

Technology Corridor Skillshed Analysis



*A study of occupational clusters, skills, & gap analysis
in the Technology Corridor*

Released October 2009

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Introduction

A Skillshed is the geographic area from which a region pulls its workforce and the skills, education, and experience that the workforce possesses. Traditionally, labor markets have been studied in terms of the products produced by a region to understand what industries are relatively strong. A Skillshed helps to understand not only where the region's competitive strengths currently lie by detailing the current workforce mix, but also in which occupations or industries the region could grow into by understanding the difference between the current skill set and that skill set needed by emerging markets. The outcome of the Skillshed helps to analyze four key findings:

- Identification of the current skills possessed by the supply of workers.
- Projected employment growth and median wages, skills, and knowledge needed by employers.
- The demand for workers considering the factors affecting supply and demand.
- Gap analysis between the current set of skills and education and that set needed by current and prospective employers.

The Skillshed analysis integrated and analyzed information from three different sources; the Technology Corridor Laborshed Study, the Regional Workforce Needs Assessment (Job Vacancy) Survey, and information from the Occupational Information Network (O*NET). These three sources were used to present the supply and demand for labor within the region and the examples of gap analysis from current to emerging or high growth occupations.

The Laborshed survey was conducted and analyzed using 1,625 telephone survey responses from a random sample of 18-64 year olds within the region. Respondents were asked a wide range of demographic and employment-related questions. Areas of interest from the Laborshed survey:

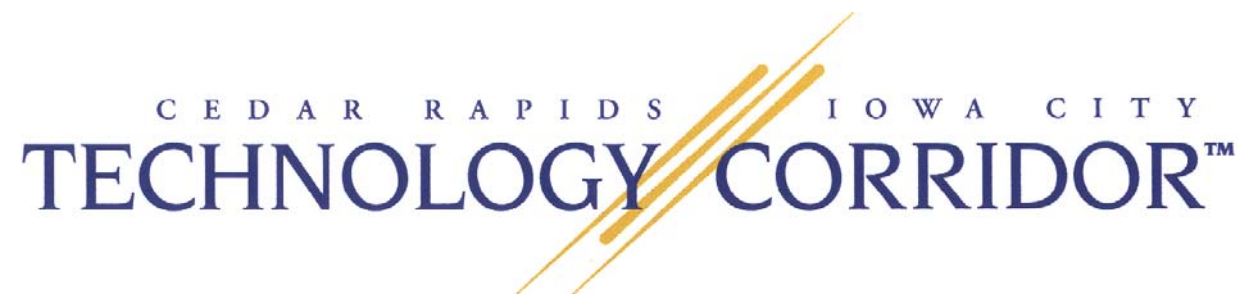
- Work experience within the region
- Population by occupational category
- Unemployment and commuting patterns

The second annual Workforce Needs Assessment was conducted from September 2008 through January 2009. There were 796 employer responses from the Technology Corridor Region, yielding a 18.0 percent response rate. In addition to vacancy and retirement data, this year's survey included questions pertaining to average hourly starting wage. Analysis of the survey illustrates the demand for workers and skills required in the vacant positions. Areas analyzed using the Iowa Workforce Needs Assessment were:

- Vacancies by occupation
- Vacancies across industries
- Work activities, skills, and knowledge areas most needed by employers
- Starting wages offered and experience required

The Occupational Information Network (O*NET) is a joint effort between the US Department of Labor and the North Carolina Employment Security Commission. It provides a database of standardized and occupation-specific descriptions that help determine which factors are critical in the performance of an occupation. Data used for these analyses were:

- Work activities
- Knowledge
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Supply of Workers

Through use of the Laborshed Study, the current occupations and skills of the region were identified. **Table 1** (below) shows the top occupational experience reported in the region by percentage of total and compares the regional Laborshed percent of occupations to that of the state. This comparison helps to identify those categories of occupations in which the region may have a higher concentration of workers and, therefore; may have a competitive advantage.

The table also includes the statewide projected annual growth rate in employment¹. The average projected growth rate for all jobs in the state of Iowa is 1.1 percent with trucking and healthcare occupations exceeding the state average. The projected growth rate for each occupation statewide is also useful in analyzing those groups of occupations in which the region has a larger concentration.

