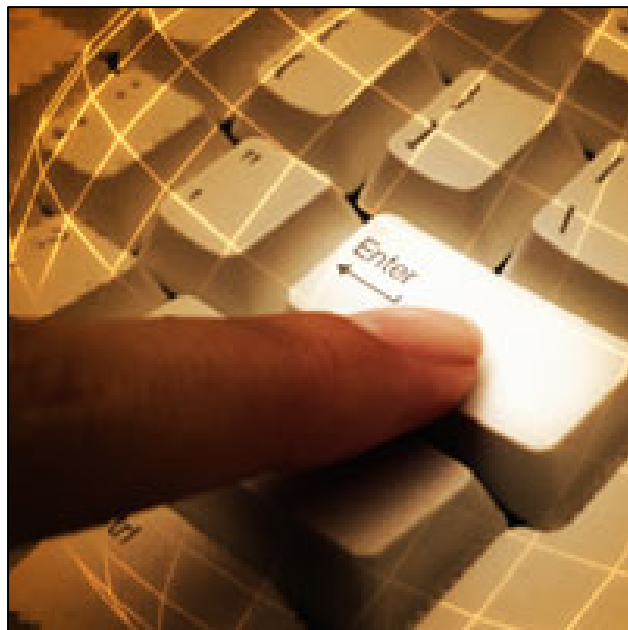


RIVERSIDE COMMUNITY COLLEGE

**INLAND EMPIRE  
COMPUTER INFORMATION SYSTEMS  
TRAINING NEEDS SURVEY**

**APRIL 2006**



*Prepared by:*  
**Reille Consulting Group, Inc.**

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**Acknowledgments:** Thank you to **Cathy Brotherton, Judy Perhamus, and Gail Zwart** for their contribution and leadership, and to all of the respondents that took the time to complete the survey.

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## EXECUTIVE SUMMARY

In the spring of 2006, Riverside Community College initiated a survey of companies in the Inland Empire that employ occupations requiring Computer Information Systems (CIS) knowledge and skills. This survey was intended to obtain information on occupations, wages, educational requirements, skills needed and projected growth to assist college faculty and administrators in updating CIS program offerings to best meet the needs of local employers.

The analysis and findings in this report are solely based on the responses of the survey collected from over 150 companies engaged in Computer Information Systems activities; of which 57% employed less than 25 employees. The findings from this survey include the following:

- Firms of all sizes and from all industries employ staff required to have more or less advanced CIS skills. Few companies employ highly skilled CIS professionals such as Software Programmers or Network System Administrators, however, an overwhelming majority of companies employ office staff that utilizes technology to perform their jobs such as Secretaries or Clerical Support Staff.
- The large majority of secretarial and clerical types of positions do not require college education.
- Most computer specific occupations require additional education beyond an Associates Degree.
- Basic skills and soft skills continue to be the most important factors in evaluating a candidate for employment.
- Interestingly, most skills considered to be “Very Important” when considering job applicants are not technical or job specific but basic or soft skills including conscientious work ethic and positive attitude (79%), ability to follow directions (79%), interpersonal and communication skills (72%), ability to work independently (66%), and creative problem-solving skills (56%). Technical competence specific to the position was also rated very important when considering job applicants by 62 % of respondents, MS Word by 52%, MS Excel by 49% and MS Outlook by 43% of respondents.
- Respondents stated that job applicants and employees were most deficient or very deficient in creative problem-solving skills (58%), integrating MS Office applications (57%), MS Access (55%), MS Excel (54%), web design (54%), web programming (52%), MS PowerPoint (50%), conscientious work ethic and positive attitude (49%), network troubleshooting (49%) and desktop publishing (47%).
- For secretarial and clerical positions, candidates with no or limited work experience generally earn \$9.00-\$11.99 per hour, and most experienced workers earn \$12.00 – \$15.99 per hour. Occupations requiring a higher level of knowledge and skills in information technology pay higher wages in the range of \$16.00-\$29.99 for worker with no or limited experience, and \$22.00-\$39.99 for experienced employees. However, those jobs often require 4 years or more of higher education.
- The highest job growth is forecasted to be for secretaries, administrative assistants, clerical staff, data entry, information processing workers and customer service specialists.
- Curriculum enhancements and program offerings should be designed for both entry level workers and highly technical employees via different delivery systems.
- A majority of survey respondents (78%) stated that their companies offer flexible schedules to employees who take courses relevant to their jobs but are offered during work hours.
- Sixty-one percent (61%) of respondents reported that their companies reimburse education expenses of employees who take classes that are relevant to their jobs.
- Entry-level educational programs should not only include, but also focus on soft skills.
- More advanced CIS skills should be additionally offered in continuing education classes for those already employed with Bachelor Degrees.

## INTRODUCTION & METHODOLOGY

Knowing that the proper use and management of technology is critical to business' success, Riverside Community College (RCC) hired the Reille Consulting Group, Inc. to survey employers within the Inland Empire to better understand regional Computer Information Systems (CIS) training needs.

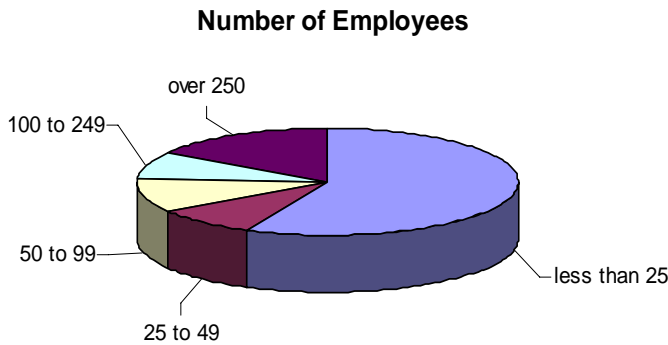
The survey was designed to investigate training and educational needs to align college program offerings with business and workforce needs. The questionnaire was developed in collaboration with Cathy Brotherton, Judy Perhamus, and Gail Zwart from Riverside Community College in February 2006. The survey was sent throughout the month of March and results were compiled and analyzed in April. Participants were solicited via an internet-based survey collection system. Survey recipients were invited to take the survey online and were offered a chance to win a \$50 gift certificate to a restaurant of their choosing.

The survey, comprising of fourteen questions, was electronically sent to a sample of 7,348 professionals throughout the Inland Empire. One of the e-mail blasts was sent by ALTEK Media Group to a random sampling of 5,000 employers. Approximately 25% of all e-mails were caught by anti-spam software and bounced back. About 5,510 individuals received an invitation to fill the survey online and 159 completed the questionnaire (a 2.9% response rate). After filling the questionnaire, participants were redirected to RCC's website.

Not all survey respondents completed every question, therefore a complete data set cannot be inferred for each question; nor can some responses be cross-referenced with other questions resulting in equitable comparisons. Some respondents checked multiple boxes within various questions; therefore the number of responses is sometimes higher than the number of respondents. Consequently, computer-generated percentages showed in appendix are occasionally totaling over 100. Those calculations have been corrected and adjusted in the body of the report.

