NLWJC - Kagan

DPC - Box 033 - Folder 002

Immigration - H1B Visas [4]

H-1B for 10/1/97-3/31/98
Number of Petitioners Approved by Company
TOP 100 COMPANIES

No. of Applicants	Company	Street Address	City	State	Zipcode
672	MASTECH	1104 MCKEE ROAD	OAKDALE	PA	15071
382	TATA CONSULTANCY SERV	1700 ROCKVILLE PIKE 535	ROCKVILLE	MD	20852
224	SAI SOFTWARE CONSULTANTS INC	2313 TIMBER SHAWDOWS SUITE 200	KINGWOOD	TX	77339
199	TATA INFOTECH	8701 GEORIA AVENUE SUITE 805	SILVER SPRING	MD	20910
144	INTEL CORP	22000 MISSION COLLEGE BLVD	SANTA CLARA	CA	950528119
132	COMPUTERPEOPLE	4400 CMAPBELLS RUN ROAD	PITTSBURGH	PA	15205
131	SYNTEL	2800 LIVERNOIS STE 400	TROY	MI	48083
124	QUALITY INF SYSTEMS	25300 TLEGRAPH RD #590	SOUTHFIELD	MI	48034
116	INTELLIGROUP	517 US HWY 1 SOUTH 5TH FLOOR	ISELIN	NJ	08830
110	LUCENT TECHNOLOGIES	283 KING GEORGI ROAD B1D22	WARREN	NJ	07059
109	KPMG PEAT MARWICK LLP	3 CHESTNUT RIDGE ROAD	MONTVALE	NJ	07645
108	TATA CONSULTANCY SERV	8701 GEROGIA AVENUE SUITE 805	SILVER SPRING	MD	20910
98	PRICE WATERHOUSE LLP	1251 AVENUE OF THE AMERICAS	NEW YORK	NY	10020
98	SYNTEL INC	2800 LIVERNOIS SUITE 400	TROY	MI	48083
89	COMPUTER CONSULTING SERVICES C	200 ASHFORD CENTER NORTH, #200	ATLANTA	GA	30338
82	TEXAS INSTRUMENTS INCORPORATED	7939 CHURCHILL WAY	DALLAS	TX	75251
81	COGNIZANT TECHNOLOGY SOLUTIONS	200 NYALA FRAMS RD	WESTPORT	CT	06880
81	FRONTIER SYSTEMS	10 PARSONAGE ROAD SUITE 406	EDISON	NJ	08837

H-1B for 10/1/97-3/31/98
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No. of Applicants	Company	Street Address	City	State	Zipcode
80	BATON ROUGE INTL	4354S SHERWOOD FOREST BLVD STE 175	BATON ROUGE	LA	70816
79	ALLIED INFORMATICS INC	7001 PEACHTREE INDUSTRIAL BLVD 406	NORCROSS	GA	30092
79	APAR INFOTECH	2581 WASHINGTON ROAD SUITE 232	PITTSBURGH	PA	15241
77	ERNST YOUNG LLP	1285 SIXTH AVE	NEW YORK	NY	10019
75	HPS AMERICA INC	1201 WEST 15TH STREET	PLANO	TX	75075
72	COMPUTECH	2 KLIMER RD	EDISON	NJ	08817
72	SYSTEMS AMERICA	244 AIRPORT PARKWAY STE 300	SAN JOSE	CA	95110
71	DATA CORE SYSTEMS	3700 SCIENCE CTR	PHILADELPHIA	PA	19104
70	DELOITTE TOUCHE LLP	10 WESTPORT ROAD	WILTON	CT	68970820
69	ORACLE CORP	500 ORALCE PARKWAY BOX 659951	REDWOOD SHORES	CA	94065
68	ACE TECHNOLOGIES INC	205 CHURCH ST	MATAWAN	NJ	07747
68	DATA CONVERSION	238 MAINS TREET	CAMBRIDGE	MA	02142
67	COMSYS TECHNICAL SERV	4000 MCEWEN ROAD SOUTH SUITE 200	DALLAS	TX	75244
67	DATAMATICS CONSULTANTS INC	2400 PLEASANT HILL ROAD 215	DULUTH	GA	30096
67	RCG INF TECHNOLOGY	379 THORNALL STREET 14TH FLOOR	EDISON	NJ	08837
65	BIRLA HORIZONS INTL	100 WOOD AVENUE SOUTH SUITE 106	ISELIN	NJ	08830
65	KEANE	TEN CITY SQUARE	CHARLESTOWN	MA	02129

H-1B for 10/1/97-3/31/98
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No. of Applicants	Company	Street Address	City	State	Zipcode
65	POLARIS SOFTWARE LAB	200 MIDDLESEX TURNPIKE SUITE 108	ISELIN	NJ	08830
64	COMSYS TECHNICAL SERVICES INC	4000 MCEWEN ROAD SOUTH 200	DALLAS	TX	75244
64	IMI SYSTEMS	290 BROADHOLLOW ROAD 3RD FLOOR	MELVILLE	NY	11747
63	INDOTRONIX INTL	331 MAIN MALL SUITE 109	POUGHKEEPSIE	NY	12601
63	TEKEDGE CORP	333 WEST EL CAMINO REAL #270	SUNNYVALE	CA	94087
63	WIPRO LTD	10670 N TAUTAU AVE #201	CUPERTINO	CA	95014
61	HCL AMERICA INC	330 POTRERO AVE	SUNNYVALE	CA	94086
59	INFORMATION MANAGEMENT RESOURC	26750 US HWY 19 NORTH 500	CLEARWATER	FL	33761
58	MILLENNIUM COMPUTER SYSTEM	54 WEST 21ST STREET #406	NEW YORK	NY	10010
57	MOTOROLA INC	1303 E ALGONQUIN RD	SCHAUMBURG	IL	60196
56	COMPLETE BUSINESS SOLUTIONS IN	32605 W 12TH MILE RD STE 250	FARMINGTON HILLS	MI	483343339
54	COOK AND ASSOCIATES INC	1770 KIRBY PARKWAY SUITE 206	MEMPHIS WN	TN	38138
54	GULF COMPUTERS	239 LITTLETON ROAD 8G	WESTFORD	MA	01886
54	HARVARD UNIV	864 HOLYOKE CTR 1350 MASS AVENUE	CAMBRIDGE	MA	02138
54	QUALCOMM INC	6455 LUSK BLVD	SAN DIEGO	CA	921212779
53	BEECHWOOD COMPUTING LTD	4655 OLD IRONSIDES DR #375	SANTA CLARA	CA	95054
52	COMPUTER HORIZONS	49 OLD BLOOMFIELD AVE	MT LAKES	NJ	70461495
52	COMPUTERPEOPLE INC	4400 CAMPBELLS RUN ROAD	PITTSBURGH	PA	15205

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No. of Applicants	Company	Street Address	City	State	Zipcode
52	DIGITAL EQUIPMENT	111 POWDERMILL ROAD MS02-1/E12	MAYNARD	MA	01754
52	GRI INC DBA GLOBAL RESOURCES	2610 CROWN CANYON RD #300	SAN RAMON	CA	94583
52	HI TECH SOFTWARE SERVICES INC	8620 CROWN CRESCENT CT	CHARLOTTE	NC	28227
50	COMPUTER ENTERPRISES	1910 COCHRAN ROAD SUITE 230	PITTSBURGH	PA	15220
49	WIPRO	16070 N TANTAU AVE #201	CUPERTINO	CA	95014
47	KAY SOFTWARE INC	2685 MARINE WAY #1209	MOUNTAIN VIEW	CA	94043
46	CYBERTECH INTERNATIONAL CORP	EIGHT NESHAMINY INTERPLEX STE 209	TREVOSE ILLE TREVOSE	PA	19053
46	NORTHERN TELECOM INC	200 ATHENS WAY 8402	NASHVILLE	TN	372281397
46	UB INF CONSULTANCY SERV	1121 BOYCE ROAD APT 100	PITTSBURGH	PA	15241
45	DSQ SOFTWARE	399 THORNALL STREET	EDISON	NJ	08837
45	HI TECH CONSULTANTS INC	26877 NOTHWESTERN HWY STE 208	SOUTHFIELD	MI	480346281
45	WEBSCI TECHNOLOGIES	4214 RT 1 NORTH	SOUTH BRUNSWICK	NJ	08852
44	ALPHABYTE CORP	5700 STONERIDGE MALL RD #370	PLEASANTON	CA	94588
44	PATNI COMPUTER SYSTEMS	238 MAIN STREET	CAMBRIDGE	MA	02142
44	YALE UNIV	246 CHURCH ST SUITE 201	NEW HAVEN	CT	06510
43	APPLIED MATERIALS INC	2841 SCOTT BLVD MS 1824	SANTA CLARA	CA	95050
42	ACE TECHNOLOGIES	205 CHURCH STREET	MATAWAN	NJ	07747

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No. of Applicants	Company	Street Address	City	State	Zipcode
41	BUTLER INTERNATIONAL INC	2463 152ND AVE NE	REDMOND	WA	98052
41	DATASOFT TECHNOLOGIES INC	1625 SPECTRUM DRIVE SUITE 201	LAWRENCEVILLE	GA	30043
41	PENTAFOUR SOFTWARE & EXPORTS L	12750 CENTER COURT DR #410	CERRITOS	CA	90703
41	SAHANA ENTERPRISES INC	5228 VILLAGE CREEK DRIVE SUITE 101	PLANO	TX	75093
41	SIGMA SYSTEMS	810 BOSTON TURNPIKE SUITE 1B	SHREWSBURY	MA	01545
40	COMPUTER INTL	ONE COMPUTER ASSOCIATES PLAZA	ISLANDIA	NY	117887000
40	INTL BUSINESS SOFTWARE	200 MIDDLESEX TPK #301	ISELIN	NJ	08830
39	ORACLE	500 ORACLE PKWY	REDWOOD SHORES	CA	94065
39	VOLT INFORMATION SCIENCES INC	2401 N GLASSELL STREET	ORANGE	CA	92865
38	INTERNATIONAL SOFTWARE SERVICE	7928 WOODLYN DR 108	WOODRIDGE	IL	60517
38	MOTOROLA INC	505 BARTON SPRINGS ROAD STE 400	AUSTIN	TX	78704
37	COMPUTEC INTL RESOURCES INC	801 NORTH BRAND BLVD 650	GLENDALE	CA	91203
37	MORGAN STANLEY	1221 AVENUE OF THE AMERICAS	NEW YORK	NY	10020
37	SPECIALIZED SOFTWARE INTL	120 STAFORD STREET #201	WORCESTER	MA	01603
36	MICROSTRATEGY	8000 TOWERS CRESCENT DRIVE #1400	VIENNA	VA	22182
36	PROFESSIONAL ACCESS	14 WALL STREET #808	NEW YORK	NY	10005
36	SOFTBYTE INTL	1700 OAKE TREE ROAD	EDISON	NJ	08820
36	UNIV OF MINNESOTA	420 DELAWARE ST SE MAYO BLDG	MINNEAPOLIS	MN	55455

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No. of Applicants	Company	Street Address	City	State	Zipcode
35	AMERICAN MGT SYSTEMS	4050 LEGATO ROAD	FAIRFAX	VA	22033
35	CYBERTECH INTL	8 NESHAMINY INTERPLEX SUITE 209	TREVOSE	PA	19053
35	GOLDMAN SACHS	85 BROAD STREET	NEW YORK	NY	10004
35	HEWLETT PACKARD CO	1266 KIFER ROAD BLDG 101 NS 101V	SUNNYVALE	CA	94086
34	INFOSYS TECHNOLOGIES LIMITED	42840 CHRISTY STREET 102	FREMONT	CA	94538
34	LARSEN TOUBRO	400 KELBY STREET #1500	FORT LEE	NJ	07024
34	UNIV OF PA	3340 WALNUT STREET	PHILADELPHIA	PA	19104
33	INTL SOFTWARE GR	37 STATION DRIVE 2ND FLOOR	PRINCETON JUNCTION	NJ	08550
33	THE SABRE GROUP INCORPORATED	4255 AMON CARTER BOULEVARD MD 4128	FORT WORTH	TX	76155
32	ACS INTL RESOURCES	5700 KIRKWOOD HIGHWAY SUITE 203	WILMINGTON	DE	19808
32	ATLANTIC DUNCANS INTL	4455 BROOKFIELD CORPORATE DR 200	CHANTILLY	VA	20151
32	CGN & ASSOCIATES INC	415 SW WASHINGTON STREET	PEORIA	IL	61602
7127	**TOTAL OF TOP 100**				

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U.S. workers find foreigners filling tech jobs

Fairness of visa rules scrutinized

04/19/98

By Jayne Noble Suhler and Ed Timms / The Dallas Morning News

For the nation's high-tech industry, foreign workers are the answer to a critical shortage of skilled high-tech labor.

