
The State of Seattle Area IT Employment and Training: Results of IT Employer and Employee Surveys

Key Findings and Survey Summaries

Washington Alliance of Technology Workers

WashTech

Communications Workers of America, Local 37083

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METHODOLOGY

This report is based on two sets of surveys of Seattle-area businesses and IT employees.

The first survey consisted of phone interviews conducted among 100 Seattle area businesses. Respondents were selected at random from a list of businesses in King, Pierce, and Snohomish Counties. Respondents were screened to reach a person in the office that is responsible for the hiring, staffing, or managing of information technology employees for the company.

Interviewing was conducted in March of 2002. The margin of error for the overall results is \pm 9.8 points at the 95 percent confidence interval.

Each interview began with a question that asked if we could speak to “a person in your office that is responsible for the hiring, staffing, or managing of information technology employees” at the company. That ensured that our interview was conducted with an Information Technology (IT) or Human Resources (HR) manager. Because the main issues in this survey were IT-related, a quota was set to ensure that 80 percent of respondents were IT managers.

The second survey relied on the results of 280 online surveys completed by Seattle-area (King, Pierce, and Snohomish Counties) technology employees. Respondents were invited to complete the online survey through email. The survey was open for completion from April 18th to May 7th, 2002.

The email samples used for the survey came from commercial and non-commercial sources and had different criteria that caused them to be selected, and are collected in different ways. Despite these differences, there are very few questions where, in our opinion, the sample from which the respondent comes from has a determinate impact on the respondent’s answer to the question.

KEY FINDINGS

1. Managers agree that demand for IT Workers will increase overall but not at their company.

- In almost all worker categories, managers say that demand will increase.
- Subgroups throughout the survey are more likely to say demand for workers with certification will increase than they are to say demand for workers with a four-year or community college degree will increase.
- Managers are twice as likely to predict an increase “in general” than to predict an increase at their company (67 percent General vs. 32 percent Their Company). While managers see some job growth at their own companies, they expect more of it to happen somewhere else.

2. Network Administrator is the top demand occupation.

- Employers and workers have similar responses when asked which job titles will have an increase in demand. The top two occupations both groups expect to experience increased demand are Network Administrators (22 percent Employers / 11 percent Workers) and Web Developers (13 percent Employers / 11 percent Workers). These two are followed closely by Programmers (7 percent Employers / 8 percent Workers) and Database Administrators (7 percent Employers / 8 percent Workers). All four of these occupations are at the core of IT. Perhaps most surprising is the relatively low percentage of responses for security-related jobs among employers (3 percent), which is one occupation where an increase in demand might be expected. Workers were twice as likely (6 percent) to name this occupation.

3. Almost half (43 percent) of companies require some type of training (certificate or four-year degree) for some of their positions.

- One in three (29 percent) require a four-year degree. This level is much higher among Large IT departments (53 percent), and Technology companies (42 percent)
- One in four (24 percent) require certification exams.
- Only one in ten (10 percent) require both.

4. If there is a requirement for certification, it is also required for almost all temporary staff. Temporary staff are less likely to have to meet four-year degree requirements.

- A quarter (24 percent) require certification exams for some of their positions. An overwhelming majority (80 percent) also require exams of temporary staff for those positions.
- A third (29 percent) of businesses require a four-year degree for some of their positions. Only a third (30 percent) of those companies also require their temporary staff to have a four-year degree for those positions.

5. Half of managers see their company as a place where workers can move up from an entry-level position (47 percent); the other half see their workers entering and leaving in the same job title (49 percent).

- Managers of Large IT departments are more likely to say workers can enter and move up (67 percent) than medium (50 percent) or small (41 percent) IT department managers.

6. More than three-quarters (79%) of managers say their company offers some kind of tuition reimbursement or other type of training.

- Two-thirds (66 percent) say their company has a tuition reimbursement program, and two-thirds (66 percent) say their company pays for or sponsors other types of training.
- Large IT departments are the most likely to offer tuition reimbursement (93 percent) or other training programs (80 percent).

7. Managers agree with questions of “conventional wisdom”.

- Managers strongly agree that as long as a worker can demonstrate expertise, they are willing to hire that worker (77 percent Agree, 43 percent Strong / 34 percent Somewhat). This agreement is even stronger among IT managers (85 percent Agree), small IT departments (87 percent Agree), and Non-Technology companies (80 percent Agree).
- They also strongly agree that workers become more valuable through multiple projects with a variety of employers (82 percent Agree, 43 percent Strong / 39 percent Somewhat).
- Managers agree, although not as strongly, that most of the responsibility for preparation and training should be on the worker (77 percent Agree, 29 percent Strong / 48 percent Somewhat).

8. Workers have faced rough times in the new millennium

- There has been significant flux in worker employment in the last six months in all categories, among both the currently employed and the unemployed. More than a third (37 percent) of workers in the survey have been out of work at some time in the last six months.

9. Experienced IT workers are more stable and make more money

- Workers with five or more years of experience are less likely to be unemployed, and even if they do find themselves out of work, they are more likely to find work faster.
- More than half (58 percent) of workers with five or more years of experience make more than \$60K, while only 19 percent of workers with less than five years experience make the same.
- Men tend to have more experience than women and, in turn, men report higher salaries.

10. A strong majority of agency contract workers don't want to be

- More than two-thirds (68 percent) of agency contract workers say they would prefer to have a permanent position if they could get one.
- The desire for full time employment is echoed in the experience of full- and part-time workers; almost half (43 percent) of them were once agency workers, a clear sign that many workers who could remain agency workers chose not to do so.

11. The pay workers receive, employer-paid health benefits, and a secure job are important to workers

- These three items rank the highest of nine items on an issue importance scale.

12. Like employers, workers see increases in demand for IT workers. But in general, workers see less increase than employers do

- Also, like employers, workers see increases in the industry “in general”, but not at their own company.
- Workers are more likely than employers to say demand will decrease for IT worker in various categories, although workers do see increases in many categories.
- As with employers, workers see higher demand for certificates and industry-trained workers than for workers with a four-year or community college degree, although the difference is not as strong among workers.

13. One worker in ten (12 percent) says he or she needed a certification exam to be hired, and a third (37%) said a four-year degree was required.

- A higher percentage of women reported needing a four-year degree to be hired than did men.

14. Company employees are more optimistic about opportunities for advancement than agency workers

- More than half (55 percent) of company employees say people at their company can advance within it, while more than half (59 percent) of agency workers say people enter the agency and leave it in the same position.

15. Only a third (37 percent) of workers say they have taken advantage of their company's tuition reimbursement program, and more than half (60 percent) have used other company-paid IT training.

- Half (49 percent) of workers say their company has a tuition reimbursement program, and more than three quarters (84 percent) say their company pays for other types of IT training

16. The Training Dilemma

Employers and workers are not in agreement on whether responsibility for training should fall entirely on individual workers, or be shared with employers, and workers say they don't have access to the training they need.

- Employers strongly agree (77 percent Agree, 25 percent Strongly / 48 percent Somewhat) and workers somewhat agree (51 percent Agree, 9 percent Strongly / 42 percent Somewhat) that the responsibility for training should be on the worker.
- Workers understand that training is important. Almost three-quarters (72 percent) of workers agree that the certificates, degrees, and training they have give them greater freedom to choose their career path. Yet half (55 percent) of workers also agree that they do not have the training or certificates they need to move into a different position. This is especially true for workers making less than \$45,000 per year; three-quarters (78 percent) of these workers agree that they don't have the training or certifications they need to move to a different position.
- However, a strong majority of workers can't count on their employer to provide this training. Three-quarters of workers (74 percent) say that employers are not offering adequate training on the latest technologies.
- Finally, when asked if they have the time, money, and resources they need to learn and get training on new technologies, an overwhelming 89 percent say they only sometimes or definitely do not have the time, money, or resources to get the training they need. Even though two-thirds (66 percent) of employers say they offer a tuition reimbursement program, only a third (37 percent) of workers report having used it.

