



OMAHA AREA IT AND ENGINEERING TALENT STUDY

RESULTS REPORT
October 24, 2013

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Study Overview

At the request of the University of Nebraska, the Greater Omaha Chamber of Commerce and AIM commissioned The MSR Group to survey Omaha-area businesses regarding workforce demand in the fields of information technology and engineering. The survey was designed to assess current and future workforce needs and to identify the skills and characteristics necessary for IT and engineering positions.

Potential participants were companies identified from lists supplied by AIM and by the Greater Omaha Chamber of Commerce. Companies identified by AIM are Omaha-area companies that have 50 or more employees and have posted IT or Engineering positions on Careerlink.com within the past two years. Companies identified by the Chamber are Greater Omaha Chamber members and represent 150 different industry categories. In total, over 2,200 companies were identified as potential participants for the study.

The survey was conducted between October 10 and October 21 using an online survey and a live telephone interview. The MSR Group initially invited potential participants via an email invitation that included a letter from the presidents of both AIM and the Greater Omaha Chamber of Commerce. To increase the response count, The MSR Group began calling potential participants one week after the initial email invitation. In total, 154 surveys were completed – 51 via the online survey and 103 via live telephone interview. The resulting response rate for the survey was 7% which is in line with market research industry standards for business-to-business surveys.

Participants were asked a series of questions about current employee counts, annual hiring, projected hiring, quality of hires, and the local talent pool. With the exception of questions pertaining to total employee counts, all questions focused on IT and engineering talent.

Participant Company Information

Participant companies represent a variety of industries with the largest group (18%) in Transportation/Logistics. Participant companies range in size from 2 employees to 50,000 employees with the majority having 200 or fewer employees. Omaha-area employee counts range from 1 to 5,600 with the majority having 75 or fewer Omaha-area employees. Omaha-area IT employee counts range from 0 to 250. Omaha-area engineering employee counts range from 0 to 500.

Annual Hiring

Collectively, participant companies hired in the Omaha-area 973 engineering professionals and 2,021 IT professionals in the past 2 years. Approximately 49% of Omaha-area engineering hires required a graduate engineering degree at the time of hire. Approximately 55% of Omaha-area IT hires required a graduate IT degree at the time of hire.

The largest categories of Omaha-area engineering hires were Civil with 344 hires and Electrical with 137 hires. The largest categories of Omaha-area IT hires were Software Developers with 401 hires and Web Developers with 299 hires.

Projected Hiring

Collectively, participant companies anticipate hiring in the Omaha-area 281 engineering professionals and 1,389 IT professionals in the next 2 years. Approximately 54% of projected Omaha-area engineering hires will require a graduate engineering degree at the time of hire. Approximately 73% of projected Omaha-area IT hires will require a graduate IT degree at the time of hire.

The largest categories of projected Omaha-area engineering hires are Civil with 78 projected hires, Electrical with 42 projected hires, and Mechanical with 40 projected hires. The largest categories of projected Omaha-area IT hires are Software Developers with 311 projected hires and Web Developers with 245 projected hires.

Quality of Hires

The vast majority of participant companies (83%) consider their recent Omaha-area engineering hires to be Excellent (36%) or Good (47%). University of Nebraska Lincoln and University of Nebraska Omaha were the most cited schools for providing highest quality engineering professionals.

The vast majority of participant companies (88%) consider their recent Omaha-area IT hires to be Excellent (40%) or Good (48%). University of Nebraska Omaha was the most cited school for providing highest quality engineering professionals.

Additional Information

The local supply of engineering talent was rated Excellent by 11% of participant companies and Good by 38% of participant companies. Similarly, the local supply of IT talent was rated Excellent by 10% of participant companies and Good by 42% of participant companies.

In terms of understanding the needs of local businesses and ensuring their programs remain relevant, local colleges and universities were rated as Excellent by 14% of participant companies and Good by 42% of participant companies. On the other hand, 24% of participant companies feel local schools do Just OK and 7% feel local schools do Poor (6%) or Terrible (1%) at understanding their needs.

Key Findings

The survey results suggest Omaha-area engineering and IT hiring will be robust over the next 2 years. With only 7% of targeted companies responding, total Omaha-area engineering and IT hires over the next 2 years likely will be two to three times higher than the 1,670 hires projected by participant companies.