## RESPONDENTS' PROFILE

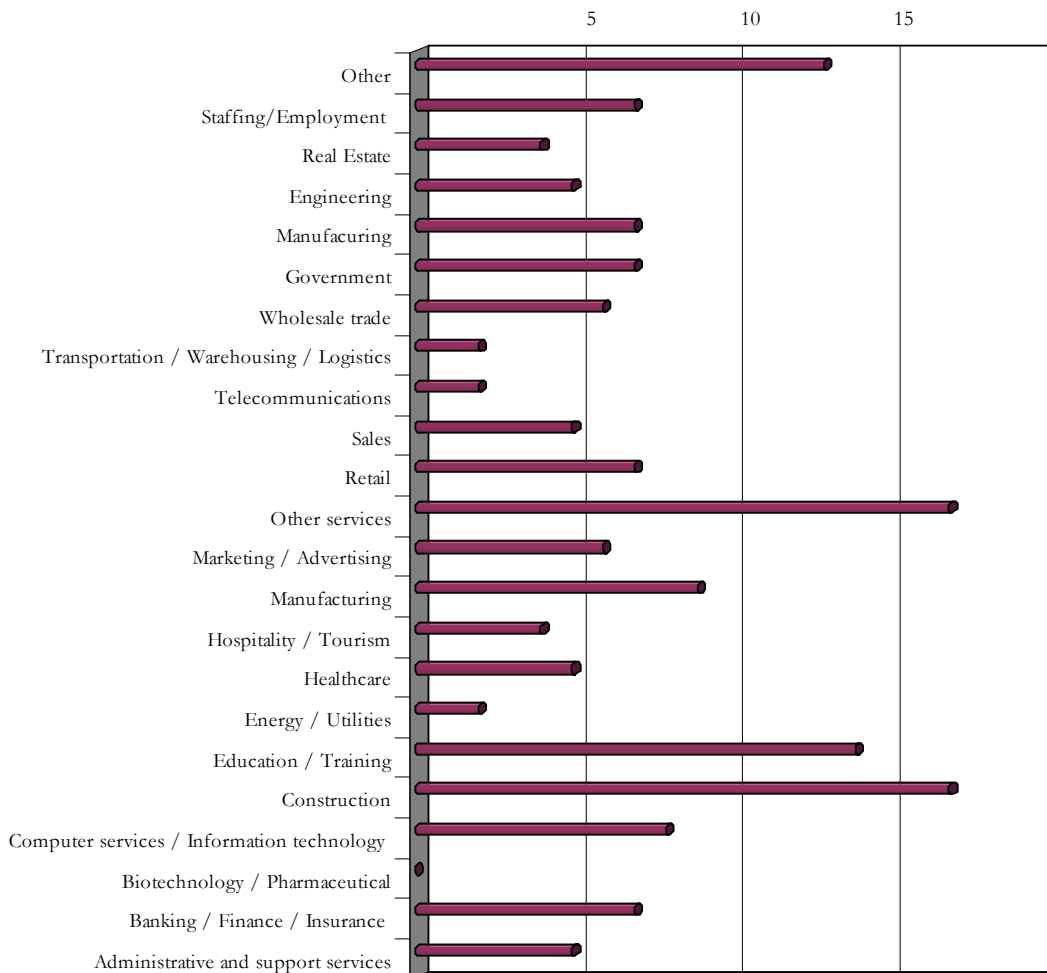
Firms employing people with CIS skills vary greatly in size and scope. At one end of the spectrum, there are few companies having computer applications and information technologies as their core business. The vast majority of respondents were companies within the Inland Empire that utilize CIS functions as technologies and tools for their business but belonged to a variety of industries. The survey yielded 159 respondents of whom 25 employed more than 250 employees (16% of participants), 13 employed 100 to 249 employees (8%), 16 employed 50 to 99 employees (10%), 14 employed 25 to 49 employees (9%), 90 employed less than 25 employees (57%), and one respondent did not indicate the number of employees at their company. The majority of employers in the region are small businesses, therefore it was important to include them in the



survey. The questionnaire was sent to businesses located throughout the Inland Empire (San Bernardino and Riverside counties). Thirty percent of respondents are located in the city of Riverside.

The chart below indicates the number of respondent per industry.

### Industry Responses



Many companies surveyed contribute resources to support their employees' continuing education. A majority of survey respondents (78%) stated that they offer flexible schedules to employees who take courses relevant to their jobs and that can improve their work performance, but are offered during work hours. Sixty-one percent (61%) of respondents reimburse education expenses of employees who take classes that are relevant to their jobs.

## OCCUPATIONAL FORECAST

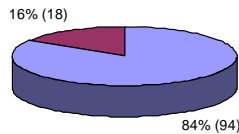
The survey included eight questions about the respondents' current workforce, including the nature of the occupations, number of employees in each category, expected growth, difficulty finding qualified workers, educational requirements, skills needed, skill gaps and average hourly wages.

Occupations specifically evaluated within the scope of this survey include:

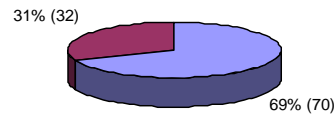
- Secretaries and Administrative Assistants
- Clerical Support Staff
- Customer Support Specialists
- Data Entry & Information Processing Workers
- Software Engineers
- Software Programmers
- Network Systems Administrators
- Systems Administrators/ Database Administrators

When asked about existing employment of these occupations, an overwhelming majority employ Secretaries and Administrative Assistants (84%) and Clerical Support Staff (69%). Half of respondents employ Data Entry & Information Processing Workers and Customer Support Specialists. Forty three percent (43%) employ Network System Administrators, 33% use Systems/ Database Administrators but fewer have on staff Software Programmers (18%) or Software Engineers (14%).

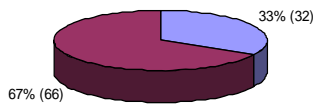
**Firms employing Secretaries and Administrative Assistants**



**Firms employing Clerical Support Staff**



**Firms employing Systems/Database Administrators**

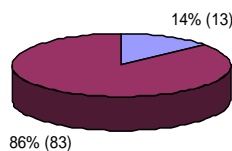


**Firms employing Data Entry & Information Processing Workers**



■ Does Employ  
■ Does Not Employ

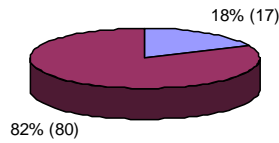
**Firms employing Software Engineers**



**Firms employing Customer Support Specialists**



**Firms employing Software Programmers**



**Firms employing Network System Administrators**



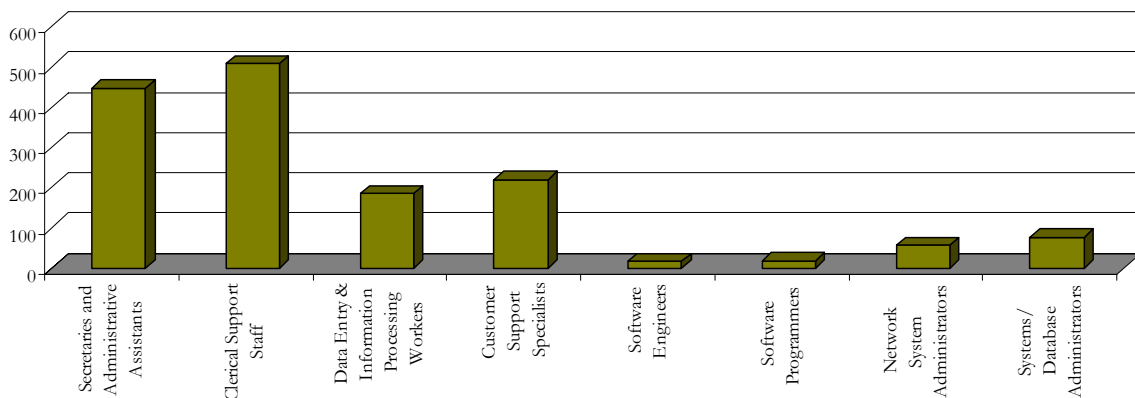
Of those businesses that employ specific CIS occupations, the majority have less than five employees per category. Very few businesses employ more than 20 employees in any given category, but this is certainly due to the size of most businesses that responded to the survey.

Companies were asked how many employees they currently had in each job category, and then were asked how many they expect to employ in twelve months. Unfortunately, many respondents answered one question but not the other. In addition, about ten respondents gave the number of expected new hires rather than the total number of employees they anticipate having in twelve months. Those discrepancies corrupted the data for projected employment that indicates a decrease in the total number of jobs.

Employment data, reports and economic forecasts, all indicate that the Inland Empire is experiencing growth and creating jobs. An individual review of each questionnaire showed that most businesses employing less than 25 people are not planning to hire additional staff in the next 12 months for the occupations listed. However, the vast majority of businesses with over 25 employees reported that they expect to create jobs. The highest growth is forecasted to be for secretaries, administrative assistants, clerical staff, data entry, information processing workers and customer service specialists. Very few companies showed a need to hire additional CIS specialists. It seems that businesses do not have a pressing need for more CIS professionals but need more highly skilled employees in information technologies.

The graph below shows the number of employees reported by survey respondents<sup>1</sup>.