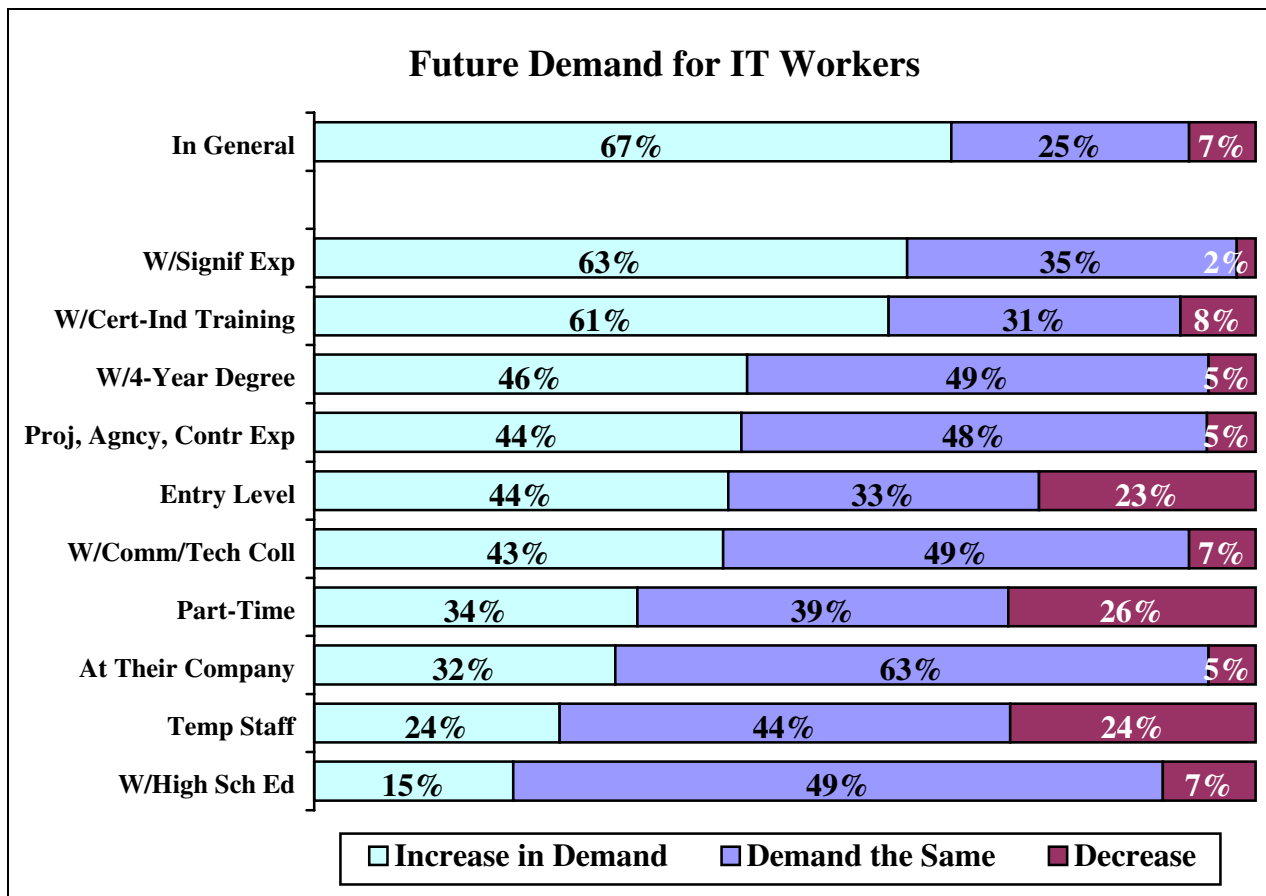
It seems clear that many workers are looking for training to advance their careers, but just don't feel they can get it. This disconnect has huge implications for the future of IT. The results give us a strong sense that workers need more and different opportunities and access to training to meet both the needs of employers and their own careers. Just like everyone else, workers as a group will probably find a way to "get by," the danger for the future of IT is if workers aren't able to keep up with new technologies, and that many IT workers and our economy could get left behind.

EMPLOYER SURVEY SUMMARY

Future IT Worker Demand

After the introduction and screening questions, respondents were asked a series of questions about the future demand for IT workers. After each, the managers were asked if they think demand for that type of IT worker will increase, decrease, or stay the same. In general, managers foresee an increase in demand for IT workers, with two-thirds (67 percent) saying demand will increase for IT workers “in the industry in general”.

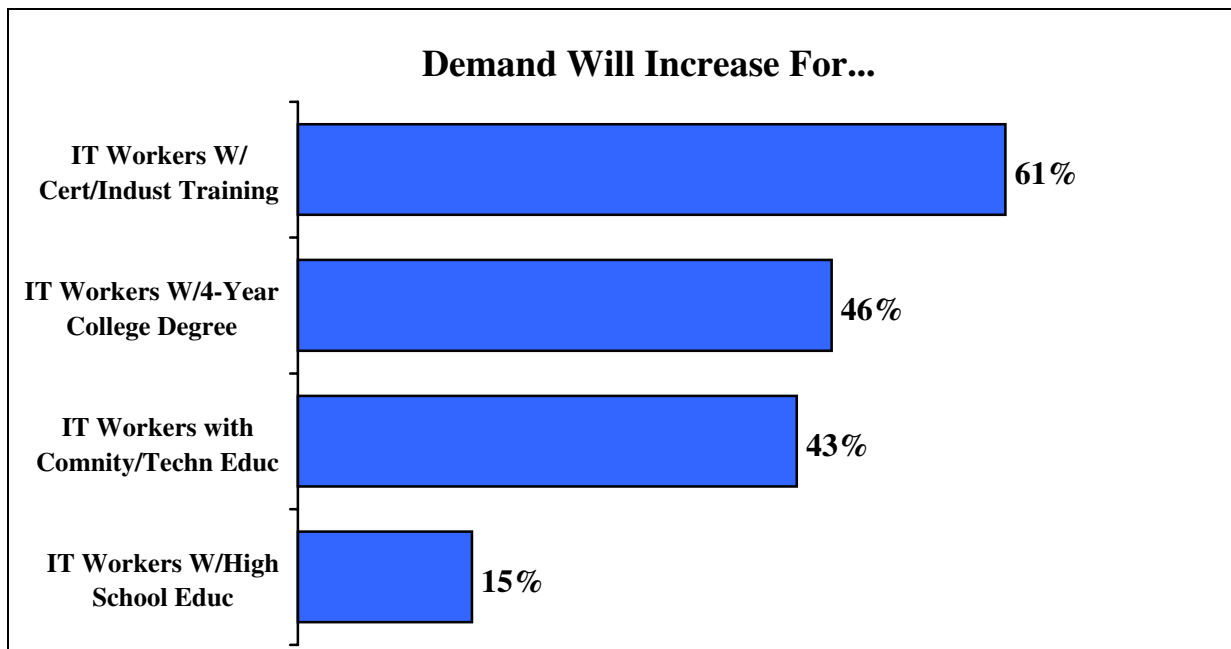
Only two other specific categories get more than a majority of managers to predict an increase; workers with significant experience in their field (63 percent), and workers with certificate or other industry-recognized certification training (61 percent). The graph below shows the answers of managers for all of the different worker categories.



One significant difference in this graph is the split between demand in the industry in general and for workers at the manager’s own company. Managers are twice as likely to predict an increase “in general” than to predict an increase at their company (67 percent General vs. 32 percent Their Company). While managers see some job growth at their own companies, they expect more of it to happen somewhere else.

The top three categories of workers where managers see a decrease in demand are for part time workers (26 percent Decrease), temporary staff (24 percent), and entry-level workers (23 percent). Except for one category (Temporary Staff; 24 percent Increase / 24 percent Decrease), the percentage of managers who say demand for these positions will increase outnumbers those that say it will decrease. This underscores the fact that managers see general increases in demand for IT workers.

Another interesting difference is how demand changes based on worker education. Managers are more likely to say demand for certificate- and industry-trained workers will increase.



This suggests that while community college and university degrees are accepted, workers with certificate and other industry training figure to be in greater demand in the future. It also signals that certificate training is another qualification that employers expect workers to have.

This does not, however, indicate that workers with a college degree or community/technical college degree are not expected to be in demand; it is clear from the graph that managers anticipate demand for them. It only means that managers predict more demand for workers with certificate or other industry training. This increase in demand for certificate training is a theme echoed in other subgroups in the results.

Three questions followed the “future demand” scale, and asked for specific job titles where this change in demand will occur. The first question asked the following:

Q15. In what occupations, or job titles, do you think there will be an increase in demand for IT Workers?

Network Administrators	22
Web Development/Developers	13
Programmers	7
Technology/Technicians	7
Database Administrators	7
Project Managers	5
Analyst	4
Help Desk Support	4
Security	3
Other	10

For an open-end response like this, any answer garnering more than 2 percentage points should be considered significant. Network Administrators (22 percent) and Web Developers (13 percent) top the list, followed closely by Programmers (7 percent), Technicians (7 percent), and Database Administrators (7 percent), all jobs that are at the core of IT. Perhaps most surprising in the results of this question is the relatively low percentage of responses for security-related jobs (3 percent), which is one occupation where an increase in demand might be expected.

The next question asked about occupations where demand will decrease.

Q16. And in what occupations, or job titles, do you think there will be a decrease in demand for IT Workers?

Help Desk/Support	10
Web Development/Designers	6
Administrators/Management	5
Operations	3
Mainframe	3
Others	21
None	19
Don't Know/Refused	33

A majority of managers (52 percent) could not think of a job title to respond to this question, which is consistent with the low percentage of managers who noted a decrease in demand for workers in the initial section. Help Desk and Support (10 percent) received the most mentions for this question, followed by Web Development and Designers (6 percent), and then Administrators and Management (5 percent). While respondents probably were not thinking of their own position in answering this question, it is intriguing that 5 percent predicted less demand in the future for people in their own position.

The third question in this series asked about jobs for which demand will stay the same.

Q17. And in what occupations, or job titles, do you think demand will stay about the same for IT Workers?

Management/Administrators	22
Help Desk Support	6
Technicians	4
Analyst	4
Engineers	4
Programmers	3
Developers	3
Operators	2
Others	19
None	5
Don't Know/Refused	28

The most mentions, perhaps not surprisingly, are for the manager's own position (22 percent). Other responses are all clustered with a few percentage points.