While local colleges and universities receive generally positive feedback about their efforts to understand and serve local business needs, there is room for improvement. The current survey results should serve as a benchmark against which future results can be compared.

Among the knowledge, skills, and abilities participating companies anticipate needing, perhaps the most noteworthy is the need for better IT/technical skills among engineering hires.

Company Information

Q1a. How many employees does your company have worldwide?

[N=154]

| Employee Count | # of Companies | % of Companies |
|------------------|----------------|----------------|
| Up to 25 | 43 | 28% |
| 26-75 | 32 | 21% |
| 76-200 | 25 | 16% |
| 201-500 | 15 | 10% |
| 501-2,000 | 11 | 7% |
| 2,001-10,000 | 7 | 5% |
| More than 10,000 | 5 | 3% |
| Don't Know | 16 | 10% |

| | |
|---------|--------|
| Average | 1,437 |
| Min | 2 |
| Max | 50,000 |

Q1b. How many employees does your company have in the greater Omaha area?

[N=154]

| Employee Count | # of Companies | % of Companies |
|------------------|----------------|----------------|
| Up to 25 | 52 | 34% |
| 26-75 | 35 | 23% |
| 76-200 | 28 | 18% |
| 201-500 | 13 | 8% |
| 501-2,000 | 9 | 6% |
| 2,001-10,000 | 2 | 1% |
| More than 10,000 | 0 | 0% |
| Don't Know | 15 | 10% |

| | |
|---------|-------|
| Average | 191 |
| Min | 1 |
| Max | 5,600 |

Company Information (continued)

Q1c. How many IT employees does your company have worldwide?
 [N=154]

| Employee Count | # of Companies | % of Companies |
|------------------|----------------|----------------|
| 0 | 25 | 16% |
| Up to 25 | 89 | 58% |
| 26-75 | 9 | 6% |
| 76-200 | 7 | 5% |
| 201-500 | 2 | 1% |
| 501-2,000 | 2 | 1% |
| 2,001-10,000 | 1 | 1% |
| More than 10,000 | 1 | 1% |
| Don't Know | 18 | 12% |

| | |
|---------|--------|
| Average | 202 |
| Min | 0 |
| Max | 20,000 |

Q1d. How many IT employees does your company have in the greater Omaha area?
 [N=154]

| Employee Count | # of Companies | % of Companies |
|------------------|----------------|----------------|
| 0 | 32 | 21% |
| Up to 25 | 95 | 62% |
| 26-75 | 8 | 5% |
| 76-200 | 5 | 3% |
| 201-500 | 2 | 1% |
| 501-2,000 | 0 | 0% |
| 2,001-10,000 | 0 | 0% |
| More than 10,000 | 0 | 0% |
| Don't Know | 12 | 8% |

| | |
|---------|-----|
| Average | 14 |
| Min | 0 |
| Max | 250 |

Company Information (continued)

Q1e. How many engineering employees does your company have worldwide?
 [N=154]

| Employee Count | # of Companies | % of Companies |
|------------------|----------------|----------------|
| 0 | 56 | 36% |
| Up to 25 | 60 | 39% |
| 26-75 | 8 | 5% |
| 76-200 | 3 | 2% |
| 201-500 | 4 | 3% |
| 501-2,000 | 2 | 1% |
| 2,001-10,000 | 3 | 2% |
| More than 10,000 | 0 | 0% |
| Don't Know | 18 | 12% |

| | |
|---------|--------|
| Average | 200 |
| Min | 0 |
| Max | 10,000 |

Q1f. How many engineering employees does your company have in the greater Omaha area?
 [N=154]

| Employee Count | # of Companies | % of Companies |
|------------------|----------------|----------------|
| 0 | 69 | 45% |
| Up to 25 | 72 | 47% |
| 26-75 | 6 | 4% |
| 76-200 | 3 | 2% |
| 201-500 | 2 | 1% |
| 501-2,000 | 1 | 1% |
| 2,001-10,000 | 0 | 0% |
| More than 10,000 | 0 | 0% |
| Don't Know | 1 | 1% |

| | |
|---------|-----|
| Average | 11 |
| Min | 0 |
| Max | 500 |

Company Information (continued)

Q1g. Which of the following best describes your company's primary industry?