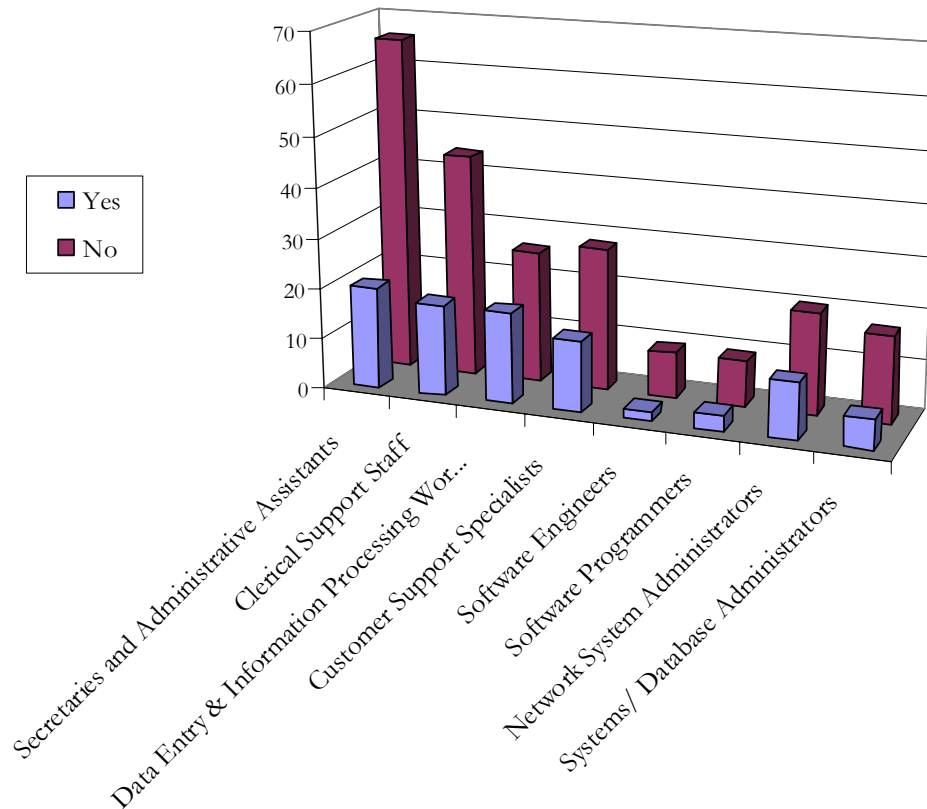
**CIS Current Employment**



<sup>1</sup> Employment figures were conservatively analyzed using the lowest number from each data range.

Survey respondents were asked whether they anticipated difficulty in filling jobs for the occupations listed. More than 50% of respondents do not anticipate difficulty for any of the occupations. The occupations with the highest degree of anticipated difficulty are Data Entry & Information Processing Workers (41%, 18 companies), Network System Administrators (35%, 11 companies), Customer Support Specialists (33%, 14 companies) and Clerical Support Staff (29%, 18 companies).<sup>2</sup>

### Number of Companies Anticipating Difficulty in Hiring



<sup>2</sup> The number of responses differed for each occupation within this questions, thus the numbers of companies and percentages do not represent all survey respondents. See Appendix for the complete numerical totals.

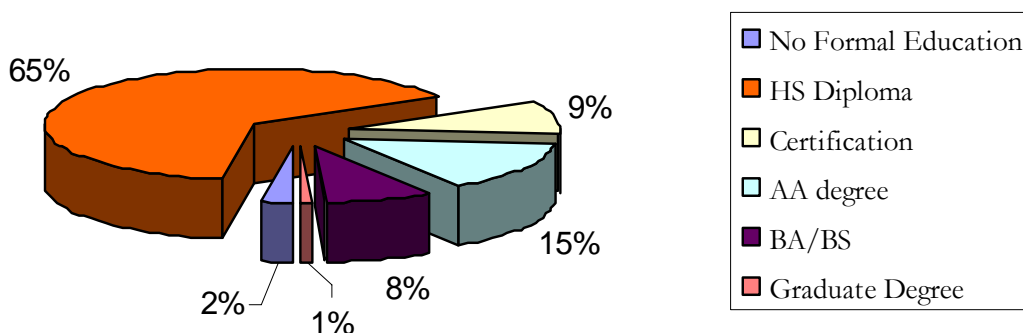
## SECRETARIES & ADMINISTRATIVE ASSISTANTS

115 businesses answered question 7 (*fully or in part*) on employment. Those companies report currently employing at least 446 Secretaries & Administrative Assistants, making this occupation the second largest after clerical support staff<sup>3</sup>. Candidates with no or limited work experience can expect a starting hourly wage of \$9.00-\$11.99 from a majority of Inland Empire businesses. Experienced workers may expect a starting wage of \$12.00 - \$15.99.

In spite of low wages and an expected employment growth, only 20 employers (23% of respondents) anticipate difficulty in filling these positions. This is undoubtedly in part due to the low educational requirements for these positions. Seventy-six percent (76%) of respondents indicate that these positions require less than an AA degree. Sixty-five percent (65%) of respondents only require a high-school diploma for those positions<sup>4</sup>.

*Secretaries and administrative assistants are responsible for a variety of administrative and clerical duties necessary to run an organization efficiently. They serve as information and communication managers for an office; plan and schedule meetings and appointments; organize and maintain paper and electronic files; manage projects; conduct research; and disseminate information by using the telephone, mail services, web sites, and e-mail. They also may handle travel and guest arrangements.*

### Educational Requirements for Secretaries and Administrative Assistants



<sup>3</sup> Employment figures were conservatively analyzed using the lowest number from each data range.

<sup>4</sup> To question 9 “What are the education requirements for the following jobs?” some respondents checked more than one choice per occupation, therefore the number of responses for a given occupation is sometimes higher than the number of respondents, leading to a total of percentages larger than 100 in the computer-generated data summary in appendix (that was based on the number of respondents). The pie charts embedded within the report illustrate educational requirement percentages according to the numbers of total responses per occupation providing a clearer picture of the weight given to each educational requirement.

## CLERICAL SUPPORT STAFF

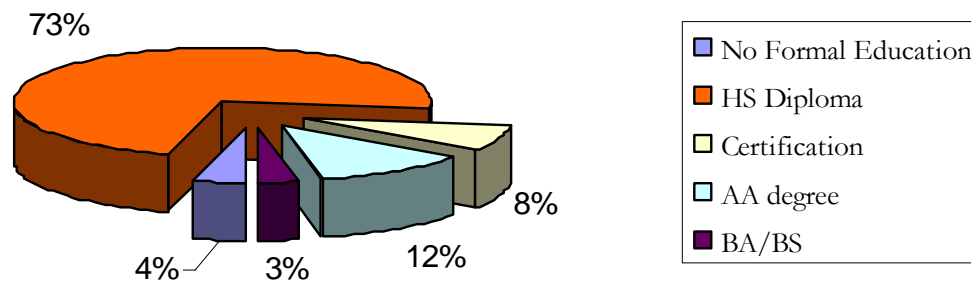
Clerical Support Staff are currently employed by 69% of industry respondents (70 employers). These employers state they currently have at least 508 employees in this category<sup>5</sup>. Similarly to Secretaries and Administrative Assistants, candidates with no or limited work experience can expect a starting hourly wage of \$9.00-\$11.99 and experienced workers may expect an hourly wage of \$12.00-\$15.99.

A large majority (73%) of respondents only require a high-school diploma for clerical support staff. Only 8% require an AA degree.

Collectively, Secretaries & Administrative Assistants and Clerical Support Staff occupations comprise 954 employees within those surveyed. These occupations are clearly where the short-term employment growth within the Inland Empire's CIS sector will stem from.

*Clerical Support Staff employees perform varied and diverse duties requiring limited knowledge of office management systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.*

### Educational Requirements for Clerical Support Staff



<sup>5</sup> Employment figures were conservatively analyzed using the lowest number from each data range.

