



IT Occupations

A Briefing for Workforce Investment Boards

In this first issue of *WIB LMI Briefing*, we examine **Information Technology-related (IT) occupations** in New York State and your local labor market region.

IT occupations occur throughout the economy, spanning a wide spectrum of training and education requirements. They range from very high-paying titles such as systems analyst to entry-level positions like billing and posting clerks. It includes “workers in occupations that build, maintain, and repair the IT infrastructure such as telecommunications and computer equipment operators, repairers, and installers.”¹

These job titles are categorized into three broad skill levels: **High**, **Moderate**, and **Low**.² (See Table 1.) IT occupations in the *High* category require an associate degree or higher. *Moderate* skill IT occupations require long-term on-the-job training or post-secondary vocational training, while *Low* skill IT jobs only require short- to moderate-term on-the-job training.

For the three broad IT skill levels we have added detailed regional occupational employment and wage data collected from New York State’s Occupational Employment Survey, and occupational projections for 2002-2012, prepared by the New York State Department of Labor’s Division of Research and Statistics. These data were compiled by aggregating data for individual underlying occupations within each broad skill category. If you have questions contact:

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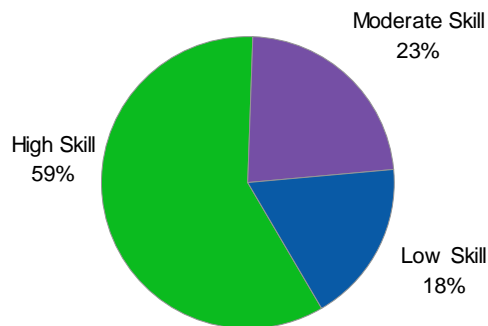
¹ IT occupations analyzed here come from Chapter II of the “Digital Economy 2003” report, prepared by the U.S. Department of Commerce’s Economics and Statistics Administration (ESA). That report presents a detailed list of IT-related occupations (see Appendix Table 1) and utilizes a broader definition of IT workers than some other studies.

² Note: this grouping by Sandra Cooke, the author of Chapter II in the “Digital Economy 2003”, reflects her interpretation of training intensity of IT-related occupations, and therefore should not be considered official estimates.

Profile of Information Technology (IT) Occupations in New York State



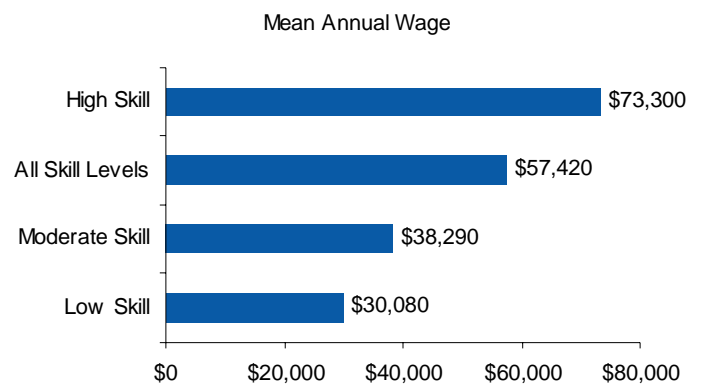
IT Employment Distribution by Skill Level



Total IT Employment: 360,380

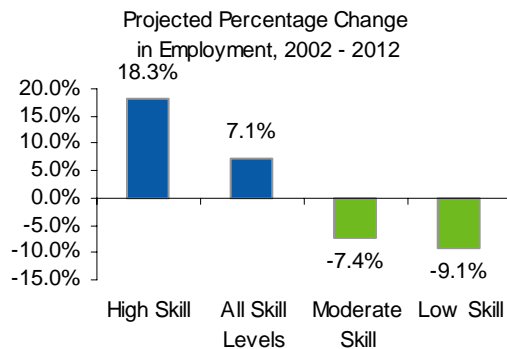
High-skill occupations account for more than one-half of all IT-related jobs, which contrasts to all occupations as a whole, where less-skilled jobs are more prevalent.

IT Occupational Wages by Skill Level



Not surprisingly, High-skill jobs pay significantly higher wages than those in the other, less-skilled categories.

IT Employment Projections by Skill Level



Overall IT-related occupational employment in New York State is expected to increase by 7.1 percent between 2002 and 2012. This rate is somewhat lower than the 8.6 percent growth projected for all occupations in New York State over this period.

Top 10 IT Occupations

Title	Number of Jobs
Computer Programmers	34,620
Billing and Posting Clerks and Machine Operators	31,990
Computer Support Specialists	27,800
Computer Systems Analysts	26,340
Computer Software Engineers, Applications	23,950
Data Entry Keyers	22,780
Computer and Information Systems Managers	17,210
Computer Software Engineers, Systems Software	16,000
Electrical and Electronic Equipment Assemblers	14,890
Switchboard Operators, Including Answering Service	14,200

Many occupations in the Moderate and Low skill categories are susceptible to being replaced by technology. For example, recognition technology and on-line telephone directories will reduce switchboard operator employment.

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Table 1: IT-Related Occupations

<p>Skill Level: High</p> <p>Computer and information systems managers Engineering managers Computer and information scientists, research Computer programmers Computer software engineers, applications</p> <p>Computer software engineers, systems software Computer support specialists Computer systems analysts Database administrators Network and computer systems administrators</p> <p>Network systems and data communications analysts Computer hardware engineers Electrical engineers Electronics engineers, except computer Electrical and electronic engineering technicians</p>	<p>Skill Level: Moderate</p> <p>Data entry keyers Computer, automated teller, and office machine repairers Telecommunications equipment installers and repairers, exc. line installers Electrical and electronics repairers, commercial and industrial equipment Electrical power-line installers and repairers</p> <p>Telecommunications line installers and repairers Electrical and electronic equipment assemblers Electromechanical equipment assemblers Semiconductor processors</p> <p>Skill Level: Low</p> <p>Communications equipment operators Billing and posting clerks and machine operators Computer operators Other office machine operators, exc. computer</p>
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Source: "Digital Economy 2003", prepared by U.S. Economics and Statistics Administration.

Skills Required for IT-Related Occupations

Of the 15 *High* skill IT-related occupations in Table 1 above, 11 are computer-related and 4 are engineering-related.

Among the common skills required for the computer-related occupations are troubleshooting, critical thinking, active learning, operations analysis, reading comprehension, complex problem solving, and coordination.

The most commonly required skills for the engineering-related jobs are reading comprehension, complex problem solving, active learning, math, coordination, judgment/decision-making, and active listening.

Among the *Moderate* skill occupations listed above, almost all require: installation, troubleshooting, and repairing skills.

For the *Low* skill jobs listed in Table 1, each requires: critical thinking, reading comprehension, active learning, active listening, writing, math, monitoring, and social perceptiveness skills.

More details on the skills necessary for these jobs can be found online at the O*Net Center at <http://online.onetcenter.org/> or from your local labor market analyst, Kevin Jack, whose contact information appears on the front page of this newsletter.