[N=154]

| Industry | # of Companies | % of Companies |
|----------------------------------|----------------|----------------|
| Manufacturing | 14 | 9% |
| Healthcare and Social Assistance | 15 | 10% |
| Transportation/Logistics | 28 | 18% |
| Information Technology | 3 | 2% |
| Business Services | 25 | 16% |
| Finance and Insurance | 19 | 12% |
| Defense | 12 | 8% |
| Other | 38 | 25% |

Annual Hiring

In the past 2 years, approximately how many IT or engineering professionals has your company hired in the Omaha area in each of the following categories?

Engineering Professionals

| | # of Companies | Total Hires | Avg. # of Hires* |
|-----------------------|----------------|-------------|------------------|
| Aerospace | 1 | 1 | 1 |
| Chemical | 4 | 19 | 5 |
| Civil | 17 | 344 | 20 |
| Electronics | 10 | 37 | 4 |
| Electrical | 13 | 137 | 11 |
| Environmental | 3 | 63 | 21 |
| Industrial | 8 | 50 | 6 |
| Mechanical | 17 | 94 | 6 |
| All other engineering | 23 | 228 | 10 |

*Average number of hires among companies who hired within the category.

IT Professionals

| | # of Companies | Total Hires | Avg. # of Hires* |
|-------------------------------|----------------|-------------|------------------|
| Computer Systems Analysts | 36 | 227 | 6 |
| Information Security Analysts | 17 | 62 | 4 |
| Software developers | 40 | 401 | 10 |
| Web developers | 31 | 299 | 10 |
| Database Administrators | 24 | 123 | 5 |
| Network/System Admins | 53 | 163 | 3 |
| Network Architects | 17 | 55 | 3 |
| All other IT professionals | 38 | 691 | 18 |

*Average number of hires among companies who hired within the category.

Q4. Of the IT professionals your company has hired in the Omaha area in the past 2 years, approximately what percentage held a graduate IT degree at the time of hiring?

[n=89]

| | |
|--------------------|-----|
| Average | 40% |
| Weighted Average** | 55% |

**Weighted by number of hires for each participant company responding to this question.

Q5. Of the engineering professionals your company has hired in the Omaha area in the past 2 years, approximately what percentage held a graduate engineering degree at the time of hiring?

[n=52]

| | |
|--------------------|-----|
| Average | 56% |
| Weighted Average** | 49% |

**Weighted by number of hires for each participant company responding to this question.

Projected Hiring

In the next 2 years, approximately how many IT or engineering professionals do you anticipate your company will hire in the Omaha area in each of the following categories?

Engineering Professionals

| | # of Companies | Total Hires | Avg. # of Hires* |
|-----------------------|----------------|-------------|------------------|
| Aerospace | 0 | | |
| Chemical | 0 | | |
| Civil | 16 | 78 | 5 |
| Electronics | 10 | 24 | 2 |
| Electrical | 10 | 42 | 4 |
| Environmental | 4 | 24 | 6 |
| Industrial | 4 | 5 | 1 |
| Mechanical | 15 | 40 | 3 |
| All other engineering | 21 | 68 | 3 |

*Average number of project hires among companies who project to hire within the category.

IT Professionals

| | # of Companies | Total Hires | Avg. # of Hires* |
|-------------------------------|----------------|-------------|------------------|
| Computer Systems Analysts | 32 | 146 | 5 |
| Information Security Analysts | 24 | 57 | 2 |
| Software developers | 37 | 311 | 8 |
| Web developers | 35 | 245 | 7 |
| Database Administrators | 35 | 128 | 4 |
| Network/System Admins | 45 | 157 | 3 |
| Network Architects | 17 | 50 | 3 |
| All other IT professionals | 24 | 295 | 12 |

*Average number of project hires among companies who project to hire within the category.

Q8. Of the IT professionals you anticipate your company will hire in the Omaha area in the next 2 years, approximately what percentage will require a graduate IT degree at the time of hiring?

[n=84]

| | |
|--------------------|-----|
| Average | 53% |
| Weighted Average** | 54% |

**Weighted by number of projected hires for each participant company responding to this question.

Q9. Of the engineering professionals you anticipate your company will hire in the Omaha area in the next 2 years, approximately what percentage will require a graduate engineering degree at the time of hiring?

[N=46]

| | |
|--------------------|-----|
| Average | 57% |
| Weighted Average** | 73% |

**Weighted by number of projected hires for each participant company responding to this question.

Quality of Hires

Q10a. How would you rate the overall quality of the engineering professionals your company has hired in the Omaha area over the past 2 years?

