
<td>Microsoft Office 12.1%</td>
</tr>
<tr>
<td>Customer Service 27.1%</td>
<td>Patient Care 23.8%</td>
<td>Word Processing 7.7%</td>
</tr>
<tr>
<td>English 25.1%</td>
<td>Medical Terminology 19.4%</td>
<td>Microsoft Windows 4.4%</td>
</tr>
<tr>
<td>Writing 24.8%</td>
<td>Data Entry 16.5%</td>
<td>CPT Coding 3.6%</td>
</tr>
<tr>
<td>Organizational Skills 24.4%</td>
<td>Mathematics 16.0%</td>
<td>ICD-9-CM Coding 3.3%</td>
</tr>
<tr>
<td>Problem Solving 23.1%</td>
<td>Administrative Functions 15.2%</td>
<td>Microsoft Powerpoint 2.0%</td>
</tr>
<tr>
<td>Multi-Tasking 22.5%</td>
<td>Front Office 14.3%</td>
<td>Meditech 1.3%</td>
</tr>
<tr>
<td>Microsoft Excel 21.8%</td>
<td>X-Rays 14.3%</td>
<td>CPT-4 Coding 1.1%</td>
</tr>
<tr>
<td>Time Management 16.5%</td>
<td>Anesthesiology 13.6%</td>
<td>Microsoft Outlook 0.8%</td>
</tr>
<tr>
<td>Microsoft Word 16.2%</td>
<td>Product Sale and Delivery 13.6%</td>
<td>ICD-9 Codes 0.5%</td>
</tr>
<tr>
<td>Telephone Skills 15.6%</td>
<td>Dispensing Patients Medication 13.1%</td>
<td>Practice Management Software 0.5%</td>
</tr>
<tr>
<td>Listening 15.1%</td>
<td>Radiography 13.1%</td>
<td>Centricity 0.4%</td>
</tr>
<tr>
<td>Secretarial Skills 12.9%</td>
<td>Client Service 13.1%</td>
<td>HCPCS Coding 0.4%</td>
</tr>
<tr>
<td>File Management 12.1%</td>
<td>Client Wellness Education 13.1%</td>
<td>Medical Software 0.3%</td>
</tr>
<tr>
<td>Clerical Duties 12.1%</td>
<td>Medical Coding 11.3%</td>
<td>Microsoft Access 0.3%</td>
</tr>
<tr>
<td>Microsoft Office 12.1%</td>
<td>Medical Office Experience 7.8%</td>
<td>Dentrix 0.2%</td>
</tr>
<tr>
<td>Detail-Oriented 7.3%</td>
<td>Word Processing 7.7%</td>
<td>C++ 0.2%</td>
</tr>
<tr>
<td>Building Effective Relationships 5.7%</td>
<td>Office Equipment 7.7%</td>
<td>Electronic Data Interchange 0.2%</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Medical Coding, Organizational Skills, and Communication Skills are the most common listed skills for entry-level Medical Records and Health Information Technicians across the country.

<table>
<thead>
<tr>
<th>Baseline Skills</th>
<th>Specialized Skills</th>
<th>Technical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Skills</td>
<td>30.7%</td>
<td>Medical Coding 41.3%</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>27.9%</td>
<td>ICD-9-CM Coding 19.7%</td>
</tr>
<tr>
<td>Writing</td>
<td>22.7%</td>
<td>Microsoft Excel 17.2%</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>18.9%</td>
<td>ICD-9-CM Coding 19.7%</td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>17.2%</td>
<td>Microsoft Office 14.3%</td>
</tr>
<tr>
<td>Typing</td>
<td>17.2%</td>
<td>CPT Coding 13.9%</td>
</tr>
<tr>
<td>Research</td>
<td>15.5%</td>
<td>Data Entry 19.2%</td>
</tr>
<tr>
<td>Customer Service</td>
<td>15.2%</td>
<td>Microsoft Word 6.8%</td>
</tr>
<tr>
<td>Detail-Oriented</td>
<td>15.2%</td>
<td>Medical Records Experience 14.7%</td>
</tr>
<tr>
<td>File Management</td>
<td>14.7%</td>
<td>Microsoft Powerpoint 2.8%</td>
</tr>
<tr>
<td>Microsoft Office</td>
<td>14.3%</td>
<td>Health Information Technology 16.7%</td>
</tr>
<tr>
<td>Multi-Tasking</td>
<td>11.6%</td>
<td>Meditech 2.6%</td>
</tr>
<tr>
<td>Quality Assurance and Control</td>
<td>10.0%</td>
<td>Physiology 11.1%</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>9.5%</td>
<td>ICD-9 Codes 1.1%</td>
</tr>
<tr>
<td>Building Effective Relationships</td>
<td>9.1%</td>
<td>Release of Information 11.0%</td>
</tr>
<tr>
<td>English</td>
<td>8.5%</td>
<td>Microsoft Outlook 1.0%</td>
</tr>
<tr>
<td>Telephone Skills</td>
<td>7.8%</td>
<td>Scanners 9.5%</td>
</tr>
<tr>
<td>Microsoft Word</td>
<td>6.8%</td>
<td>Microsoft Vista 0.9%</td>
</tr>
<tr>
<td>Microsoft Windows</td>
<td>5.6%</td>
<td>3M Encoder 0.7%</td>
</tr>
<tr>
<td>Time Management</td>
<td>4.8%</td>
<td>HIPAA 9.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practice Management Software 0.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inpatient Coding 8.2%</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Certifications: Medical Secretary

Of the 20,551 national entry-level positions listed in 2015, a majority did not list a required certification in the job posting. Certifications for Medical Secretaries are not common for entry-level roles. Taking additional training to learn industry-specific terminology may serve applicants better than pursuing a health certification to obtain a Medical Secretary role.

High school graduates who have experience using computer software applications usually qualify for entry-level positions. Although most secretaries learn their job in several weeks, many legal and medical secretaries require additional training to learn industry-specific terminology.


Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Bureau of Labor Statistics
Certifications: Medical Records & Health Information Technicians

Of the 15,116 national entry-level positions listed in 2015, a majority did not list a required certification in the job posting. Health IT certifications can highlight applicants validated skill sets to potential employers, but are not always required to enter the market.