But as industry leaders lobby Congress to increase the number of noncitizens granted work visas, critics charge that U.S. corporations are depressing the job market with cheap foreign labor. They say the noncitizens are being treated as indentured servants and are displacing U.S. workers.

The U.S. Department of Labor is seeking changes to address what it sees as fundamental flaws in the visa program.

"There's no way to explain to people how it is that U.S. employers can reach out to India or Bangladesh or China or any other foreign country without even trying to find a U.S. worker to fill the job," said John Fraser, acting administrator of the Labor Department's wage and hour division. "And there's absolutely no way to explain to people why a U.S. employer can fire or lay off U.S. workers and replace them with foreign workers. That's just ill-conceived public policy."

Earlier this month, the Senate Judiciary Committee passed a bill that would raise the annual cap on the "H1-B" work visas from 65,000 to 95,000 in 1998 and up to

105,000 until 2002. The House immigration subcommittee, chaired by Rep. Lamar Smith, R-San Antonio, is scheduled to hold hearings on the issue this week.

In testimony and in a lobbying blitz, industry groups say that to stay competitive in the world market, they need more highly skilled workers - and that there aren't enough qualified U.S. citizens to go around. Industry leaders point out that the H1-B visa holders represent only a fraction of the millions of high-tech workers in the United States.

"Clearly we're an industry that's been growing rapidly, and we're an industry that is driving the U.S. economy," said Michaela Platzer, vice president of the American Electronics Association, an industry advocacy group. "As American companies move forward, you've got to be able to retain the best and the brightest. You've really got to get the top 10 percent - no matter where they're located."

Government officials predict that all 65,000 H1-B visas for 1998 will be granted by the end of May, well before the end of the fiscal year.

Nearly 45 percent of the visas go to workers in computer-related fields, including programmers and engineers. At the same time, analysts say that the industry is slowing and that several major companies have announced layoffs in recent months.

War of words

Debate over the H1-B visa program has pitted rock-ribbed Republicans and free-for-all Libertarians against labor-friendly Democrats and U.S. workers. A reported shortage of high-tech workers is being supported - and disputed -

with contradictory statistics and projections.

Even the terminology is open to interpretation: those who hold H1-B work visas are described in government documents as "temporary" foreign workers. In fact, many already have spent years in the United States on university campuses, where U.S. tax dollars have helped finance their education. Almost half become permanent residents.

As the law now stands, potential employers seeking a "labor certification" for a foreign worker submit a one-page application to the Labor Department.

Employers must attest that the worker will receive the prevailing wage and benefits for the job and that other similarly employed workers won't be adversely affected. They must state that an opening is not the result of a strike or a walkout, and that current employees have been told that a foreign worker is being sought.

The department also wants companies to attest that they have sought U.S. workers before bringing in a foreign worker and that they have not laid off U.S. workers to create the openings.

Employers do not identify job candidates, and most fax in the applications. The Labor Department must act within seven days, unless the document is incomplete or contains obvious inaccuracies.

"So even if you have information or a lead or an allegation that the employer wasn't doing or wasn't going to do what it said, you can't reject an application on that basis," said Mr. Fraser.

After the certification is granted, the Immigration and Naturalization Service is petitioned for the visa. The INS determines whether the worker meets the minimum

qualifications - a bachelor's degree or equivalent work experience - and other general requirements for entry.

'In a double bind'

Despite wage and benefit requirements, almost one in five foreign workers was being paid less than the wage their employers had indicated, according to a recent survey by the Labor Department's inspector general.

But department officials say they receive few complaints. They say that might be because employers sponsor the visas and foreign workers fear they will be sent home if they complain.

"They're kind of in a double bind," Mr. Fraser said. "On the one hand, they're dependent on their employer to stay and work in the United States as a non-immigrant, and secondly, they're dependent on the employer to take action on their behalf to sponsor them for permanent status - and those are powerful incentives for them not to complain."

Shree, a 28-year-old engineer from India who asked that his full name not be used, said that for two years he had been reluctant to complain to his employer about benefits and went without a raise.

After he recently mentioned that he was about to receive permanent residency, his employer immediately wanted to discuss a raise.

Since the H1-B program began in the early 1990s, the Labor Department has received about 300 complaints. In 91 cases, investigators concluded that companies owed almost $2.3 million in back wages and assessed about $215,000 in penalties.

"But that's not a lot of money for very profitable industries, especially if one in

five aren't paying what they've promised to pay, the chances of getting caught are very small," Mr. Fraser said. "It's hardly a slap on the wrist."

But industry representatives suggest that the relatively low number of complaints indicates that U.S. companies aren't abusing the program.

"You have a marketplace that's probably going to be the best watchdog on this," said Bob Cohen, spokesman for the Information Technology Association, an industry advocacy group. "Our members have no interest in having their competitive edge low-balled or subverted by a company that comes in and undercuts the marketplace."

Some high-tech workers - and groups that represent them - argue that foreign workers help keep salaries low and make older job candidates with higher salary demands virtually unemployable.

"What they [industry] are really saying is they don't have enough cheap scientists," said Gene Nelson, 46, a biophysicist who has been laid off from several high-tech jobs and currently works for a Dallas-area cellular telephone company answering technical questions.

A matter of skills

Dr. Nelson, who has a doctorate in biophysics from the State University of New York at Buffalo, believes that employers don't hire him because his resume does not show the most current programming experience.

"What employers want is a person who has just the skills they are looking for and no more," said Dr. Nelson, who estimates that it would take him about two weeks to learn a new programming language.

Often, companies want candidates who don't need training, and the H1-B visa program was created in order to fill highly specialized positions, Mr. Cohen said.

"You take your ... candidates with the greatest likelihood of success, and in our particular industry that means a certain combination of education, experience and skill," he said.

Employers say that when recruiting at universities, they often find the best job candidates are foreign students.

"There are plenty of people coming out of American universities with degrees; unfortunately, too few of them are American citizens," said Allen Kay, a spokesman for Mr. Smith. He said the San Antonio congressman plans to introduce legislation in the House to increase the cap on the H1-B visas, although he has not decided by how much.

When Simon J. Fang received his doctorate in material science from Stanford University a few years ago, he had several job offers. The Taiwanese citizen chose a position with Dallas' Texas Instruments.

Dr. Fang, 30, said he did not worry about exchanging a student visa for a work visa and said he plans to seek a green card in about two years.

Exaggerated claims?

Many high-tech experts say the argument that companies need workers with highly specialized skills is overstated. They note that many high-tech workers don't have degrees in the field in which they're working. They run the gamut from anthropology majors to college dropouts.

"What many of us are finding is that the people coming over are not significantly

more technically skilled than anybody in the United States and they're not typically doing work that is breakthrough or new," said Paul Kostek, president-elect of the Institute of Electrical and Electronics Engineers-U.S.A. "They're off doing grunt jobs that any kid with a B.S. degree in computer science from a U.S. school could do."

In fact, Labor Department officials say that "job contractors" or "job shops" appear to be the most frequent users of H1-B workers in the high-tech fields.

The job contractors, which provide temporary workers, are popular among companies who need extra workers for short-term projects or who want to limit their personnel overhead.

Some of these companies, Mr. Fraser said, are staffed almost entirely by foreign workers.

Whether working as interns after completing a college education on a student visa, or as an H1-B worker, foreign workers affect the U.S. workforce, Labor Department officials say.

A job is "effectively occupied from the student intern days through permanent immigration status," said Raymond Uhalde, the labor department's acting assistant secretary for employment and training.

Often companies will sponsor foreign employees with H1-B visas for permanent residency - but under the law they are supposed to first conduct an exhaustive search for a U.S. citizen to fill the job.

The process, however, was described in a 1996 Labor Department inspector general report as "perfunctory at best and a sham at worst."

Critics also say that even if foreign workers are brought in at the prevailing wage for their occupation, over time they depress salaries.

"There is a certain truth in that. ... An American employee faces that fact that an immigrant worker with the same qualifications is willing to work for less pay," said Shree, the engineer from India.

Critics say they expect the industry will just keep coming back for more and more foreign workers.

"The whole thing boils down to dollars ..." said Bill Reed, president of the American Engineering Association. "Foreign workers have become the drug of choice for industry and academia. They're addicted and they're not going to stop until they can pick and choose from anyone in the world."

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H1-B

DISCRETIONARY APPROPRIATIONS FOR FISCAL YEAR 1998—COMPARISON OF CURRENT LEVEL WITH SUBALLOCATIONS PURSUANT TO BUDGET ACT SECTION 302(b)

[In millions of dollars]

	Revised 302(b) suballocations (March 3, 1998)				Current level reflecting action completed as of April 21, 1998				Difference			
	Discretionary		Mandatory		Discretionary		Mandatory		Discretionary		Mandatory	
	BA	O	BA	O	BA	O	BA	O	BA	O	BA	O
Agriculture, Rural Development	13,757	14,000	35,048	35,205	13,751	13,997	35,048	35,205	−6	−3	0	0
Commerce, Justice, State	31,280	25,555	522	532	31,280	28,955	522	532	0	3,400	0	0
District of Columbia	855	554	0	0	855	554	0	0	0	0	0	0
Energy and Water Development	20,732	20,879	0	0	20,732	20,880	0	0	0	1	0	0
Foreign Operations	31,008	13,079	44	44	13,147	13,079	44	44	−17,861	0	0	0
Interior	13,797	13,707	55	50	13,799	13,707	55	50	2	0	0	0
Labor, HHS & Education	80,328	76,123	206,611	209,167	80,547	76,202	206,611	209,167	219	79	0	0
Legislative Branch	2,279	2,251	92	92	2,251	2,251	92	92	−28	0	0	0
Military Construction	9,183	9,862	0	0	9,183	9,862	0	0	0	0	0	0
National Defense	247,512	244,199	197	197	247,512	244,198	197	197	0	−1	0	0
Transportation	11,772	37,179	698	665	12,711	37,204	698	665	939	25	0	0
Treasury-Postal Service	12,735	12,502	12,713	12,712	12,866	12,613	12,713	12,712	131	111	0	0
VA-HUD-Independent Agencies	66,395	79,977	21,332	20,061	68,703	80,089	21,332	20,061	2,308	112	0	0
Reserve/Offsets	2,953	470	0	0	0	0	0	0	−2,953	−470	0	0
Grand total	544,586	550,337	277,312	278,725	527,337	553,591	277,312	278,725	−17,249	3,254	0	0

BEA—COMPARISON OF CURRENT LEVEL TO DISCRETIONARY SPENDING LEVELS SET FORTH IN SEC. 251(c) OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

[In millions of dollars]

	Defense		Nondefense		Violent crime trust fund	
	BA	A	BA	A	BA	A
Statutory Caps[1]	269,000	267,124	253,506	285,686	5,500	4,833
Current Level	268,934	266,694	252,903	283,614	5,500	3,583
Difference	−66	−430	−603	−2,072	0	−1,250

[1] As adjusted pursuant to sec 251(b) of the BBEDCA

H-1B VISAS: THE STEALTH WAY OF TAKING U.S. JOBS FROM WORKERS PROGRAM

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Pennsylvania (Mr. KLINK) is recognized for 5 minutes.

Mr. KLINK. Mr. Speaker, I rise tonight, I understand the hour is late, but I think this is a very important issue.

We have a program which many Members of Congress are not familiar with. It is called the H-1B visa program. This program allows industries from this Nation to bring over mostly high-tech workers from other countries, 65,000 workers a year right now, for temporary jobs. They can stay here for 6 years.

This was a program that was established back in 1990 because we were being told that we had an anticipated shortage of scientists and of engineers. By the time this program was in place, the Berlin Wall had fallen and we did not have as much of a need in the defense industry for this kind of technical expertise.