[N = 53]

| | |
|------------|-----|
| Excellent | 36% |
| Good | 47% |
| Just Ok | 8% |
| Poor | |
| Terrible | |
| Don't Know | 9% |

Q10b. Please list the universities/colleges that have provided the highest quality engineering professionals to your organization.

[N=34]

| School | # of Mentions |
|---|---------------|
| UNL | 19 |
| UNO | 18 |
| Iowa State | 7 |
| Kansas State | 3 |
| Peter Kiewit | 3 |
| Colorado State | 2 |
| Iowa | 2 |
| Perdue | 2 |
| Bellevue | 1 |
| Colorado | 1 |
| Colorado School of Mines | 1 |
| Community Colleges | 1 |
| Creighton | 1 |
| ITT | 1 |
| Metro Community College | 1 |
| Milford | 1 |
| Missouri University of Science and Technology | 1 |
| Oklahoma State | 1 |
| Oregon State | 1 |
| Penn State | 1 |
| University of Texas Arlington | 1 |

Quality of Hires (continued)

Q10c. What are the strengths of graduates of the universities/colleges you listed above?

[N=31]

| Theme | # of Mentions |
|------------------------------------|---------------|
| General Technical Knowledge/Skills | 10 |
| General Knowledge | 6 |
| Quality of Education | 6 |
| Work Ethic | 5 |
| Engineering Knowledge | 4 |
| Practical Knowledge/Skills | 4 |
| Problem Solving | 4 |
| Local | 3 |
| Well-Rounded | 2 |
| Other | 9 |

Q10d. Please list the universities/colleges that have provided the lowest quality engineering professionals to your organization.

[N=4]

| School | # of Mentions |
|--------|---------------|
| UNO | 2 |
| Kansas | 1 |
| UNL | 1 |

Q10e. What are the weaknesses or skill gaps of graduates of the universities/colleges you listed above?

[N=4]

- Not technically sound, cannot think for themselves, require handholding
- All Universities need to work on communication skills. Traditionally the students are more comfortable with communication types that do not include face to face interaction. They need to be comfortable speaking to people.
- The specialized skills in engineering are very weak, the basics aren't bad, and the upper level classes are not well taught.
- Technical skill was lacking

Quality of Hires (continued)

Q11a. How would you rate the overall quality of the IT professionals your company has hired in the Omaha area over the past 2 years?

[N=90]

| | |
|------------|-----|
| Excellent | 40% |
| Good | 48% |
| Just Ok | 8% |
| Poor | |
| Terrible | |
| Don't Know | 4% |

11b. Please list the universities/colleges that have provided the highest quality IT professionals to your organization.

[N=43]

| School | # of Mentions |
|--|---------------|
| UNO | 18 |
| UNL | 10 |
| Bellevue | 9 |
| Creighton | 4 |
| Iowa State | 3 |
| Peter Kiewit | 3 |
| Iowa | 2 |
| Iowa Western Community College | 2 |
| IT Tech | 2 |
| Southeast Community College of Lincoln | 2 |
| Community Colleges | 1 |
| Kansas State | 1 |
| MIT | 1 |
| Nebraska Wesleyan | 1 |
| North Dakota | 1 |
| Northeast Community College | 1 |
| Northern Iowa | 1 |
| Penn State | 1 |
| St. John's NY | 1 |

Quality of Hires (continued)

Q11c. What are the strengths of graduates of the universities/colleges you listed above?

[N=34]

| Theme | # of Mentions |
|------------------------------------|---------------|
| General Technical Knowledge/Skills | 13 |
| General Knowledge | 8 |
| Quality of Education | 4 |
| Practical Knowledge/Skills | 4 |
| Problem Solving | 4 |
| Specific Technical Knowledge | 3 |
| Local | 3 |
| Well-Rounded | 3 |
| Business Knowledge | 3 |
| Communication | 3 |
| Team Players | 3 |
| Other | 8 |

Q11d. Please list the universities/colleges that have provided the lowest quality IT professionals to your organization.