2015 National: Percent of Entry-Level Medical Records and Health Information Technician Job Postings with Certifications

- 65% NO CERTIFICATION
- CERTIFIED PROFESSIONAL CODER
- REGISTERED HEALTH INFORMATION TECHNICIAN
- REGISTERED HEALTH INFORMATION ADMINISTRATOR
- CERTIFIED CODING SPECIALIST
- CERTIFIED PROFESSIONAL CODER - HOSPITAL OUTPATIENT
- MEDICAL BILLING AND CODING CERTIFICATION

Notable Vendors
- AAPC – Certified Professional Coder (CPC)
- AHIMA – Registered Health Information Technician (RHIT)
- AHIMA – Registered Health Information Administrator (RHIA)
- AHIMA – Certified Coding Specialist (CCS)
- AAPC – Certified Outpatient Coding (COC)

*See Appendix for Certification Requirements

Most employers prefer to hire health information technicians who have certification, or they may expect applicants to earn certification shortly after being hired.

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015

Health Informatics Potential Career Progression

Education Level

- No Degree
  - Health Information Technician
  - Health Information Management Clerk
  - Insurance Claims Clerk
  - Medical Biller
  - Medical Secretary
  - Patient Registrar

- Associate's Degree
  - Registered Health Information Technician
  - Medical Transcriptionist
  - Data Entry Specialist

- Bachelor's Degree
  - Registered Health Information Administrator
  - Informatics Nurse Specialist
  - System Data Analyst

- Advanced Degree
  - Master Degree or Cert.: Biomedical Informatics
  - Master Degree in Health Informatics
  - Certified Health Data Analyst (CHDA)
  - Epidemiologist
  - Statistician
  - Informaticist

Source: AHIMA
http://library.ahima.org/doc?oid=107443#.Vxa7yPKrKM9
Medical Secretaries can advance within Health IT or make lateral and/or career transitions to other related occupations. Other possible entry points are shown within the career pathway.
Health Information Career Pathway (2 of 4)

- **Medical / Health Services Manager**
  - **Medical Records & Health Information Technician**
    - $ = National Salary Range
    - 🧑 = Common Education Level
    - 🍔 = Relevant Certifications
    - 🌞 = Relevant Skills

- **Director of Administrative Services**
  - **$ 83,790 – 149,180**
    - Bachelor’s +
    - PMP, Six Sigma
    - Business Development, Procurement, Purchasing, Microsoft Office, Front Office

- **Hospital Top Executives**
  - **$ 22,270 – 47,300**
    - 37% H.S., 63% +
    - N/A
    - Communication, Admin Support, Microsoft Office, Front Office

- **Administrative Services Manager**
  - **$ 45,590 – 113,070**
    - 19% H.S., 81% +
    - PMP, Six Sigma
    - Accounting, Communication, Microsoft Office, Facility Management

**Source:** Burning Glass Labor Insights, Jan 1-Dec 31, 2015

Bureau of Labor Statistics

O*Net OnLine
Health Information Career Pathway (4 of 4)

- **Registered Nurse**
  - Salary: $45,880 – $98,880
  - Education: Associate’s
  - Certifications: RN
  - Skills: Patient Care, Treatment Plan, Communication

- **Medical Assistant**
  - Salary: $21,540 – $42,760
  - Education: 10% H.S., 95% Postsecondary Certificate
  - Certifications: CMA
  - Skills: Patient Care, Vital Signs, Communication

- **Medical Records & Health Information Technician**
  - Education: Entry

- **Medical / Health Services Manager**
  - Education: Postsecondary Certificate
  - Certifications: CMA

- **Medical / Health Services Director**
  - Education: Postsecondary Certificate

- **Hospital Top Executives**
  - Education: Postsecondary Certificate

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Bureau of Labor Statistics
HealthCarePathway.com
O*Net OnLine
Health Appendix
<table>
<thead>
<tr>
<th>Certification</th>
<th>Purpose</th>
<th>Price</th>
<th>Recommended Experience / Pre-Requisites</th>
<th>Exam details</th>
<th>Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCS – Certified Coding Specialist</td>
<td>Ensures coding accuracy for health organizations</td>
<td>$399</td>
<td>By Credential options: • RHIA • RHIT • CCS-P</td>
<td>• Four hour test with two sections: • Multiple Choice • Medical Scenarios</td>
<td>AHIMA</td>
</tr>
<tr>
<td>CMA – Certified Medical Assistant</td>
<td>Validates Medical Assistant proficiency and excellence</td>
<td>$125</td>
<td>Required: • Completing student or recent graduate of a CAAHEP or ABHES medical assisting program</td>
<td>120 Question test (20 will be counted as a pre-test section) • 3 Sections: General, Administrative, and Clinical</td>
<td>AAMA</td>
</tr>
<tr>
<td>COC – Certified Outpatient Coder</td>
<td>Exam validates outpatient billing and coding requirements</td>
<td>$350</td>
<td>Required: • 2 years medical coding experience Recommended: • associate’s degree</td>
<td>• 150 multiple choice • 5 hours 40 minutes • 1 free retake</td>
<td>AAPC</td>
</tr>
<tr>
<td>CPC – Certified Professional Coder</td>
<td>Gold standard for coding performed in a physician office setting</td>
<td>$350</td>
<td>Required: • 2 years medical coding experience Recommended: • associate’s degree</td>
<td>• 150 multiple choice • 5 hours 40 minutes • 1 free retake</td>
<td>AAPC</td>
</tr>
<tr>
<td>CTR – Certified Tumor Registrar</td>
<td>Sets standard for professional excellence in the cancer registry field.</td>
<td>$399</td>
<td>Must meet all: • associate’s degree or equivalent • NCRA Formal Education • 160 hour CTR Practicum</td>
<td>• Offered by NCRA 3x per year • 235 questions • 4 hours total • Open and closed book sections</td>
<td>NCRA</td>
</tr>
<tr>
<td>RHIA – Registered Health Information Administrator</td>
<td>Critical link between care providers, payers, and patients</td>
<td>$299</td>
<td>Successfully complete HIM program at the baccalaureate level by CAHIIM</td>
<td>• Four hours • 180 multiple choice • Includes a pre-test section</td>
<td>AHIMA</td>
</tr>
<tr>
<td>RHIT – Registered Health Information Technician</td>
<td>Often specialize in coding diagnoses and provides solid option for career advancement</td>
<td>$299</td>
<td>Successfully complete HIM program at the associate’s degree level by CAHIIM</td>
<td>• 3.5 hours • 150 multiple choice • Includes a pre-test section</td>
<td>AHIMA</td>
</tr>
</tbody>
</table>

*Price does not include study materials which can range from $25 - $100+ depending on materials used

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
AAMA, AHIMA, AAPC, NCRA
Market Scan: Methodology
Methodology Overview

**Burning Glass Technologies: Labor Insights**

Burning Glass Technologies: Labor Insights was a significant resource to this research. The Burning Glass tool provided detailed information obtained directly from job postings from January 2015 – December 2015. Data was pulled for the most demanded IT and Health IT occupations in regard to experience and education. Top demanded certifications and skill profiles were also obtained for targeted filters (experience, education, IT, etc.).