But what ended up happening was many countries found out that they could go overseas, they could bring over computer programmers or reprogrammers rather than train American workers, and we have seen throughout this country a propensity of what I would refer to as job shops, that is companies that are providing computer programmers to our industries. And our industries are laying off unbelievable numbers of American workers, and they are being replaced by these temporary foreign workers.

I think we are really headed down a tragic highway in this country. I would just want to point out to the Members of the House that, as the technical and high-tech industry is beating the drum saying we have need to import workers, that we have really thousands upon thousands of students that are graduating from college every year, and we are just debating here on the floor of the House how we deal with the student loan program.

These students are graduating from college. They have large amounts of student loans to pay back and, in many instances, they find themselves waiting on tables because they cannot get jobs. They could be trained to take these jobs. They could be trained to do computer programming.

And, at the same time, we are hearing from the computer industry and many others that they have this high-tech labor shortage. The headlines across the Nation in our papers are telling a different story.

Let me just read something from the Wall Street Journal that just said, a steady drumbeat of layoff announcements in industry sectors that until recently have complained about personnel shortages. In the Silicon Valley, layoffs have occurred at Seagate Technology Incorporated, Silicon Graphics, Netscape Communications Corporation, Apple Computer Incorporated, Sybase Incorporated and others. Some firms have cut hiring plans; help wanted advertising has slumped since the start of the year. Elsewhere, high-tech giants are shedding staff.

Last week, again, according to the Wall Street Journal, Xerox Corporation announced the layoff of 9,000 people. Yet we want to import up to 95,000 workers a year from other countries and give them these jobs.

Something is wrong in America today. We have not had a debate as to the need for this.

The other difficulty is that here is a high-tech industry which prides itself on identifying and quantifying problems, yet they have not proven, according to the GAO, that, in fact, there is a shortage. The gentleman from Michigan (Mr. DINGELL) and myself asked the GAO to look into these claims, and we found out that the material that they are using to justify this claim is faulty.

Also, last week in the San Francisco Examiner, they ran an unprecedented series of letters from readers that are concerned about the alleged shortage of information technology workers. Their conclusion is that we are seeing age discrimination that is pushing into this high-tech sector, pushing many qualified American workers out of the marketplace. The employers want cheaper, more exploitable foreign workers.

And I would like to quote at length from some of these letters, because I think we here in Congress are too busy as we rush through our legislative schedule and we have not heard from these workers.

An older computer consultant has said, "At job fairs, many older people, including myself, are rudely treated by young recruiters from human resources. In one blatant case, I saw a recruiter from a major local computer manufacturer and software firm refuse to talk to anyone who looked like they were over 35. Résumés from older people were tossed in one pile, résumés from younger people were put on another pile with attached notes from a mini interview."

I would also like to talk about one worker who said he was being brought back to his former employer to do what

he called really retroactive—he actually called it mentoring a foreign engineer who now does his job. So they laid him off, brought over foreign workers, and he had to train them to do his job.

There is a problem in America, Mr. Speaker, and we in Congress have to address it.

Mr. Speaker, I am also providing for the RECORD more detailed information regarding the H-1B program, which follows herewith:

H-1B PROGRAM

Origin of H-1B Program: It was established in 1990 to alleviate an anticipated shortage of scientists and engineers, particularly at the Ph.D level. By the time it was in place, however, the Berlin Wall had fallen, there was an economic downturn, and downsizing was rampant in defense and other industries using these people. The main proponents of the program were the universities, the National Science Foundation and some industry groups.

Supposed to be a Temporary Program: The program is a high-tech, guestworker program. It allows 65,000 persons in "specialty" occupations to enter the U.S. for three years with one renewal for a total of six years to respond to "temporary" shortages. Then they are supposed to return home. Many, many H-1Bs are used by foreign students trying to stay in the country. Their employers use H-1Bs as a way to see if they want to sponsor the person permanently. So a large, large number of these people never go back home.

Approval is Quick and Easy: The employer certifies to the Labor Department that it needs a worker in a certain occupation (names are not required) and will pay the prevailing wage. There is no requirement to show that there is an actual shortage in that occupation. After the certification is received, a person's name is attached and INS and the State Department process the visa. Three years ago, this entire process could be done in about a month so employers loved it.

Misuse of H-1B: While in the H-1B status, however, they are indentured servants to their employers. The job they hold is for an occupation, not a certain person. They can be underpaid, forced to work seven days a week, etc., until they can obtain their green card or have to go back home.

Layoffs: In the meantime, another sub-industry of temporary workers developed in the information technology industry. Numerous temporary employment companies appeared which hired almost exclusively H-1Bs from India, Taiwan and the Philippines, paid them less than American workers and used them to replace American workers, particularly computer programmers. Three years ago, the Senate Judiciary Committee held hearings at which laid-off U.S. programmers appeared. Most had lost their jobs to foreign H-1Bs.

65,000 Limit: Until last year, the 65,000 limit was never reached. Then, suddenly, last year, it was reached at the end of August, and the cries of pain from the high-tech industry for raising the cap. There has been no analysis of why this happened.

"SHORTAGE" OF INFORMATION TECHNOLOGY WORKERS

There is no universally accepted definition of information technology (IT) workers or what training is required for the jobs. So industry defined IT worker broadly when trying to demonstrate a demand for IT workers and defined the training required very narrowly.

Demand for IT Workers: The Information Technology Association of America (ITAA) and Commerce reports found that between 1996-2006 the US will require 1.3 million job openings because of growth and net replacements (1.1 million of which is for growth alone). That is a 14.5% increase.

"Shortage:" ITAA and Commerce defined the pool of qualified IT workers as those who have obtained a Bachelor's degree in computer and information science. They did not consider degrees and certifications in computer and information science other than a B.A., degrees in other areas, or workers who could be retrained. In 1993, only 25% of those employed in IT actually had a B.A. in computer and information science. Other workers had degrees in business, social sciences, math, engineering, psychology, economics, and education.

Basis for ITAA's and Commerce's Conclusions and Response: (1) Wages for IT workers are going up, but no more than in any other professional field (the labor supply always tightens in a good economy), (2) there are unfilled jobs, but a response of only 14% of those surveyed is not sufficient to conclude that this is a nationwide problem (need at least 75% response to be credible), and (3) there is offshore recruiting occurring, but no information as to the extent or magnitude.

Response to survey: ITAA sent out a random sample of 2,000 large-sized, mid-sized, and non-IT companies, but only heard from 271 (14%). A 75% response is required to make credible extrapolations, or nationwide generalizations. Also, there is no information on these reported vacancies such as how long the jobs were open, wage being offered, and how the company is attempting to fill them.

Decrease in computer Science B.A. Candidates: There has been a decline since 1986 but that was the peak year. There had been a steady increase from 1970s and it has remained stable in the 1990s.

H-1-B VISAS: THE STEALTH WAY OF TAKING U.S. JOBS FROM U.S. WORKERS

Do you remember when we were promised that by passing NAFTA and GATT, Americans might lose low-wage jobs, but would definitely gain high-wage jobs? Well, they are changing their story . . . again.

The high technology industry is telling us that there is a shortage of information technology workers in the U.S. and an inability to ever meet the demand. The High Tech Industry wants to open the doors to temporary foreign professional workers by issuing something called H-1-B visas. Currently we issue up to 65,000 H-1-B visas per year. Increasing the number of these visas issued could quickly result in surplus labor and rapidly dropping wages.

A little over two years ago this same industry was laying off U.S. computer programmers by the hundreds and replacing them with cheaper foreign workers. Their story was Americans got paid too much and temporary foreign workers should be used to keep down wages or else the work would go abroad. Some jobs did go abroad, but the high technology industry is still unsatisfied. Our country's most highly skilled, sought-after, domestic technology workers have realized how valuable their knowledge is and have started shopping around for the best available wage packages. The industry, unwilling to pay the going wage for U.S. workers, has declared a labor shortage and is demanding more H-1-B visas to keep wages down.

High-Tech Corporate America would be the winner: it could make more money and continue to treat its workers with disdain, dumping them in every temporary downturn in the economy and refusing to invest in job training. The losers will be our young people who are looking for jobs in technology, older workers who may need retraining, and taxpayers who will pay to train U.S. workers only to have them become surplus labor.

There may be a lot of posturing and panic, but there is no evidence of a shortage. Though industry and the Commerce Department have produced studies claiming there is a shortage, the General Accounting Office found that "serious analytical and methodological weaknesses" undermine the Commerce report's credibility. Every year, this country produces approximately 650,000 bachelor's degrees in science and engineering; 120,000 master's degrees; and 40,000 doctorates for a total of 810,000. Any one of these degrees could be used to develop a career in information technology. However, a degree is not absolutely necessary to succeed in this field. After all, Bill Gates dropped out of college and then created Microsoft.

Furthermore, an employer does not have to look for a U.S. worker before applying for an H-1-B worker. So even if there are hundreds of talented U.S. workers available, an employer can apply to hire a temporary foreign worker without any negative consequences.

It is too risky to raise temporary foreign worker quotas before anyone has clearly defined and quantified a problem. Once H-1-B visas are increased, it will be very hard to bring the number back down again. These temporary programs quickly become permanent ones that send negative signals to our own workers. They say—you can train, but we will still import our workers.

The technology industry appears to be booming and has been posting record earnings for several years. Let's allow America's most skilled workers to "boom" with it.

INFO TECH WORKER SHORTAGE? WHERE'S THE EVIDENCE?

DEAR COLLEAGUE: For months we have been bombarded with stories from the information technology industry about a terrible shortage of skilled professionals. They argue that Congress must expand the temporary foreign worker program to meet their needs. Three studies have been cited to prove the case—one by the Commerce Department and two by the Information Technology Association of America. Based on these reports, legislation to increase the number of foreign technical workers has already been introduced in the Senate and is expected soon in the House.

The problem is the reports are wrong.

Claim #1: The Commerce Department found a shortage of information technology workers based on the (flawed) ITAA studies and its own back-of-the-envelope calculation that there will be 95,000 new jobs created annually in industry with only 25,000 new computer science college graduates each year.

Response: The General Accounting Office noted that "serious analytical and methodological weaknesses" undermine the Commerce report's credibility. Only 29% of IT workers have come from computer science with graduates in math, science, social science, education and business filling the remaining positions.

Claim #2: In 1997, ITAA claimed 190,000 unfilled IT jobs. In January, ITAA claimed 346,000 unfilled jobs based on another survey—a claim that also got widespread press attention.

Response: GAO states that "to make sound generalizations, the effective response rate should usually be at least 75 percent." Because the first ITAA survey had only a 14 percent response rate, GAO found it "is inadequate to form a basis for a nationwide estimate of unfilled IT jobs." This second survey was done by a self-described marketing researcher with no experience in labor studies. Further, ITAA has never released the study so we can't evaluate the methodology. However, we know that the newest ITAA study

had a response rate of 36%—far too low for accurate projections.

Claim #3: The demand for IT workers will double in the next 10 years and there will not be enough of a supply of U.S. workers to meet it.

Response: Who says we can't meet it? The demand for IT workers doubled over the last 10 years and it was satisfied right here in the U.S. by people from a wide variety of educational backgrounds. At least half of the jobs require a two-year college degree or less. Let the demand double again. With well-planned policies of training and education and the natural market response of Americans looking for good jobs that pay well, we will meet that demand again.

What is the ITAA's excuse for these bad numbers? Their only response is to stop "arguing over methodology" so we can fix a problem that they can't even document. Could it be that foreign workers are cheaper, and they are trying to pull one over on Congress so they can cut their costs?

Before we invite thousands of foreign workers in to take American jobs, the industry owes us some straight answers.

RON KLINK.

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from North Carolina (Mr. JONES) is recognized for 5 minutes.

(Mr. JONES addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentlewoman from Texas (Ms. JACKSON-LEE) is recognized for 5 minutes.

(Ms. JACKSON-LEE addressed the House. Her remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Texas (Mr. SESSIONS) is recognized for 5 minutes.

(Mr. SESSIONS addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from California (Mr. HORN) is recognized for 5 minutes.

(Mr. HORN addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from New Jersey (Mr. SAXTON) is recognized for 5 minutes.

(Mr. SAXTON addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

THE PAYCHECK PROTECTION ACT

sion of this special order to speak about one of the most basic components of campaign finance reform that we have to deal with here in the present Congress and certainly throughout the country as well.