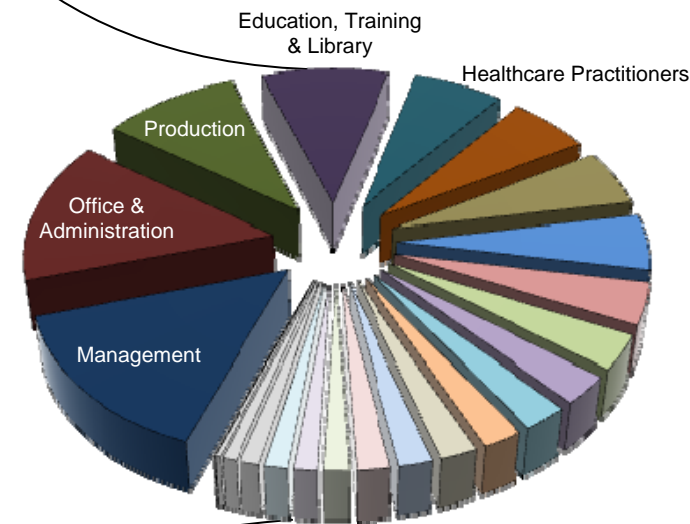
Table 1
Occupational Experience in Region

Occupation	Percent of Region	Percent of State	Statewide Projected Annual Growth Rate ¹
Teachers & Instructors, All Other	6.2%	4.7%	0.9%
Chief Executives (including self-employed & business owners)	4.4%	4.6%	0.4%
General & Operations Managers	4.0%	0.3%	0.2%
Registered Nurses	4.0%	2.3%	2.3%
Production Workers, Helpers	3.6%	0.2%	0.6%
Secretaries, except Legal, Medical, & Executive	1.7%	1.2%	0.1%
First-Line Supervisors/Managers of Office & Administrative Support Workers	1.6%	1.6%	0.7%
Office Clerks, General	1.6%	0.8%	1.5%
Retail Salespersons	1.5%	0.6%	1.5%

Table 2
Population by Occupational Category

Occupational Category	Percentage of All Workers
Management	14.9%
Office & Administrative Support	14.3%
Production	9.9%
Education, Training, & Library	9.3%
Healthcare Practitioner & Technical	6.5%
Sales & Related	6.0%
Transportation & Material Moving	5.6%
Business & Financial Operations	5.5%
Healthcare Support	4.2%
Construction & Extraction	3.5%
Installation, Maintenance, & Repair	2.9%
Architecture & Engineering	2.6%
Arts, Design, Entertainment, Sports, & Related	2.3%
Computer & Mathematical Science	2.1%
Food Preparation & Serving Related	1.9%
Building & Grounds Cleaning & Maintenance	1.9%
Community & Social Services	1.4%
Personal Care & Service	1.3%
Life, Physical & Social Science	1.3%
Protective Service	1.1%
Legal	0.8%
Farming, Fishing, & Forestry	0.3%
Military Specific	0.1%

The occupations listed above can also be analyzed by overall occupational category. **Table 2** presents the occupational categories for the region. The region has a high relative concentration of workers in the management, office & administrative support, and production occupational categories which is similar to the percentages statewide: Management (15.5%), Office & Administrative Support (13.8%), and Production (13.4%).



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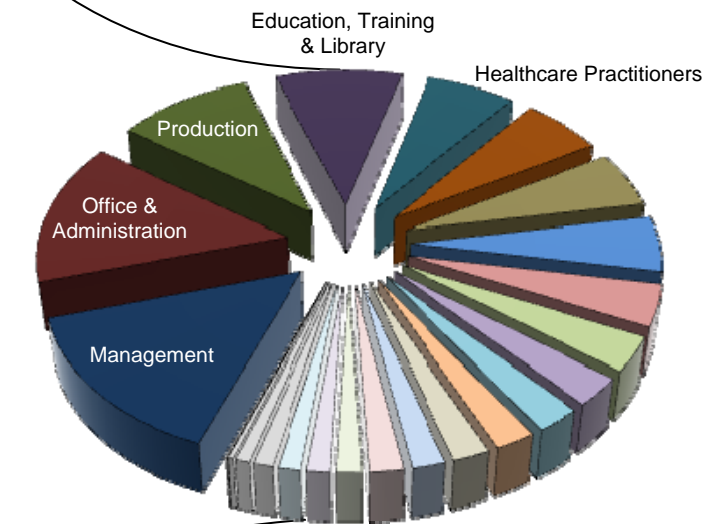
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Architecture & Engineering	2.6%
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Commuting and Willingness to Change/Accept Employment

The Laborshed Study also presents data on the commuting patterns and the willingness to change and/or accept employment. On average, workers within the region currently commute 11 miles each way to work for an average median wage of \$15.00 per hour and would be willing to commute up to 15 miles for a desired average wage of \$15.00 per hour.