**Government Resources**


**Additional Resources**

Additional sources included certification vendors, trade associations, journals, publications, online job boards, as well as salary and company review sites to ensure comprehensive approach.

**Qualitative Analysis**

Research findings were supplemented and confirmed with qualitative data provided by FOCs, a Health Information Subject Matter Expert, and the Accenture Local Technology Support group. The curriculum for the BCO program created by Accenture Corporate Citizenship used the quantitative and qualitative data in its development. The curriculum has since gained employer, FOC, and Health Information Subject Matter Expert validation. Qualitative analysis confirmed the quantitative data while also bringing a clear understanding to the importance of experience and networking to secure a job.
The methodology hierarchy is important to the outcome desired from the research. The industry overview finds opportunities based on demand and expected growth. Occupation research finds barriers to entry, growth opportunities, relevant skills and certifications, and culminates with the Career Pathway.
Market Overview Methodology

Market research focuses on four main components. Broad market analysis by industry, then moves towards more detailed occupational demand and expected growth.
Industry assessments help give a picture of the market landscape. GDP analysis highlights prevalent industries within a region (whether national – city), which further directs occupational opportunities for beneficiaries. IT occupations are found within each industry and participants can pursue IT careers in a variety of organizations, based on available opportunities and career goals.

Steps:
- Download GDP (Excel) data from Bureau of Economic Analysis
- Import the Excel download into the Excel template provided
- Graph will populate

Source: 2014 Bureau of Economic Analysis, US Department of Commerce
Detailed instructions are included within the template Excel file provided for GDP analysis (data and graphs). The below data supplements the included instructions.

GDP data is reported by the U.S. Department of Commerce and can be found here on the Bureau of Economic Analysis website:

- City Scan:
  - http://bea.gov/iTable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1
  - Regional Data>Gross Domestic Product by Metropolitan Area>GDP Current Dollars>All Industries>Select City>2011-2014
  - Download XLS (Excel version)
- National Scan:
  - http://bea.gov/iTable/iTable.cfm?ReqID=51&step=1#reqid=51&step=51&isuri=1&5114=a&5102=1

Follow directions in the Market Overview Excel document template provided:

- Excel template provides:
  - Instructions
  - Data tabs to store data downloaded (recommend copy data from downloaded documents and paste into corresponding tabs in template)
  - Graphs

Populate corresponding GDP graph:

- Once data is pasted into corresponding tabs the graphs will auto-populate
- Graph is now ready to use as desired
Industry assessments help give a picture of the market landscape, but aren't comprehensive to occupations within those industries. IT occupations are found within each industry and participants can pursue IT careers in a variety of organizations, based on available opportunities and career goals.

Source: 2014 Bureau of Economic Analysis, US Department of Commerce

### 2014: National NAICS Industries by GDP (in billions) - including Information Industry

- **Government**: 2,274.6, 13%
- **Real estate, rental, leasing (NAICS 53)**: 2,247.7, 13%
- **Manufacturing (NAICS 31-33)**: 2,097.7, 12%
- **Health care and social assistance (NAICS 62)**: 1,226.9, 7%
- **Finance and insurance (NAICS 52)**: 1,222.9, 7%
- **Information (NAICS 51)**: 824.7, 5%
Industry assessments help give a picture of the market landscape. Employment analysis highlights industries within a region (whether national – city) in relation to employment. Current employment, past employment growth, and projected 10 year growth are all included in this analysis.

**Steps:**
- Download Employment (Excel) data from Bureau of Economic Analysis
- Import the Excel download into the Excel template provided
- Graph will populate

**Source:** 2014 Bureau of Economic Analysis, US Department of Commerce
Employment data is reported by the U.S. Department of Commerce and can be found here on the Bureau of Economic Analysis website:

- **City Scan:**
  - [http://bea.gov/iTable/iTable.cfm?reqid=70&step=25&isuri=1&7022=11&7023=7&7024=naics&7001=711&7029=33&7090=70#reqid=70&step=25&isuri=1&7022=11&7023=7&7024=naics&7001=711&7029=33&7090=70](http://bea.gov/iTable/iTable.cfm?reqid=70&step=25&isuri=1&7022=11&7023=7&7024=naics&7001=711&7029=33&7090=70#reqid=70&step=25&isuri=1&7022=11&7023=7&7024=naics&7001=711&7029=33&7090=70)
  - Regional Data>Metropolitan Area>Select City>Years 2011-2014
  - Download XLS (Excel version)

- **National Scan:** Table 6.4D Full-Time and Part-Time Employees by Industry
  - [http://bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=193](http://bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=193)

**Follow directions in the Market Overview Excel document template provided**

- Excel template provides:
  - Instructions
  - Data tabs to store data downloaded (recommend copy data from downloaded documents and paste into corresponding tabs in template)
  - Graphs

**Populate corresponding GDP graph**

- Once data is pasted into corresponding tabs the graphs will auto-populate
- Graph is now ready to use as desired
IT occupations are found within each industry and participants can pursue IT careers in a variety of organizations based on available opportunities and career goals.

Burning Glass Current Occupation Demand

This report/graph shows the top demanded occupations by number of job postings in order based on certain criteria (education, experience, time, location, occupation family, etc.). These occupations are then displayed in order of most demanded and a corresponding line shows the 10 year projected growth (either state or national depending on goal) to increase validation of the current demanded occupation.

