



# **Uncertain Futures**

**The Real Impact of the High-Tech Boom  
and Bust on Seattle's IT Workers**

**A Report to the Washington Alliance of Technology Workers,  
Communications Workers of America, Local 37083, AFL-CIO**

**Marc Doussard  
Sharon Mastracci**

**Center for Urban Economic Development  
University of Illinois at Chicago  
September 1, 2003**

Marc Doussard is a Research Associate at the Center for Urban Economic Development

Sharon Mastracci is an Assistant Professor in the College of Urban Planning and Public Affairs and a Faculty Affiliate of the Center for Urban Economic Development

Funding for this report was provided by the Ford Foundation

## **Acknowledgements**

We would like to thank Marcus Courtney and Rich Feldman for their guidance and assistance in this research. We also wish to thank the Washington State Employment Security Department for providing data on Seattle-area employment and temporary work.

We would also like to acknowledge the Ford Foundation for its financial support of this study.

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### **Contact Information:**

Marc Doussard  
Research Associate  
UIC-CUED  
322. S. Green St., #108  
MC 345  
Chicago, IL 60607  
Ph: 312-996-4327  
Fax: 312-997-5766  
Email: [mdouss1@uic.edu](mailto:mdouss1@uic.edu)

## I. Introduction

There is no shortage of information on the boom and bust of the Seattle-area high-tech industry. The basic facts about employment loss are well known, and rightly so. From the early 1990s to 2001, the data processing industry grew at a fast and steady rate; employment more than doubled in the three-year span from 1997 to 2000 alone. Then, in February 2001, this seemingly unstoppable growth transformed into equally surefooted losses. At last count, employment in the data-processing industry – the most focused measure of IT employment – in the three-county area stood at 56,000, a decline of more than 10,000 jobs from its apex in 2001.<sup>1</sup>

But move past this rough outline of heady growth and swift losses, and the story is neither simple nor well-known. Behind the image of tech works as young, highly adaptive go-getters with highly sought-after skills, lies a reality that is far less glamorous. Although a number of IT professionals continue to earn substantial compensation, recent years have seen a growing focus on the sizable share of the high-tech workforce earning modest, five-figure salaries.<sup>2</sup> Similarly, the court decision in favor of Microsoft’s “permatemp” employees has brought to light the precarious and uncertain employment conditions of many of these workers. Even when wages were high for some workers and new work opportunities abounded, the industry offered a large number of its workers little by way of stable employment with long-term security. Coupled with the stated desire of many leading IT firms to “offshore” substantial numbers of highly skilled production jobs to other nations, the barriers to re-employment for tech workers are numerous. The instability of high-tech employment in Seattle raises important questions that have rarely been addressed. Who are these workers? What are their demographic

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<sup>1</sup> All IT employment figures used in this report are for SIC code 737 – computer programming, data processing, and other related services. We recognize that this narrowly defined industry only covers a specific, concentrated portion of IT employment, and does not account for the fairly commonplace employment of IT workers in most other industries (particularly legal and business services, but also healthcare, universities, etc.). Despite this limitation, SIC 737 is by far the best available measure of IT employment, both in terms of the practicality of measuring changing employment levels across a broad swath of industries, and in terms of its focus on the pure technology firms at the center of the economic expansion of the 1990s and the subsequent recession.

<sup>2</sup> “Disparities within the Digital World: Realities of the New Economy,” The Worker Center, King County Labor Council. <http://63.236.214.150/wt/report/ford.php>

characteristics? And how well equipped are they to weather the employment challenges of the current economic downturn?

This last question is particularly important. Because the high-tech job losses of the past two years appear to be long-term, if not permanent, large numbers of former tech workers will need to move into new industries and professions. Many IT workers have found that their specialized skills and past technical accomplishments are unimpressive credentials for the transition into other professions and industries. The recent efforts of many former high-tech employees to move into the blossoming biotechnology industry illustrate the problem well. Former management employees at high-tech firms have found that their generalized business skills easily transfer to high-level employment in other settings; a businessperson is a businessperson, regardless of industry.<sup>3</sup> But the engineers, programmers and technical specialists who make up the bulk of the high-tech industry have found little market for their niche-specific skills.<sup>4</sup> Given the difficulty of this transition for many high-tech workers, it is imperative that policy makers know more about the traits, abilities, and lifestyle constraints of the Seattle-area IT workforce. Where the young, well-paid tech entrepreneurs of the popular imagination have both the mobility and resources to improve their training or follow promising new jobs, older workers and workers with families face a significantly higher number of barriers to re-employment – regardless of their formal qualifications.