Nearly one-fourth (23.8%) of the employed are willing to change employment and nearly two-thirds (63.0%) of those reporting to be unemployed are willing/able to accept employment within the region. Commuting ranges and the willingness to change and/or accept employment could have an impact on economic development as the region covers a relatively large area and the majority are rural communities.

Five percent (5.0%) of those within the Laborshed reported being unemployed. This is not to be confused with the “unemployment rate” for the region, which is 5.5% (4.7% Johnson County & 6.0% Linn County) as of July 2009.

Demand for Workers

The Workforce Needs Assessment reveals the vacant jobs employers reported in the region. **Table 3** shows the occupations with the most reported vacancies, the average starting wage, and the median regional wage. When comparing the occupations with the most vacancies and the occupational experience in the region (**Table 1**, previous page), there is overlap. There are several possibilities that might explain this overlap of employers and workers which are explained in the Factors Affecting Supply and Demand section on page five. In the region there is a labor supply and current vacancies for registered nurses. However, the majority (92.3%) of registered nurses are currently employed and earn a median hourly wage of \$24.72 per hour which is well above the starting and regional entry level wage.

Table 3
Occupations with Most Vacancies

Job Title	Average Starting Wage	Regional Median Wage ²	Regional Entry Level Wage ²
Laborers & Freight, Stock, & Material Movers, Hand	\$ 7.50	\$ 10.78	\$ 7.93
Nursing Aides, Orderlies, & Attendants	\$ 9.41	\$ 11.40	\$ 9.78
Registered Nurses	\$ 22.54	\$ 24.53	\$ 19.39
Cashiers	\$ 7.81	\$ 8.11	\$ 6.49
Customer Service Representatives	\$ 9.69	\$ 13.44	\$ 10.07
Truck Drivers, Heavy & Tractor-Trailer	\$ 16.61	\$ 14.40	\$ 9.90
Postsecondary Teachers, All Other	\$ 40.23	\$ 16.80	\$ 11.82
Computer Support Specialists	\$ 11.94	\$ 19.84	\$ 14.22
Compliance Officers, Except Agriculture, Construction, Health & Safety, & Transportation	\$ 9.10	\$ 22.04	\$ 23.49
Teacher Assistants	\$ 10.61	\$ 10.03	\$ 7.45
Inspectors, Testers, Sorters, Samplers, & Weighers	\$ 13.63	\$ 19.83	\$ 13.56
Managers, All Other	\$ 13.49	\$ 31.37	\$ 17.12
Market Research Analysts	\$ 15.50	\$ 18.15	\$ 16.00
Sales & Related Workers, All Other	\$ 14.04	\$ 16.41	\$ 11.29

Table 4 (next page) shows the largest industries in the region (by employment), and the vacancies most reported by those industries. The wholesale and retail trade industries have been combined due to the similarity in occupational mix.

In some instances, employers may have difficulty filling a vacancy in one industry but can fill the same occupation in another industry quite easily. Aside from differences in starting wages, these cases can occur because work duties and educational requirements may be similar across industries, but the work environment may be different and applicants may need some industry specific knowledge. Other occupations may be equally difficult to fill across industries. By examining the occupations demanded across industries, we can begin to see a demand picture for occupational categories. For example, some type of administrative support workers are in high demand in three of the top industries in Table 4.

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Employers in the region reported requiring less experience and fewer years of formal education for their vacancies than those levels generally reported on O*NET or other occupational planning sources. This indicates that employers are willing to work with applicants to develop the skills and knowledge for the job rather than demanding that an applicant possess all skills at the outset.