[N=8]

| School | # of Mentions |
|-------------------------|---------------|
| Bellevue | 2 |
| Creighton | 2 |
| ITT | 2 |
| Metro Community College | 1 |
| University of Phoenix | 1 |
| UNL | 1 |
| UNO | 1 |

Quality of Hires (*continued*)

Q11e. What are the weaknesses or skill gaps of graduates of the universities/colleges you listed above?
[N=11]

- What can be a weakness is lack of practical skills. When a university uses primarily open source software without real training in the real world tools used by established companies, it becomes hard to train on the job.
- Weak point is usually lack of business skills incorporated into the IT programs
- Too much theory and not enough practical expertise.
- Too few .NET software developers in this market. And due to the high demand, the salaries of AVERAGE talent are inflated.
- Soft skills, overall professionalism. Ability to communicate with others in a work environment.
- Poor base knowledge
- Our industry is a bit unique. But we don't believe we can expect the industry to do that final training to meet our specific need. Give us good quality talent and we can finish the training internally
- Mostly just a limited knowledge base.
- Lack of accuracy in work. Poor work ethic. Poor scheduling of time, and overestimating of their skills.
- It the subject matter, there are no programs that teach how web services work, PHPO ASP.Net, Apache
- Hands-on experience with current technology.

Additional Questions

Q12a. How would you rate the supply of local engineering talent to meet the needs of your company?

[N=53]

| | |
|------------|------------|
| Excellent | 11% |
| Good | 38% |
| Just Ok | 30% |
| Poor | 6% |
| Terrible | 8% |
| Don't Know | 8% |

Q12b. What new engineering knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[N=36]

| Theme | # of Mentions |
|------------------------------------|---------------|
| Other Specific Technical Knowledge | 7 |
| Mechanical Engineering | 6 |
| General IT Knowledge/Skills | 5 |
| Civil Engineering | 4 |
| CAD | 3 |
| Design Engineers | 3 |
| Electrical Engineering | 3 |
| IT Security | 3 |
| Network Knowledge/Skills | 3 |
| Environmental Engineering | 2 |
| Green Technology/Certification | 2 |
| Mobile Technologies | 2 |
| Practical Knowledge/Skills | 2 |
| Structural Engineering | 2 |
| Water Supply/Resources | 2 |
| Other | 3 |

Q13a. How would you rate the supply of local IT talent to meet the needs of your company?

[N=90]

| | |
|------------|------------|
| Excellent | 10% |
| Good | 42% |
| Just Ok | 24% |
| Poor | 10% |
| Terrible | 6% |
| Don't Know | 8% |

Additional Questions (*continued*)

Q13b. What new IT knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[N=68]

| Theme | # of Mentions |
|-------------------------------|---------------|
| IT Security | 16 |
| Wireless/Mobile | 11 |
| Big Data/Data Analytics | 9 |
| Cloud | 9 |
| Web Design/Development | 8 |
| Real World/Business Knowledge | 7 |
| Software Development | 7 |
| Database | 6 |
| Network Knowledge/Skills | 6 |
| Well-Rounded | 4 |
| .NET | 3 |
| Electronic Medical Records | 2 |
| Social Media | 2 |
| Systems Admin | 2 |
| Other | 15 |

Q14. How would you rate the efforts of local colleges and universities to understand the needs of business and to ensure their programs remain relevant to the current business environment?

[N=154]

| | |
|------------|------------|
| Excellent | 14% |
| Good | 42% |
| Just Ok | 24% |
| Poor | 6% |
| Terrible | 1% |
| Don't Know | 14% |

Verbatim Comments

Q10c. What are the strengths of graduates of the universities/colleges you listed above?

[N=31]

- Work ethic
- We have partnership with the University of Nebraska at Lincoln.
- Strengths would be a good knowledge base, of what they need to know.
- They were able to identify the problem, and come up with a solution. They knew their stuff like the technology and what was out there.
- They have work ethic. Proper technical skills
- They have core technology skills that are helpful.
- They come with a good fundamental understanding of engineering. Tend to have a good work ethic.
- The quality of their education and readiness to work.
- The ability to think on their own - not requiring spoon feeding answers.
- structure for the degree students prepared for their position
- Strong work ethic and basic education.
- Strong technical skills, ready to apply knowledge to solve real world problems.
- Strong technical aptitude, excellent communication skills, problem solving.
- Strong engineering knowledge, desire to remain local
- Strong construction management IA mechanical engineering
- Strong education good work ethic
- Ready to hit the ground running, well-rounded, good technical skills
- Problem solving and reliable.
- Practical knowledge; Local area based; Computer application knowledge and experience;
- Multifaceted
- Knowledge.
- knowledge, skills and abilities
- Just good technical background, very solid. In other words, they have a good technical background, they have had the opportunities to roll up their sleeves and do their work. It's more than just book learning.
- Basic engineering fundamentals.
- They fit in to the business we are in. They seem to know their area of expertise and they are team players. Homegrown gets the advantage.
- Good quality graduates with good work ethic
- Good knowledge, professional, Understanding of overall network infrastructure
- General knowledge of engineering
- Excellent internships, excellent academic prep
- Computer skills and mathematics
- A good basic knowledge coming right out of school - at least the ones we have had have been job ready.