Just as policymakers must know more about the former IT workers abandoning IT employers for new industries, they must develop an accurate and reliable picture of both the remaining IT workforce in metropolitan Seattle and the changing nature of high-tech employment. The IT industry is undergoing a restructuring process in which the loosely organized employment and production relationships of the 1990s are being replaced with a tightly structured employment system that more clearly identifies relevant job credentials and formalizes the contract and temporary work arrangements common to the industry. The end point of this restructuring process is not yet clear, but its immediate

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<sup>3</sup> “Biotech Doesn’t Necessarily Mean ‘Tech’,” *Seattle Times*, January 26, 2003.

<sup>4</sup> *Ibid.*

impacts – starting with layoffs – are. Additionally, evidence of “offshoring,” or the relocation of skilled jobs to foreign countries in an attempt to obtain new cost efficiencies, is mounting. But the most immediate evidence of this restructuring can be seen in the data below, which show that the education levels and likelihood of standard, full-time employment for IT workers have changed considerably since the end of the 1990s boom. Yet for all its complications, restructuring has not diminished the importance of the industry to the region. Despite heavy employment losses in recent years, the high-tech sector still employs more than 50,000 workers and represents a central pillar of Seattle’s economic base.

Accordingly, this report profiles the high-tech workforce in Washington and tracks changes within both that workforce and the IT industry itself as high-tech fortunes moved from boom to bust. In doing so, we answer the following questions:

- Who works in the high-tech industry in 2003?
- What are the prospects for high-tech employment in the near- and mid-term future?
- Are there pay disparities by age and gender within the industry?
- Are high-tech workers well prepared to retrain for employment in new industries?
- What evidence is there that the industry is restructuring, or actively changing the way it uses workers and produces output?

Section II of this report reviews the growth and decline of high-tech employment in metropolitan Seattle, and evaluates the potential for renewed employment growth in the near-term future. Section III uses data from the U.S. Current Population Survey (CPS) to describe the demographic traits of Seattle’s high-tech workforce and to track changes in that workforce over time. Section IV evaluates these findings in the context of high-tech job losses and suggests important re-employment issues for public policy.

## II. The Recession: A Brief History

The boom years of the late 1990s were not the only time the Seattle-area high-tech industry enjoyed steady and rapid growth. In fact, they were the most pronounced result of a long and sustained growth spurt that would have been remarkable even without the dot-com fortunes it eventually produced.

Between 1995 and 2001, data processing employment in metropolitan Seattle nearly tripled, from less than 23,000 to more than 66,000.<sup>5</sup> Although employment growth rates topped 20 percent for three consecutive years at the height of the boom, the industry's largest growth year was 1996, when standard, full-time employment rose 23 percent (Table 1).

Table 1: Data Processing Employment in the Seattle Metropolitan Statistical Area (MSA)

Year	Employment	Change
1995	22,945	N/A
1996	28,313	23%
1997	32,312	14%
1998	37,612	16%
1999	45,398	21%
2000	54,454	20%
2001	66,109	21%
2002	56,561	-14%