**Table 4
Top Jobs Within Region's Largest Industries**

Industry	Occupation	Average Education Requirement	Average Experience Requirement	Average Starting Wage ³
Healthcare	Nursing Aides, Orderlies, & Attendants	Completed High School	No previous experience	\$ 9.41
	Registered Nurses	Associate level	Several months of training/experience	\$ 22.54
	Teachers & Instructors	Bachelor's level	One year of training or experience	\$ 17.17
	Physical Therapists	Associate level	Several months of training/experience	\$ 25.41
	Executive Secretaries & Admin Assistant	Completed High School	A few weeks training or experience	\$ 13.83
Wholesale & Retail Trade	Sales & Related Workers	Completed High School	No previous experience	\$ 12.25
	Cashiers	Some High School, No diploma	A few weeks training or experience	\$ 7.81
	Automotive Service	Associate level	A few weeks training or experience	\$ 13.77
	Stock Clerks & Order Fillers	Completed High School	No previous experience	\$ 14.24
	Sales Representatives	Completed High School	No previous experience	\$ 17.25
Construction	Cement Masons & Concrete Finishers	Completed High School	A few weeks training or experience	\$ 15.67
	Construction Laborers	Completed High School	A few weeks training or experience	\$ 10.94
	Construction & Related, All	Some High School, No diploma	No previous experience	\$ 12.50
	Truck Drivers, Heavy & Tractor Trailer	Completed High School	A few weeks training or experience	\$ 16.61
	Receptionists & Information	Some High School, No diploma	No previous experience	\$ 11.25
Professional & Technical Services	Tax Preparers	Completed High School	A few weeks training or experience	\$ 26.25
	Engineers, All Other	Bachelor's level	Several months of training/experience	\$ 26.96
	Receptionists & Information	Some High School, No diploma	No previous experience	\$ 11.25
	Accountants & Auditors	Associate level	Several months of training/experience	\$ 22.46
Manufacturing	Production Workers	Completed High School	A few weeks training or experience	\$ 11.33
	First-Line Supervisors of Production & Operating Workers	Associate level	A few weeks training or experience	\$ 16.40
	Multiple Machine Tool Setters, Operators, & Tenders	Completed High School	No previous experience	\$ 11.00

Table 5, Table 6, and Table 7 show the top work activities, the top skills, and the top knowledge required by employers

Table 5 Work Activities by Employer Needs	Table 6 Skills by Employer Needs	Table 7 Knowledge by Employer Needs
Work Activities	Skills	Knowledge
Communicating with Supervisors, Peers, or Subordinates	Active Listening	Biology
Documenting/Recording Information	Complex Problem Solving	Computers & Electronics
Evaluating Information to Determine Compliance with Standards	Coordination	Customer & Personal Service
Getting Information	Critical Thinking	Design
Identifying Objects, Actions, & Events	Equipment Maintenance	Engineering & Technology
Interacting With Computers	Judgement & Decision	English Language
Making Decisions & Solving Problems	Reading Comprehension	Mathematics
Organizing, Planning, & Prioritizing Work	Speaking	Mechanical
Processing Information	Time Management	Physics
Updating & Using Relevant Knowledge	Writing	Telecommunications

³ Iowa Workforce Needs Assessment Survey

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Interacting With Computers	Judgement & Decision	English Language
Making Decisions & Solving Problems	Reading Comprehension	Mathematics
Organizing, Planning, & Prioritizing Work	Speaking	Mechanical
Processing Information	Time Management	Physics
Updating & Using Relevant Knowledge	Writing	Telecommunications

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Table 8 presents a sample of high growth occupations, their projected annual growth rates, and median wages for the region. These data (projected employment 2006-2016) represent the occupations that are most likely to experience growth throughout the region based on current employment. The industry projections for the same time period show growth by percent employment change in Social Assistance (46.0%); Securities & Commodities (41.4%), Museums, Historical Sights, & Similar Institutions (40.0%), and Amusement, Gambling, & Recreation (39.7%).

**Table 8
Regional High Growth Occupations**

Occupation	Projected Annual Growth Rate ¹	Regional Median Wage ¹
Network Systems & Data Communications Analysts	4.8%	\$ 29.92
Home Health Aides	4.6%	\$ 9.73
Personal & Home Care Aides	3.9%	\$ 10.30
Mental Health & Substance Abuse Social Workers	3.8%	\$ 16.41
Fitness Trainers & Aerobics Instructors	3.7%	\$ 14.98
Social Workers, All Other	3.7%	\$ 20.55
Insurance Sales Agents	3.7%	\$ 17.48
Computer Software Engineers, Applications	3.7%	\$ 41.90
Pharmacy Technicians	3.6%	\$ 12.23
Medical Assistants	3.6%	\$ 13.15
Veterinarians	3.4%	\$ 33.72
Medical & Public Health Social Workers	3.3%	\$ 17.46
Social & Human Service Assistants	3.3%	\$ 13.73

The average projected annual job growth projections for the region is 1.4 percent. Jobs with a negative annual projected employment growth should be studied to see which skills or training would be necessary to move workers in the occupations that show more growth in the opportunities in the future.