Verbatim Comments

Q11c. What are the strengths of graduates of the universities/colleges you listed above?

[N=34]

- Work ready, good work experience rather than just theory.
- Well-structured thought processes, excellent coders, good team players
- Well rounded business and IT knowledge / skills
- Web development Information Security
- We work with the academic over the years and it's the business side together.
- We need quality entry level techs and ITT and the Omaha community meets our demand well at this time.
- We have one employee with an undergraduate degree. This guy has a lot of experience - a wide variety.
- They were technical and well trained.
- They know their expertise and their fields and adapt well to our business. Staying current in their field and able to reach out into future growth.
- They have general overall knowledge, they don't have what we're looking for initially so we train them internally
- They have core technology skills that are helpful.
- Their technical knowledge and real world application.
- Strengths would be on the technical side, less on the business side
- They come with a good fundamental understanding of IT. Tend to have a good work ethic.
- Ready to hit the ground running, well-rounded, good technical skills
- Problem solving Strategic thinking Communication skills
- Passion. Technical excellence.
- Overall Knowledge, Team work
- Networks and system administration.
- Knowledge of the community and service that we need.
- Knowledge, skills, abilities
- Know the trending software, training.
- IT knowledge.
- High technical skills, analytical skills. Communication and problem solving.
- Good problem solvers, good communicators, intellectual curious tic, strong interpersonal skills.
- Good general knowledge but little real world working knowledge which doesn't seem to prepare them for what is really needed in the real world environment.
- Familiarity with latest technology.
- exposure to a broad level of basic understanding
- Depth of knowledge in the industry of Information Technology
- Course Content
- Computer Technology or Computer Science and Engineering
- Business minded technical talent.
- Base knowledge, options for working in a small agency
- Base knowledge

Verbatim Comments

Q12b. What new engineering knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[N=36]

- Virtual Networks, WAN, Network Circuits, Network Security
- I would say primarily electrical engineering.
- Travel Demand modeling for transportation
- They will need much more real-world projects and experiences. They will need improved skills with Sequel Server and My SQL, with data analytics pools, and with ETL tools.
- The one thing I see expanding a lot is HVAC.
- The engineering people I get out of school dont know any have any IT skills. They cant trouble shoot or write code and I see that we may need that in the future.
- The AutoCAD inventor, we absolutely need that. Just obviously mechanical engineering skills. Other than those two things I'm good.
- Technology understanding, manufacturing equipment and processes, IT security
- Structural.
- Structural engineering
- strong civil engineers, water supply and water resources
- Networking big data. Business intelligence.
- More Wi-Fi.
- more of focus on green technology
- More emphasis on water resources and water-related fields.
- Mobile and communications
- Mechanical, electrical, civil
- Mechanical Engineer
- Mechanical and design engineers.
- Just software engineering skills
- Green certification, federal, and state laws that seem to be driving things that way.
- Extensive experience and knowledge of Revit if in the A-E field; with Civil 3D if in the Civil Engr. field. An attitude that it takes experience, time, and knowledge to be a Project Manager - you don't just get there because you have a degree
- Environmental, mechanical, and civil engineers. We are doing more with less, we need engineers that can integrate into the workforce and not just want to perform engineering projects all day
- Emphasis on ability to harness IT systems. Use software effectively. This creates a challenge for senior engineers.
- Electrical trouble shooting, hydraulics
- Electrical
- Development of more cloud research.
- Design, mechanical, CAD designers
- Design engineers that have experience
- Continue to be a demand for security. CCCIE Certification.
- Computer and Software
- Civil engineers in emphasis in transportation