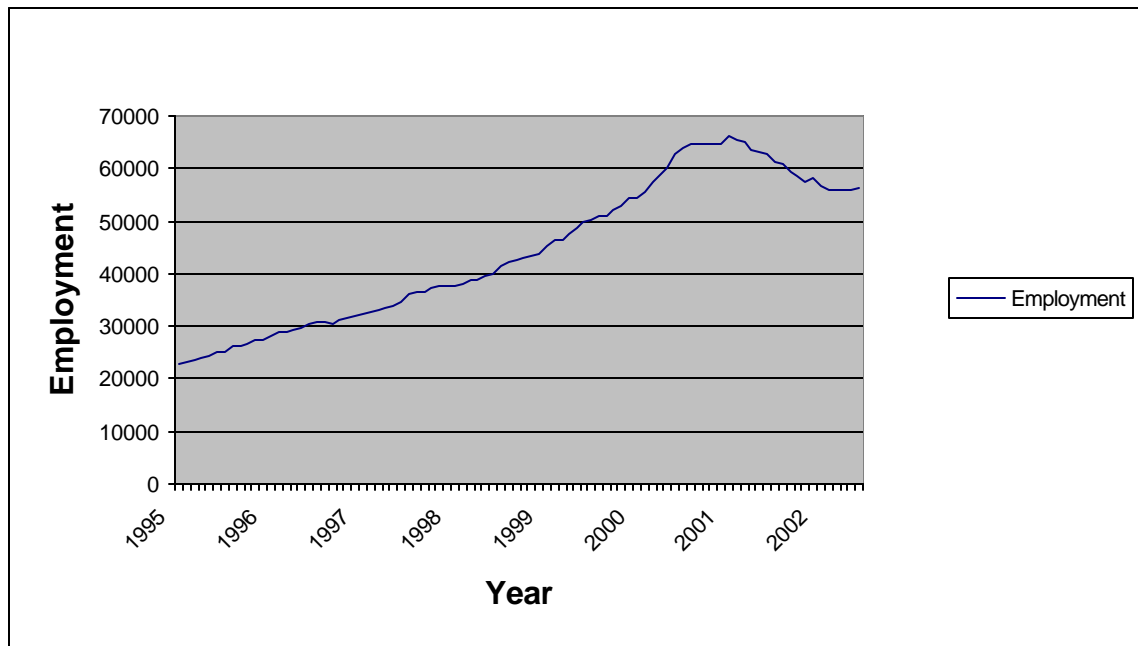
Source: UIC-CUED calculations from Washington State Employment Security Department data. All figures are for January of the calendar year listed. Employment totals exclude contract and temporary workers.

The recession that ended the boom has been equally dramatic. From February 2001 to April 2002, the high-tech sector shed an average of 640 jobs per month, for a total loss of 9,600 jobs over the 14-month period. These employment losses finally stabilized in mid-2002 (Chart 2).

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<sup>5</sup> UIC-CUED calculations from special run of Washington State Employment Security Department data.

Chart 2: Data Processing Employment in Metro Seattle



Source: UIC-CUED calculations from Washington State Employment Security Department data.

There are two striking aspects to these employment trends.

First, overall employment remains high. In simple terms, the high-tech sector continues to be a potent economic force and a significant employer for the metropolitan area. With more than 56,000 employees at last count, the high-tech sector still employs more workers today than it did in the boom year of 1999 (Chart 1). Given this high level of employment, it should not be surprising that the 2,800-plus high-tech firms currently operating in King County represent a large increase over the number operating in the late 1990s.<sup>6</sup>

Second, employment levels have stabilized. In addition to ending the epic employment growth of the late 1990s, the current recession has also eliminated the reliable and steady employment growth IT had been enjoying long before the dot-com boom. After shedding more than 10,000 jobs in 2001, data processing employment stabilized in 2002.<sup>7</sup> But a review of employment projections from the Washington State Employment Security

<sup>6</sup> UIC-CUED calculations from special run of Washington State Employment Security Department data.

<sup>7</sup> *ibid.*

Department suggests that “stagnated” might be a more accurate description. Far from being a short-term blip on the employment radar, the low employment growth rates for today’s high-tech sector show every sign of persisting. Official employment forecasts by Washington’s government economists for high-tech occupations in metro Seattle predict job growth rates of 1 to 3 percent per year for the near future – a five-fold reduction from recorded levels over the past decade.<sup>8</sup> At these rates, the high-tech employment levels of 2000 will not return until 2012 at the earliest.

Over the short term, these job losses have given Washington’s IT workers an unemployment rate of more than 10 percent – nearly twice the employment rate encountered in other industries (Table 2).

Table 2: Unemployment

	1997	2000	2002
Statewide	4.0%	4.6%	6.4%
Seattle MSA	3.3%	3.9%	5.9%
IT Industry	<1%	<1%	10.6%

Note: Due to sample-size requirements, IT employment figures are for Washington State as a whole instead of the 3-county Seattle metropolitan statistical area (MSA). Because a vast majority of the state’s IT workers live in metropolitan Seattle, the difference between the two is minimal.

Far from being a Washington-specific anomaly, stagnant IT employment constitutes a broad national trend. Nationwide, tech employment declined more than 4 percent in 2002, according to a survey by AeA (formerly the American Electronics Association).<sup>9</sup> At 10 percent, nationwide payroll cuts since January 2001 are deeper than net employment losses, indicating that the remaining high-tech jobs are far less lucrative than they were three or four years ago – especially when considering the declining value of stock compensation, which is not included in these wage estimates.<sup>10</sup>

<sup>8</sup> UIC-CUED analysis of Washington State Employment Security Department occupational projections available at <http://www.wa.gov/esd/lmea/labmrkt/occ/ltprojhome.htm>.