Temporary Staffing

Less than one quarter (21 percent) of managers reports using temporary staff to fill technical positions. Of those who do use temporary staff, more than half (57 percent) say they have reduced or stopped their use of those staffing agencies in the last six months.

Layoffs

The same percentage (21 percent) say they have had to lay off IT workers in the past six months. Cuts ranged from one worker laid off to more than 40, and were focused on network administration, system analysts, and support technicians.

Education Requirements for Hiring

Almost half (43 percent) of companies require workers to have some kind of training for some of their IT positions. A quarter (24 percent) of businesses require a certification exam or some other type of certification, and almost a third (29 percent) require a four-year college degree. One in ten (10 percent) require both a certification and a four-year college degree for some of their positions.

While some overlap exists among these companies, the net result is that almost half (43 percent) of companies require some kind of training before they will hire a worker for some of their IT positions. However, taken individually, workers without these certifications or degrees will not necessarily find this to be a barrier to employment at a majority of companies.

For those that require certification, Microsoft Certified Systems Engineer, or MCSE, training is the most often reported (12 percent). For four-year degrees, the most frequently reported are computer science (11 percent) and general bachelor's (11 percent) degrees.

Workers who do not have certifications or degrees should still be able to find positions they for which they are qualified. In a follow-up to training requirement questions, managers were asked how many of their positions require certification or a college degree. For the quarter (24 percent) of businesses that require certification exams, around half of those (14 percent of all) require them for more than half of their positions. This means that even companies that seek certifications when hiring also have positions for which certification is not required. By the same token, for the third (29 percent) of businesses that require a four-year college degree, half of those (15 percent of all) require them for more than half of their positions.

As for temporary IT staffing, certification requirements are almost universal at companies that require it for their positions. A strong majority (80 percent) of companies that require certification exams for regular employees also require temporary staff they hire to have them as well. The requirement for a four-year degree is not as prevalent for regular company positions; only a third (30 percent) of companies that require their regular employees to have a four-year degree require their temporary workers to have them as well. This further reinforces the utility of certification exams; workers may find more barriers to employment if they lack the certifications employers are seeking.

Opportunities for Advancement and Education

Managers are split over the possibilities of advancement at their company. Half (47 percent) say that workers move up from lower positions to higher-skilled, higher-paying positions in the company. The other half (49 percent) says that workers enter and leave the company in the same position.

-
- Q32. Moving on, do you think there are advancement opportunities for IT employees at your company? That is, which of the following is a better description of IT workers at your company:
- | | |
|--|----|
| 1. IT Workers begin at an entry-level position,
and then move up to a higher-skilled,
higher-paying job in the company | 47 |
| OR | |
| 2. IT Workers enter the company and leave | 49 |

the company in the same job title

This suggests a couple of points; first, almost half of managers see their companies as a place where IT workers have an opportunity to advance. For those IT workers that are interested in staying with one company and advancing within it, they should be able to find a company that matches their interests. At the same time, almost half of managers have a more rigid view of IT workers in their company. For whatever reason, whether it is high turnover or simply no room for an IT worker to advance, almost half of companies expect that workers will leave the company in the same position as when they started.

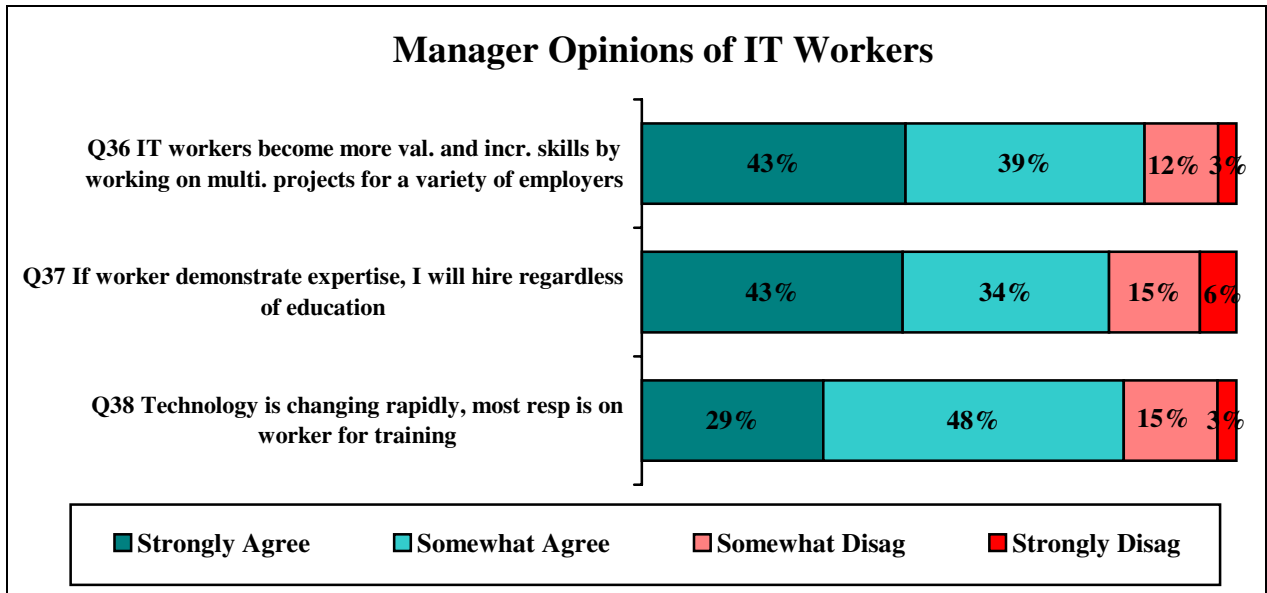
One way for employees to advance is through education and training, which is the subject of the next set of questions. More than three-quarters (79 percent) of managers say their company offers some kind of tuition reimbursement or other type of training incentive or benefit.

Two-thirds (66 percent) of managers say their company has a “tuition program that pays for or reimburses IT workers for education expenses.” The wording of this question leaves little ambiguity about what information we were looking for; specifically, reimbursement for educational expenses. This means that IT workers would be safe to assume that they will find some opportunities for assistance with education at almost two-thirds of businesses. A further indication of the flexibility available to workers through these programs is that a strong majority (70 percent) of the companies that offer these programs do not require that the course be at a two- or four-year college, opening these programs to a wider range of training opportunities.

The next question asks managers about other types of training. Two-thirds (66 percent) of managers say their company sponsors or pays for “other types of IT employee training.” One major concern about this question regards the specific types of training that companies offer. Due to time constraints, follow-up questions about this training could not be asked; which means that managers could have been referring to training that has nothing to do with an IT worker’s job.

Manager Opinions of IT Workers

The next set of questions asks managers a series of agree or disagree statements about IT workers. Managers agree with each question to varying degrees, as shown in the graph below.



A majority of managers agree with each of these statements. All three of these questions offer insight into what managers and companies are thinking about IT workers. Perhaps the best news for IT workers is almost half (43 percent) of managers strongly agree that “as long as an IT worker can demonstrate expertise in an application or job setting, I am willing to hire that worker regardless of their educational or training background.” An additional third (34 percent) somewhat agree with this statement.

Not surprisingly, managers that disagree with this statement are more likely to have positions that require a four-year degree (52 percent vs. 22 percent Disagree) than managers who agree with the statement.

The same percentage of managers (43 percent) strongly agrees that “IT workers become more valuable and increase skills by working on multiple projects for a variety of employers.” This question can be good and bad for IT workers. While some workers prefer to work this way, the

strength with which managers agree with this statement may not be good news for workers who prefer a more stable environment.