Table 9 presents a sample of occupations with negative or low growth, their projected annual growth rates (projected employment 2006-2016) throughout the region based on current employment, and median wages for the region. The industry projections for the same time period, show a negative growth by percent employment change in Leather and Allied Product Manufacturing (-17.4%); Textile Mills (-16.7%); Printing and Related Support Activities (-14.3%), and Paper Manufacturing (-10.1%). Though these industries represent the lowest growth by percentage, they also comprise less than 1.0 percent of employment. More attention should be paid to the next three lowest projections: Machinery Manufacturing (-8.2%), Fabricated Metal Manufacturing (-8.0%), and Plastics & Rubber Products (-8.0%) which comprise 2.6 percent of total estimated employment.

**Table 9
Regional Declining and Low Growth Occupations**

Occupation	Projected Annual Growth Rate ¹	Regional Median Wage ²
Order Clerks	-2.7%	\$ 13.88
Farmers & Ranchers	-0.9%	*
Packaging & Filling Machine Operators & Tenders	-0.8%	\$ 14.13
Telemarketers	-0.7%	\$ 9.31
Cutting, Punching, & Press Machine Setters, Operators, & Tenders	-0.5%	\$ 17.06
Packers & Packagers, Hand	-0.5%	\$ 8.57
Stock Clerks & Order Fillers	-0.4%	\$ 9.52
Paper Goods Machine Setters, Operators, & Tenders	-0.3%	\$ 18.02
Office & Administrative Support Workers, All Other	-0.3%	\$ 10.29
Vocational Education Teachers, Secondary School	-0.3%	*
Driver/Sales Workers	-0.3%	\$ 14.50
Machinists	-0.2%	\$ 16.27
Computer Programmers	-0.1%	\$ 24.98

¹Insufficient Regional Data

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Pharmacy Technicians	3.6%	\$ 12.23
Medical Assistants	3.6%	\$ 13.15
Veterinarians	3.4%	\$ 33.72
Medical & Public Health Social Workers	3.3%	\$ 17.46
Social & Human Service Assistants	3.3%	\$ 13.73

The average projected annual job growth projections for the region is 1.4 percent. Jobs with a negative annual projected employment growth should be studied to see which skills or training would be necessary to move workers in the occupations that show more growth in the opportunities in the future.

Table 9 presents a sample of occupations with negative or low growth, their projected annual growth rates (projected employment 2006-2016) throughout the region based on current employment, and median wages for the region. The industry projections for the same time period, show a negative growth by percent employment change in Leather and Allied Product Manufacturing (-17.4%); Textile Mills (-16.7%); Printing and Related Support Activities (-14.3%), and Paper Manufacturing (-10.1%). Though these industries represent the lowest growth by percentage, they also comprise less than 1.0 percent of employment. More attention should be paid to the next three lowest projections: Machinery Manufacturing (-8.2%), Fabricated Metal Manufacturing (-8.0%), and Plastics & Rubber Products (-8.0%) which comprise 2.6 percent of total estimated employment.

**Table 9
Regional Declining and Low Growth Occupations**

Occupation	Projected Annual Growth Rate ¹	Regional Median Wage ²
Order Clerks	-2.7%	\$ 13.88
Farmers & Ranchers	-0.9%	*
Packaging & Filling Machine Operators & Tenders	-0.8%	\$ 14.13
Telemarketers	-0.7%	\$ 9.31
Cutting, Punching, & Press Machine Setters, Operators, & Tenders	-0.5%	\$ 17.06
Packers & Packagers, Hand	-0.5%	\$ 8.57
Stock Clerks & Order Fillers	-0.4%	\$ 9.52
Paper Goods Machine Setters, Operators, & Tenders	-0.3%	\$ 18.02
Office & Administrative Support Workers, All Other	-0.3%	\$ 10.29
Vocational Education Teachers, Secondary School	-0.3%	*
Driver/Sales Workers	-0.3%	\$ 14.50
Machinists	-0.2%	\$ 16.27
Computer Programmers	-0.1%	\$ 24.98

¹Insufficient Regional Data

¹ <http://iwin.iwd.state.ia.us/iowa/ArticleReader?itemid=00003928>

Factors Affecting Supply & Demand

Starting wages that are below the required wages a worker would need to consider employment could present a problem for employers trying to fill a vacant position. Aside from increasing starting wages, possible solutions are those that decrease the cost of transportation for employees, increase benefits, flexible hours, or provide training opportunities for employed people with income constraints.

Employee turnover has an affect on the job market in the Technology Corridor just as it does everywhere else. The Workforce Needs Survey showed high levels of vacancies for jobs in the office & administrative support, sales & related, and food preparation & serving related occupational categories, but high turnover in these occupations means there is not necessarily high demand for employees. There is little economic developers can do to decrease turnover within occupational categories or the job market as a whole.