<sup>9</sup> “Tech Industry Sheds 236,000 Jobs in ’02,” *Associated Press*, March 19, 2003.

<sup>10</sup> *ibid.*

For U.S. workers, this downturn in the high-tech industry is compounded by strong employment and wage competition from foreign professionals working under the H-1B visa program. Despite the employment downturn in the IT industry, the annual allocation of H-1B visas has risen, from 65,000 in fiscal year 1997 to 195,000 in fiscal year 2003.<sup>11</sup> These guest-worker visas officially serve to help firms find skilled workers when no qualified American worker is available, but vague layoff protections and easily skirted standards for prevailing wages have helped many IT employers turn the visas into a steady means of procuring lower-cost labor. A 1996 audit of the H-1B program by the Office of Inspector General, U.S. Department of Labor, found that the Department of Labor's role in regulating H-1B visas amounted to frequent "rubber stamping" of employers' applications for guest workers.<sup>12</sup> In the middle of the high-tech boom, researchers found that "the current size of the H-1B workforce relative to the overall number of IT professionals is large enough to keep wages from rising as fast as might be expected in a tight labor market."<sup>13</sup> Today, the use of H-1B visas is complemented by growing use of L-1 visas, which allow companies to transfer foreign-based workers to their U.S. offices, where they stand to displace American workers.<sup>14</sup> To date, more than 300,000 guest workers have been placed in US IT jobs with the help of L-1 visas.<sup>15</sup> In the face of economic stagnation, the availability of lower-paid guest workers under these federal programs will continue to dampen the future job prospects of the Seattle-area high-tech workforce.

Moreover, when many of these lost jobs do come back, it is increasingly uncertain whether they will be in Seattle, or in the U.S. at all. In recent years, many large IT companies have begun a concerted effort to hire lower-cost workers in India and other

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<sup>11</sup> U.S. Department of Labor, <http://www.doleta.gov/h-1b/html/overv1.htm>

<sup>12</sup> Office of Inspector General, U.S. Department of Labor. "The Department of Labor's Foreign Certification Programs: The System is Broken and Needs to Be Fixed."  
[http://www.oig.dol.gov/public/reports/oa/pre\\_1998/06-96-002-03-321.pdf](http://www.oig.dol.gov/public/reports/oa/pre_1998/06-96-002-03-321.pdf)

<sup>13</sup> National Research Council of the National Academies. "Building a Workforce for the Information Economy," October, 2000.

<sup>14</sup> "Companies Abusing Visa Program, Replacing U.S. Workers, Critics Say," *The Oregonian*, July 28, 2003.

<sup>15</sup> "Bill in Congress Would Curb L-1 Visa Use for Foreign Workers," Computerworld.com. News story dated May 21, 2003.

<http://www.computerworld.com/careertopics/careers/labor/story/0,10801,81401,00.html>

nations with burgeoning high-tech workforces.<sup>16</sup> This trend intensified in July 2003, when Microsoft announced its first offshoring plans<sup>17</sup> and IBM was forced to disclose plans to being shifting service jobs to overseas workers.<sup>18</sup> Where international labor sourcing in other industries has typically started with lower-skilled, low-paying jobs, the leading “offshored” IT jobs – software development and data center management – are highly-skilled jobs of high importance to the industry.<sup>19</sup> Increased use of offshore workers appears to be a long-term industry strategy, not a short-term tactic. More than one million IT-related jobs are expected to move out of the U.S. within the next 15 years.<sup>20</sup> The relocation of these jobs is expected to be doubly harmful for the U.S. IT workforce, as competition from overseas workers exerts downward pressure on the wages of those jobs that remain. According to Jared Bernstein of the Economic Policy Institute, globalization accounts for between 15 and 25 percent of wage declines in the U.S. While this decline used to be restricted to traditional white-collar occupations, it is increasingly evident in the high-tech sector, he says.<sup>21</sup>