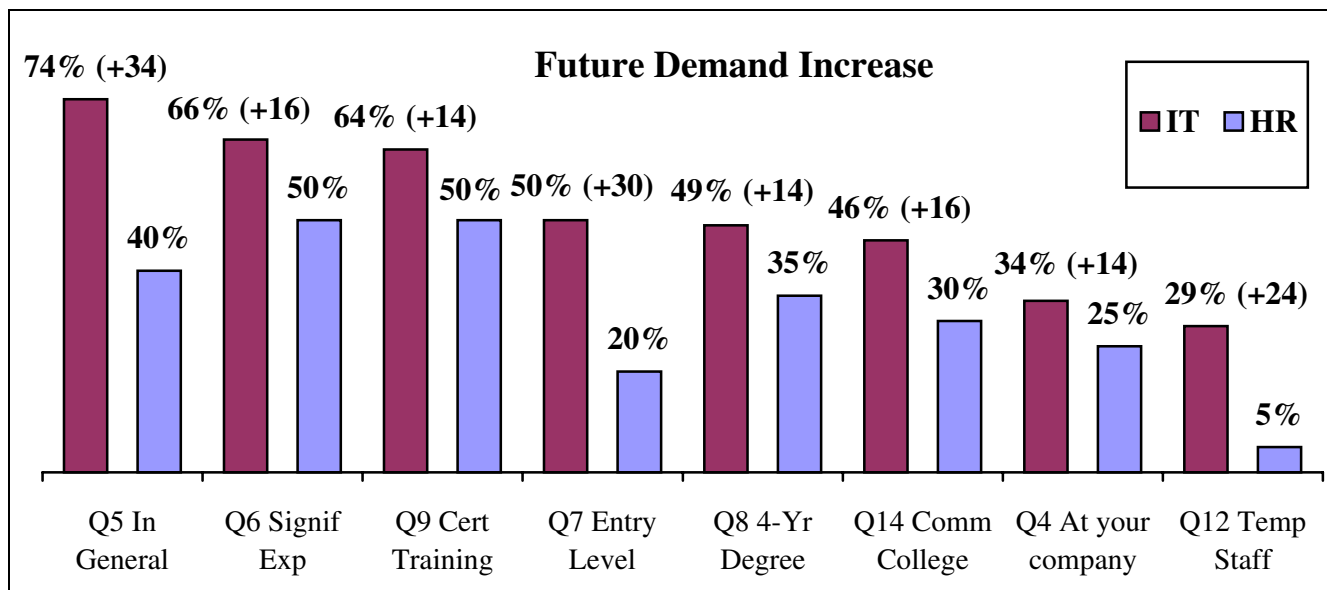
While three-quarters (77 percent Agree; 29 percent Strongly / 48 percent Somewhat) of managers agree that “most of the responsibility for preparation and training to learn future technologies should be on the IT worker,” agreement with this statement is the softest of the three. This may mean that managers see that they have some responsibility when it comes to worker training, if not most of it.

Detailed Findings: HR vs. IT Managers

Demand

Two interesting comparative subgroups in this survey are Human Resources (HR) and Information Technology (IT) managers. The differences in their opinions on questions in the survey have a wide range of implications. It is most likely these differences stem from the fact that HR managers are not as familiar with IT.

The first distinct differences between these two groups can be seen in the initial “demand” section of the survey. IT managers rate future demand for the questions in the chart below an average of 19 percentage points higher than HR managers. The graph shows some of the largest differences in perceived demand among IT and HR managers.



It is reasonable to assume IT Managers are more familiar with IT staffing needs, thus their opinions on future demand are of more value to IT workers. Generally, IT Managers see more need for IT workers than HR managers do, with significantly higher demand seen for workers “in general” (+34 points), “entry level” (+30 points), and “temporary staff” (+ 24 points). IT and HR managers are more likely to say that demand for workers with certification will increase (IT 64 percent / HR 50 percent), as opposed to workers with a four-year college degree (IT 49 percent / HR 35 percent) or a community college degree (IT 46 percent / HR 30 percent). There is little difference in opinion in the three other categories we asked managers about (Project/Agency Exp Increase, IT 44 percent / HR 45 percent; Part-Time Increase, IT 34 percent / HR 35 percent; High School Educ Increase, IT 16 percent / HR 10 percent).

Increase in Demand for Job Titles

Another difference between IT and HR managers regards their answers to the open-ended follow-up questions about specific job titles. The first question asked which job titles where there will be an increase in demand.

		IT Manager	HR Manager
Q15 Job titles, increase in demand for IT workers?	Network Admin	25%	5%

	Web devel/developers	13%	10%
	Database admin	8%	0%
	Programmers	7%	5%
	Analyst	5%	0%
	Projects managers	5%	5%
	Technology/Techs	4%	19%
	Security	3%	0%
	Help desk support	3%	5%
	All others	11%	5%

IT managers name Network Administrators (25 percent) as the top job for which they predict an increase in demand, while only 5 percent of HR Managers mentioned this job title. Again, IT manager’s familiarity with IT would be a logical explanation for this response.

Agree/Disagree Statements

Perhaps the most significant differences between HR and IT managers are found in the agree/disagree statements (Q36 and Q38). The chart below shows the difference between HR and IT managers for these questions.

		IT Manager	HR Manager
Q36. Agr/Disagr IT worker can demonstrate expertise, I am willing to hire that worker	Strongly Agree	48%	25%
	Somewhat Agree	38%	20%
	Somewhat Disagree	10%	35%
	Strongly Disagree	4%	15%
Q38. IT workers are more valuable and increase skills through multiple projects for a variety of employers	Agree	85%	45%
	Disagr	14%	50%

The first question in this series asked whether managers agree or disagree that as long as an IT worker can demonstrate expertise, they are willing to hire that worker regardless of their educational training or background.

An overwhelming 85 percent of IT Managers agree with this statement, with half (48 percent) strongly agreeing. On the other hand, half (50 percent) of HR Managers disagree with this statement. This has some implications for workers in IT. First, HR managers appear to put more emphasis on training, certificates, and proven credentials than IT managers do. Second, workers who may not have the certificates or proven credentials they might need but who are seeking IT jobs should talk to or interview with an IT manager about employment. They are clearly much more willing to consider demonstrated expertise of a skill than HR managers are, and the chances of a successful interview for the worker would be much higher.

The last major difference between HR and IT managers is their response to whether “IT workers are more valuable and increase skills through multiple projects for a variety of employers” (Q38). While the overall level of agreement between the two groups is similar (Agree; HR 85 percent / IT 81 percent), well over half (60 percent) of HR managers strongly agree, while just over a third (39 percent) of IT managers strongly agree. Since there is no difference between the two manager groups on questions regarding part-time and agency workers, the explanation for this difference is unclear. It could be, as was shown previously, that HR managers are less familiar with IT in general, and thus are more inclined to believe the “stereotype” of IT workers as employees that better themselves by continually shifting jobs.

Detailed Findings: IT Department Size: Large, Medium, and Small

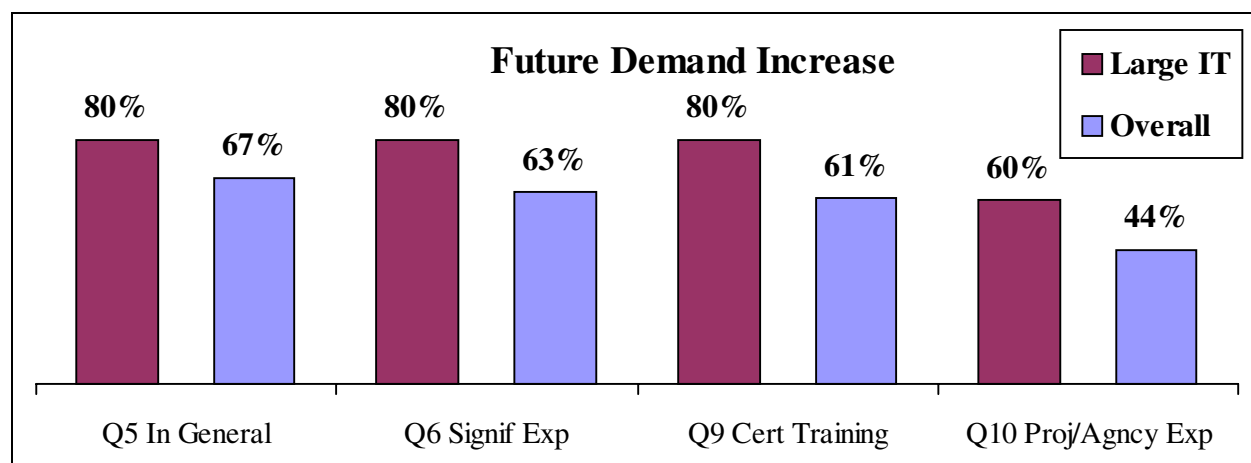
For analytical purposes, the survey population was divided into three “IT employee size” subgroups. The first group is small IT departments with one to four employees, the second is medium IT departments with five to 15 employees, and the third is large IT departments with 16 or more employees.

The first note about these groupings is that the larger the IT department, the more likely it is that we spoke with an HR manager. At small and medium IT departments, 20 percent of the managers we spoke with were HR managers, while at large IT departments, 40 percent of the managers we spoke with were HR managers.

Demand

Large IT department managers are much more likely than medium or small department managers to see an increase in demand for IT workers in almost every category. Medium and small IT department managers do not generally see as much increase in demand; the percentages in each worker category for medium and small department managers are close to the overall percentages.

Of particular interest is that half of large IT department managers (53 percent vs. 32 percent Overall) see an increase in demand for IT workers at their own company. Large IT department managers are much more in agreement about this increase in future demand than HR or IT managers were. The graph below shows the top four highest percentages for IT worker categories where large IT department managers see future demand increasing compared with the overall.



Except for a few IT worker categories (Part-Time, Comm College), managers at large IT departments are much more likely than managers at medium or small departments to predict an increase in demand for IT workers in the future.

The theme of education arises again in this subgroup. A strong majority (80 percent vs. 61 percent Overall) of large IT department managers see an increase in demand for workers with certificate training, but not as many see an increase in demand for workers with a four-year degree (53 percent vs. 46 percent Overall) or for workers with a community college degree (40

percent vs. 43 percent Overall). Again, this is further evidence that certificate training will be in great demand in the future.