There has been a lot of talk, Mr. Speaker, about various ways and strategies to reinstitute a sense of fairness and confidence in our election laws among the American people. But while the discussions about limited campaign funds, about reporting requirements, about various strategies to disclose the campaign contributions and expenditures of candidates seems to be occupying the center of political debate on campaign finance reform, I believe there is a much more fundamental issue that we need to deal with, and that is known as the Paycheck Protection Act.

What happens today in a strategy to raise funds for various campaigns is that we have a number of organizations that have found creative ways to withdraw the wages of hard-working Americans and siphon those dollars off for political causes of various sorts. Now, this often occurs without the consent or even the knowledge of the wage earner, who is working hard to earn the cash to make all this possible.

It occurs in many different settings, but most generally the biggest culprit seems to be labor unions. Labor unions persuade prospective employees to join their organizations for a variety of very attractive causes. One would be agency representation and collective bargaining, for example. And while those are legitimate functions of labor unions, functions that I think most people would support and agree with, few people would agree that it is also a good idea to siphon a portion of a worker's wages associated with union dues or agency fees and divert those dollars toward political campaigns of various sorts, often campaigns that the union worker themselves, the wage earner themselves, do not support.

I want to offer a couple of examples that I think Members ought to consider. If we read today's headlines, for example, "Ex-Teamsters Official Indicted". This deals with just one labor union. There are several. And there are several that are very honorable and worthwhile organizations.

I am focusing on the one in yesterday's headline, being the Teamsters Union. This is in the Washington Times. "A Federal Grand Jury indicted the Teamsters former political director yesterday on charges of giving $1.1 million in union funds to the Democratic Party, the AFL–CIO and liberal advocacy groups so they would launder por-

covering in that committee is just disclosure after disclosure after disclosure and additional revelations about money laundering schemes through the Teamsters Union.

Now, here we have an example of union dues that are being used and misused and laundered to benefit certain political campaigns.

There are some people, no doubt within these organizations, that support these particular political activities and political causes. And for them this money laundering scheme is certainly to their advantage and to their benefit. But the vast majority of union members and certainly Teamsters Union members do not approve of money laundering. They do not approve of having pension funds and other funds diverted toward political causes of various sorts without their knowledge and without their consent.

Now, these are matters of a very different nature than the general campaigns that myself or other Members of this Congress engage in, or at the State legislative level or county commissioners level, at a local level back home, or on an issue advocacy basis.

But those second kinds of campaigns that I mentioned are also the kinds of campaigns that receive political funds from union dues and from the wages of hard-working Americans without the consent or knowledge of the wage earner.

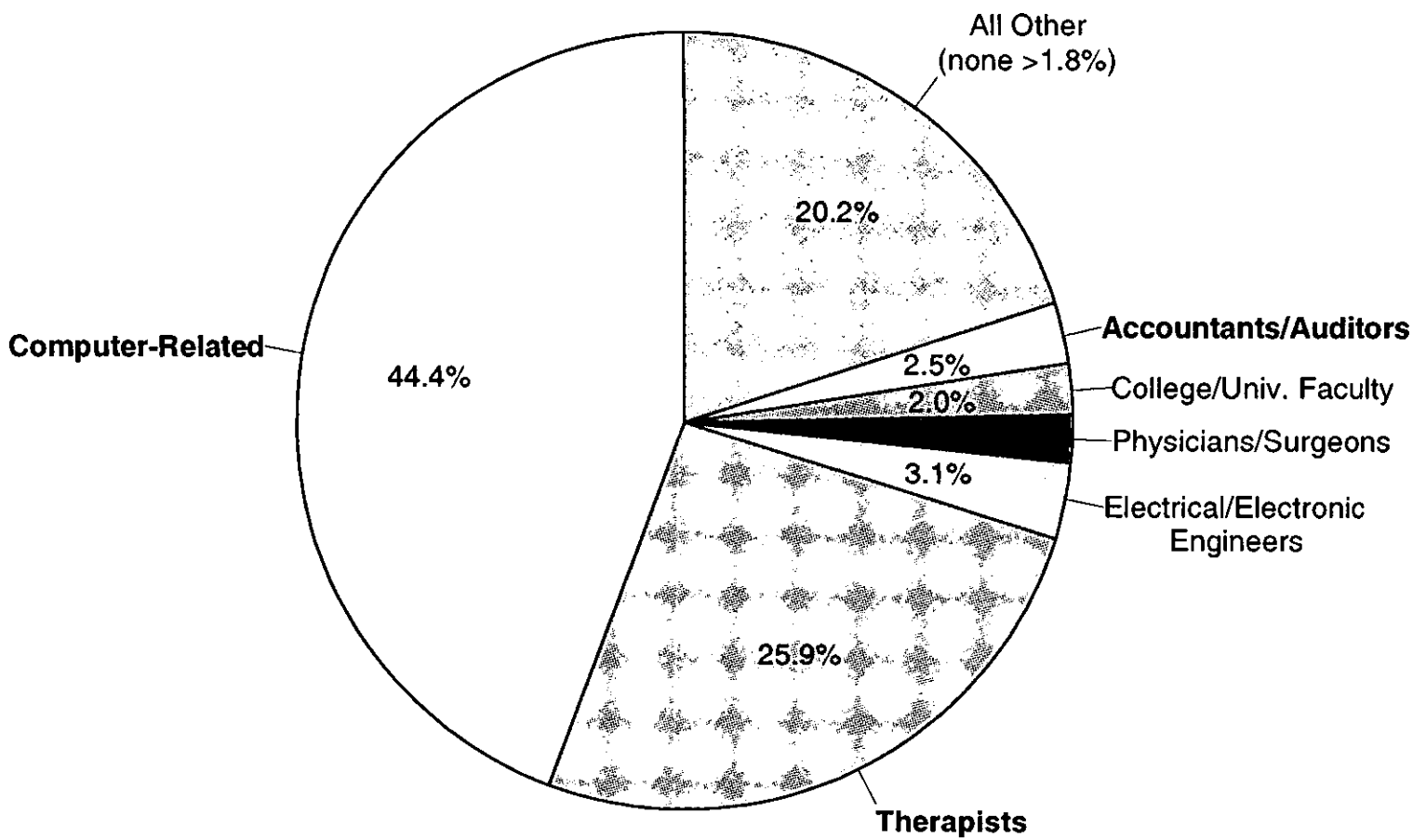
It does not seem to be too difficult a question to ask nor to answer in America as follows: Should anyone be forced or compelled to contribute their hard-earned wages to a political campaign they do not support? I think the answer is clearly no. It is hard to believe that there is anyone in America who would answer in the affirmative when given such a question.

The most recent national polls on the subject, and I am referring to this chart here on my right which shows where public opinion registers on this particular topic. A recent poll by John McLaughlin and Associates asked Americans across the country whether they approved or disapprove of a new Federal law that would protect workers paychecks. In other words, a law that would prevent any organization, corporations or labor organizations from siphoning off a portion of a wage earner's paycheck and directing it towards politics without the consent of the wage earner. Would Americans support a Federal law that would protect paychecks and protect them from such a travesty?

Among all voters, 80 percent of the American people have told us that they support a law to that effect. Looking way over here on the chart, only 16 per-

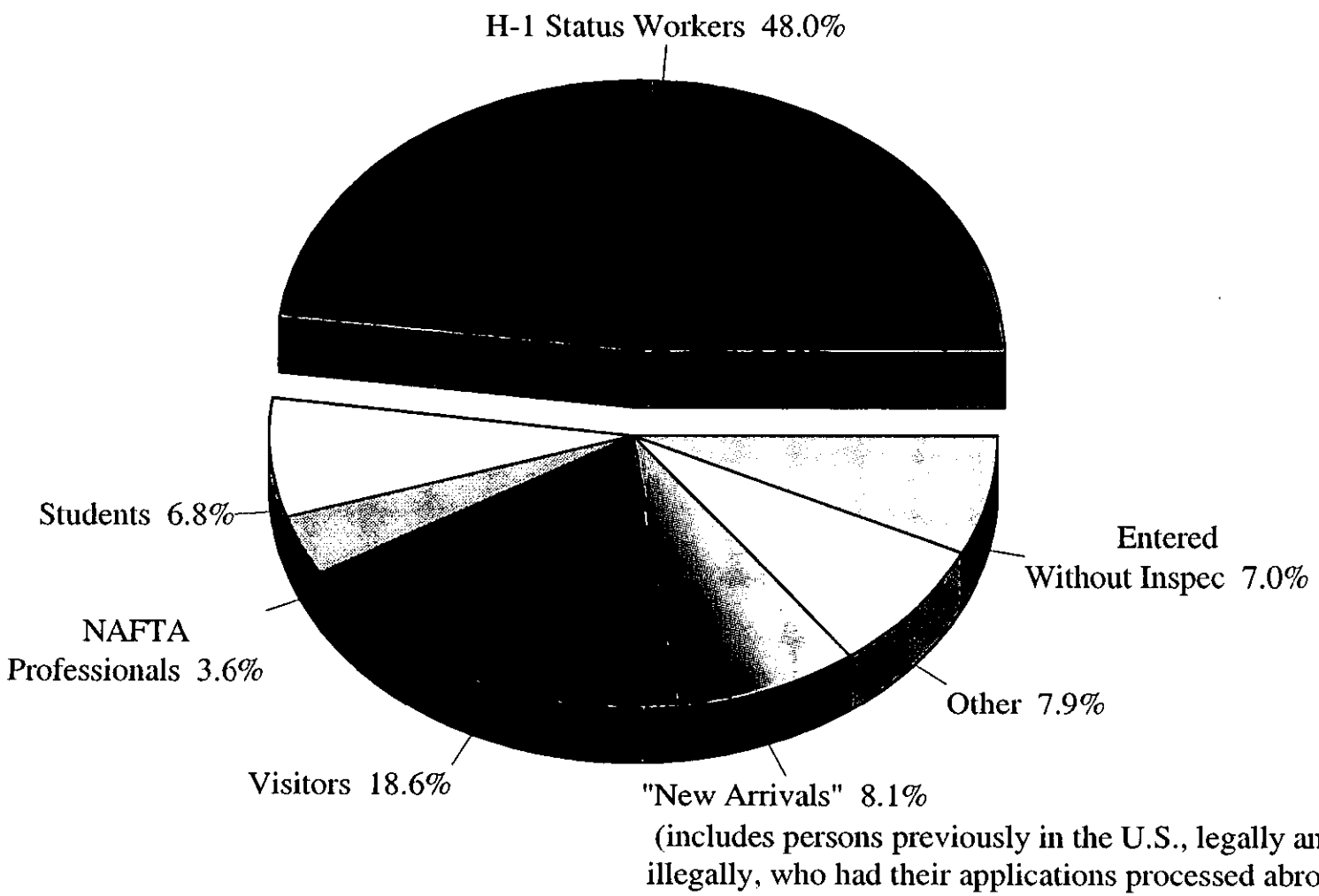
The "Best and Brightest?"

Most Foreign Temporary Workers (H-1B) are Sought for Therapist and Computer-Related Positions



Source: USDOL\ETA FY 1997 data on H-1B jobs certified.