Burning Glass Labor Insights

Steps:
- Burning Glass Labor Insights > Occupations & Titles > Summary Table
- For Entry-Level data: Advertised Education = High School; Experience = 0-2 Years
- Time Period Used = Full Year 2015
- Locations = Nationwide (or specific city depending on report seeking)
- Burning Glass Occupations = Information Technology (Health Care for HIT)
- Click Update > Produces the Summary Table of Data which can then be exported to excel
- Produce graph based off postings and government projected (BLS/OES) 10 year growth

Export Summary Table Excel

Source: 2014 Bureau of Economic Analysis, US Department of Commerce
Example: Current Occupation Demand

The Bureau of Labor Statistics (BLS) has reported the following national job growth projections for IT occupations, IT associated industries, and the overall market as nationwide growth by 2024. Postings are for high school level education and 0-2 years experience across the nation.

National Projected Job Growth by 2024 for Trending IT Occupations by Job Postings

% Growth is Nationwide by the Department of Labor and Bureau of Labor Statistics

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Example: Current Occupation Demand

The Bureau of Labor Statistics (BLS) has reported the following national Job Growth projections for IT occupations, IT associated industries, and the overall market as nationwide growth by 2024.

National Projected Job Growth by 2024 for Trending IT Occupations by Job Postings

- Software Developer / Engineer
- Systems Analyst
- Network Systems Administrator
- Computer Support Specialist
- Database Administrator
- Total U.S. Job Growth
- Information Industry
- Professional and Bus. Services

The Bureau of Labor Statistics (BLS) has reported the following national Job Growth projections for IT occupations, IT associated industries, and the overall market as nationwide growth by 2024.

% Growth is Nationwide by the Department of Labor and Bureau of Labor Statistics

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Projected 10 Year Employment (State = 2022; National = 2024)

This report/graph shows the top occupations based off projected and total current employment numbers regardless experience while also including 10 year projected percent growth.

Burning Glass Labor Insights

Steps:
• Burning Glass Labor Insights > Occupations & Titles > Summary Table
• Not seeking entry level data, so leave "any" for education and experience filters
• Time Period Used = Full Year 2015
• Locations = Nationwide (or specific city depending on report seeking)
• Burning Glass Occupations = Information Technology (Health Care for HIT)
• Click Update > Produces the Summary Table of data which can then be exported to excel
• Produce graph based off postings and government projected (BLS/OES) 10 year growth

Export Summary Table Excel

Source: 2014 Bureau of Economic Analysis, US Department of Commerce
The Computer User Support Specialist serves as an optimal entry into IT occupations based on Bureau of Labor Statistics projected growth, occupations contained in its future career pathway, as well as factoring in its minor barriers to entry.

<table>
<thead>
<tr>
<th>Key</th>
<th>= High Entry Level Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>= In Computer User Support Specialist Career Pathway</td>
</tr>
<tr>
<td></td>
<td>= Considerable preparation needed</td>
</tr>
<tr>
<td></td>
<td>= Highest % Growth across IT occupations</td>
</tr>
</tbody>
</table>

Top IT Occupations in USA based on Employment by 2024

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Projected Employment 2024</th>
<th>Employment 2014</th>
<th>% Change Employment Nationwide by 2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developers, Applications</td>
<td>800,000</td>
<td>100,000</td>
<td>21%</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>700,000</td>
<td>50,000</td>
<td>13%</td>
</tr>
<tr>
<td>Computer User Support Specialists</td>
<td>600,000</td>
<td>40,000</td>
<td>13%</td>
</tr>
<tr>
<td>Software Developers, Systems Software</td>
<td>500,000</td>
<td>30,000</td>
<td>8%</td>
</tr>
<tr>
<td>Network and Computer Systems Administrators</td>
<td>400,000</td>
<td>20,000</td>
<td>5%</td>
</tr>
<tr>
<td>Web Developers</td>
<td>300,000</td>
<td>10,000</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor Insights

% Growth is Nationwide by the Department of Labor and Bureau of Labor Statistics
Top Employers

An employer table for trending occupations based off postings is an important aspect of the research. This table goes beyond experience and education requirements and displays a representation of the employer market. Top employers for given demanded occupations and the number of postings are listed for each. These employers serve as potential partners for FOCs, while also informing beneficiaries of possible future employers to target.

Burning Glass Labor Insights

Steps:

- Burning Glass Labor Insights > Top Employers
- Not seeking entry level data, so leave “any” for education and experience filters
- Time Period Used = Full Year 2015
- Locations = Nationwide (or specific city depending on report seeking)
- From top occupations report, input Occupation Title into O*Net or Burning Glass Occupation Title
- Click Update > Produces a graph based on top employers for occupation
- Complete table by inputting top 5 employers and the number of job postings per time period
- Repeat for as many top occupations as desired for comprehensive analysis
Below is a table showing top trending IT occupations for 2015 and the top employers by job postings for the year. These positions and companies can be targets for the future careers of the participants once they have gained experience.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle</td>
<td>8,541</td>
<td>Oracle</td>
<td>6,811</td>
<td>General Dynamics</td>
<td>2,491</td>
<td>Best Buy</td>
</tr>
<tr>
<td>Accenture</td>
<td>8,292</td>
<td>Accenture</td>
<td>4,020</td>
<td>Computer Sciences Corporation</td>
<td>1,215</td>
<td>Leidos</td>
</tr>
<tr>
<td>IBM</td>
<td>5,008</td>
<td>Anthem Blue Cross</td>
<td>1,713</td>
<td>Northrop Grumman</td>
<td>1,029</td>
<td>Apple, Inc.</td>
</tr>
<tr>
<td>Amazon.com</td>
<td>4,742</td>
<td>Deloitte</td>
<td>1,639</td>
<td>Oracle</td>
<td>1,013</td>
<td>General Dynamics</td>
</tr>
<tr>
<td>UnitedHealth Group</td>
<td>4,347</td>
<td>UnitedHealth Group</td>
<td>1,461</td>
<td>Accenture</td>
<td>965</td>
<td>Oracle</td>
</tr>
</tbody>
</table>
Project Executive Summary

Methodology Overview

Outcome Hierarchy

Market Overview: GDP, Employment, Demanded Occupations

Selected Occupation Analysis: Employers, Skill Profile, Certifications, Pathway

Recommendation for continued research

Appendix & Resources
Many factors go into selecting occupations that create opportunities for beneficiaries. Every occupation will have some level of drawbacks while also posing potential for opportunity. To this end, there is no perfect occupation or career pathway route, but many that serve as excellent career onramps.
Bridge Program: Education and Experience Requirements

An Education and Experience distribution chart shows the number of postings (current demand) pertaining to specific tiers [High School, Associate’s, Bachelor’s, Graduate/Professional]. This chart shows the postings available to the beneficiaries circled in red with 0-2 years experience and high school or equivalent education.