Temporary Staffing

Large IT department managers are also much more likely to use temporary staffing agencies for technical positions (67 percent vs. 21 percent Overall). These large departments may rely on temporary staffing as a way to keep costs down; rather than hire and train a worker for a job, they can hire a temporary worker who is already trained for the position. Only 19 percent of medium and 12 percent of small IT department managers said they use temporary agencies for technical positions.

Educational Requirements

Large IT department managers are the first subgroup where more than half (53 percent; 25 percent Medium / 25 percent Small) requires a four-year college degree. This is the highest percentage to require a four-year degree in any subgroup. Since large IT departments have a larger share of jobs, workers should take note of these requirements.

Opportunities for Advancement

The idea that workers enter a company and move up is affected by IT department size. Large IT company managers are more likely to say that workers at their company “move up” the job ladder (67 percent vs. 47 percent Overall) than medium (50 percent) or small (41 percent). This is most likely due to the fact that there is more room for advancement at larger companies, and therefore more jobs into which workers can advance.

Tuition and Training

Large IT departments are also the most likely to offer a tuition reimbursement (93 percent, vs. Medium 69 percent, Small 59 percent) or other company-sponsored training programs (80 percent, vs. Medium 81 percent, Small 59 percent). The availability of funds and the sheer size of these departments likely affords them with greater flexibility in providing these training options.

Demonstrated Expertise vs. Education

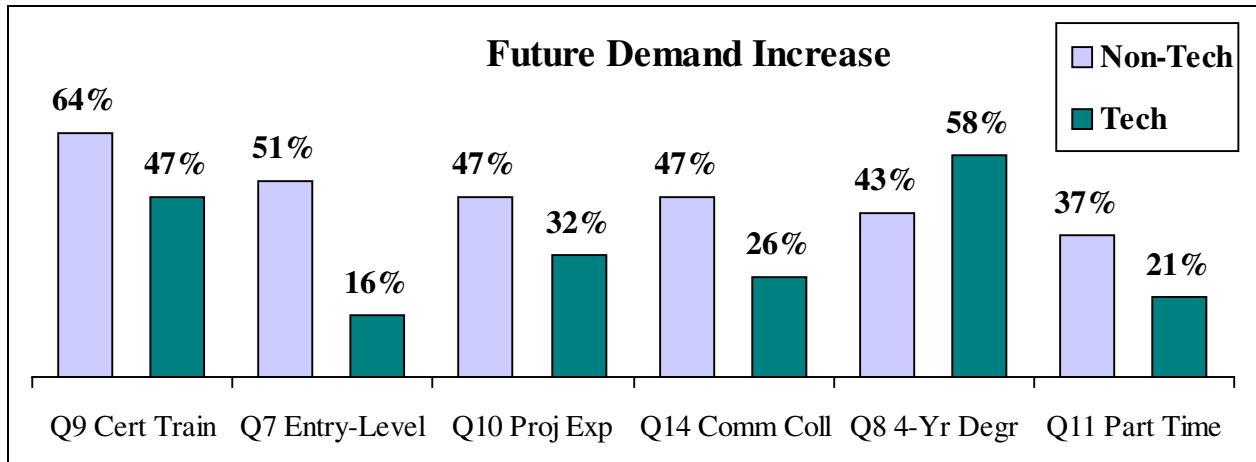
Small IT departments are the most accepting of workers who can demonstrate their skills, but may not have the training or education to prove it (87 percent Agree vs. Medium 56 percent, Large 53 percent). Due to their size, small IT departments probably enjoy more autonomy over their work environments; at the very least, managers in these departments probably are choosier about their workers because they don't have many to oversee. They therefore may be willing to hire workers if they can get a "feel" for how they work.

Detailed Findings: Technology vs. Non-Technology Companies

Another split in the survey results was among companies where technology was the main focus (e.g. software firms), and non-technology companies (e.g. insurance companies and accounting firms). However, connections to answers in the survey seem less predictable here than in the IT/HR manager split.

Demand

Perceptions of demand among these two groups are similar for most worker categories. The most notable differences are shown in the graph below.



Perhaps in contradiction to conventional wisdom, Non-Tech managers are more likely to predict an increase in demand in the future for all but one of these worker categories. The worker category that goes against this trend is that a majority (58 percent) of Tech managers see an increase in demand for workers with a four-year college degree.

Temporary Staff

Technology managers are much more likely to use temporary staff (53 percent vs. 14 percent Non-Tech) than non-tech managers. In fact, tech managers’ use of temporary staff accounts for half (10 percent out of 21 percent) of all companies in the survey that say they use temporary staffing agencies.

Certification and Education Requirements

In keeping with answers these managers gave for demand, technology managers are less likely to require certification (16 percent vs. 26 percent Non-Tech), but are much more likely to require a four-year college degree (42 percent vs. 26 percent Non-Tech) than non-tech managers. This

percentage is the second highest of any subgroup (IT 30 percent / HR 29 percent), and is another sign that IT managers have some preference for a college degree.

Tuition Reimbursement Plans

Technology managers' companies are more likely to offer tuition reimbursement (79 percent vs. 63 percent Non-Tech) and other training (89 percent vs. 60 percent Non-Tech) than non-tech managers' companies.

Demonstrated Expertise vs. Education

Curiously, tech company managers are less likely to accept a worker who does not have the certificates but can demonstrate expertise (63 percent Agree vs. 80 percent Non-Tech Agree). Our supposition was that managers who are more familiar with IT would be more likely to agree with this statement, and one would expect tech managers to be among the most knowledgeable about IT.

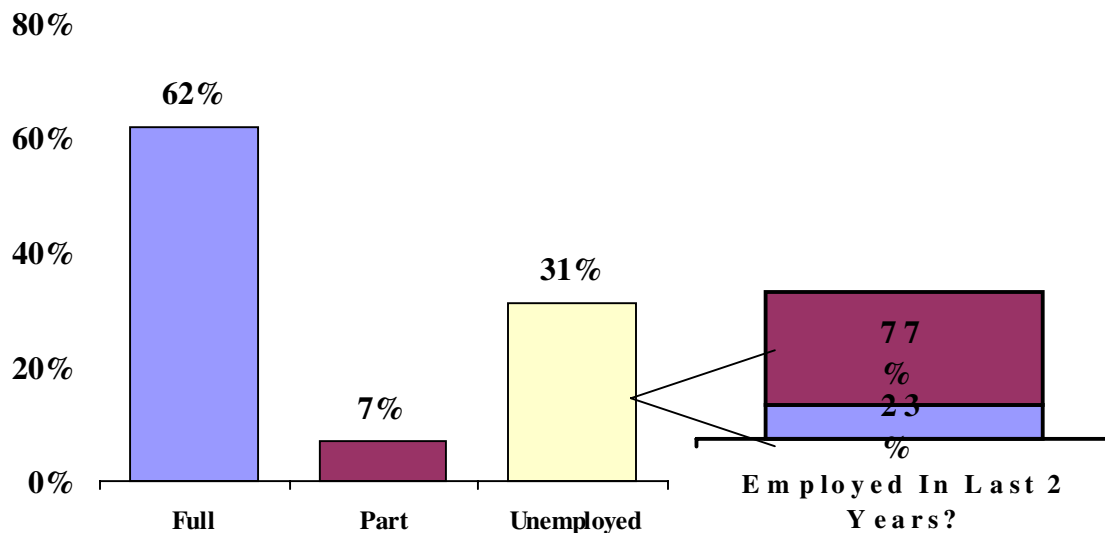
Tech managers are also less likely to agree that the responsibility for training lies with the worker (58 percent Agree vs. 81 percent Non-Tech) than non-tech managers.

EMPLOYEE SURVEY SUMMARY

Job Status

Nearly two-thirds (62 percent) of employee survey respondents report full employment, with an additional 7 percent saying they are employed part-time. The remaining third (31 percent) say they are currently unemployed. Of the third that are currently unemployed, three quarters (77 percent%) say they were employed in IT in the last two years.

Worker Employment Status



Every group has indications of fluctuating working status; portions of all groups have been out of work in the last six months. Almost one in ten (7 percent) of those who are currently employed full-time were out of work in the last six months, while almost a quarter (22 percent) of part-timers say the same. In addition, more than half (55 percent) of those who are currently employed say their company has laid off workers in the last six months.

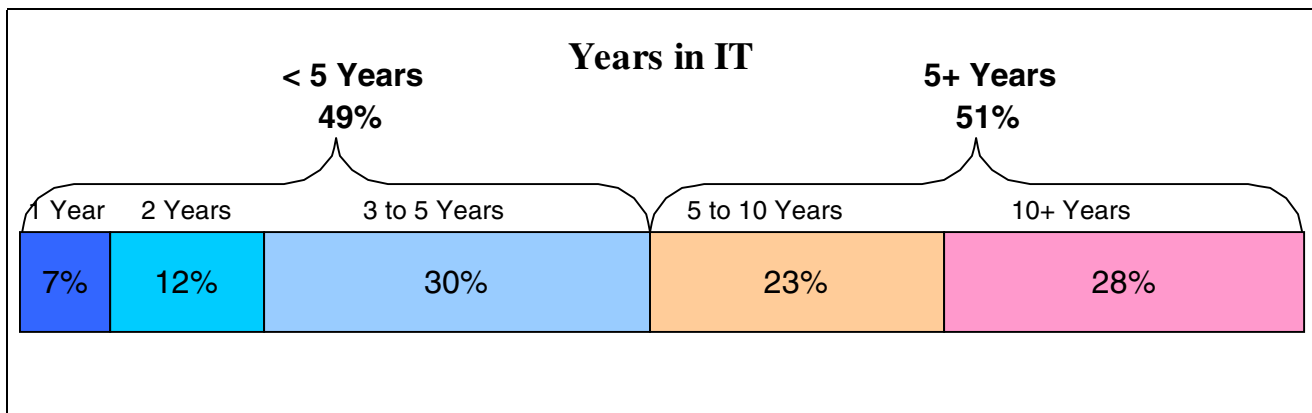
As for the currently unemployed, almost half (45 percent) were laid off in the last six months. The rest (55 percent) lost their jobs prior to six months ago. Recalculated, that means that 17

percent (55 percent of 31 percent) of the entire survey population has been out of work for more than six months.