About Half of Employment-Based Immigrants* Admitted Through H-1 Programs

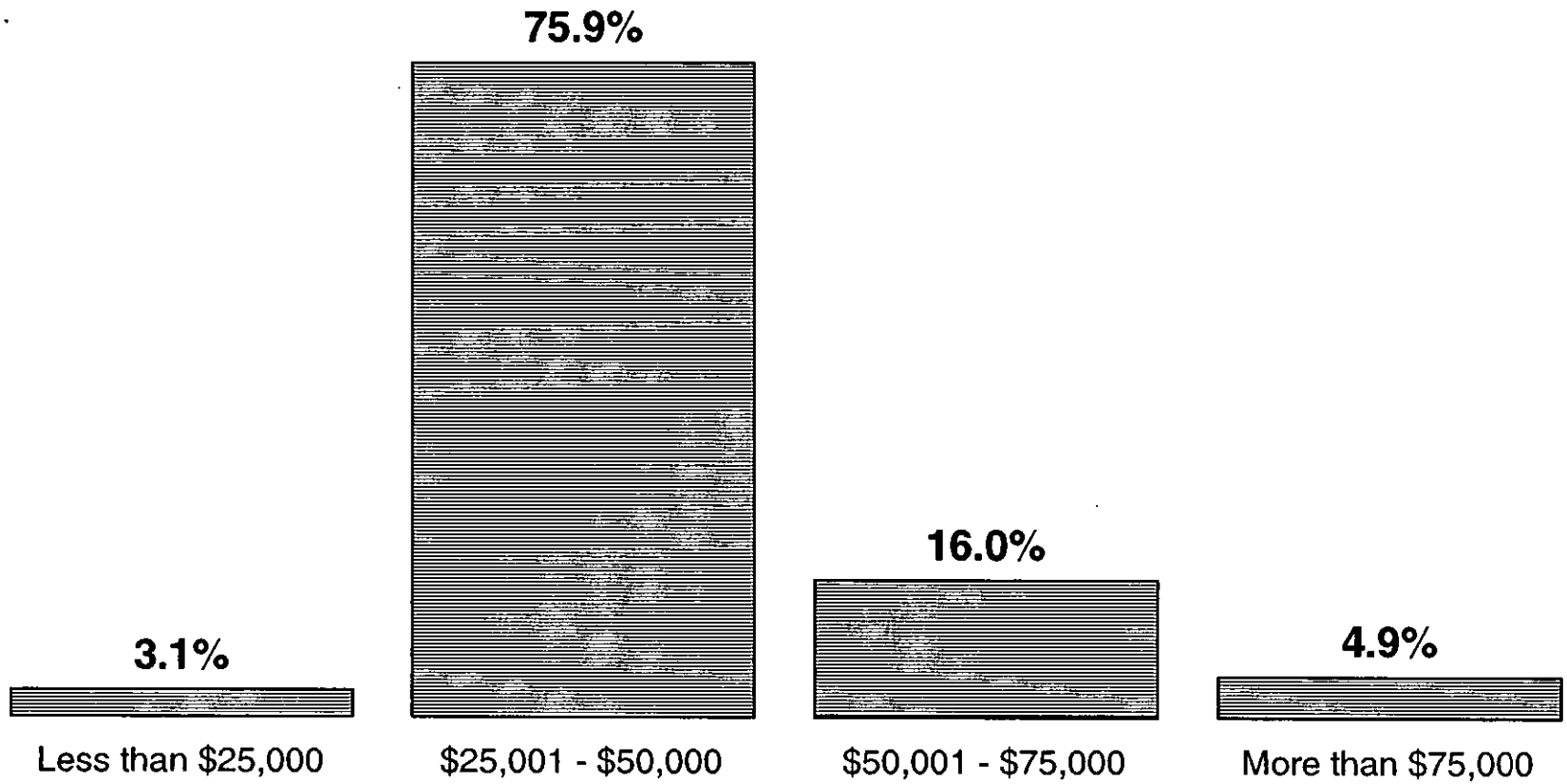


* Admissions for FY 1996, includes 2nd and 3rd Preference Principals only.
Excludes Chinese Student Protection Act and Unskilled Workers.

Source: U.S. Immigration and Naturalization Service

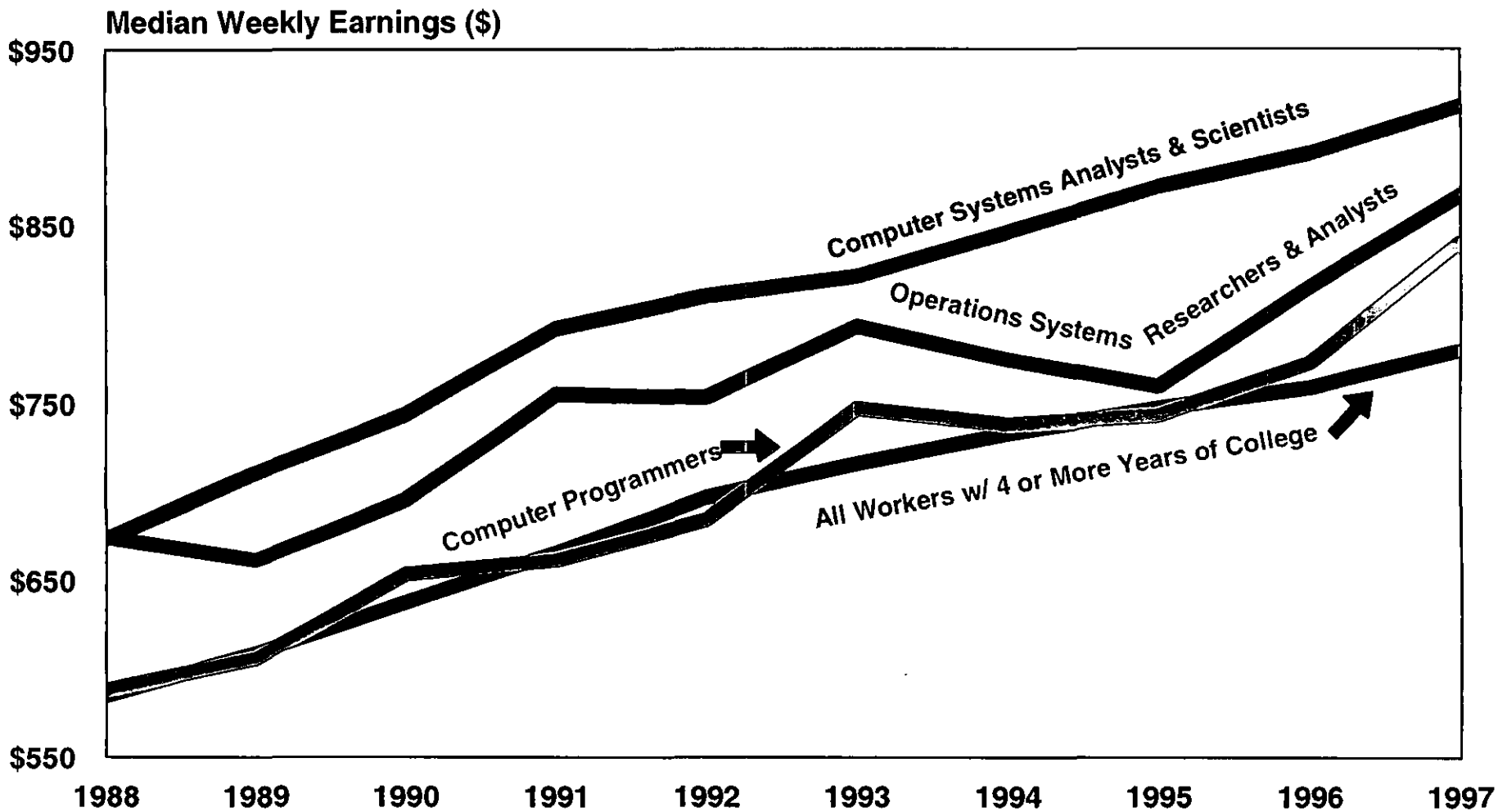
The "Best and Brightest?"

Most Jobs for which Employers Seek H-1B Workers Pay Less Than $50,000 a Year



Source: USDOL\ETA FY 1997 data on H-1B jobs certified.

Wages of Information Technology Workers Growing NO FASTER Than Those of Other Professionals



Source: U.S. Department of Labor, Bureau of Labor Statistics. Employment and Earnings, Household data. Annual averages (published in January after each year).

THE WALL STREET JOURNAL.

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The Outlook

Even High Tech Faces Problems With Pricing

PALO ALTO, Calif.

A long time has passed since the U.S. high-technology industry suffered a slowdown, but that's what seems to be unfolding. Nearly every day brings another sobering announcement from a giant of Silicon Valley, from Silicon Graphics Inc. to Oracle Corp. to Intel Corp. Outside the valley, too, such high-tech bellwethers as Compaq Computer Corp., CompUSA Inc. and Motorola Inc. are warning investors of problems.

Almost invariably, the problems center on slumping sales.

Conventional wisdom holds that it's just a high-tech hiccup. And that might be true. Yet when some of the fastest-growing companies of the 1990s suddenly start to grow more slowly, or start shrinking, it is probably worth asking why it is happening and what could come next.

The high-tech sector is getting a painful dose of what ails lots of companies: the erosion of pricing power. In much of high tech, prices are falling, and the pace of the declines has reached 20% or more annually in some sectors. That requires huge gains in shipments just to maintain sales totals.

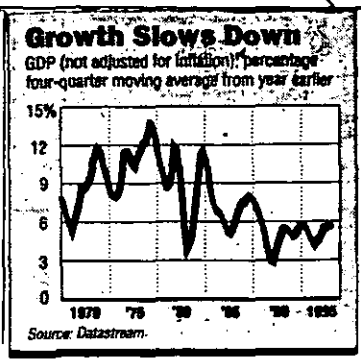
"U.S. demand seems to be strong. I can't say the cycle has turned," says Richard O'Brien, chief economist at Hewlett-Packard Co. "What you have is pervasive weakness in pricing."

Competition is beating down prices in products ranging from semiconductor chips to finished personal computers. Partly, this is the Asian crisis beginning to hit the U.S. high-tech sector; imports are forcing down prices. Meantime, sales are slumping because export orders to Asia are shrinking, while the strong dollar is making exports to Europe and elsewhere more expensive. The problems also reflect savvy customers insisting on bargains. Of course, these problems are partly offset by lower costs, especially for imported components.

As result, independent analysts are slashing once-optimistic forecasts. A typical revision: World-wide electronics shipments will rise just 3% this year, to $953 billion, instead of the 9% forecast earlier, says Dataquest, a Gartner Group Inc. unit.

All this is ominous because in the 1990s, the U.S. economy has been powered by high tech, by computers, business equipment, information-technology services and telecommunications. If high tech slows down, it may take the same defensive measures, such as consolidation, taken by many industries hit by slowing sales.

The 1990s have clearly been an era of slow sales growth. To many economists, the best measure of overall sales growth is nominal gross domestic product — GDP unadjusted for inflation. As the chart shows, it has been running about 6% annually, well below the level of previous decades, thanks partly to declining inflation. And many companies see an urgent need to find new sources of revenue.



Mergers have been one popular solution. As Edward Hyman and Nancy Lazar of International Strategy & Investment, New York, wrote recently, "In a low nominal-growth environment, sales increases, obviously, are particularly hard to come by. So companies 'acquire' sales increases."

Merged companies tend to shed people. So do slow-growers generally. In that sense, the weak sales environment triggered moves that led to the strong profit performance of the 1990s. Says James Paulsen, chief investment officer at the investment-management unit of Norwest Corp., in Minneapolis, the 1990s executive became a "contractionary-minded capitalist" who slashed payrolls, added computers, minimized inventory, stopped building factories and eliminated middle management. And companies suffering from sales-growth problems put the squeeze on their suppliers.

What remains to be seen, of course, is whether the apparent high-tech slowdowns will also trigger mergers, layoffs and squeezes on suppliers. Yet Compaq's proposed acquisition of Digital Equipment Corp. could be a harbinger of high-tech combinations to come.

Moreover, the past couple of weeks have seen a steady drumbeat of layoff announcements in industry sectors that until recently have complained about personnel shortages. In Silicon Valley, layoffs have occurred at Seagate Technology Inc., Silicon Graphics, Netscape Communications Corp., Apple Computer Inc., Sybase Inc. and others. Some firms have cut hiring plans; help-wanted advertising has slumped since the start of this year. Elsewhere, high-tech giants are shedding staff. Last week, Xerox Corp. announced the layoff of 9,000 people.

Some think high-tech payrolls still look bloated, in view of the weak pricing, Asia's impact on sales and the likelihood of profit problems. "Given the top-line numbers," the still-expanding work force "can't be good for profits," says Mr. O'Brien of Hewlett-Packard. "Somewhere along the line, these numbers don't add up." They may add up to slowing economic growth.

—BERNARD WYSOCKI JR.

NEW YORK TIMES

Use of Work Visas by Technology Companies Is Under Fire

NYT 4-20-98 D1

By JERI CLAUSING

WASHINGTON, April 19 — As the information technology industry lobbies Congress to let more high-skilled foreign workers enter the country, new immigration figures indicate that the companies applying for the most visas are using them for the kind of jobs that critics say many Americans could easily be trained to perform.