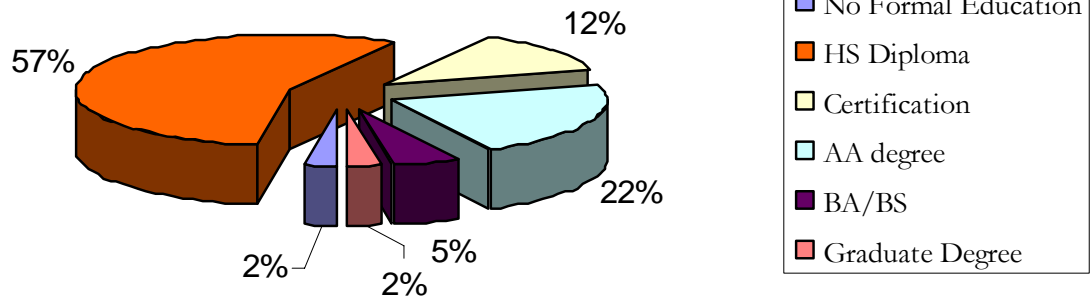
## DATA ENTRY & INFORMATION PROCESSING WORKERS

According to this survey, respondents report there are currently 184 Data Entry & Information Processing Workers within these companies. Forty-one percent of respondents anticipate difficulty in hiring Data Entry & Information Processing Workers – the highest percentage of difficulty anticipated of all occupations.

Candidates with no or limited work experience, can expect a starting hourly wage of \$9.00-\$11.99 from a majority of Inland Empire businesses. Experienced workers may expect a higher starting wage of \$12.00 - \$15.99. Being that many firms only require a High School Diploma for this occupation and that the pay is similar to other entry-level occupations, job function itself is likely to be the key variable impacting businesses' ability to find qualified employees. The job requires excellent accuracy and attention to detail in an often fast-paced but possibly monotonous setting.

*Data entry and information processing workers help ensure the smooth and efficient handling of information. By keying in text, entering data into a computer, operating a variety of office machines, and performing other clerical duties, these workers help organizations keep up with the rapid changes that are characteristic of today's "Information Age."*

### Educational Requirements for Data Entry & Information Processing Workers



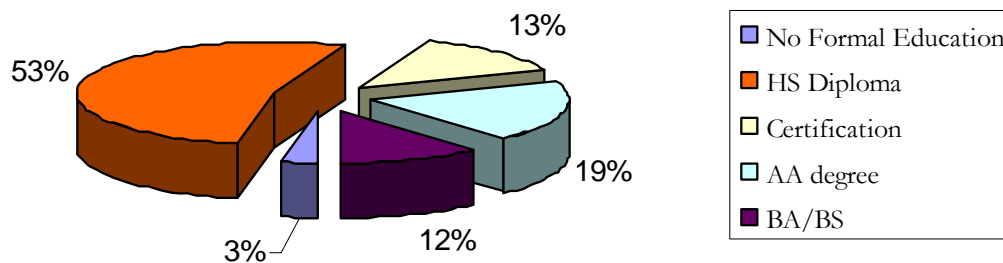
## CUSTOMER SUPPORT SPECIALISTS

Similar to the aforementioned, Customer Support Specialists with no or limited work experience, can expect a starting hourly wage of \$9.00-\$11.99 and a majority of firms may offer experienced workers \$12.00-\$15.99 per hour. Companies report a current workforce of 218 employees.

One third of respondents expect some difficulty in filling future openings. Given the moderate educational requirements for this occupation, there must be extraneous variables affecting this difficulty rate. Further investigation with employers would reveal why it is challenging to hire Customer Support Specialists in this region. This might represent an opportunity to offer more customer service training, or supervisory training including techniques to increase employee satisfaction and retention.

*Customer Support Specialists provide technical assistance and training to computer system users. Investigate and resolve computer software and hardware problems of users; answers clients' inquiries in person and via telephone.*

### Educational Requirements for Customer Support Specialists



## SOFTWARE ENGINEERS

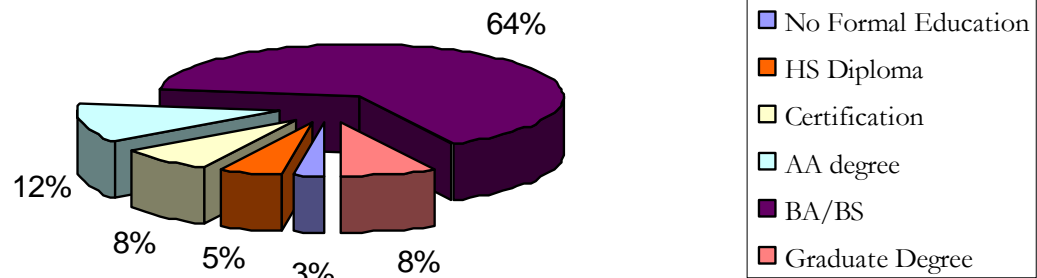
Among all the CIS professions examined, companies anticipate the least amount of difficulty hiring Software Engineers. However, only 13 respondents stated employing Software Engineers and only one employs more than four.

A Software Engineer with no or limited work experience can expect to earn \$16.00-\$29.99 per hour. Experienced Engineers can anticipate earning \$22.00-39.99 per hour. Four companies reported hourly wages of \$40.00-\$55.00+.

Seventy-two percent (72%) of respondents require a Bachelors or Graduate Degree for those positions. Given their education requirement and small projected need, Software Engineers should not be a focus for curriculum development within the community college system. It is however possible to offer individual classes or short certificates to teach specific technologies as continuing education or contract training.

*Software Engineers develop, create, and modify general computer applications software or specialized utility programs. They may analyze and design databases within an application area, working individually or coordinating as part of a team.*

### Educational Requirements for Software Engineers



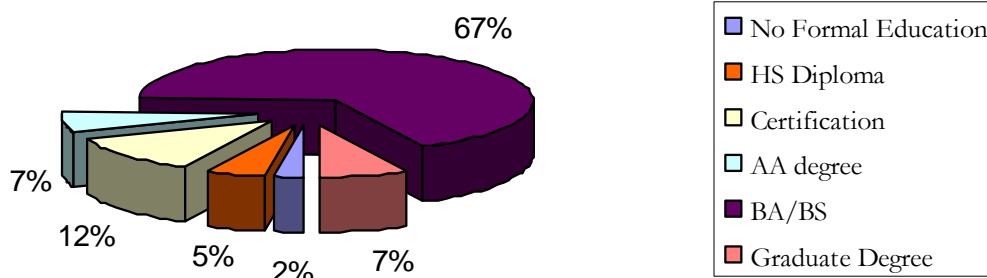
## SOFTWARE PROGRAMMERS

Seventy-four percent (74%) of respondents stated that the education requirement for employment as a Software Programmer was either a Bachelors or Graduate Degree. Thus, Software Programmers have the highest education requirements within the entire CIS cluster (with Software Engineers close behind with 72%).

Employees within this occupation with no or limited work experience can expect an hourly wage of \$16.00-\$29.99. Experienced Software Programmers may expect an hourly wage of \$22.00-\$39.99. Only 17 companies surveyed currently employ Software programmers. Of those, 7 have less than 50 employees, 4 have 100 to 249 employees and 6 employ over 250 people.

*Software Programmers convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. They develop and write computer programs to store, locate, and retrieve specific documents, data, and information. They also may program web sites.*

### Educational Requirements for Software Programmers



## NETWORK SYSTEMS & SYSTEMS/DATABASE ADMINISTRATORS

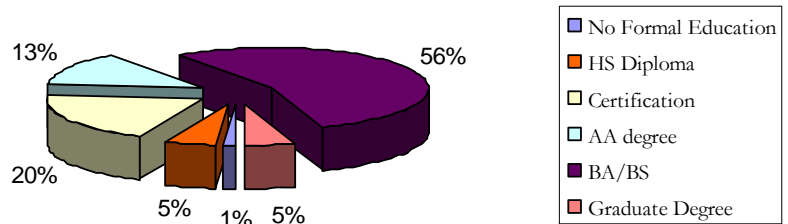
Given the staggering similarity within both the Network Systems Administrators & Systems/Database Administrators characteristics, their results herein are combined. Only 43% (42 companies) and 33% (32 companies) of respondents currently hire Network Systems Administrators & Systems/Database Administrators respectively. Only six firms employ five or more employees within either occupation.

As shown in the graphs, the vast majority of candidates must possess at least a Bachelors Degree. Only 26% of Network Systems Administrators and 25% of Systems/Database Administrators are hired with less than an Associates Degree.