Mismatch in skills between workers and job vacancies can be identified by examining individuals that are employed in positions that do not maximize their previous experience, skills and education, or that do not adequately compensate them based on their qualifications.

Worker/Employer connection is another factor affecting the relationship between the supply of workers in the region and the demand for those workers. The most likely cause of this imbalance in the labor market is a lack of information shared between people that have necessary skills to those seeking employees. Counseling services, consolidated region-wide job banks, and other services promoting the dissemination of information are those most likely to assist with closing this gap.

The media most used by job seekers in the region, as reported by the analysis of the Laborshed Study, are: the internet (65.4%); local/regional newspapers (61.8%); networking with family, friends, or acquaintances (24.3%); and local Iowa Workforce Development Centers (17.5%). The most visited internet sites for worker job search are: www.monster.com, www.corridorcareers.com, www.careerbuilder.com, and www.iowaworkforce.org. The top four media used by employers to find applicants, as reported by the Workforce Needs Assessment Survey, are local/regional newspapers (83.9%), the internet (70.1%), college/university career centers (53.9%), and local Iowa Workforce Development Centers (50.3%). The most used internet sites for employers are: company specific websites, www.iowaworkforce.org, www.monster.com, or www.careerbuilder.com.

Gap Analysis

Three occupational clusters have been selected for gap analysis based on strength of the workforce and targeted industries identified by the Laborshed and Workforce Needs Assessment. The clusters are Information Technology, Engineering, and Natural Sciences & Environmental Management. They were selected for their projected employment growth, high average wages, and the proximity between required skills for the occupations and the current skill set of the workforce. For these reasons, the workforce will be able to transfer into these occupations easily and with the most value added to the regional economy. **Tables 10-12** provide examples of the occupations within the workforce that are most related to the emerging occupations. The tables also include those skills shared by the occupations and those in which more training will be needed to transition from the occupation currently in great supply within the regional workforce to an emerging occupation.

Within the Information Technology cluster of occupations, the regional workforce fell short with respect to education in Computers and Electronics, Engineering & Technology, and Telecommunications. On average, the occupations within the cluster demand an associate degree level of understanding in the core areas. With respect to experience, the current workforce requires training in computer skills and information processing skills.

It is important to note the difference between the results of the gap analysis for the population on average and that displayed in the figures. The following tables display the shared and additional skills or education needed to transition a worker from a related occupation into one of the emerging occupations. The gap analysis for the population on average showed that there were certain areas of skills and education that were needed to transition a group of the population into the group of emerging occupations. For example, **Table 10** shows that an Audio and Video Equipment Technician will need training in education in Customer Service, Evaluating Information, Interacting with Computers, and Telecommunications. The portion of the population that was well suited for careers in the Information Technology group; however, needs training and education in Computers & Electronics, Engineering & Technology, Telecommunications, Interacting with Computers, and Processing Information. Further analysis of the skills differences between specific occupations is available through the O*NET system. The analysis of the overall skills and educational differences between the population and the groups of emerging occupations is provided in this report and in the Skillshed Technical Report.

Factors Affecting Supply & Demand

Starting wages that are below the required wages a worker would need to consider employment could present a problem for employers trying to fill a vacant position. Aside from increasing starting wages, possible solutions are those that decrease the cost of transportation for employees, increase benefits, flexible hours, or provide training opportunities for employed people with income constraints.

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From the table below, we also see that some of the most common skills needed to transition the workforce are: Customer Service, Computers & Electronics, Interacting with Computers, Telecommunications, and Processing Information.

Table 10
Related Occupations to Information Technology

Related Occupations		Median Wages	Overlapping Skills and Education	Required Areas for Improvement	
Information Technology	Emerging Occupation: Network Systems and Data Communications Analysts		\$ 29.88		
	Career Pathways	Electrical and Electronics Installers and Repairers	\$ 18.89	Engineering & Technology, Documenting/Recording Information	Mathematics, Customer Service, Processing Information, Interacting with Computers, Computers & Electronics
		Audio and Video Equipment Technicians	\$ 17.56	Engineering & Technology, Monitoring and Controlling Processes	Telecommunications, Customer Service, Evaluating Information to Determine Compliance, Interacting with Computers
		Telecommunications Equipment Installers and Repairers	\$ 18.43	Telecommunications, Controlling Machines and Processes	Engineering & Technology, Computers & Electronics, Interacting with Computers, Processing Information
	Emerging Occupation: Computer Software Engineers		\$ 34.89		
	Career Pathways	Inspectors, Testers, Sorters, Samplers, and Weighers	\$ 15.22	Customer Service, Processing Information	Telecommunications, Engineering & Technology, Interacting with Computers, Thinking Creatively
		Bookkeeping, Accounting, and Auditing Clerks	\$ 13.60	Communications and Media; Communicating with Supervisors, Peers, or Subordinates	Telecommunications, Computers & Electronics, Thinking Creatively, Interacting with Computers
		Bus and Truck Mechanics and Diesel Engine Specialists	\$ 16.59	Customer Service, Documenting/Recording Information	Telecommunications, Computers & Electronics, Thinking Creatively, Interacting with Computers