Burning Glass Labor Insights

Steps:
• Burning Glass Labor Insights > Distribution of minimum education requirements (specified)
• Run the report once with “any” experience and run a second time with “0-2”
• Time Period Used = Full Year 2015
• Locations = Nationwide (or specific city depending on report seeking)
• Burning Glass Occupations Family = Information Technology (or applicable Health IT roles)
• Click Update > Produces data report that can then be built into a graph

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
A small portion of the nation’s information technology positions are available to individuals with only a high school diploma or equivalent. The Bridge Program will target the positions available to individuals with no experience, which is an even smaller segment of the market.

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Bridge Program: Trending Occupations and Earnings

The trending occupation and earnings table shows demanded occupations as well as the corresponding earning tiers.

Steps:
- Burning Glass Labor Insights > Top Occupations
- Run the report with high school or equivalent and 0-2 years experience
- Time Period Used = Full Year 2015
- Locations = Nationwide (or specific city depending on report seeking)
- Burning Glass Occupations Family = Information Technology (or applicable Health IT roles)
- Click Update > Produces data report that can then be built into a graph
- Download the BLS or State Labor Department Wage data: http://www.bls.gov/oes/tables.htm
  - Use the Metropolitan level (Metropolitan and Non-Metropolitan XLS)
  - Wage data can also be found on O*Net OnLine through specific occupation profiles

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
## Example: Trending Occupations and Average Earnings

Computer Support Specialists was the most frequently posted occupation for individuals with a HS diploma or equivalent and less than two years of experience.

### Top Occupations

<table>
<thead>
<tr>
<th>Top Occupations</th>
<th># of Job Postings</th>
<th>Average Wages by Percentile¹</th>
<th>Median Hourly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Support Specialist</td>
<td>17,508</td>
<td>$28,280</td>
<td>$22.89</td>
</tr>
<tr>
<td>Software Developer / Engineer</td>
<td>6,530</td>
<td>$56,310</td>
<td>$45.92</td>
</tr>
<tr>
<td>Network / Systems Administrator</td>
<td>4,482</td>
<td>$46,220</td>
<td>$36.44</td>
</tr>
<tr>
<td>Database Administrator</td>
<td>3,503</td>
<td>$44,470</td>
<td>$38.60</td>
</tr>
<tr>
<td>Search Engine Optimization Specialist</td>
<td>2,084</td>
<td>Salary Data Not Available</td>
<td></td>
</tr>
<tr>
<td>Computer Programmer</td>
<td>1,569</td>
<td>$44,140</td>
<td>$37.28</td>
</tr>
</tbody>
</table>

¹ Percentiles: 10th, 25th, 50th, 75th, 90th

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
The trending employers for entry-level occupations table is helpful in targeting employers/companies for beneficiaries upon completion of the Bridges to Career Opportunities program. This table highlights entry-level employers, number of applicable postings, and top entry-level occupation.

Steps:
• Burning Glass Labor Insights > Top Employers
• Run the report with high school or equivalent and 0-2 years experience
• Time Period Used = Full Year 2015
• Locations = Nationwide (or specific city depending on report seeking)
• Burning Glass Occupations Family = Information Technology (or applicable Health IT roles)
• Click Update > Produces data report that can then be built into a graph or table
• To find top occupation for each company:
  • Run a Top Occupation report with all same filters but add the employer to list

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Example: Trending Entry-Level Employers

In 2015, the following employers had the most job postings for individuals with a high school diploma or equivalent and less than two years of experience. These employers serve as a starting point for participants to target when entering the IT field.

<table>
<thead>
<tr>
<th>Top IT Employers</th>
<th># of Job Postings</th>
<th>Top Occupation at Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Buy</td>
<td>9,025</td>
<td>Computer User Support Specialist</td>
</tr>
<tr>
<td>R&amp;E Automated Systems</td>
<td>957</td>
<td>Computer Programmer</td>
</tr>
<tr>
<td>IBM</td>
<td>945</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>UnitedHealth Group</td>
<td>534</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>Big Lots Incorporated</td>
<td>366</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>Vodastra Technologies - Onsite It Services</td>
<td>337</td>
<td>Computer User Support Specialist</td>
</tr>
<tr>
<td>Teletech</td>
<td>278</td>
<td>Computer User Support Specialist</td>
</tr>
<tr>
<td>H&amp;R Block</td>
<td>254</td>
<td>Network / Systems Support Specialist</td>
</tr>
<tr>
<td>General Electric Company</td>
<td>184</td>
<td>Software Developer / Engineer</td>
</tr>
<tr>
<td>Xerox</td>
<td>173</td>
<td>Computer User Support Specialist</td>
</tr>
</tbody>
</table>
The Competency Model developed by the Department of Labor helps classify applicable job competencies possibly needed for an occupation. The bottom tiers will be prefilled based off the industry model selected, and top tiers can be tailored to specific occupation from O*Net OnLine data.

Steps:
- Go to the Department of Labor Competency Model Clearinghouse website
- Navigate to the industry models and select applicable model (Information Technology)
- Competency model can be tailored further using data from O*Net OnLine for top tier info
The Department of Labor (DOL) has developed an IT Competency Model that identifies possible knowledge, skills, and abilities needed for workers to perform successfully in the IT field. Information for upper Tiers are specific to occupation and can be found through DOL O*Net OnLine. Employees in the field do not need to possess all competencies identified within.