Candidates with no or limited work experience, can expect a starting hourly wage of \$16.00-\$29.99 and a majority of companies offer experienced administrators \$22.00-\$39.99 per hour.

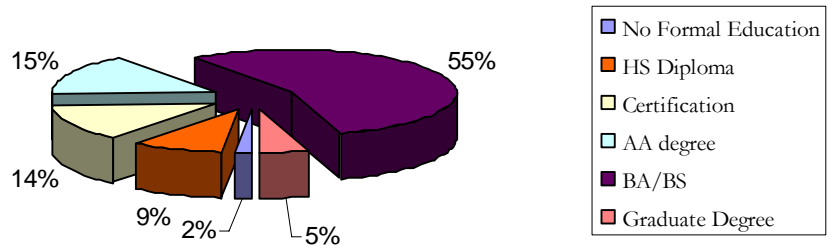
*Systems Administrators/ Database Administrators: Plan layout and installation of new systems or modifications of existing systems; may set up and control computer systems to solve scientific and engineering problems.*

**Educational Requirements for Network System Administrators**



*Network Systems Administrators: Analyze data processing requirements to plan EDP system to provide system capabilities required for projected workloads.*

**Educational Requirements for System/Database Administrators**

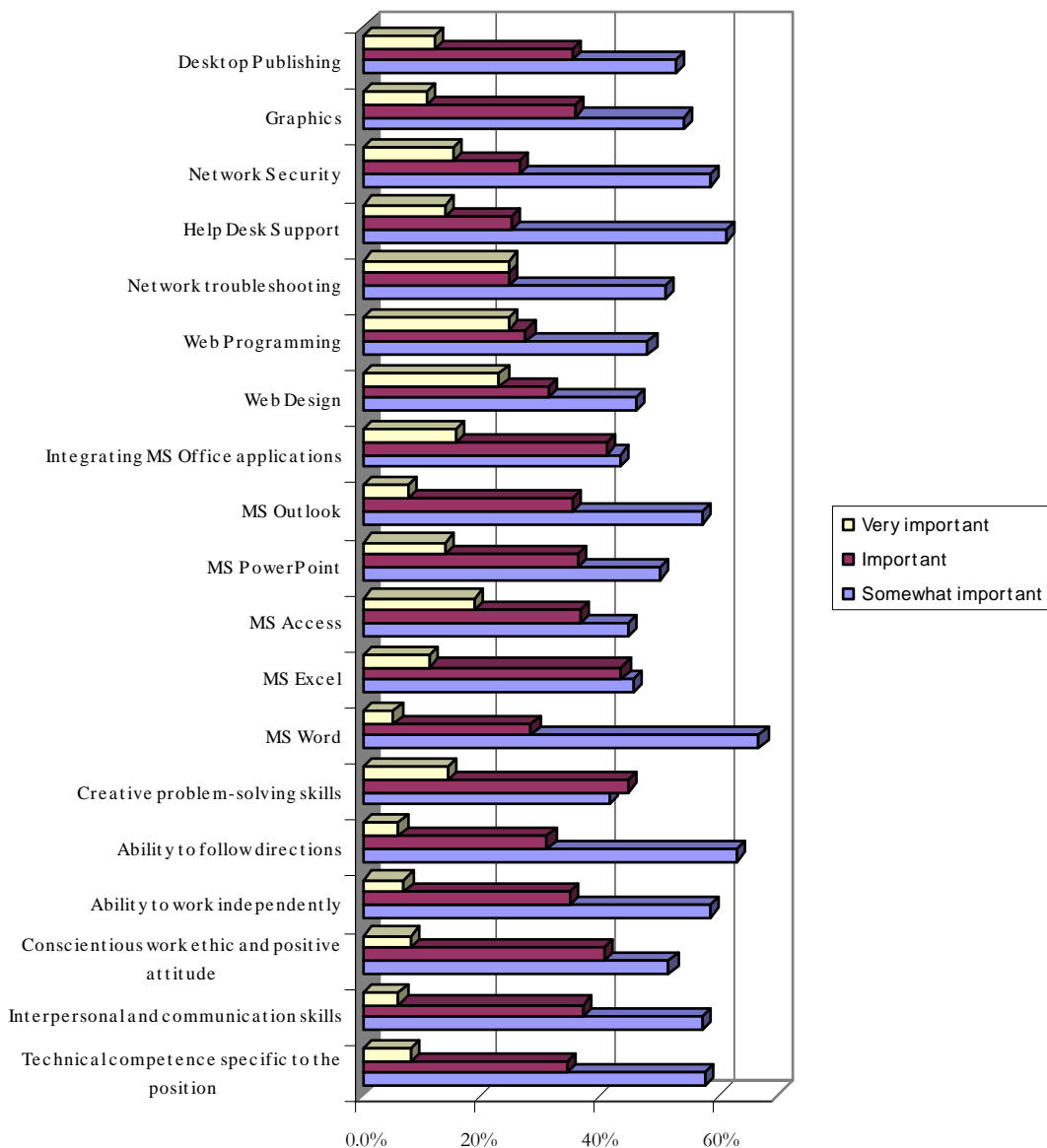


## SKILL IMPORTANCE

Survey respondents were asked “How important are the following skills when considering applicants for those jobs?” The chart below illustrates the importance of specific skills for job applicants from 108 responding companies. Interestingly, most skills considered to be “Very Important” are not technical or job specific but basic or soft skills including conscientious work ethic and positive attitude (79%), ability to follow directions (79%), interpersonal and communication skills (72%), ability to work independently (66%), and creative problem-solving skills (56%).

Technical competence specific to the position was also rated very important when considering job applicants by 62 % of respondents, MS Word by 52%, MS Excel by 49% and MS Outlook by 43% of respondents.