Verbatim Comments

Q12b. What new engineering knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[Continued from previous page]

- It's important for the students to keep up with changes in technology and improvements in design and analysis software.
- Auto CAD, civil 3D design and environmental engineering.
- All the new technologies, iPad, personal services. New technologies are using laptops, phones, smart phones, and things like that. They're going to be doing things by mobile bank things. We have to have people that can respond to that. That would cover it.
- advanced computer graphics, 3 dimensional model

Q13b. What new IT knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[N=68]

- Wireless/ mobile.
- Website development and maintenance, database marketing, cyber security, communication skills
- Web Development; Mobile App development; emerging technologies specialists.
- Web development. Folks that can develop on Android and other mobile devices.
- We are healthcare, so moving ahead into electronic medical records. We are in the process of going there. I have no idea what else.
- VM ware, Storage, project managers, network architects.
- Using software to analyze data and communicate that globally. We are having some medical services for nonprofit agencies and there are all sort of electronic records it would be good to keep them secure and have access to them. We have so many collaborations as to have to the appropriate access by multiple agencies. Quality improvement overall for purposes to track and collect data and all sorts of company statistics. In online media would be good to have some sort of management. There may also be more opportunities of western Iowa and Omaha. We have kids around the state that could have opportunities to the equivalence of child serving agencies and thee technology for therapeutic contacts.
- They will need much more real-world projects and experiences. They will need improved skills with Sequel Server and My SQL, with data analytics pools, and with ETL tools.
- Need them to be a partner with other businesses to understand better.
- The most up and coming is going to be the web development.
- Software developers, .net, java, VI developers, data analysts. Data integration.
- Software developers only.
- Software & web development primarily
- Social media analyst. And a financial analyst that has the knowledge of tech.
- Skills needed to act as an ISP and to be able to build, service and maintain Software as a Service applications
- Security. It is a big issue for accounting firms. We need the protection for our clients.
- Security, web.

Verbatim Comments

Q13b. What new IT knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[Continued from previous page]

- Security is very important to our business.
- The cloud is dominating the office scene. Making practical business decisions.
- Same
- Programmers and Network Engineers
- Cloud computing, it's where our company is moving toward, and will be our greatest needs.
- People who are generalist, well rounded, and can touch a lot of different things.
- Analytic. Business intelligence.
- Open source languages, and technologies.
- Network security and general technical support skills
- Network design, Network support, Network management
- Multi- faceted education. Someone who knows networking web development networking and system analysts and not just in one field but to be able to cross over.
- More Wi-Fi.
- More social expertise
- Mobile, security and cloud and white area network.
- Mobile, expertise, and more software developers. In general we need more software developers, people who are able to use mobile.
- Mobile app development ksa's, data scientist ksa's
- Microsoft MVC
- MAC skills
- Software development/security knowledge
- IT employees who can market and sell as well as have the I.T. knowledge and experience.
- It changes every two years but generally I would say diversity-they'd have the ability to understand multiple technology platforms and principles, whether that be security or purchasing, more of a broad base
- Internal database administrator and builder, specifically in Access.
- Integration with other systems, ability to work/communicate with all levels of staff/physicians
- Information security mobility, cloud, and big data.
- Information Security Business/System analyst
- Information Security Data Analytics Database Administration
- Information structure. We are going into integrated data bases. Nothing
- Systems engineering.
- Geographical Information Systems
- Web developers, web designers, and architects. On the IT side, software developers and preferably mobile.
- Familiarization with Cloud and Virtualization
- Electronic health records, server overhaul, general system administration
- Database Specialist
- Data mining, RP, engineering

Verbatim Comments

Q13b. What new IT knowledge, skills, or abilities do you anticipate your company will need in the next 5 years?

[Continued from previous page]

- Data base management and electronic/network security, web design, social media
- Cyber security
- Continuing increase of knowledge about web applications and systems hardware advancements.
- Cold Fusion Development
- Cloud; over the internet everything is hosted somewhere else.
- Cloud computing
- Cloud computing
- Business integration skills
- Big data.
- Being able to interpret operational needs and how to translate that into a technology solution.
- Architectural Design
- Anticipate linux operating systems, more security, networking administration.
- Analytics, BI, more security
- Security engineers
- Agile, .Net, Oracle
- A professional who is versatile in their knowledge and skills
- .NET. Mobile.