Figures recently given to Congress by the Immigration and Naturalization Service show that the 10 companies using the most visas last year all provide contract labor and services — jobs like computer and software installation and maintenance that critics contend do not necessarily require college-level math and science degrees.

The designation H1-B is used for work visas intended for hard-to-fill jobs. Many technology companies say they need to import more workers under the H1-B program because of a shortage of technically proficient domestic workers to fill crucial electrical engineering and product development jobs — positions that often require master's or even doctorate degrees.

And yet, the company that imported the most foreign labor last year under the H1-B program is the Mastech Systems Corporation, a Pittsburgh company that received visas for 1,733 employees — or about 80 percent of its domestic work force — to bring in software programmers with only bachelor's degrees.

"This is not brain surgery," Representative Ron Klink, a Pennsylvania Democrat, said of the jobs being filled by foreign workers at companies like Mastech. "These jobs do require some skill and intellect. But American workers can be trained to take these jobs."

Mr. Klink, a member of the House Commerce Committee, requested a recent General Accounting Office review that questioned the extent of the shortage of technology workers.

He and other critics want Congress to hold the line on the number of visas rather than adopt a proposal by Senator Spencer Abraham, a Michigan Republican, that

Continued on Page 10

Continued

Technology Worker Visas At Center of Industry Debate

Continued From First Business Page

would raise the number of H1-B visas to 95,000 from 65,000. American industry, they argue, is exaggerating the dearth of qualified labor market to import foreign workers who are willing to work for lower pay and who take jobs from Americans.

Supporters of the Abraham bill, which is scheduled for a Senate vote early next month, say the current ceiling will be reached in May, four months before the end of the Federal fiscal year and leaving many crucial technology projects at risk.

No comparable House legislation has yet been introduced. But the House Judiciary Committee's subcommittee on immigration is holding a hearing on Tuesday. And the chairman, Lamar Smith, a Texas Republican, said he hoped to have a bill offered within a week and passed by the full House by the end of the month.

Industry lobbyists say the shortage of high-tech workers is so acute that failing to raise the cap could threaten one of the most vital parts of the nation's booming economy. Companies unable to fill crucial positions in this country, they say, will have no choice but to send more sophisticated technology projects overseas.

The American information technology industry has 346,000 job openings — more than enough to go around for foreign workers and Americans alike, said Harris Miller, president of the Information Technology Association of America, a Washington trade group.

Complicating the debate are some seemingly contradictory trends, as some key parts of the industry — including personal computer makers and chip companies — are grappling with cyclical softening of their markets.

Two weeks ago, for example, the **Intel Corporation** played a lead role in releasing an industry study that contends there is a dire shortage of skilled technology workers. By last week, the company was announcing plans to cut some 3,000 jobs, mainly through attrition, in response to weakening demand for its microprocessors.

But the kinds of jobs going dark and the kinds going begging are not of the same skill level, according to Tracy Koon, an Intel spokeswoman. The company is always on the lookout for the type of highly skilled employees who receive most of its H1-B visas. At Intel, about 3 percent of a work force of 67,000 people have been hired via H1-B visas, and nearly 80 percent of the immigrants hold master's degrees or doctorates, Ms. Koon said.

Two other Silicon Valley advocates for the Senate bill, including the **National Semiconductor** Corporation and **Varian Associates** Inc., have frozen their work forces at current levels.

Varian Associates, which is based in Palo Alto, Calif., is a maker of laboratory instruments, medical equipment and semiconductor manufacturing equipment. It has only 30 H1-B visa holders among its 7,000 employees and is not currently seeking to add any new high-skill positions. Nevertheless, Varian wants the immigration cap raised.

"We don't know when the crunch is going to come; it's so cyclical," said Ernest M. Felago, Varian's vice president of human resources. "Our only point is that it's another source of labor, so why dry it up?"

National Semiconductor, also a chip maker, said that 55 of the 450 technical people it has hired this year required H1-B visas. Even though the company has imposed a temporary hiring freeze, National Semiconductor, like Varian, wants the visa limit raised to be assured of having access to the best talent from where ever and whenever necessary.

"We would probably support taking the lid off altogether, but that's pretty radical at this point," said Tom Wulf, director of staffing for National Semiconductor.

A problem with even the current caps, according to companies which seek the highest-skilled foreign workers, is that too many of the H1-B visas are being used to fill jobs that do not require searching overseas for candidates.

"They should be hiring double-E people and people in product development," Mr. Wulf said, using an industry abbreviation for electrical engineers. "Otherwise," he said, they shouldn't be allowed to use the visas."

But Mastech, for one, makes no apologies for using the visas or for bringing in such a high proportion of immigrant labor. Mastech began as a high-tech personnel service but has expanded into helping companies design, install and update office computer systems.

"The whole market has grown so fast and the talent keeps declining," said Chuck Rusdill, investor relations director for Mastech. He said the company has been forced to dip into the foreign labor pool for even bachelor-degree holders, not to pay lower wages but because of the dwindling number of American computer science graduates.

Mastech said that most of its H1-B workers arrive with a bachelor's degree in computer science and three to five years of work experience. But Mr. Klink said that many of the jobs at Mastech and companies like it do not require math or science degrees. Programming, he contended is a skill that many underemployed Americans can easily be trained to do.

During the 1993 and 1994 votes on free-trade treaties, "we were being told that as we entered the new information age, our workers were going to be training for new information technology jobs," Mr. Klink said. "Now, only four years later, we're being told we don't have enough people, our people aren't trainable."

As the debate rages, even basic data are being questioned about the extent of the job opportunites in information technology. In addition to the the Information Technology Association of America study that found 346,000 job vacancies, the Commerce Department has estimated that the information technology industry will need an additional 1.3 million workers over the next decade.

But the recent General Accounting Office review questioned the validity of those numbers and the methods used for calculating them.

And while the industry points to figures showing wages in information technology are as much as 64 percent higher than the national average, critics say a rather modest wage growth in the field does not bear out claims of a labor crisis.

Norm Matloff, a computer science professor at the University of California-Davis, said that Norm Matloff said that Bureau of Labor Statistics indicate salaries for computer programmers rose 7 percent last year — not a rate that would indicate employers are desperate for new labor, he said.

Who Uses High-Skill Visas

Across the country, thousands of foreigners with special work visas, called H1-B visas, are working for technology companies that say they need the foreign labor to fill skilled jobs that cannot be filled by Americans. Some critics, though, contend that the workers are not necessarily more skilled, just less expensive. Here are the companies with the largest number of these workers.

COMPANY	BUSINESS	NO. OF EMPLOYEES WITH H1-B VISAS
Mastech Systems	Software consulting	1,733
Tata Consultancy Services	Software and system development	1,110
Syntel	Software consulting	675
Computer People	Software consulting	447
Wipro	Hardware and software maintenance	446
Tata Infotech/Tata Unisys	Computer services	421
HCL America	Financial system integration	401
Indotronix International	System and software development	253
RCG Information Technology	Computer consulting	233
Cybertech International	Computer consulting	227
Comsys Technical Services	Software and computer consulting	206

Source: Immigration and Naturalization Service

The New York Times

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The Digital Divide
High-tech boom a bust for blacks, Latinos

San Francisco Chronicle
May 4, 1998

Julia Angwin, Laura Castaneda, Chronicle Staff Writers
Monday, May 4, 1998

URL: http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/1998/05/04/MN30RAC.DTL

Blacks and Latinos, the fastest-growing segment of California's population, are largely missing out on the Silicon Valley technology boom -- the state's most powerful economic engine since the Gold Rush.

Employment records for 33 of the leading Silicon Valley firms show that their Bay Area staffs, on average, are about 4 percent black and 7 percent Latino -- even though blacks and Latinos make up 8 percent and 14 percent of the Bay Area labor force, respectively.

The blacks and Latinos who do work at these companies are far more likely than whites to hold factory, service and support jobs, and less likely than whites to hold managerial and professional jobs. The employment records for the 33 companies were obtained from the Department of Labor through a Freedom of Information Act request.

The valley's firms -- many of which are government contractors -- are doing little to diversify, although federal law requires them to try to hire under-represented minorities.

``It's pretty clear that there's an ethnic and occupational segregation going on in the Silicon Valley,'' said Manuel Pastor, a professor at the University of California at Santa Cruz who has studied racial issues in Silicon Valley.

This racial imbalance, dubbed the ``digital divide,'' is occurring at a time when affirmative action is the focus of heated nationwide debate.

It also comes at a time when many technology firms, claiming they can't find enough U.S. workers to fill technical jobs, are clamoring to change immigration laws to allow them to hire more foreign workers.

But critics say Silicon Valley firms are overlooking a possible long-term solution to the worker shortage: training blacks and Latinos, many of whom are in their own back yards, for high-tech careers.

``If you can always find people from overseas, then the economic necessity does not exist to seek out and train young people from minority groups,'' said Mark Krikorian, executive director of the Center for Immigration Studies, a nonpartisan Washington D.C. think tank that often opposes immigration increases.

Some say the lack of blacks and Latinos in high-tech jobs points to a larger failure of the U.S. education system -- which threatens to drive Silicon Valley companies overseas in search of skilled workers.

``Failure to create a competitive workforce represents no less a threat to our national security than the Soviet Union of bygone years,'' said George Campbell, president of the National Action Council for Minorities in Engineering in New York.

The digital divide is driving a deeper wedge between society's ``haves'' and ``have-nots.''

``Prosperity isn't being shared,'' said Amy Dean, executive officer of the South Bay AFL-CIO Labor Council. ``Silicon Valley is very much a tale of two cities

-- and the community of color is being left behind.'' There are at least five major reasons for the digital divide, according to hundreds of interviews conducted over six months with Silicon Valley firms, black and Latino high-tech executives, academics, government officials and community activists.

-- Education: Not enough blacks and Latinos are earning the math and science degrees that prepare them for high-tech careers.

-- Affirmative Action Laws: Government contractors -- including most large high-tech firms -- are required by federal law to show they are making a good faith effort to recruit minorities. But violators rarely pay fines and are almost never disqualified from getting government contracts.

-- Recruiting: Many Silicon Valley firms fail to seek out blacks and Latinos at minority job fairs and college campuses with large black and Latino populations.

-- Networks: There are virtually no top-ranking blacks and Latinos in Silicon Valley to inspire and mentor younger employees.

-- Discrimination: Blacks and Latinos say racism exists in high technology, as it does in other industries.

THE INDUSTRY'S VIEW

Silicon Valley considers itself a meritocracy -- where the color of your skin doesn't matter as long as you can do the job.

In fact, the workforce at the 33 Silicon Valley firms is about 28 percent Asian, while the Bay Area workforce as a whole is 21 percent Asian.

``It wouldn't matter if you were green with white stripes, if you could code (software) you will get a top job,'' said Cara Finn, head of employee services at Remedy, a mid-sized Mountain View software firm.

T.J. Rodgers, the outspoken chief executive officer of Cypress Semiconductor in San Jose, said the relative dearth of blacks and Latinos at the 33 firms surveyed ``is not a problem.''

He added: ``We hire the best people for the job, regardless of race, color or creed, and we find that we end up with a pretty fair mix of people.''

Blacks accounted for about 3 percent of Cypress' workforce and Latinos made up about 6 percent in 1996, according to latest records submitted by the medium-sized chipmaking company to the Equal Employment Opportunity Commission.

Some firms say it's hard to build a diverse workforce when you're growing like a weed and racing the competition to get your product to market.

Netscape Communications in Mountain View, for example, was cited by the federal government in 1996 for missing the deadline to set up a diversity program.

``Being the fastest-growing software company ever, we shot past the mark that the government sets down for putting an affirmative action plan in place," said Bob Sundstrom, diversity programs manager at the Silicon Valley's best-known Internet software firm.

Others say it's not the industry's fault that there are so few blacks and Latinos qualified for professional high-tech jobs.

``It's the American public's duty," said Mary Jane Weaver, a San Francisco immigration attorney who represents many high-tech firms. ``I don't think it's fair to make corporations responsible for education."

EDUCATION

In Silicon Valley, an engineering or computer science degree is a ticket to full employment. That's because demand for employees with these degrees is increasing, while the supply is shrinking.

The number of math, computer science and engineering bachelor's degrees earned by all U.S. students has slipped by nearly one-fifth in the past decade -- to about 100,000 in 1995 from almost 124,000 in 1985.