The presence of recently laid-off workers in the ranks of the employed and unemployed, reports of layoffs by more than half (54 percent) of the companies of currently employed workers, and the amount of time the unemployed have been out of work all validate reports of a sagging IT economy, with a significant dive occurring since late 2001. While this survey is not a labor statistics report, more than a third (37 percent) of workers who responded to our survey have been out of work in the last six months. Clearly, a significant portion of IT workers has faced rough times in the new millennium.

Work Experience

Experience among survey respondents is split evenly. Half (51 percent) of respondents have five or more years of experience in the industry. And additional third (30 percent) have three to five years of experience, and the remaining fifth (19 percent) have one or two years experience. The chart below breaks down the work experience of the survey respondents.



The value and benefits that accrue to workers with experience can clearly be seen in this survey. Workers with more than five years experience are less likely to be unemployed (22 percent vs. 31 percent <5 Years), and even those that were unemployed but have more experience are more likely to have been employed in the last two years (88 percent vs. 71 percent <5 Years). Also, workers with more experience make more money. More than half (58 percent) of workers with

five or more years of experience make more than \$60,000 per year, while only 19 percent of workers with less than five years make the same. More than half (53 percent) of workers with less than five years experience make \$45,000 per year or less.

In another indication of the value of experience, almost two-thirds (63 percent) of currently unemployed workers have five or less years of experience. On the other hand, more than half (59 percent) of workers who are employed full-time have more than five years of experience.

Additionally, these more experienced workers have different perceptions of opportunities for advancement. Well over half (60 percent) of workers with more than five years experience say that workers at their company can “move up” the job title and pay scale, while only half (50 percent) of workers with less than five years say the same. In general, experienced IT workers make more money, are less likely to be out of work, have more optimism about career advancement, and bounce back faster from being out of work than those with less experience.

Agency Workers

Slightly more than one in ten respondents (14 percent) report that they currently work through a staffing agency. The vast majority (82 percent) of these workers were placed with one or two companies in the last six months. Only 9 percent were placed with three companies, and a small minority (9 percent) was placed with four or more companies.

A majority of these agency workers (53 percent) worked a full 40-hour week almost every week in the last year. The next largest concentration of workers is the quarter (26 percent) of agency workers who worked a 40-hour week about half of the time in the last year.

Despite their current status, a majority of these workers are not agency workers by choice. Only a third (32 percent) would choose to be an agency worker, with the rest (68 percent) saying they would prefer a permanent position.

Respondents who said they do not work through a staffing agency were asked if they had ever worked for a temporary staffing agency. Nearly half (43 percent) of workers who don't currently work through a staffing agency have worked through one at some point.

Selected Issue Importance

Following the initial demographics and employment section, respondents were asked to rank a series of items on an importance scale. Respondents could rank each item from one to seven, where one means that item is the least important to them, and seven means it is extremely important to them, or they could indicate that they do not have an opinion. The chart below lists the top three items in order of importance on this scale, based on their mean rankings overall.

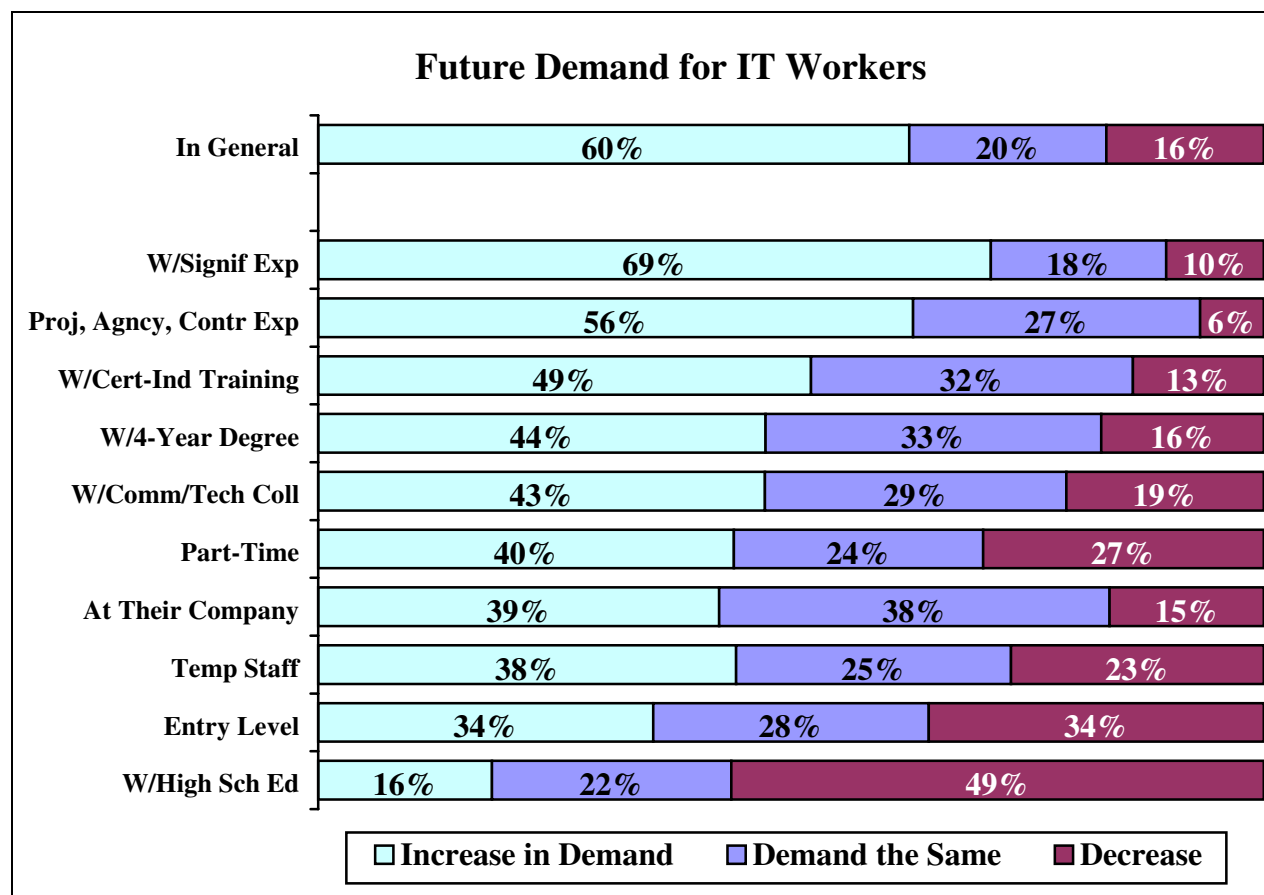
Item	Mean Ranking
13 Importance of the pay you receive for your work	5.97
15 Importance of health benefits paid for by your employer	5.80
14 Importance of having a secure job	5.80

For this scale, items that score closest to seven on the mean scale are the most important, and a differential of half a point should be considered significant.

Future IT Worker Demand

The next series of questions asks about future demand for IT workers. For each item, workers were asked whether they think demand for that type of IT worker would increase, decrease, or stay the same. In general, workers predict an increase in demand for IT workers, with almost two-thirds (60 percent) saying demand will increase for IT workers “in the industry in general”. However, workers’ ranking of demand are generally lower than managers’ rankings of these worker categories, with higher levels of “decrease” selected by workers in most categories. At the very least, this is an indication that workers are more pessimistic than managers about future IT industry growth.