Tier 6: Occupation Specific Requirements

**Knowledge of:**
- Computers and Electronics
  - Circuit boards
  - Processors
  - Chips
  - Electronic Equipment
  - Computer Hardware and Software
  - Applications
  - Programming
- Customer and Personal Service
  - Customer needs assessment
  - High service standards
  - Evaluate customer satisfaction
- Telecommunications
  - Transmission
  - Broadcasting
  - Switching
  - Control
  - Operation
- Clerical
  - Word processing
  - File mgmt.
  - Stenography
  - Form Design
- Administration and Mgmt.
  - Strategy
  - Planning
  - Leadership
  - HR Modeling
- Engineering and Technology
  - Engineering Science
  - Engineering Technology
  - Principles
  - Techniques
  - Procedures
  - Equipment

Tier 5: Industry-Sector Technical Competencies – User and Customer Support

- Understanding different user groups
- Ability to communicate with and solve user’s problems
- Understand IT Structure of an IT business or product plan
- Assess user implications of new IT solutions
- Knowledge of importance relating to IT continuity within a business
- Provide training on new hardware / software
- Describe how call centers typically operate
The Department of Labor has developed competency models that are available to the public and specific to industries. This competency model serves as a starting place for the Bridges to Career Opportunities IT program.

Source: Department of Labor: Competency Model Clearinghouse
The first four tiers of the IT competency model are highly applicable to all IT professions. The Department of Labor has clarified that the model is not hierarchical, but tapers at the top as specializations between occupations are identified. The model is not an all-inclusive list, and not all workers need to possess all competencies identified within.

**Tier 4: Industry-Wide Technical Competencies**
- Networks, Telecom, Wireless & Mobility
- Software Dev. & Management
- User Support
- Digital Media & Visual
- Compliance
- Risk Mgmt. Security & Info Assurance

**Tier 3: Workplace Competencies**
- Teamwork
- Planning & Organizing
- Innovative Thinking
- Problem Solving & Decision Making
- Working with Tools & Technology
- Business Fundamentals

**Tier 2: Academic Competencies**
- Reading
- Writing
- Math
- Science
- Communication
- Critical & Analytical Thinking
- Fundamental IT User Skills

**Tier 1: Personal Effectiveness Competencies**
- Interpersonal Skills & Teamwork
- Integrity
- Professionalism
- Initiative
- Adaptability & Flexibility
- Dependability & Reliability
- Lifelong Learning

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Department of Labor: Competency Model Clearinghouse
The skill profile helps breakdown baseline, specialized, and technical skills that applicants should have for a given occupation. The data for the skill profile was tabulated from job postings through Burning Glass Labor Insights.

Burning Glass Labor Insights

Steps:
- Burning Glass Labor Insights > Top Skills
- 0-2 Years Experience / High School or Equivalent Education level
- Time Period Used = Full Year 2015
- Locations = Nationwide (or specific city depending on report seeking)
- Burning Glass Occupation = Computer Support Specialist
  - or O*Net = Computer User Support Specialist
- Click Update > Produces the report of data which can then be exported to excel
- Use the excel template given and paste in new data pertaining to the skill tabs

Export Summary Table Excel
Example: Skill Profile - Computer User Support Specialist

Customer service, repair and consumer electronics skills are the most commonly listed for entry-level Computer User Support Specialists nationwide. These important skills have been confirmed through preliminary validation communication with Accenture Local Technical Support.

<table>
<thead>
<tr>
<th>Baseline Skills</th>
<th>Specialized Skills</th>
<th>Technical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service</td>
<td>Repair</td>
<td>Microsoft Windows</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>Consumer Electronics</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>Computer Repair</td>
<td>Microsoft Excel</td>
</tr>
<tr>
<td>Microsoft Windows</td>
<td>Technical Support</td>
<td>Microsoft Operating Systems</td>
</tr>
<tr>
<td>Microsoft Office</td>
<td>Help Desk Support</td>
<td>Transmission Control Protocol / Internet Protocol</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Software Installation</td>
<td>Virtual Private Networking (VPN)</td>
</tr>
<tr>
<td>Writing</td>
<td>Computer Installation and Setup</td>
<td>Microsoft Powerpoint</td>
</tr>
<tr>
<td>Organizational Skills</td>
<td>Administrative Functions</td>
<td>ITIL</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>Printers</td>
<td>Microsoft Word</td>
</tr>
<tr>
<td>Research</td>
<td>PC Support</td>
<td>LINUX</td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>It Support</td>
<td>Cisco</td>
</tr>
<tr>
<td>Detail-Oriented</td>
<td>Personal Computers</td>
<td>SQL</td>
</tr>
<tr>
<td>Multi-Tasking</td>
<td>Troubleshooting Technical Issues</td>
<td>Citrix</td>
</tr>
<tr>
<td>Time Management</td>
<td>Technical Training</td>
<td>Microsoft Outlook</td>
</tr>
<tr>
<td>Typing</td>
<td>Microsoft Operating Systems</td>
<td>Domain Name System (DNS)</td>
</tr>
<tr>
<td>English</td>
<td>Record Keeping</td>
<td>Microsoft Exchange</td>
</tr>
<tr>
<td>Supervisory Skills</td>
<td>Hardware Experience</td>
<td>Word Processing</td>
</tr>
<tr>
<td>Telephone Skills</td>
<td>Hardware and Software Configuration</td>
<td>Microsoft Vista</td>
</tr>
<tr>
<td>Listening</td>
<td>Computer Hardware/Hardware Knowledge</td>
<td>Microsoft Sharepoint</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Telecommunications</td>
<td>UNIX</td>
</tr>
</tbody>
</table>
Demand certifications were found using Burning Glass Labor Insights. Burning Glass tabulates percentage of certifications listed on job postings. A positive correlation exists between increased percent listed and increased market demand.

**Steps:**
- Burning Glass Labor Insights > Top Certifications
- 0-2 Years Experience / High School or Equivalent Education level
- Time Period Used = Full Year 2015
- Locations = Nationwide (or specific city depending on report seeking)
- Burning Glass Occupation = Computer Support Specialist
  - or O*Net = Computer User Support Specialist
- Click Update > Produces the report of data which can then be exported to excel
- Use the excel template given and paste in new data pertaining to the skill tabs
Example: Certifications - Computer User Support Specialist

Of the 17,508 postings in 2015, 80% did not list a required certification in the job posting. IT certifications can highlight applicants validated skill sets to potential employers, but are not required to enter the IT job market.

2015 National Entry-Level Computer User Support Specialist Job Postings with Certifications

*Note: Percentages are based on number of postings containing a certification. Multiple certifications may be listed on one posting, resulting in total percentages over 100%. Top certifications are shown in graph.