The percentage of these degrees awarded to blacks and Latinos increased dramatically during that time period, but it was still less than 11 percent of the total in 1995.

The divergence starts early.

More than two-thirds of black and Latino students go to elementary and high schools with a predominantly minority population -- which tend to have less money than majority white schools, according to a recent study. The study was commissioned by the Education Trust, a nonprofit advocacy group in Washington, D.C., that focuses on educationally disadvantaged students.

The same study found that math and science are given short shrift in underfunded middle schools and high schools. For example, 69 percent of math classes in mostly white schools were taught by math majors, while only 42 percent of math classes in minority schools were taught by math majors.

In California, black and Latino secondary school students are much more likely than whites to be tracked into remedial education classes and are rarely found in advanced placement classes, the study found.

``Every day we do things to sabotage the education of poor kids, black kids and Latino kids," said Amy Wilkins, senior associate at Education Trust.

However, the lack of a math and science background cannot be the only reason why there aren't more blacks and Latinos working in Silicon Valley. That's because the majority of jobs -- including many professional positions in human resources, accounting, finance and marketing -- do not require a technical degree.

Only one in three employees at software firms in Silicon Valley -- defined as Santa Clara County and adjacent parts of San Mateo, Alameda and Santa Cruz counties -- are engineers, systems analysts or computer programmers, according to a study by Collaborative Economics, a Palo Alto consulting firm that specializes in community development.

Yvette del Prado, a Latina, got a high-ranking job in high tech without a technical degree. She was a school superintendent before being recruited by Tandem Computers in Cupertino to oversee employee training and customer service.

Del Prado is now vice president of external affairs at Silicon Graphics, a Mountain View computer-maker. She thinks there would be more blacks and Latinos in high tech if companies got more creative about recruiting.

``Good managers are good managers whether they're in corporate America or a school system,'' she said. ``All skills of managing are transferable.''

AFFIRMATIVE ACTION LAWS

Although affirmative action is being chipped away, it is still the law for federal contractors -- including many large Silicon Valley firms.

Companies that win government contracts of $50,000 or more are not required to hire a certain number of minorities, but they must prove that they've made a ``good faith effort'' to implement an affirmative action program.

The U.S. Labor Department has cited more than a dozen Bay Area high-tech firms in the past seven years for affirmative action violations. Comparative figures are not readily available for other industries because the Labor Department does not maintain citation records by industry.

Most of the Silicon Valley firms were cited for failing to actively recruit blacks and Latinos. The penalty, in most cases, was that the companies were required show they were trying to recruit blacks and Latinos.

For example, Adobe Systems was cited in 1995 for not having a minority recruiting plan even though the company had no blacks and Latinos among its 274 technicians, sales reps and engineers.

To comply, the San Jose software maker had to acknowledge the deficiency and put a recruiting plan in place.

``It was a technical violation related to how we were keeping our records,'' said Bob Estko, director of human resources at Adobe. He said the company has since stepped up minority recruiting, but he would not release any numbers.

The Department of Labor cannot fine firms unless it finds a worker who was denied a job for which he or she was qualified. In that case, the worker can get back pay for the period of unemployment.

Since 1991, the Department of Labor has fined four Silicon Valley firms for this type of racial discrimination -- Apple Computer of Cupertino, Everex Systems of Fremont, Oracle of Redwood Shores and Solectron of Milpitas.

Solectron -- an electronics maker that is the only two-time winner of the national Malcolm Baldridge award for quality manufacturing -- had to pay the biggest fine.

It paid $151,583 in back wages to eight blacks and Latinos who were turned down for factory jobs in 1993 and 1994.

It also had to pay $86,132 in back wages to two black men who were rejected for engineering positions. Solectron would not comment on the case.

The Labor Department almost never uses its only other threat: debarment -- the banning of a company from getting federal contracts.

Since it was started 25 years ago, the department's Office of Federal Contract Compliance has debarred only 41 companies in all types of industries.

Helen Haase, regional director of the office, said she often wishes the agency had the ability to fine companies that don't take affirmative action seriously.

``If it were financially costly to companies,'' Haase said, ``they might have a better incentive to keep good records.''

RECRUITING

While Silicon Valley firms make some effort to recruit blacks and Latinos, critics say it's not enough. Intel Corp., for example, recruits almost exclusively from Ivy League schools and the top public universities. It also recruits at a few schools with large Latino enrollments, such as the University of Texas at El Paso.

But Intel, ``to my knowledge, has never sent a recruiting team to a historically black college,'' said spokeswoman Tracy Koon. ``The philosophy has been we tend to recruit from the best of the best.''

The giant Santa Clara chipmaker attends three minority job fairs a year -- one for blacks, one for Latinos and one for American Indians.

Some black Intel employees wish their employer would do more -- and are taking recruiting into their own hands.

At a recent job fair for the National Society of Black Engineers in Santa Clara, Intel employee Gabriel Donnell was talent scouting on his own time.

``It's not going to happen unless we do it,'' said Donnell, an engineer at Intel.

In fact, Donnell got hired after meeting a black Intel employee who was searching for applicants at a National Society of Black Engineers' job fair.

Donnell was joined at the fair by black friends from Sybase, a mid-sized Emeryville software firm, and Sun Microsystems, who were also looking for recruits on their own time.

One firm that was noticeably absent at the black engineering students' job fair was software giant Oracle Corp. A table was set up for the Redwood Shores firm, but nobody showed up to staff it.

Oracle was cited in 1992 for not having a recruiting program for blacks and Latinos and for paying some women and minority workers less than their white male counterparts.

In 1996, Oracle's workforce was 3 percent black and 3 percent Latino, one of the lowest rates among the 33 companies analyzed by The Chronicle. Oracle did not respond to calls seeking comment.

Many companies say they don't have much luck at minority colleges and job fairs because there are too many employers chasing too few qualified applicants.

``Everybody has these same regulations that they're trying to meet,'' said Bill Weitz, staffing director for KLA-Tencor, a mid-sized San Jose chip equipment firm. ``The

problem in our case is that KLA-Tencor is not exactly a household word, so we're really at a disadvantage."

Some firms say they have better success recruiting through word of mouth.

``Most of the jobs in our company get filled by networking," said Kenneth Alvares, head of human resources for Sun Microsystems, one of the Silicon Valley's largest computer makers. ``About 60 percent of our jobs are filled by referrals by employees."

NETWORKS

Some blacks and Latinos say it's hard to break into those informal job-referral networks.

``To get to the next level," said Stephan Adams, a black entrepreneur in Oakland, ``you have to associate with people of power -- and those are usually white males."

That leads to a cycle in which the few blacks and Latinos in Silicon Valley don't have strong enough networks to promote each other and pull in newcomers.

``It's a chicken or egg kind of thing," said Andrew Bernat, a computer science professor who runs a diversity program at the University of Texas at El Paso. ``You've got to get them in the industry so (other blacks and Latinos) can say, `Aha, I can see myself there; there's someone who looks like me.' "

The cycle starts at home, where black and Latino kids are less likely to have parents in the industry who can encourage them to pursue technology careers.

``If you're not raised in that environment, it doesn't occur to you to do that," said Margarita Quihuis, a Latina engineer in Silicon Valley. Quihuis said her father, a Chicano activist, encouraged her to become an engineer because he read that they were well-paid and would always be employed.

Because she had no role models at home, her father moved the family to a predominantly white San Diego suburb.

``He thought we needed to be comfortable in that world," she said. ``He didn't want us to pick up the barrio culture, which is too limiting."

Once they leave home and school, blacks and Latinos also need mentors in the workplace.

``You have to have someone who believes in you and thinks you have something to offer. That's the single most important factor," said Glen Toney, a black vice president at Applied Materials, a large chip equipment-maker in Santa Clara.

Ken Coleman, one of Silicon Valley's highest-ranking black executives, said he left his job at Hewlett-Packard because there was no one there offering to help him reach the next step

-- which would have been vice president.

``There's an attitude in the valley that anybody who rolls up their sleeves and works hard will be successful, which is a little bit naive," said Coleman. ``Most people get help from someone along the way."

Today Coleman is a senior vice president at Silicon Graphics -- thanks, he says, to

former Silicon Graphics chief executive and mentor Ed McCracken, who hired him to be vice president.

DISCRIMINATION

Blacks and Latinos say racism exists in Silicon Valley -- as it does in other industries.

``Of course I've been discriminated against -- both subtly and blatantly,'' said Curt Crawford, the recently hired black chief executive of Zilog, a mid-sized chipmaker in Milpitas. ``I don't think it's an industry issue -- it's something that happens in this society.''

Laura Gonzalez-Escoto, who runs a community development program in San Jose, said she knows of two Latinos who Anglicized their names to get jobs in high tech. ``They felt it really made a difference,'' she said.

Kimberly Brown McNeil, a black customer program analyst at Intel, said her colleagues have complained that her expressive hand and facial gestures clash with Intel's button-down corporate culture.

``I've been told I'm abrasive or intimidating,'' she said. ``Now I have to go home and say to myself, `OK. I'm going to learn to smile more and not use my body language as much.' ''

Ralph Jackson, a Milpitas systems analyst, claims that Sun Microsystems discriminated against his firm because it was black-owned.

In a lawsuit filed in January in Alameda County Superior Court, Jackson said his six employees worked under contract for five years as systems analysts at a division of Sun in Fremont. He alleges that Sun repeatedly refused to allow him to bid on other work at Sun, up until the day he left last year.

Jackson said he discovered why when a Sun executive leaked him an e-mail that said his firm was being barred from other contracts because it was hard to work with.

The e-mail from a Sun manager, according to the suit, said Jackson's firm was ``basically used to getting a lot of handholding from other companies they work with, as they are a minority-owned business, and Sun does not operate that way.''

A Sun spokeswoman said the firm had no comment on the lawsuit but the firm is committed to diversity.

Despite such cases, some blacks and Latinos say the high-tech industry still holds out hope.

Said Zilog's Crawford: ``The good news about our industry is it's huge and growing and there's plenty of opportunities to change it.''

``About Race'' is a yearlong public journalism project in which The Chronicle, KRON-TV, BayTV and KQED-FM are examining various aspects of race relations in the Bay Area.

RELATED COVERAGE ON THE INTERNET

For a more detailed breakdown of the 33 Silicon Valley companies' racial statistics, log on to www.sfgate.com. The Web site also will sponsor a discussion on race in Silicon

Valley.

To reach the authors and editors of this report, send e-mail to racetech@sfgate.com

HOW THE CHRONICLE OBTAINED THIS DATA

The Chronicle obtained the employment data for this series from the Department of Labor through a Freedom of Information Act request.

In October of last year, The Chronicle requested two types of documents submitted by government contractors: EEO-1 documents, which show the racial makeup of a company's workforce, and affirmative action plans, which show how companies plan to hire and retain minority workers.

We requested records from 54 of the largest high-tech government contractors in the Bay Area.

All of the companies except Adobe Systems and Zilog Inc. protested the release of their affirmative action plans. However, the Department of Labor released the citations it gave to firms whose affirmative action plans did not pass muster.

Seventeen companies protested the release of their EEO-1 reports, which are submitted annually to the Equal Employment Opportunity Commission. The Department of Labor is evaluating the protests in a process that can take two years.

Those companies are: Altera, Applied Materials, Atmel, Cadence Design Systems, Cisco Systems, Hewlett-Packard, Informix, KLA Instruments, Linear Technology, Network General, National Semiconductor, SRI International, Solectron, Synopsys, Varian, Verifone and Xilinx.

Thirty-three companies did not protest the release of their EEO-1 reports. The data for these firms are in the chart at right.

Our requests for EEO-1 data from Autodesk, C-Cube Microsystems, Maxim Integrated Products and Tandem Computers are still pending.

By comparison, the ethnic breakdown of the employees at The Chronicle and the San Francisco Newspaper Agency, which handles advertising, production and distribution for the newspaper, is 69.7 percent white, 11.3 percent Asian, 10 percent Latino, 8.4 percent black and 0.7 percent Native American.

AFFIRMATIVE ACTION VIOLATIONS

Since 1992, at least a dozen Silicon Valley firms -- all government contractors -- were cited by the U.S. Department of Labor's Office of Contract Compliance Programs for failure to comply with affirmative action regulations. Data were obtained under the Freedom of Information Act.