One million jobs may seem a fantastical number, but the allure of “offshoring” jobs to the nation’s dominant IT firms is clear. Microsoft executives, for example, have stressed the notion that “offshore” employment relieves pressure on the Redmond, Wash. headquarters, and that the 16-18 hour workdays made possible by having employees on opposite sides of the globe will enhance the firm’s productivity and flexibility. There is no shortage of foreign workers capable of meeting these production needs. Recent educational advances, particularly in India, have resulted in a steady stream of newly

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<sup>16</sup> “IT Migrating to Overseas Outsourcing,” CNET News.com. News story dated February 21, 2003. <http://zdnet.com.com/2100-1104-985379.html>. See also: “The Great Tech Job Exodus,” Washington Alliance of Technology Workers, Communications Workers of America, Local 37083. [www.washtech.org](http://www.washtech.org). News story dated January 24, 2003; “Offshore IT Outsourcing Targeted by Critics,” *East Bay Business Times*, June 20, 2003. <http://www.bizjournals.com/eastbay/stories/2003/06/30/story8.html>; and “American High-Tech Workers See Threat,” Cox News, June 22, 2003.

<sup>17</sup> “Microsoft Shifting Jobs to India Office,” *Seattle Times*, July 1, 2003.

<sup>18</sup> “IBM Explores Shift of Some Jobs Overseas,” *New York Times*, July 22, 2003.

<sup>19</sup> *ibid.*

<sup>20</sup> “Nearly 1 Million IT Jobs Moving Offshore.” *Datamation*, November 19, 2002.

<http://itmanagement.earthweb.com/career/article.php/1503461>. Not all of these jobs are predicted to be in the IT industry proper. Call-center jobs, for example, are expected to be among those most aggressively moved overseas. Due to data limitations, these jobs are not discussed in this report.

<sup>21</sup> Quoted in “The Great Tech Job Exodus.”

graduated workers with the skills American firms seek.<sup>22</sup> Simply put, offshore technology production appears to be an easily attainable plank of a long-term strategy likely to reduce the number of highly skilled IT jobs in the U.S.

If high-tech employment opportunities in metropolitan Seattle are less lucrative and less plentiful in the coming years, a large number of workers can be expected to move into other industries or to assume new roles within the high-tech industry. In Section III we profile this workforce in order to understand workers' needs and their ability to adapt to the new, slow-growth reality of the high-tech industry.

### **III. Data: Who Is the IT Workforce?**

As we have seen, Seattle's IT workers face an uncertain and difficult future, one that will make specific career-mobility demands on them. With this need to transition into new employment arrangements in mind, this section profiles the Seattle MSA's high-tech workforce at three strategic points: 1997, the beginning of the most intense period of the boom; 2000, the apex of the boom; and 2002, the most recent recession year for which data are available.

Contrary to the perception that high-tech workers are significantly younger and more flexible than other workers, we find that IT workers in metropolitan Seattle are nearly as old as other workers and equally as likely to be heads of household. Additionally, we find strong evidence that a large portion of high-tech employment during the IT boom consisted of unstable "contingent" jobs that offered workers little security and few future employment prospects. In other words, the data show that an IT job during the boom was not as lucrative as was generally believed.

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<sup>22</sup> "The Great Tech Job Exodus."

## A. Characteristics of the High-tech Workforce

Although IT workers in Washington State are younger than the typical worker in both Seattle and Washington as a whole, the age differential is small. Over the course of the six-year period studied here, IT workers were on average a little less than five years younger than the metro workforce as a whole (Table 3).

Table 3: Average Worker Age

	1997	2000	2002
Statewide	38.4	38.6	39.5
Seattle MSA	38.7	38.3	39.4
IT Industry	36.0	35.9	35.6

Source: UIC-CUED analysis of U.S. Current Population Survey Data

The IT workforce in metro Seattle is predominantly male. Although women have made modest employment gains in the IT industry over the last five years, they remain under-represented compared to their labor-force participation in Seattle and Washington as a whole (Table 4).

Table 4: Female Labor Market Participation

	1997	2000	2002
Statewide	45.7%	47.2%	46.8%
Seattle MSA	45.9%	46.4%	45.4%
IT Industry	21.4%	25.0%	27.0%

Source: UIC-CUED analysis of U.S. Current Population Survey Data

As women have entered the IT workforce, the likelihood that an IT worker is the head of his or her household – the primary earner – has fallen. Nevertheless, this recent decline should not obscure the fact that in the boom years of 1997 and 2000, IT workers were more likely than others to head household, not less. This finding again challenges the prevailing perception of IT workers as free-agent technical experts who do not need the stability of long-term employment (Table 5).