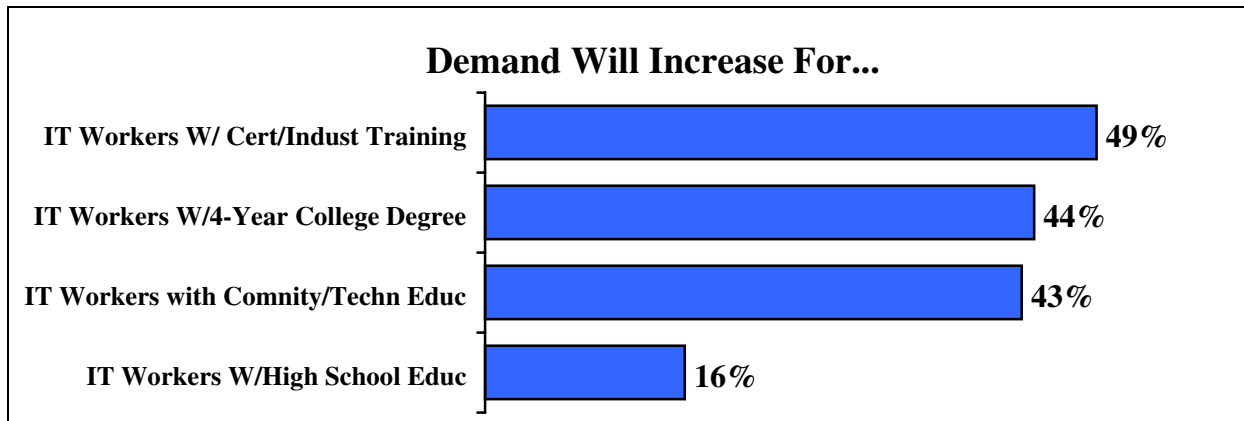
The most frequently mentioned category where workers think demand will increase is workers with significant experience in their field (69 percent Increase). The graph below shows all categories.



As with employers, workers are in agreement that demand will increase in general, as opposed to at their own company. Perhaps more interesting is that a distinct hierarchy emerges in the way workers rank these categories. From the top of the rankings to the bottom, workers predict more demand for IT workers with “more” experience, workers with “significant experience” (69 percent Increase), workers with “project, agency, or contract experience” (56 percent), and workers with certificates (49 percent), four-year degrees (43 percent), and community college degrees (43 percent). The bottom rankings are, in order: part-time (40 percent), workers at their company (39 percent), temporary staff (38 percent), entry-level (34 percent), and workers with a high school education (16 percent).

While this hierarchy of workers was also found in the employer rankings, employers were more likely to predict “increases in demand” or that “demand will stay the same” for these categories than were workers. This is a significant difference between workers and employers, and shows that, in general, workers are not necessarily “on the same page” with management.

The theme found in the employer survey of demand changing based on worker education is carried out to a lesser degree among employees. Again, certificate- and industry-trained workers get the highest percentage for increase in demand, followed by four-year and community college degree workers, as shown in the graph below.



While this shows that workers understand certificate training will be in demand, it also shows that workers do not think this demand will be as high as employers do.

Employers and workers have similar responses when asked which job titles will have an increase in demand. The top two occupations both groups expect to experience increased demand are Network Administrators (22 percent Employers / 11 percent Workers) and Web Developers (13 percent Employers / 11 percent Workers). These two are followed closely by Programmers (7 percent Employers / 8 percent Workers) and Database Administrators (7 percent Employers / 8 percent Workers). All four of these occupations are at the core of the IT industry. Perhaps most surprising is the relatively low percentage of responses for security related jobs among employers (3 percent), which is one occupation where an increase in demand might be expected. Workers were twice as likely (6 percent) to name this occupation.

Education Requirements for Hiring

One worker in ten (12 percent) said they needed a certification exam or other type of certification to be hired. More than a third (37 percent) reported that they needed a four-year degree. While the level of certificate requirement reported by workers is lower than for employers (24 percent), the four-year degree requirement reported by workers is higher (37 percent Workers / 29 percent Employers).

Most workers (51 percent) report that less than a quarter of the positions at their company require a bachelor's degree in Computer Science or Engineering. For temporary workers, the story is a little different. A third (36 percent) of temporary workers say that their agency has positions that require certifications.

Agency Workers and Opportunities for Advancement

Agency workers and “company “workers have different views of advancement at their places of employment. Agency workers are more likely to say that workers enter and leave the agency at the same skill and pay level (59 percent), while company workers are more likely to say that they can “move up” (55 percent).

(Agency Workers)

Q43. Which do you think is a better description of agency contract workers:

Agency contract workers begin at an entry level position, and are placed with different clients and companies, and the skills acquired and pay received increases with the assignment	41
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OR

Agency contract workers enter the agency at one skill and pay level, and stay at that level until they leave	59
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(Company Employees)

Q44. Do you think there are advancement opportunities for employees at your company?

That is, which of the following is a better description of workers at your company;

Workers begin at an entry-level position, and then move up to a higher skilled, higher paying job in the company	55
--	----

OR

Workers enter the company and leave	45
-------------------------------------	----

the company in the same job title

This interesting disparity gives some insight into the underlying career attitudes of agency and company workers. The opposite tilt may simply be reflective of the attitudes of these worker groups; agency workers do not have much room to advance, thus they are more inclined to see themselves as unable to advance, while workers who are at a company can see paths to advancement much more easily.

Educational Opportunities

Moving on to educational opportunities, only half (49 percent) of workers say their company has a tuition reimbursement program, which is significantly lower than the three quarters (79 percent) of managers who said their company offers a tuition reimbursement program. There are three possible explanations: one, workers are not aware of the programs at their companies; two, managers are over-reporting the existence of these programs; or three, there are significant differences between where the employees and employers work. While any of these are possible, it is more likely that this is another indication that workers and managers are “on different pages”; managers think they’re offering adequate training, but workers aren’t aware of it.

Only a third (37 percent) of workers that say they have access to a tuition reimbursement program have used it. A third (38 percent) say that the program requires courses to be at a college or four-year institution; only a quarter (24 percent) of managers said the same.

As for other types of training, many more workers (84 percent) than managers (66 percent) say their company pays for other types of IT training. More than half (60 percent) of workers have taken advantage of this type of training.

Workers were then asked if employers are offering adequate training in the latest technologies; three-quarters (74 percent) of workers say no.

A question was also asked about workers’ resources and their ability to access training.

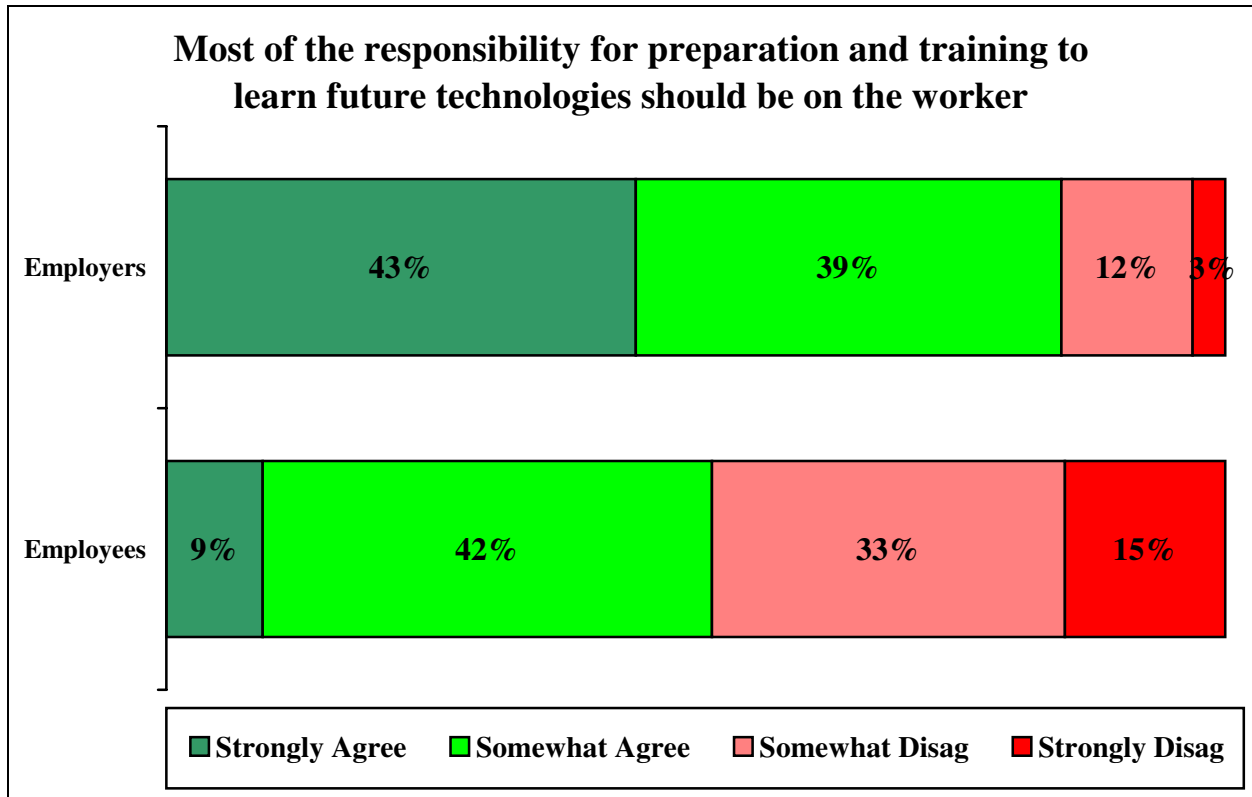
Q43. As a worker, do you feel you have the time, money, and resources you need to learn and get training on new technologies and programming languages?	
Yes, Definitely	11
Sometimes	44
No, Definitely Not	45

An overwhelming majority of workers (89 percent) feel they only sometimes or definitely do not have the resources for additional training. Perhaps the most surprising part of the response to this question is that a middle-ground was offered to respondents, but as many chose “sometimes” as did “no, definitely not.” This is a clear indication that those training options available now are not compatible for most workers.