The Natural Sciences & Environmental Management occupational cluster was the most closely related to the set of skills and experiences held by the regional workforce. The most critical gap in education required fell within biology and mathematics. The gap between the current knowledge of these subjects within the regional workforce and the level of knowledge required was between the high school level and the associate degree level, or less than one year of coursework.

From the table below, we also see that some of the most common skills needed to transition the workforce are: Biology, Computers & Electronics, Analyzing Data or Information, and Interacting with Computers

Table 11
Related Occupations to Natural Sciences and Environmental Management

Related Occupations		Median Wages	Overlapping Skills and Education	Required Areas for Improvement	
Natural Sciences and Environmental Management	Emerging Occupation: Soil and Plant Scientists		\$ 27.45		
	Career Pathways	Farm Workers and Laborers, Crop	\$ 10.43	Production & Processing, Controlling Machines and Processes	Biology, Computers & Electronics, Processing Information, Analyzing Data or Information
		Landscaping and Groundskeeping Workers	\$ 10.33	Production & Processing, Controlling Machines and Processes	Biology, Computers & Electronics, Processing Information, Analyzing Data or Information
		Laundry and Dry-Cleaning Workers	\$ 9.75	Production & Processing, Controlling Machines and Processes	Biology, Computers & Electronics, Interpreting the Meaning of Information, Analyzing Data or Information
	Emerging Occupation: Environmental Science and Protection Technician		\$ 20.71		
	Career Pathways	Occupational Health and Safety Technicians	\$ 20.88	Biology; Inspecting Equipment, Structures, or Material	Mathematics, Engineering & Technology, Analyzing Data or Information, Interacting with Computers
		Cost Estimators	\$ 22.88	Biology; Inspecting Equipment, Structures, or Material	Mathematics, Computers & Electronics, Analyzing Data or Information, Interacting with Computers
		Healthcare Support Workers, All Others	\$ 10.95	Biology, Monitoring and Controlling Processes	Mathematics, Engineering & Technology, Analyzing Data or Information, Estimating Quantifiable Characteristics

From the table below, we also see that some of the most common skills needed to transition the workforce are: Customer Service, Computers & Electronics, Interacting with Computers, Telecommunications, and Processing Information.

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Related Occupations to Information Technology

Related Occupations		Median Wages	Overlapping Skills and Education	Required Areas for Improvement	
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		Bus and Truck Mechanics and Diesel Engine Specialists	\$ 16.59	Customer Service, Documenting/Recording Information	Telecommunications, Computers & Electronics, Thinking Creatively, Interacting with Computers

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The requirements of the Engineering occupational cluster are close to the current skill set of the region. The current workforce lacked some of the formal education required for the occupations within the cluster. The regional workforce showed a need for coursework in the areas of Computers & Electronics, Engineering & Technology, and Design.

From the table below, we also see that some of the most common skills needed to transition the workforce are: Engineering & Technology, Analyzing Data or Information, Processing Information, Computers & Electronics, and Interacting with Computers.

**Table 12
Related Occupations to Engineering**

Related Occupations		Median Wages	Overlapping Skills and Education	Required Areas for Improvement	
Engineering	Emerging Occupation: Environmental Engineering Technician	\$ 19.91			
	Career Pathways	Helpers- Installation, Maintenance, and Repair Workers	\$ 11.31	Mechanical; Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Engineering & Technology, Physics, Monitoring and Controlling Processes, Analyzing Data or Information
		Janitors and Cleaners, Except Maids and Housekeeping	\$ 10.95	Production & Processing, Controlling Machines and Processes	Physics, Engineering & Technology, Processing Information, Analyzing Data or Information
		Interior Designers	\$ 16.38	Mechanical; Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Engineering & Technology, Physics, Processing Information, Analyzing Data or Information
	Emerging Occupation: Electrical and Electronic Engineering Technician		\$ 22.27		
	Career Pathways	Electrical and Electronic Equipment Assemblers	\$ 11.33	Building & Construction, Inspecting Equipment, Structures, or Material	Telecommunications, Computers & Electronics, Interacting with Computers, Repairing and Maintaining Electronic Equipment
		Maintenance and Repair Workers, General	\$ 15.76	Building & Construction, Inspecting Equipment, Structures, or Material	Production & Processing, Engineering & Technology, Interacting with Computers, Documenting/Recording Information
		Construction and Building Inspectors	\$ 22.76	Mechanical, Repairing and Maintaining Mechanical Equipment	Computers & Electronics, Engineering & Technology, Interacting with Computers, Repairing and Maintaining Electronic Equipment