Table 5: Percent of IT Workers Who are Heads of Household

	1997	2000	2002
Statewide	53.2%	53.1%	53.4%
Three-County Area	52.9%	52.8%	53.7%
IT Industry	64.5%	65.2%	48.6%

Source: UIC-CUED analysis of U.S. Current Population Survey Data

Washington’s IT employees were far more likely than the rest of the population to have a college education during the boom, but this gap in educational attainment shrunk between 2000 and 2002 (Table 6).

Table 6: College Graduation Rates of Workers Ages 25 and Older

	1997	2000	2002
Statewide	23.9%	32.3%	33.5%
Seattle MSA	40.9%	35.3%	38.6%
IT Industry	60.1%	64.2%	63.2%

Source: UIC-CUED analysis of U.S. Current Population Survey Data

In sum, the traits of Seattle’s high-tech workers differ significantly from their popular image, particularly during the celebrated boom years. Far from being the mobile, unburdened technical “guns for hire” of the popular imagination, these workers were only marginally younger than others in metropolitan Seattle, and more likely – not less – to use their earnings to support a household. Moreover, the employment losses of the 2000-02 recession appear to have accentuated the divergence between this workforce and its image. It is to this ongoing transformation that we now turn.

## B. Changes in the High-Tech Workforce

In just two years, the end of the 1990s economic boom dramatically transformed Seattle’s IT workforce. As salaries, job security and potential stock compensation dwindled, the number of highly educated IT workers – those who can most easily withstand pay cuts and the whims of rapid hirings, firings and layoffs – declined even as the share of metropolitan Seattle residents with college degrees grew. Generally speaking, today’s IT

worker is younger, more likely to be a woman, and less likely to be supporting dependents than in 1997.

This transformation is first evident in educational attainment. At the height of the boom in 2000, 64.2% of IT workers 25 and older had a college degree, compared to 38.6% of Seattle workers in that same age bracket – a difference of 28.9%. In the subsequent two years, that number rose to 38.6% for the Seattle workforce while falling to 63.2% for the IT workforce – narrowing the gap between the two from 28.9% to 24.6% (Table 7).

Table 7: Difference in College Graduation Rates of Workers Ages 25 and Older

	1997	2000	2002
Seattle MSA	40.9%	35.3%	38.6%
IT Industry	60.1%	64.2%	63.2%
Difference	19.2%	28.9%	24.6%

Source: UIC-CUED analysis of U.S. Current Population Survey Data

Compared to Seattle workers at-large, the IT workforce has also become younger. Where the mean age of workers in metropolitan Seattle has risen by seven-tenths of one percent since 1997, the mean age of IT workers has in that same time decreased by four-tenths of one year (Table 8).

Table 8: Difference in Average Worker Age

	1997	2000	2002
Seattle MSA	38.7	38.3	39.4
IT Industry	36.0	35.9	35.6
Difference	2.7	2.4	3.8

Source: UIC-CUED analysis of U.S. Current Population Survey Data

This change is difficult to interpret. On the one hand, younger workers have shorter employment histories and are less likely to have worked their way up from industry-specific technical jobs to management-level jobs that translate easily across industries. On the other, industry workers have indicated that future IT employment will be

dominated by those with substantial experience in the industry.<sup>23</sup> The endpoint of these shifts is uncertain, but these substantial demographic changes, together with rising offshore employment and continued reliance on workers holding H-1B visas, makes it clear that the IT industry is in undergoing a substantial restructuring.<sup>24</sup> Surveys of IT workers suggest that the industry is maturing and replacing the disorganized employment structures of its infancy with formalized job descriptions that strongly value formal education and industry experience.<sup>25</sup> In this analysis, these recent changes in the demographic composition of Seattle’s IT workforce can be viewed as a means of clearing out the industry’s previous employment structures in preparation for a new and more formalized internal labor market.

Another notable change comes in the form of the growing presence of women in the IT workforce. Although still under-represented by any measure, women have achieved greater representation in the industry in the past five years. Women now comprise more than one quarter of Metro Seattle’s IT workforce (Table 9).