Source: Burning Glass Labor Insights, Jan 1-Dec 31, 2015
Certifications – Additional Analysis

Certification relevancy, demand, and necessity for the occupation were all analyzed from a variety of sources for validation purposes.

- Job Postings
- Burning Glass
- O*Net OnLine
- Certification Vendors (e.g., CompTIA, Microsoft, Oracle, etc.)
- U.S. Department of Labor
- Bureau of Labor Statistics
- Occupational Outlook Handbook
- Qualitative
- Accenture Local Technical Support
Recommended beginner/novice IT certifications (IT Fundamentals, A+, and Microsoft Technology Associate) serve as an optimal entry point into IT certifications to provide participants with highly applicable IT foundational skills that further can be built on.

**Cisco IT Certifications by Vendor**

- **Entry**
  - Cisco Certified Entry Networking Technician
  - Cisco Certified Technician

- **Associate**
  - Cisco Certified Network Associate

**CompTIA**

- No Prerequisites
- IT Fundamentals
- A+
- Network+ (N+)
- Server+
- Security+

**Microsoft Certifications**

- Professional
- Microsoft Certified Professional
- Microsoft Certified Solutions Expert
- Microsoft Certified Solutions Developer
- Introductory
- Microsoft Technology Associate

*Source: Cisco, CompTIA, Microsoft, and Burning Glass Technologies*

- = recommended for beginner/novice; highly applicable to most IT career pathways
- ★ = high demand for IT entry-level roles not requiring advanced degree
# Example: Trending IT Certification Overview (Found in Appendix)

The CompTIA A+ certification has a low barrier to entry while also being in high demand.

<table>
<thead>
<tr>
<th>Certification</th>
<th>Purpose</th>
<th>Price</th>
<th>Recommended Experience/Pre-Reqs</th>
<th>Exam details</th>
<th>Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified A+ Technician</td>
<td>Validates understanding of most common hardware/software</td>
<td>$199</td>
<td>Recommends 6 to 12 months of hands-on IT experience</td>
<td>Computer-based, composed of multiple choice questions focused on IRQs, direct memory access, practical computer repair (e.g. repairing hard drives, modems, CPUs and printers)</td>
<td>Vendor-neutral</td>
</tr>
<tr>
<td>Microsoft Certified Professional</td>
<td>Validates technical expertise covering a wide range of Microsoft products, technologies and solutions</td>
<td>$150</td>
<td>None</td>
<td>Microsoft does not identify a singular exam format or question types before the exam. Exams can include multiple choice, building lists, case studies, short answer sections and more.</td>
<td>Microsoft</td>
</tr>
<tr>
<td>Microsoft Certified Systems Expert</td>
<td>Advanced/Expert credential to measure skills, expertise and knowledge necessary to perform complex roles using Microsoft technologies</td>
<td>$150 per exam</td>
<td>Microsoft Certified Solutions Associate certification is a pre-requisite</td>
<td>MCSE candidates must pass three to five exams, depending on their concentration</td>
<td>Microsoft</td>
</tr>
<tr>
<td>Network + Certified (N+)</td>
<td>Measures skill as a network technician</td>
<td>$239</td>
<td>Recommends having the A+ certification, followed by 9 months of work but it’s not technically required</td>
<td>Topics include network hardware, connections, software, LANs</td>
<td>Vendor-neutral</td>
</tr>
<tr>
<td>Security +</td>
<td>Validates vendor-neutral IT security such as network security and risk management</td>
<td>$311</td>
<td>Recommends having the Network + Certification and two years of experience in IT administration with a security focus</td>
<td>Up to 90 multiple choice and performance-based questions</td>
<td>Vendor-neutral</td>
</tr>
<tr>
<td>Cisco Certified Network Associate</td>
<td>Verifies basic skills in installing and managing medium-size networks</td>
<td>$250</td>
<td>Certification only lasts for three years; individuals must be re-certified</td>
<td>Written test plus 8 hours of lab work to demonstrate skills</td>
<td>Cisco</td>
</tr>
<tr>
<td>Server +</td>
<td>Validates skills to plan, secure and maintain a variety of server equipment</td>
<td>$285</td>
<td>Recommends having the A+ certification followed by 18 to 24 months of IT work</td>
<td>90 minutes to complete 100 questions</td>
<td>Vendor-neutral</td>
</tr>
</tbody>
</table>
Example: Vendor Validation – CompTIA (Found in Appendix)
Career Pathway

Career Pathways are used to help define possibilities for the future careers of the beneficiaries. The pathway included in the research is not the only option for beneficiaries and should not limit them, but instead instigate ideas for the future.

**Steps:**
- Burning Glass Labor Insights > Top Occupations
  - Begin with entry-level then progress to more experienced criteria when searching
- Burning Glass performed a study showing common career progression pathways
  - (SlideShare Resource)
- BLS: Occupational Outlook Handbook has profiles for each SOC code occupation and lists:
  - How to become one
  - How to progress
- O*Net lists data on career clusters as well as common education requirements
- Certification vendors will list common occupations that use their certifications and progression
Help Desk / Entry-level Computer Support Specialists can be trained to obtain several different IT positions and can serve as an optimal entry into the greater IT field.
Expanded Career Pathway

The expanded career pathway builds off the initial pathway slide, but includes a location specific salary range, common education level, relevant certifications, and relevant skills for the occupation.

**Steps:**
- Burning Glass Labor Insights > Top Certifications
- Burning Glass Labor Insights > Top Skills
- O*Net Online and BLS lists education levels for occupations within the SOC Code Profile
- O*Net Online and BLS Occupational Outlook Handbook list salary levels
- Salary levels can also be found from a BLS download specific to Metropolitan area:
  - [http://www.bls.gov/oes/tables.htm](http://www.bls.gov/oes/tables.htm)
- Certification vendors will list common occupations that use their certifications and progression

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**BLS: Occupational Outlook Handbook**

**O*Net OnLine**

**Certification Vendors / Colleges / Universities**

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Example: Expanded IT Support Career Pathways

The computer user support pathway contains a progression of salary, education, skills, and credentials. This is one potential pathway, and several variations may occur.