### Important Employability Skills



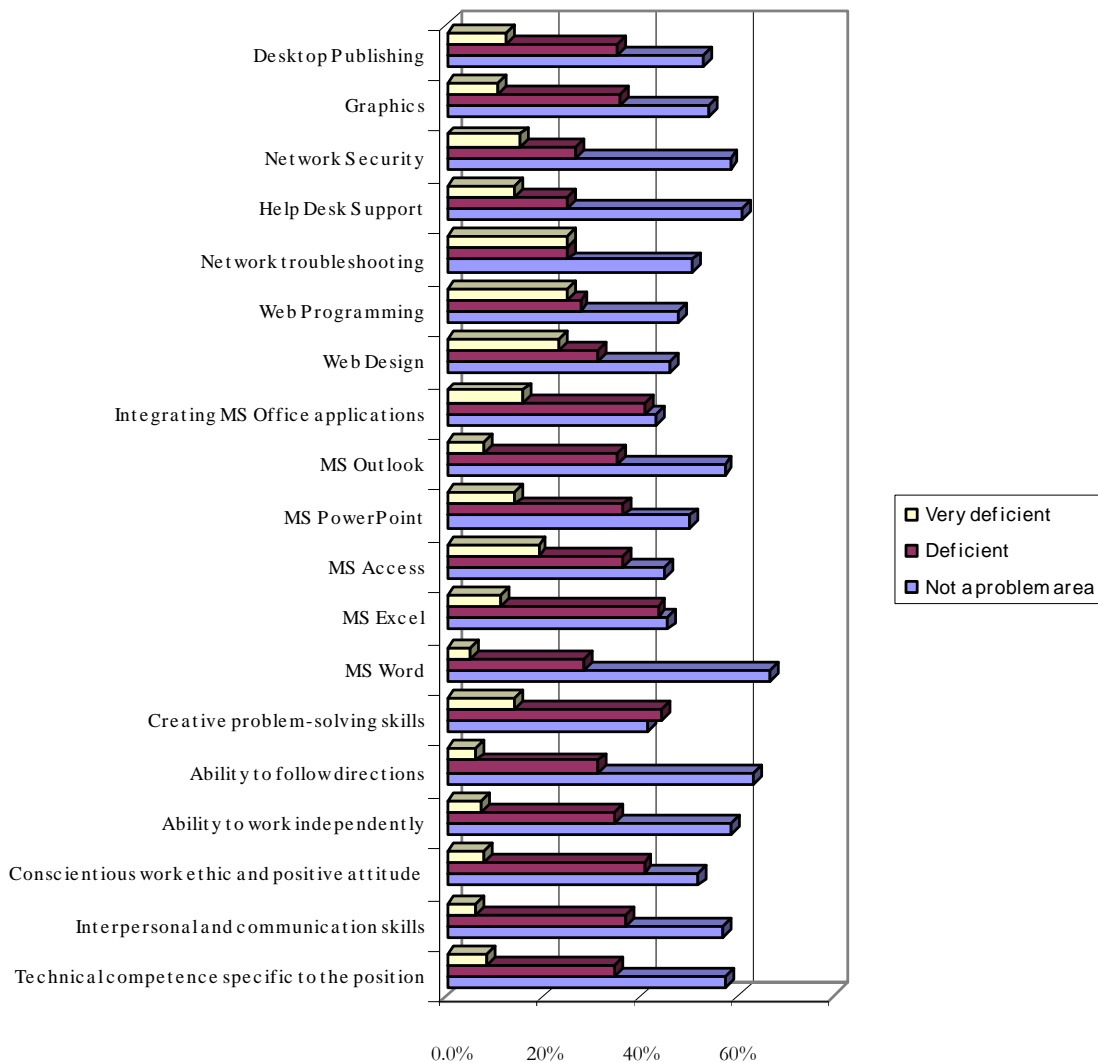
## SKILL GAPS

The chart below illustrates the stated deficient skills for both job applicants and current employees from a total of 104 respondents. Respondents did not answer the question for all occupations but only for those that they employ; therefore the total number of respondents for each occupation varies from 101 to 72. The details are shown in appendix.

Respondents stated that job applicants and employees were most deficient or very deficient in creative problem-solving skills (58%), integrating MS Office applications (57%), MS Access (55%), MS Excel (54%), web design (54%), web programming (52%), MS PowerPoint (50%), conscientious work ethic and positive attitude (49%), network troubleshooting (49%) and desktop publishing (47%).

The complete percentages and numerical counts for all important skills and skill deficiencies are included in appendix.

### Deficient Employability Skills



## CONCLUSION

The survey showed a variety of opportunities for Riverside Community College to contribute to the skill training and general educational requirements for employment within the CIS field. By sheer numbers, focusing upon the software skills and content knowledge required for Secretaries, Administrative Assistants and Clerical Support Staff positions, provide the greatest impact followed by Data Entry & Information Processing workers and Customer Support Specialists. However, these are the lowest paid occupations within the cluster requiring minimal education for employment. The highest paid occupations within the profession require specific technical abilities and predominantly require over 4 years of higher education.

For the community colleges to continue providing value to businesses requiring CIS skills, the target market must be identified at both ends of the educational spectrum. Curriculum enhancements and program offerings should include basic software application for entry level workers in the form of individual courses or short certificate programs, as well as highly technical designing and troubleshooting skills for employees within the industry that already have earned a bachelors degree but are in need of continuously upgrading their skills and knowledge. These courses should be offered at convenient times for the working adult.

According to the survey responses, the completion of any training program in CIS should include a demonstrated ability to follow directions, conscientious work ethic and positive attitude, interpersonal and communication skills, and the ability to work independently. Technical training should include MS Office for administrative staff, and web programming and designing, network troubleshooting, network security, graphics, desktop publishing, and help desk support for CIS specialists.

# APPENDIX 1

## Questionnaire



### 1. Riverside Community College Computer Skills Survey

For a chance to win a \$50 gift certificate to your favorite restaurant, please take a few minutes to fill the questionnaire on the next page. The survey is conducted on behalf of Riverside Community College. The results will be used by the Community Colleges in the Inland Empire to better address employees' computer training needs. Thank you for your input.

The questions apply to specific job categories:

- **Data Entry & Information Processing Worker:** Data entry and information processing workers help ensure the smooth and efficient handling of information. By keying in text, entering data into a computer, operating a variety of office machines, and performing other clerical duties, these workers help organizations keep up with the rapid changes that are characteristic of today's "Information Age."
- **Secretary and administrative assistant:** Secretaries and administrative assistants are responsible for a variety of administrative and clerical duties necessary to run an organization efficiently. They serve as information and communication managers for an office; plan and schedule meetings and appointments; organize and maintain paper and electronic files; manage projects; conduct research; and disseminate information by using the telephone, mail services, Web sites, and e-mail. They also may handle travel and guest arrangements.
- **Customer Support Specialists:** Provide technical assistance and training to computer system users. Investigate and resolve computer software and hardware problems of users. Answers clients' inquiries in person and via telephone.
- **Software Engineers:** Develop, create, and modify general computer applications software or specialized utility programs. May analyze and design databases within an application area, working individually or coordinating as part of a team.
- **Software Programmers:** Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.
- **Network Systems Administrators:** Analyze data processing requirements to plan EDP system to provide system capabilities required for projected workloads.
- **Systems Administrators/ Database Administrators:** Includes database administrators and network administrators. Plan layout and installation of new systems or modifications of existing systems; may set up and control computer systems to solve scientific and engineering problems.

1. Name and title

2. Phone number (to contact you if you win a gift certificate)

3. Name of company

4. City

5. Number of employees

6. Industry

7. Do you employ workers in the following job categories? If yes, how many; how many do you expect to employ in 12 months; and do you anticipate difficulty in filling those positions?

	Do you employ?	How many currently?	How many in 12 months?	Anticipate difficulty?
Secretaries and Administrative Assistants	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Clerical Support Staff	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Data Entry & Information Processing Workers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Customer Support Specialists	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Software Engineers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Software Programmers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Network System Administrators	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Systems/ Database Administrators	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**8. What other job categories do you employ that requires computer skills?**

**9. What are the education requirements for the following jobs?**

	No Formal Education	HS Diploma	Certification	AA degree	BA/BS	Graduate Degree
Secretaries and Administrative Assistants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clerical Support Staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data Entry & Information Processing Workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer Support Specialists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Software Engineers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Software Programmers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Network System Administrators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Systems/ Database Administrators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**10. How important are the following skills when considering applicants for those jobs?**

Somewhat important    Important    Very important

Technical competence specific to the position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interpersonal and communication skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conscientious work ethic and positive attitude	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to work independently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to follow directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creative problem-solving skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MS Word	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MS Excel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MS Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MS PowerPoint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MS Outlook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integrating MS Office applications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Web Design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Web Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Network troubleshooting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help Desk Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Network Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Desktop Publishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**11. What skills are job applicants and current employees most deficient in?**

	Not a problem area	Deficient	Very deficient
Technical competence specific to the position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interpersonal and communication skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conscientious work ethic and positive attitude	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to work independently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to follow directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creative problem-solving skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MS Word	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MS Excel



MS Access



MS PowerPoint



MS Outlook



Integrating MS Office applications



Web Design



Web Programming



Network troubleshooting



Help Desk Support



Network Security



Graphics



Desktop Publishing



**12. What are the average hourly rates offered to new employees in the following categories?**

	Candidate with no or limited work experience	Experienced worker
Secretaries and Administrative Assistants	<input type="text"/>	<input type="text"/>
Clerical Support Staff	<input type="text"/>	<input type="text"/>
Data Entry & Information Processing Workers	<input type="text"/>	<input type="text"/>
Customer Support Specialists	<input type="text"/>	<input type="text"/>
Software Engineers	<input type="text"/>	<input type="text"/>
Software Programmers	<input type="text"/>	<input type="text"/>
Network System Administrators	<input type="text"/>	<input type="text"/>
Systems/ Database Administrators	<input type="text"/>	<input type="text"/>

**13. Do you offer flexible schedules to employees who take courses that are offered during work hours but are relevant to their jobs and can improve their work performance?**

**14. Do you reimburse education expenses of employees who take classes that are relevant to their jobs?**

**Done >>**

**Thank you!**

## APPENDIX 2

### Survey Results

#### Contact Information

##### 1. Name and title

[View](#) Total Respondents 159

(skipped this question) 0

##### 2. Phone number (to contact you if you win a gift certificate)

[View](#) Total Respondents 156

(skipped this question) 3

##### 3. Name of company

[View](#) Total Respondents 158

(skipped this question) 1









##### 4. City

[View](#) Total Respondents 159

(skipped this question) 0

5. Number of employees			
		Response Percent	Response Total
less than 25		57%	90
25 to 49		8.9%	14
50 to 99		10.1%	16
100 to 249		8.2%	13
over 250		15.8%	25
<b>Total Respondents</b>			<b>158</b>
(skipped this question)			1

6. Industry			
		Response Percent	Response Total
Administrative and support services		3.2%	5
Banking / Finance / Insurance		4.4%	7
Biotechnology / Pharmaceutical		0%	0
Computer services / Information technology		5.1%	8
Construction		10.8%	17
Education / Training		8.9%	14
Energy / Utilities		1.3%	2
Healthcare		3.2%	5
Hospitality / Tourism		2.5%	4

Manufacturing		5.7%	9
Marketing / Advertising		3.8%	6
Other services		10.8%	17
Retail		4.4%	7
Sales		3.2%	5
Telecommunications		1.3%	2
Transportation / Warehousing / Logistics		1.3%	2
Wholesale trade		3.8%	6
<a href="#">View</a> Other (please specify)		26.6%	42
<b>Total Respondents</b>			<b>158</b>
(skipped this question)			1

## Questionnaire

7. Do you employ workers in the following job categories? If yes, how many; how many do you expect to employ in 12 months; and do you anticipate difficulty in filling those positions?