Table 9: Women in the Workforce

	1997	2000	2002
Seattle MSA	45.9%	46.4%	45.4%
IT Industry	21.4%	25.0%	27.0%
Difference	24.5%	21.4%	18.4%

Source: UIC-CUED analysis of U.S. Current Population Survey Data

Taken together, these trends create the impression of an industry that came more and more to rely on historically less privileged groups of workers – younger, less educated, more likely to be women – as its financial fortunes have waned. The growing evidence of

<sup>23</sup> Source: “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, Communications Workers of America, Local 37083. June, 2002. <http://www.washtech.org/wt/eGuide/fullreport.pdf>

<sup>24</sup> The falling age and education levels of Seattle’s IT workers raise the possibility that older and more experienced workers have moved into other industries or become unemployed; this is a question that must be addressed in future research.

<sup>25</sup> Source: The State of Seattle Area IT Employment and Training

“offshoring” higher-skilled jobs adds weight to this impression. Although unemployment figures and anecdotal news accounts hint at the current fate of former IT workers, the reality is unknown. Given that these skilled workers are large in number and a tremendous asset to the Seattle economy, it is incumbent on policy makers to identify and minimize the barriers to continued, highly skilled employment for the IT workforce.

### **C. Contingent Work and Information Technology**

Just as the ages, faces, and education of Seattle’s IT workforce are changing, so too are the duration, stability, and benefits of the jobs they perform. Technology firms nationwide are known for their enthusiastic embrace of “contingent” work – non-traditional arrangements such as, temporary and contract employment – and Seattle employers are no exception. Over the six-year period between 1995 and 2001, contingent workers comprised, on average, 10.8% of the Seattle-area IT workforce.<sup>26</sup> When the constantly shifting capital flows and rapid growth of many IT firms during the 1990s boom are considered, the prevalence of contingent work in the industry is not surprising: Short-term, non-binding work contracts allowed newly funded firms to swiftly alter their product development plans and staffing levels.

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<sup>26</sup> Source: UIC-CUED analysis of U.S. Current Population Survey, Contingent Worker Supplement for 1995, 1997, 1999 and 2001. The 10.8% figure represents a weighted average of IT industry workers reporting contingent status over those four sample years. Because employment in the IT industry is reported through unstructured responses instead of SIC code affiliation, we are presenting the most conservative possible estimate of affiliation with the IT industry. The Contingent Work Supplement asks separate questions about the employer to whom a worker is assigned and the employer for whom she legally works. The 10.8% figure represents the portion of workers at IT sector firms whose legal employer is a temporary agency or contractor. Details on this data set are below.

The Contingent Work supplement was administered first in February 1995, and repeated in February 1997, 1999, and 2001. The supplement is administered to about three-fourths of the 60,000 households in the monthly survey. Population weights are included to allow estimates to be reflective of the overall population. The U.S. Bureau of Labor Statistics defines contingent workers as those who do not have an explicit or implicit contract for long-term employment. Contingent workers are identified using several questions about how much longer they expect to work at their job, whether they were hired to replace an employee temporarily, or whether they were hired until the completion of a specific project.

Assigned job is measured separately for Temp Agency and Contract workers. This allows the respondent to identify separately the type of employer for which they work (e.g., a consulting firm for which the respondent performs contract work, or a temporary help agency through which the employee is leased), and the type of employer to which they are assigned.

But, contrary to reports emphasizing the “freedom” of short-term and temporary employment, an overwhelming 96 percent of IT contingent workers surveyed said they would prefer a standard, full-time job.<sup>27</sup> This preference is likely reinforced by recent spells of unemployment. In 1997, 1.7 percent of metro Seattle’s IT temps had been with their present employer for more than a year. Low as it is, this figure actually represents a high-water mark. In 1995, 1999, and 2001, less than 1 percent of all IT temps had logged more than one year at their current job. By comparison, 7.5 percent of temporary workers in other Seattle-area industries reported job tenures of a year or more. Beyond the problem of job instability, contingent employment required these workers to direct a portion of their take-home pay toward basic fringe benefits from which contingent workers are typically excluded. In 2001, just 10.7 percent of metro Seattle’s contingent IT workers received employer-sponsored health insurance.<sup>28</sup> Similarly, more than three-fourths of these workers did not have access to employer-backed retirement programs.<sup>29</sup>

Although it might seem that IT firms and other businesses turn to temporary, contract and involuntary part-time employment during lean times in which full-time jobs are scarce, the opposite is the case. Temporary and contingent workers are hired most aggressively during boom times and used as “buffers” against sharp economic downturns – meaning they will be the first to have their jobs terminated. Between December 2000 and January 2001 alone, temporary employment in metro Seattle dropped by 8,000 workers, or 17 percent. While these figures cover all industries and not just high-tech workers, they are indicative of the general fate of the area’s IT temps, as well as the astonishing speed with which temporary employment can evaporate. Particularly notable is the way in which a sharp downturn in temporary employment directly preceded the first IT employment losses in years. One month after 17 percent of Seattle’s temporary employees lost their jobs, IT employment began to reverse its decade-long ascent. While these temporary employment figures cover workers in all industries, and not just those in IT, they nevertheless show the outlines of a relationship between temporary staffing levels and the direction of employment growth for full-time workers (Table 10).