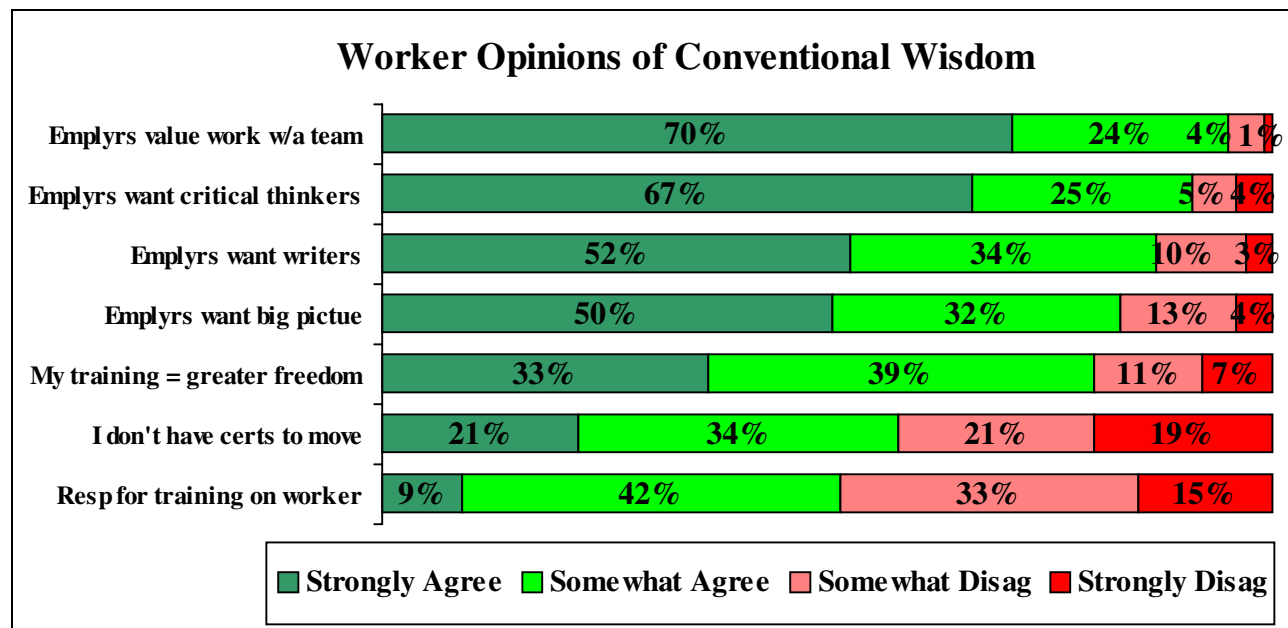
A strong indication of how a worker will answer this question is his or her salary. More than two-thirds (68 percent) of those who answer “Yes, Definitely” to this question make more than \$60,000 a year, while half (50 percent) of those who say “No, Definitely Not” make less than \$45,000 a year.

“Conventional Wisdom” Questions

Workers were asked an expanded and altered version of the “conventional wisdom” questions that employers were asked. One question appeared in both surveys, and employer and employee responses differ dramatically on it.



While half (51 percent) of workers agree with this statement, almost all of the agreement is lukewarm (42 percent Somewhat Agree). As many employers strongly agree (43 percent) with this statement, which is a clear indication of how far apart the opinions of workers and employers are on this issue. All of the employee statements are shown in the graph below.



While it is difficult for workers to disagree with the four highest-ranking items on this scale, it does show that employees have a hierarchy of what they think is important to employers. While the combined “agree” for these four items are similar, the “strongly agree” varies, from the high of “working with a team” (70 percent Strongly Agree), to the low of “seeing the big picture” (50 percent Strongly Agree). But in each case, an overwhelming majority of workers agree with those four statements.

In the next-highest ranked question, a majority (72 percent) of workers agree that their training and certificates give them greater freedom in their career. This is a good indication that most workers see value in training; they understand it can help them in their careers. This and other responses begin to paint a picture of the conundrum IT workers are in.

Roughly half (55 percent) of workers agree that they don’t have the certifications or training they need to move to a different position right now. This is especially true for workers making less than \$45,000 per year; three-quarters (78 percent) of these workers agree that they don’t have the training or certifications they need to move to a different position. This, coupled with the high percentage of workers who say they definitely do not have the time (45 percent) or only sometimes have the time (44 percent) to get training and the majority (72 percent) of workers

who agree that their training gives them greater freedom in their career creates a conundrum for workers. It seems clear that many workers are looking for training to advance their careers, but just don't feel they can get it. This disconnect has huge implications for the future of the IT industry. The results give us a strong sense that workers need more and different opportunities and access to training to meet both the needs of employers and their own careers. Just like everyone else, IT workers as a group will probably find a way to "get by," the danger for the future of the IT industry is if workers aren't able to keep up with new technologies, many IT workers, and our economy, could get left behind.

Education and Training Options

Following the "conventional wisdom" questions, employees were asked to rate their interest in and feelings about types of training. Workers were asked to rate three types of training from one to seven, where one means they're not at all interested in that type of training, and seven means they are extremely interested in it. The chart below shows the rankings of each type of training on the mean scale.

Item	Mean Ranking
Q61 Interested in Industry specific certificate classes or programs that result in certification or registration	5.23
Q59 Interested in A four-year college degree from a university	3.09
Q60 Interested in A two-year college degree from a community college	2.58

Only industry-specific certification classes rank above the midpoint in the scale. This tells us that the vast majority of workers are not interested in going back to school full-time, either at a university or community college. Another indication is the percentage of respondents who ranked these items (Q59 and Q60) a "1" on the scale, meaning they are not at all interested in it. Almost half (46 percent) of workers ranked a two-year degree a "1", while slightly less (41 percent) ranked a four-year degree a "1". Put another way, nearly half of IT workers are not at all

interested in going back to school for either a two- or four-year degree. At the other extreme, more than a third (37 percent) of workers are “extremely interested” in certification classes, which is confirmed on the employer side by the way in which managers ranked demand for workers with certificate training.

Detailed Findings: Women and Men in IT

Two interesting comparative subgroups in this survey are women and men. Close to half (48 percent) of the survey respondents were women. While current employment status is similar for both genders, experience is not. Men tend to have more experience in IT (55 percent 5+ Years) than women do (47 percent 5+ Years). Women (17 percent vs. 10 percent Men) are more likely to work through a staffing agency.

Women in IT also tend to make less money than men. While a third (33 percent) of men make less than \$45,000 per year, more than a third (39 percent) of women make the same. At the other end of the pay scale, a third (34 percent) of women make more than \$60,000 a year, while short of half (43 percent) of men make the same.

Women also report higher levels of access to employer-provided training benefits than men do. More than half (53 percent) of women say their company has some kind of tuition reimbursement program, while less than half (45 percent) of men say the same. Despite this availability, women are not more likely to use a tuition program; in fact, men are slightly more likely (38 percent) to have used the program than women are (36 percent).

In almost every case, women see less increase in demand for worker categories than men do. Since women don't report higher levels of unemployment, it is hard to say why they have lower levels of optimism about the future of the IT industry.

Interestingly, a higher percentage of women than men reported needing a four-year degree to be hired. Almost half (45 percent) of women reported needing a degree, while less than a third (29 percent) of men reported needing one. The most interesting question that comes of this difference is; do women seek jobs that require higher levels of education, or does the industry

place a “higher burden” on women in terms of their education? This question cannot be answered through this study.

Detailed Findings: Income Categories

Based on income categories selected by respondents, workers were divided into three groups; those making less than \$45,000 per year, those making between \$45,000 and \$60,000, and those making more than \$60,000 per year. Some demographic differences exist in these groups; workers who have higher incomes have more experience (76 percent of workers who make more than \$60,000 have five or more years of experience / 72 percent of workers who make less than \$45,000 have five or less years of experience), and are more likely to have full-time employment (77 percent for workers who make more than \$60,000 / 46 percent for workers who make less than \$45,000).

Attitudinally, income appears to have an effect on a worker’s view of where the responsibility for training should lie. A majority (60 percent) of workers who make more than \$60,000 agree that most of the responsibility for training should be on the worker. For workers who make less than \$45,000, the opposite is true; a majority (56 percent) disagrees that the responsibility should be on the worker.

These two groups also have differing views about their own skills and abilities. An overwhelming three-quarters (78 percent) of workers who make less than \$45,000 agree that they don’t have the training or certifications they need to move to a different position. A majority (58 percent) of workers who make more than \$60,000 disagree with this statement.

One aspect of training that does not appear to be as closely tied to income is a worker’s opinion of his or her own ability to get the training he or she needs. When the “sometimes” and “no, definitely not” responses are combined, more than three-quarters (80 percent \$60,000+ / 90 percent \$45,000-60,000 / 97 percent of < \$45,000) of workers in every income category agree that they don’t have the time, money, and resources to get training on new technologies.