Do you employ?			
	Yes	No	Response Total
Secretaries and Administrative Assistants	84% (94)	16% (18)	112
Clerical Support Staff	69% (70)	31% (32)	102
Data Entry & Information Processing Workers	50% (50)	50% (51)	101
Customer Support Specialists	50% (50)	50% (51)	101
Software Engineers	14% (13)	86% (83)	96

Software Programmers	18% (17)		82% (80)			97
Network System Administrators	43% (42)		57% (56)			98
Systems/ Database Administrators	33% (32)		67% (66)			98
Other	72% (41)		28% (16)			57
<b>How many currently?</b>						
	<b>1-4</b>	<b>5-9</b>	<b>10 to 19</b>	<b>20 to 49</b>	<b>over 50</b>	<b>Response Total</b>
Secretaries and Administrative Assistants	73% (66)	11% (10)	7% (6)	7% (6)	3% (3)	91
Clerical Support Staff	63% (43)	13% (9)	3% (2)	15% (10)	6% (4)	68
Data Entry & Information Processing Workers	71% (34)	8% (4)	15% (7)	6% (3)	0% (0)	48
Customer Support Specialists	70% (33)	11% (5)	11% (5)	6% (3)	2% (1)	47
Software Engineers	91% (10)	9% (1)	0% (0)	0% (0)	0% (0)	11
Software Programmers	92% (12)	8% (1)	0% (0)	0% (0)	0% (0)	13
Network System Administrators	86% (31)	14% (5)	0% (0)	0% (0)	0% (0)	36
Systems/ Database Administrators	96% (26)	0% (0)	0% (0)	0% (0)	4% (1)	27
Other	59% (20)	6% (2)	18% (6)	6% (2)	12% (4)	34
<b>How many in 12 months?</b>						
	<b>1-4</b>	<b>5-9</b>	<b>10 to 19</b>	<b>20 to 49</b>	<b>over 50</b>	<b>Response Total</b>
Secretaries and Administrative Assistants	86% (71)	5% (4)	4% (3)	2% (2)	4% (3)	83
Clerical Support Staff	70% (40)	16% (9)	9% (5)	0% (0)	5% (3)	57
Data Entry & Information Processing Workers	79% (31)	8% (3)	8% (3)	0% (0)	5% (2)	39
Customer Support Specialists	77% (30)	13% (5)	3% (1)	5% (2)	3% (1)	39

Software Engineers	<b>100% (8)</b>	0% (0)	0% (0)	0% (0)	0% (0)	<b>8</b>
Software Programmers	<b>83% (5)</b>	17% (1)	0% (0)	0% (0)	0% (0)	<b>6</b>
Network System Administrators	<b>93% (25)</b>	7% (2)	0% (0)	0% (0)	0% (0)	<b>27</b>
Systems/ Database Administrators	<b>95% (18)</b>	0% (0)	5% (1)	0% (0)	0% (0)	<b>19</b>
Other	<b>62% (20)</b>	9% (3)	9% (3)	16% (5)	3% (1)	<b>32</b>
<b>Anticipate difficulty?</b>						
	<b>Yes</b>	<b>No</b>			<b>Response Total</b>	
Secretaries and Administrative Assistants	23% (20)	77% (66)			<b>86</b>	
Clerical Support Staff	29% (18)	71% (44)			<b>62</b>	
Data Entry & Information Processing Workers	41% (18)	59% (26)			<b>44</b>	
Customer Support Specialists	33% (14)	67% (28)			<b>42</b>	
Software Engineers	18% (2)	82% (9)			<b>11</b>	
Software Programmers	25% (3)	75% (9)			<b>12</b>	
Network System Administrators	35% (11)	65% (20)			<b>31</b>	
Systems/ Database Administrators	26% (6)	74% (17)			<b>23</b>	
Other	41% (14)	59% (20)			<b>34</b>	
<b>Total Respondents</b>					<b>115</b>	
(skipped this question)					<b>44</b>	

<b>8. What other job categories do you employ that requires computer skills?</b>		
<a href="#">View</a> Total Respondents	<b>50</b>	
(skipped this question)		<b>109</b>

9. What are the education requirements for the following jobs?							
	No Formal Education	HS Diploma	Certification	AA degree	BA/BS	Graduate Degree	Respondent Total
Secretaries and Administrative Assistants	3% (3)	<b>76% (78)</b>	11% (11)	17% (18)	10% (10)	1% (1)	<b>103</b>
Clerical Support Staff	5% (4)	<b>83% (72)</b>	9% (8)	14% (12)	3% (3)	0% (0)	<b>87</b>
Data Entry & Information Processing Workers	3% (2)	<b>64% (45)</b>	14% (10)	26% (18)	6% (4)	3% (2)	<b>70</b>
Customer Support Specialists	3% (2)	<b>61% (36)</b>	15% (9)	22% (13)	14% (8)	0% (0)	<b>59</b>
Software Engineers	3% (1)	6% (2)	9% (3)	14% (5)	<b>74% (26)</b>	9% (3)	<b>35</b>
Software Programmers	3% (1)	5% (2)	14% (5)	8% (3)	<b>76% (28)</b>	8% (3)	<b>37</b>
Network System Administrators	2% (1)	7% (4)	25% (15)	17% (10)	<b>68% (41)</b>	7% (4)	<b>60</b>
Systems/ Database Administrators	2% (1)	11% (6)	17% (9)	19% (10)	<b>67% (36)</b>	6% (3)	<b>54</b>
<b>Total Respondents</b>							<b>113</b>
(skipped this question)							46

10. How important are the following skills when considering applicants for those jobs?				
	Somewhat important	Important	Very important	Respondent Total
Technical competence specific to the position	8% (8)	30% (32)	<b>62% (66)</b>	<b>106</b>
Interpersonal and communication skills	1% (1)	27% (29)	<b>72% (78)</b>	<b>108</b>
Conscientious work ethic and positive attitude	0% (0)	21% (22)	<b>79% (85)</b>	<b>107</b>
Ability to work independently	3% (3)	31% (33)	<b>66% (70)</b>	<b>106</b>
Ability to follow directions	0% (0)	21% (22)	<b>79% (85)</b>	<b>107</b>
Creative problem-solving skills	3% (3)	41% (44)	<b>56% (60)</b>	<b>107</b>

MS Word	7% (7)	41% (43)	<b>52% (55)</b>	<b>105</b>
MS Excel	11% (11)	41% (42)	<b>49% (50)</b>	<b>103</b>
MS Access	<b>51% (43)</b>	27% (23)	24% (20)	<b>85</b>
MS PowerPoint	<b>41% (37)</b>	37% (34)	22% (20)	<b>91</b>
MS Outlook	16% (16)	40% (39)	<b>43% (42)</b>	<b>97</b>
Integrating MS Office applications	24% (21)	<b>49% (43)</b>	27% (24)	<b>88</b>
Web Design	<b>71% (57)</b>	16% (13)	12% (10)	<b>80</b>
Web Programming	<b>75% (57)</b>	12% (9)	13% (10)	<b>76</b>
Network troubleshooting	<b>47% (38)</b>	25% (20)	28% (23)	<b>81</b>
Help Desk Support	<b>49% (38)</b>	22% (17)	29% (22)	<b>77</b>
Network Security	<b>49% (38)</b>	21% (16)	31% (24)	<b>78</b>
Graphics	<b>60% (49)</b>	23% (19)	16% (13)	<b>81</b>
Desktop Publishing	<b>52% (43)</b>	25% (21)	23% (19)	<b>83</b>
<b>Total Respondents</b>				<b>108</b>
(skipped this question)				51