Sources:
CompTIA
Burning Glass Technologies & SlideShare
Glassdoor.com
O Net Online & Bureau of Labor Statistics

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Project Executive Summary
Methodology Overview
Outcome Hierarchy
Market Overview: GDP, Employment, Demanded Occupations
Selected Occupation Analysis: Employers, Skill Profile, Certifications, Pathway
Recommendations for continued research
Appendix & Resources

Methodology
Introduction
Encouraged Continued Research

To extend the life of this research, Accenture Corporate Citizenship encourages LISC and/or FOCs to participate in ongoing research. Top areas of encouraged research are shown in the figure below.
O*Net OnLine

O*Net OnLine is sponsored by the U.S. Department of Labor and is a great starting place for occupational research. O*Net OnLine uses the Standard Occupational Classification (SOC) system to organized occupations. Each SOC occupation has a profile page with extensive information available to the public.

Great Resource For:
- SOC Occupation Profiles
- Tasks
- Knowledge
- Skills
- Job Zone
- Education Level
- Applicable Credentials
- Related Occupations
- Wage & Employment Trends
- Find Job Openings
- Career Clusters
- Group occupations with similar skills
- Can help in the construction of a Career Pathway
- Multiple ways to search for occupations
- Bright Outlook
- Industry
- Job Zone
- Etc.
The Occupational Outlook Handbook links with the O*Net OnLine and provides supplemental information. Occupations are also classified with the SOC code.

Great Resource For:
- SOC Occupation Profiles
- Summary
- What they Do
- Work Environment
- How to Become One
- Pay
- Job Outlook
- State & Area Data
- Similar Occupations
- More Info
- Search Occupations
- Occupation Groups
- Filters
  - Pay
  - Entry-Level
  - Etc.
- Highest Paying
- Fastest Growing
- Additional Resources
The Occupational Outlook Handbook links with the O*Net OnLine and provides supplemental information. Occupations are also classified with the SOC code.

Great Resource For:
- NAICS Industries Profiles
- About the sector
- Workforce Statistics
- Earnings and Hours
- Fatalities, Injuries, and Illnesses
- Prices
- Workplace Trends
- Overview of the NAICS System
- Search Industries
  - Alphabetical Order
  - Industry Order Index

The Bureau of Labor Statistics (BLS) provides industries at a glance, including NAICS industries profiles.
Job Sites

Job sites provide a platform to search for occupations open positions. Job sites can be used to look for specific jobs, but also can be used to find demanded jobs and top employers in a given location. Both government job banks as well as job search engines (i.e., Indeed, Glassdoor, LinkedIn) can be used.

Great Resources For:
- Finding Jobs
- Searching for demanded occupations
- Searching for employers of specific occupations and search filters
- Find information about employers
- Finding additional resources
Associations and certification vendors provide valuable information on market data, industry trends, employment opportunities, and applicable certifications.
The Bureau of Economic Analysis provides economic data (GDP, Employment, etc.) for the nation. This data is very useful in assessing employment opportunities, advancing industries, and overall general economic outlook.

Great Resource For:
- Economic Data
- GDP
- Employment
- National Data
- Regional Data
- Industry Data
The Bureau of Economic Analysis provides economic data (GDP, Employment, etc.) for the nation. This data is very useful in assessing employment opportunities, advancing industries, and overall general economic outlook.
Accenture Corporate Citizenship

• Accenture Corporate Citizenship has performed research based on the methodologies provided in this document. The data derived from the research was composed from the resources stated. Accenture Corporate Citizenship took proper action to help ensure credible sources were used (Burning Glass, government, recognized job boards and profiles, and relevant professional vendors/associations), but is not responsible for any errors or omissions by other entities within such resources.

• Accenture Corporate Citizenship has used this research to assist in the development of the LISC Bridges to Career Opportunities (BCO) curriculum and course development. Accenture Corporate Citizenship does not guarantee that beneficiaries will obtain a job from this research or the program.

• Accenture Corporate Citizenship performed qualitative research to supplement the quantitative research. Qualitative data is valuable to confirm material relevance, but as with any sample size, it may not be a true representation of the full market and the universe of employers.

• The Methodology document is intended to provide you with the ability to have direct access to the same steps and procedures performed by Accenture Corporate Citizenship. Future research by LISC or FOCs is encouraged to extend the relevance of this methodology.

Burning Glass Technologies: Labor Insights

• 11. Content
  • 11.1 You understand that, in delivering the Services and in rendering the Content thereof, Burning Glass leverages a range of analytical, probabilistic, and interpretive techniques. You understand that such techniques represent methods for addressing fundamental uncertainty and that these methods may or may not prove effective or accurate and you acknowledge that any data, statements, assertions, or representations directly or indirectly made by the Services or the Content thereof are inherently uncertain and subject to error. Burning Glass makes no warranty as to the accuracy or completeness of the Services or the Content thereof, including, but not limited to, any reports, graphs, tables, charts, data, or job listings.
  • Burning Glass Labor Insights Terms of Service: http://laborinsight.burning-glass.com/jobs/us#/snapshots/create
  • Additional found in Terms of Use on the Burning Glass website
Resources

Research was performed within the following resource groups.

- Existing Training Programs
- Government Sources
- Trade Associations and Certification Vendors
- Burning Glass Labor Insights
- Journals and Publications
- Job Boards
National Resources


Reports obtained from Burning Glass Technologies. Data from January 2015 – December 2015.


Additional Resources

Atlantic Cape Community College - http://www.atlantic.edu/conted/computers-technology/a-plus-certification.htm
Asher College - http://www.asher.edu/IT-Programs/CompTIA-Certifications/CompTIA-A+.html
Brookdale Community College - http://www.brookdalecc.edu/continuinged/careerdevelopment/comptraining/tech-training/
Creating IT Futures - http://www.creatingitfutures.org/developing-programs/it-ready/application
ED2GO - http://www.ed2go.com/career/training-programs/a-plus-certification-requirements
IT Career Finder - http://www.itcareerfinder.com/it-certifications/comptia-certifications/a-plus-certification.html

NH Houston - http://www.nhhouston.com/training-and-certifications/technical-courses/comptia
Toms IT Pro - http://www.tomsitpro.com/articles/hardware-certifications,2-678-2.html
Unitek - http://www.unitek.com/training/comptia/aplus_bootcamp.php#Pre-Requisites