The current workforce also needs skills training in the areas of repairing and maintaining electronic equipment; making decisions and problem solving; and interacting with computers. Engineering occupations of all types are among the occupations projected to be in high demand for the cluster. The focus here has been placed on engineering technicians because these positions require fewer years of education and experience but are still projected to outpace the statewide averages for growth and wages.

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Conclusion

A Skillshed examines the interaction between the current supply of workers and the current demand for their skills by employers; also, it measures the difference between the current set of skills and education held by the regional workforce and that set of skills and education required for emerging occupations.

A region must develop a plan to meet the current needs of the labor market by ensuring that its workforce is prepared with the necessary skills. At the same time, the region must also help its labor market transition into a workforce with the skills and education required by emerging occupations.

An important note is that the data collected and used in this report, other than that from the Workforce Needs Assessment, is from before the collapse of the financial sector and the ensuing governmental response. More data will be available in the coming year to better assess the recession's effect on employment and industrial growth. The Finance, Insurance, & Real Estate industry will certainly not be as highly demanded as was originally thought while employment in Social Services, and possibly, Public Administration will increase.

Key Findings:

- The supply of workers in the region currently possess skills in the following occupational categories:
 - Production
 - Office & Administrative Support
 - Management
- More specifically, the supply of workers in the region currently possess skills in the following occupations:
 - Teachers & Instructors
 - Managers
 - Registered Nurses
 - Production Workers
- The current education and skills of the workforce most closely resemble the education and skills of three occupational categories designated as knowledge clusters:
 - Information Technology
 - Engineering & Related Services
 - Natural Sciences & Environmental Management
- The occupational categories with the highest projected annualized employment growth (2006-2016) within the region are as follows:
 - Community & Social Services (2.7%)
 - Healthcare Support (2.7%)
 - Computer & Mathematical (2.4%)
 - Healthcare Practitioners & Technical (2.1%)
- The occupations within the knowledge cluster occupational groups with the highest projected annualized employment growth (2006-2016) within the region are as follows:
 - Network Systems & Data Communication Analysts (5.3%)
 - Computer Software Engineers (4.5%)
 - Computer Systems Analysts (2.9%)
 - Environmental Science & Protection Technicians (2.8%)
 - Environmental Engineers (2.5%)
 - Environmental Engineering Technicians (2.5%)
 - Biomedical Engineers (2.1%)
- The gap between the current education level and skill set of workers in the region and the education level and skills required by employers in the region is, in a majority of cases, approximately one year of educational courses and less than one year of skills training.

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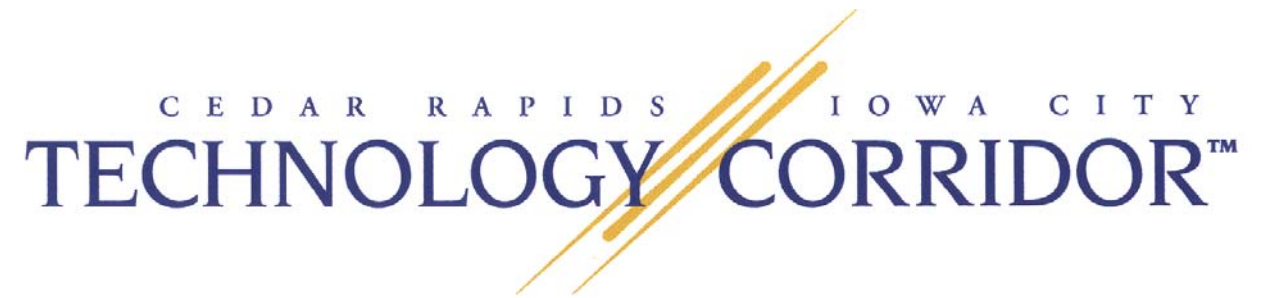
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In Partnership With:



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