11. What skills are job applicants and current employees most deficient in?				
	Not a problem area	Deficient	Very deficient	Respondent Total
Technical competence specific to the position	<b>58% (57)</b>	34% (34)	8% (8)	<b>99</b>
Interpersonal and communication skills	<b>57% (57)</b>	37% (37)	6% (6)	<b>100</b>
Conscientious work ethic and positive attitude	<b>51% (52)</b>	41% (41)	8% (8)	<b>101</b>
Ability to work independently	<b>58% (59)</b>	35% (35)	7% (7)	<b>101</b>



Ability to follow directions	<b>63% (63)</b>	31% (31)	6% (6)	<b>100</b>
Creative problem-solving skills	41% (41)	<b>44% (44)</b>	14% (14)	<b>99</b>
MS Word	<b>67% (66)</b>	28% (28)	5% (5)	<b>99</b>
MS Excel	<b>45% (45)</b>	43% (43)	11% (11)	<b>99</b>
MS Access	<b>45% (38)</b>	36% (31)	19% (16)	<b>85</b>
MS PowerPoint	<b>50% (43)</b>	36% (31)	14% (12)	<b>86</b>
MS Outlook	<b>57% (52)</b>	35% (32)	8% (7)	<b>91</b>
Integrating MS Office applications	<b>43% (36)</b>	41% (34)	16% (13)	<b>83</b>
Web Design	<b>46% (34)</b>	31% (23)	23% (17)	<b>74</b>
Web Programming	<b>48% (35)</b>	27% (20)	25% (18)	<b>73</b>
Network troubleshooting	<b>51% (37)</b>	25% (18)	25% (18)	<b>73</b>
Help Desk Support	<b>61% (44)</b>	25% (18)	14% (10)	<b>72</b>
Network Security	<b>58% (42)</b>	26% (19)	15% (11)	<b>72</b>
Graphics	<b>54% (41)</b>	36% (27)	11% (8)	<b>76</b>
Desktop Publishing	<b>53% (39)</b>	35% (26)	12% (9)	<b>74</b>
<b>Total Respondents</b>				<b>104</b>
(skipped this question)				55


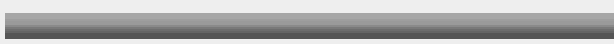
12. What are the average hourly rates offered to new employees in the following categories?									
Candidate with no or limited work experience									
	less than \$8.99	\$9.00 to \$11.99	\$12.00 to \$15.99	\$16.00 to \$21.99	\$22.00 to \$29.99	\$30.00 to \$39.99	\$40.00 to \$55.00	over \$55.00	Response Total
Secretaries and Administrative Assistants	15% (12)	<b>54% (44)</b>	24% (20)	6% (5)	0% (0)	0% (0)	0% (0)	1% (1)	<b>82</b>

Clerical Support Staff	30% (22)	<b>54% (40)</b>	14% (10)	1% (1)	1% (1)	0% (0)	0% (0)	0% (0)	<b>74</b>
Data Entry & Information Processing Workers	26% (13)	<b>50% (25)</b>	16% (8)	8% (4)	0% (0)	0% (0)	0% (0)	0% (0)	<b>50</b>
Customer Support Specialists	16% (7)	<b>49% (22)</b>	29% (13)	7% (3)	0% (0)	0% (0)	0% (0)	0% (0)	<b>45</b>
Software Engineers	9% (2)	4% (1)	17% (4)	<b>35% (8)</b>	26% (6)	4% (1)	0% (0)	4% (1)	<b>23</b>
Software Programmers	5% (1)	0% (0)	14% (3)	29% (6)	<b>33% (7)</b>	14% (3)	0% (0)	5% (1)	<b>21</b>
Network System Administrators	3% (1)	0% (0)	21% (7)	<b>35% (12)</b>	29% (10)	12% (4)	0% (0)	0% (0)	<b>34</b>
Systems/ Database Administrators	3% (1)	6% (2)	6% (2)	<b>32% (10)</b>	<b>32% (10)</b>	6% (2)	10% (3)	3% (1)	<b>31</b>
<b>Experienced worker</b>									
	<b>less than \$8.99</b>	<b>\$9.00 to \$11.99</b>	<b>\$12.00 to \$15.99</b>	<b>\$16.00 to \$21.99</b>	<b>\$22.00 to \$29.99</b>	<b>\$30.00 to \$39.99</b>	<b>\$40.00 to \$55.00</b>	<b>over \$55.00</b>	<b>Response Total</b>
Secretaries and Administrative Assistants	0% (0)	14% (11)	<b>51% (40)</b>	27% (21)	8% (6)	0% (0)	0% (0)	0% (0)	<b>78</b>
Clerical Support Staff	1% (1)	38% (26)	<b>47% (32)</b>	13% (9)	0% (0)	0% (0)	0% (0)	0% (0)	<b>68</b>
Data Entry & Information Processing Workers	11% (5)	20% (9)	<b>43% (20)</b>	24% (11)	2% (1)	0% (0)	0% (0)	0% (0)	<b>46</b>
Customer Support Specialists	2% (1)	11% (5)	<b>43% (19)</b>	27% (12)	11% (5)	0% (0)	2% (1)	2% (1)	<b>44</b>
Software Engineers	0% (0)	0% (0)	0% (0)	19% (4)	29% (6)	<b>33% (7)</b>	14% (3)	5% (1)	<b>21</b>
Software Programmers	0% (0)	0% (0)	0% (0)	16% (3)	<b>37% (7)</b>	26% (5)	16% (3)	5% (1)	<b>19</b>
Network System Administrators	0% (0)	0% (0)	0% (0)	24% (9)	<b>35% (13)</b>	19% (7)	14% (5)	8% (3)	<b>37</b>
Systems/ Database Administrators	0% (0)	0% (0)	3% (1)	12% (4)	<b>47% (15)</b>	19% (6)	9% (3)	9% (3)	<b>32</b>
<b>Total Respondents</b>									<b>96</b>
(skipped this question)									<b>63</b>

13. Do you offer flexible schedules to employees who take courses that are offered during work hours but are relevant to their jobs and can improve their work performance?

									<b>Respons</b>	<b>Respons</b>
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		e Percent	e Total
Yes		78.4%	87
No		21.6%	24
<b>Total Respondents</b>			<b>111</b>
(skipped this question)			48

14. Do you reimburse education expenses of employees who take classes that are relevant to their jobs?			
		Response Percent	Response Total
Yes		61.3%	68
No		38.7%	43
<b>Total Respondents</b>			<b>111</b>
(skipped this question)			

List of answers to question 8:

Environmental eng.	Web designers	Graphic design/excel/word	AutoCAD Drafters
Receiver, loader, inventory control clerk, order selector	Clerical/Administrative	Teachers	New Accounts Representative and Tellers
Sales	Designer / Drafters	Training Dept.	Various operations and engineering skills
Staffing	Salesmen, parts person	Copywriters/Graphic Artists	Cad Cam
Engineer; sales; marketing	Sales	Telecom Administrator	Front Desk Agents
Technical Writers, Editors, Authors	Estimating	Medical Front Office	Engineering, Shipping/Receiving/Quality
Sales & Marketing, Trainers	Engineers	Engineers/Scientists	Graphic Designer
Production	Instructors	Electronic engineering	Producers/Sales Personnel
Scientist, Geologist, Managers	Sales Reps	Essentially all staff require a degree of computer skills.	Professional accountants
Sales	Field Service Engineers	Data Entry/Info Processing	All jobs require computer skills
Sales	Graphic/Web Designers	Computer technicians	Professional staff
Estimators	Traffic Manager	Health educators	Forklift Operators