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<sup>27</sup> Source: *ibid.*

<sup>28</sup> Source: *ibid.*

<sup>29</sup> Source: *ibid.*

Table 10: Temporary and IT Employment Growth in Metro Seattle

Year	Month	Temporary Employment	Change	IT Employment	Change
2000	July	45,956	N/A	63,934	N/A
	August	47,672	4%	64,778	1%
	September	48,238	1%	64,758	0%
	October	46,158	-4%	64,522	0%
	November	45,999	0%	64,510	0%
	December	46,215	0%	64,655	0%
2001	January	38,356	-17%	66,109	2%
	February	36,653	-4%	65,471	-1%
	March	37,440	2%	64,901	-1%
	April	35,932	-4%	63,641	-2%
	May	36,120	1%	63,031	-1%
	June	35,746	-1%	62,785	0%

Source: UIC-CUED analysis of Washington State Employment Security Department data

As boom gave way to bust, involuntary part-time employment – a working situation in which the employee prefers, but cannot obtain, a full-time job – fell in the IT industry, even as it rose in the rest of the Seattle metro area and Washington State. Again, it appears that the IT industry’s contingent workers acted as shock absorbers were the first to suffer the impacts of the emerging economic decline (Table 11).

Table 11: Percent of Workers in Involuntary Part-Time Employment

	1997	2000	2002
Statewide	7.9%	8.8%	8.3%
Seattle MSA	7.5%	8.9%	8.7%
IT Industry	10.4%	8.0%	6.5%

Source: UIC-CUED analysis of U.S. Current Population Survey Data

Taken together, these findings offer a view on IT contingent work at considerable odds with the prevailing wisdom about high-tech employees’ preference for flexibility. During the height of the boom, an overwhelming majority of Seattle’s contingent IT workforce would have preferred full-time employment, and for good reason: these workers faced

shorter job tenures, had to pay for benefits out of their own pockets, and found themselves standing on the frontlines when the IT bubble burst.

#### **IV. Conclusion**

Although the IT worker of the popular perception is well-equipped to handle job loss and to transfer her skills to new and similarly well-remunerated employment, the reality is not so simple. Even during the height of the 1990s economic expansion, Seattle's IT workers earned lower hourly wages and faced greater job insecurity – thanks in large part to the IT industry's enthusiasm for temporary and contract work – than is widely assumed.

Moreover, job security was important for these workers and their families. Although media accounts of IT workers focus on young, unencumbered entrepreneurs, the typical Seattle IT worker during the boom was far more likely to use her wages to support a family than was the average Seattle worker. Similarly, although characterized as extremely young in the public discourse, the IT workforce was on average less than three years younger than the rest of Seattle's workers. With wage and stability needs little different than those of other workers, Seattle's IT employees labored in an industry defined by instability.

The end of the 1990s economic expansion has compounded these issues. As compensation fell and job instability rose, the workers who remained in the IT industry became younger, less experienced, and less well-educated – in other words, it consisted of workers with fewer options for re-employment in other industries.

For those that remain in the IT industry, the future has lost much of its promise. Where rapid employment growth was once a given, Washington economists now predict steady, but slow growth that makes the high-tech sector look much like any other. The evident restructuring of the industry casts further doubt on the future employment prospects of these workers. While restructuring could benefit those with specific skills and long-term industry experience, it could just as easily eliminate many of the unstructured job

opportunities through which the industry extended itself into new portions of the workforce during the 1990s. Even more worrisome for these workers, however, is growing evidence of “offshoring” highly skilled IT positions to other countries and the continued use of H-1B and L-1 visas despite high unemployment rates for U.S.-born IT employees. If this trend is as strong as predicted, Seattle’s IT workers may not be asking when their jobs will come back, but whether they will.