1991

--Apple Computer was forced to pay $436,687 in back pay to 15 black workers who were turned down for jobs for which they were qualified.

1992

--Everex Systems was forced to pay $166,000 in back pay to 30 qualified blacks and nine Latinos who were turned down for jobs.

--Oracle was cited for paying seven women and minorities less than their white male counterparts. Oracle disputed the charges, and eventurally only had to pay $2,700 in back pay to one worker. It also was cited for failing to diversity its workforce, which at the time was 0.02 percent black and 0.03 percent Latino.

1993

--PeopleSoft was cited for failing to identify the underrepresentation of blacks and Latinos in its overall workforce. PeopleSoft did not return calls seeking comment.

1994

--Maxim Integrated Circuits was cited for failing to recruit blacks and Latinos. Maxim did not return calls seeking comment.

--Sun Microsystems was cited for not recruiting Latinos for eight job categories. Sun said it has stepped up recruiting and is now 3 percent black and 4 percent Latino.

1995

--Solectron was forced to pay $237,715 in back pay to five qualified black and five qualified Latino applicants.

--Adobe Systems was cited for not having a minority recruitment plan even though it had no blacks or Latinos out of 274 employees in seven divisions. Adobe says it has stepped up recruiting, but would not release figures.

--Altera was cited for having almost no blacks or Latinos in certain job categories. Altera refused to comment on the citation.

--Remedy was cited for failing to recruit blacks and Hispanics in six departments. Remedy said it has stepped up recruiting and its staff is now 5 percent black and 3 percent Latino.

1996

--Netscape Communications was cited for failing to increase its Hispanic applicant pool. Netscape said it has changed its policies but would not release figures.

1997

--Tencor Instruments was cited for lack of blacks and Latinos in four job categories. Tencor, which is now KLA-Tencor, said it has stepped up its recruiting, but would not release figures.

--Xilinx was cited for using incorrect data to estimate how many blacks and Latinos were eligible for office and clerical positions. Xilinx said the violations were technical and that it has improved its reporting systems. Source: Chronicle research

MINORITY EMPLOYMENT RESOURCES

GOVERNMENT ORGANIZATIONS

-- President Clinton's Initiative on Race

(202) 395-1010

www.whitehouse.gov/Initiatives/

OneAmerica/america.html

-- Department of Labor

Office of Federal Contract Compliance Programs

(888) 376-3227

www.dol.gov/dol/esa/public/ofcp_org.htm

-- Equal Employment Opportunity Commission

(800) 669-4000

www.eeoc.gov/

THINK TANKS

-- Joint Venture: Silicon Valley Network

(408) 271-7213

www.jointventure.org/

-- Tomas Rivera Policy Institute

(909) 621-8897

www.cgs.edu/inst/trc.html

PRIVATE ORGANIZATIONS

-- Mexican American Legal Defense and Educational Fund

(213) 629-2512

www.maldef.org/

-- National Association for the Advancement of Colored People

(410) 521-4939

www.naacp.org/

-- National Society of Black Engineers

(703) 549-2207

www.nsbe.org/

-- National Action Council for Minorities in Engineering

(212) 279-2626

www.nacme.org/

-- Society of Hispanic Professional Engineers

(213) 725-3970

www.shpe.org/, or www.alianza.org for the resume database

INVESTORS

-- AI Research (Latino-owned venture capital firm)

(650) 852-9140

-- New Vista Capital (black-owned venture capital firm)

(650) 329-9333

-- Nu Capital Access (black-owned venture capital firm)

(510) 635-7345

-- Fields Group (black-owned angel investor)

(510) 485-6707

Source: Chronicle research

CHART (1):
HIGH-TECH RACIAL BREAKDOWN

-- Silicon Valley firms vs. Bay Area labor pool

	Silicon Valley firms(x)	Bay Area workforce
White	61%	56%
Asian	28%	21%
Black	4%	8%
Latino	7%	14%

-- Where blacks, Latinos are

In Silicon Valley firms(x), blacks and Latinos are more likely to work in factory or support jobs than whites and Asians.

Whites (48,592 workers)	
Professionals	65%
Officials/managers	22%
Factory/support staff	12%
Asians (22,493)	
Professionals	66%
Officials/managers	10%
Factory/support staff	24%
Blacks (2,870)	
Professionals	54%
Officials/managers	12%
Factory/support staff	34%
Latinos (5,882)	
Professionals	46%
Officials/managers	9%
Factory/support staff	45%

(x) - Average Bay Area workforce for 33 large Silicon Valley firms.
Note: Professionals include positions that require four-year degrees, and sales and technical jobs

that require a two-year degree. Factory/support staff includes clerical and service workers as well as laborers, operators and craftworkers. Because of rounding, figures may not add up to 100%.

Source: Company reports to the Equal Employment Opportunity Commission

CHART (2):

THE EDUCATION GAP

The number of bachelor's degrees in math, engineering and computer science awarded to U.S. students has been falling for the past decade. But the number of degrees awarded to blacks and Latinos has been steadily growing during that time.

	1985	1995	% chg
White	104,475	69,601	-33%
Asian	7,406	10,113	+37%
Black	4,948	6,334	+28%
Latino	2,858	4,222	+48%
Total	123,986	100,569	-19%

Source: U.S. Dept. of Education

CHART (3):

RACIAL BREAKDOWNS OF 33 SILICON VALLEY COMPANIES' U.S. WORKFORCE IN 1996

-- Adaptec Inc., Milpitas

Titles	Total	White	Asian	Black	Latino
Officials/Managers	314	75%	21%	2%	2%
Professionals	966	58%	36%	3%	4%
Factory/Support Staff	237	59%	18%	6%	16%
Total	1,517	61%	30%	3%	6%

-- Advanced Micro Devices, Sunnyvale

Titles	Total	White	Asian	Black	Latino
Officials/Managers	1,585	74%	21%	1%	3%
Professionals	3,653	55%	28%	5%	10%
Factory/Support Staff	1,602	56%	19%	8%	12%
Total	6,840	60%	24%	5%	9%

-- Air Touch Communications, San Francisco

Titles	Total	White	Asian	Black	Latino
Officials/Managers	1,168	83%	7%	6%	4%
Professionals	2,251	76%	7%	8%	8%
Factory/Support Staff	2,581	60%	7%	22%	12%
Total	6,000	70%	7%	13%	9%

-- Amdahl Corp., Sunnyvale(a)

Titles	Total	White	Asian	Black	Latino
Officials/Managers	751	89%	6%	3%	2%
Professionals	4,059	73%	17%	5%	4%
Factory/Support Staff	515	57%	21%	7%	15%
Total	5,325	74%	16%	5%	5%

-- Apple Computer, Cupertino

Titles	Total	White	Asian	Black	Latino
Officials/Managers	1,834	81%	11%	3%	5%
Professionals	4,481	78%	13%	4%	6%
Factory/Support Staff	1,223	49%	23%	10%	17%
Total	7,538	74%	14%	5%	7%

-- Bay Networks, Santa Clara

Titles	Total	White	Asian	Black	Latino
Officials/Managers	695	87%	9%	1%	2%
Professionals	3,216	78%	16%	3%	3%
Factory/Support Staff	753	53%	26%	4%	16%
Total	4,664	75%	17%	3%	5%

-- Cirrus Logic Inc., Fremont

Titles	Total	White	Asian	Black	Latino
Officials/Managers	548	69%	27%	1%	2%
Professionals	1,662	56%	37%	2%	5%
Factory/Support Staff	582	40%	36%	8%	16%
Total	2,792	55%	35%	3%	7%

-- Cypress Semiconductor, San Jose

Titles	Total	White	Asian	Black	Latino
Officials/Managers	340	82%	14%	1%	2%
Professionals	875	64%	28%	2%	5%
Factory/Support Staff	636	59%	26%	6%	9%
Total	1,851	66%	25%	3%	6%

-- Diamond Multi-Media Systems Inc., San Jose

Titles	Total	White	Asian	Black	Latino
Officials/Managers	95	80%	15%	0%	5%
Professionals	273	67%	26%	2%	5%
Factory/Support Staff	311	57%	31%	2%	10%
Total	679	64%	27%	2%	8%

-- ESS Technology, Fremont

Titles	Total	White	Asian	Black	Latino
Officials/Managers	39	28%	69%	0%	3%
Professionals	136	19%	80%	0%	1%
Factory/Support Staff	36	22%	53%	3%	22%
Total	211	21%	73%	0%	5%

-- Integrated Device Technology, Santa Clara

Titles	Total	White	Asian	Black	Latino
Officials/Managers	373	67%	25%	2%	7%
Professionals	989	43%	43%	3%	10%
Factory/Support Staff	847	32%	44%	4%	20%
Total	2,209	43%	40%	3%	13%

-- Intel Corp., Santa Clara

Titles	Total	White	Asian	Black	Latino
Officials/Managers	2,862	84%	8%	2%	5%
Professionals	22,519	70%	18%	3%	8%
Factory/Support Staff	4,622	71%	8%	4%	16%
Total	30,003	71%	16%	3%	9%

-- Komag Inc., Milpitas

Titles	Total	White	Asian	Black	Latino
Officials/Managers	178	52%	40%	3%	5%
Professionals	577	34%	59%	2%	4%
Factory/Support Staff	1,213	12%	73%	3%	12%
Total	1,968	22%	66%	3%	9%

-- Lam Research Corp., Fremont

Titles	Total	White	Asian	Black	Latino
Officials/Managers	612	72%	19%	3%	6%
Professionals	2,259	63%	25%	3%	8%
Factory/Support Staff	795	42%	29%	6%	22%
Total	3,666	60%	24%	4%	10%

-- LSI Logic Corp., Milpitas

Titles	Total	White	Asian	Black	Latino
Officials/Managers	485	72%	22%	2%	4%
Professionals	1,490	50%	43%	1%	5%
Factory/Support Staff	617	35%	44%	6%	15%
Total	2,592	51%	39%	2%	7%

-- McAfee Associates Inc. , Santa Clara(b)

Titles	Total	White	Asian	Black	Latino
Officials/Managers	37	84%	11%	5%	0%
Professionals	171	77%	11%	8%	4%

Factory/Support Staff	21	71%	5%	10%	14%
Total	229	78%	10%	8%	4%

-- Netscape Communications, Mountain View

Titles	Total	White	Asian	Black	Latino
Officials/Managers	197	84%	12%	1%	2%
Professionals	664	79%	17%	1%	3%
Factory/Support Staff	68	84%	7%	4%	4%
Total	929	80%	15%	1%	3%

-- Oracle Corp., Redwood Shores

Titles	Total	White	Asian	Black	Latino
Officials/Managers	172	91%	4%	3%	1%
Professionals	10,945	73%	21%	3%	3%
Factory/Support Staff	656	72%	11%	8%	8%
Total	11,773	73%	20%	3%	3%

-- PeopleSoft Inc., Pleasanton

Titles	Total	White	Asian	Black	Latino
Officials/Managers	140	89%	7%	1%	3%
Professionals	1,320	82%	11%	3%	4%
Factory/Support Staff	38	82%	5%	0%	11%
Total	1,498	83%	10%	3%	4%

-- Quantum Corp., Milpitas

Titles	Total	White	Asian	Black	Latino
Officials/Managers	588	84%	11%	2%	3%
Professionals	2,467	70%	24%	2%	4%
Factory/Support Staff	1,327	49%	32%	7%	11%
Total	4,382	65%	25%	3%	6%

-- Rational Software Corp., Santa Clara

Titles	Total	White	Asian	Black	Latino
Officials/Managers	68	94%	6%	0%	0%
Professionals	298	85%	8%	3%	4%
Factory/Support Staff	41	59%	20%	7%	15%
Total	407	84%	9%	3%	4%

-- Raychem Corp., Menlo Park

Titles	Total	White	Asian	Black	Latino
Officials/Managers	379	89%	7%	2%	2%
Professionals	1,318	75%	13%	3%	8%
Factory/Support Staff	2,017	50%	13%	12%	25%
Total	3,714	63%	12%	8%	17%

-- Remedy Corp., Mountain View

Titles	Total	White	Asian	Black	Latino
Officials/Managers	60	77%	17%	3%	0%
Professionals	220	71%	20%	5%	3%
Factory/Support Staff	34	88%	3%	3%	6%
Total	314	74%	18%	5%	3%

-- Sanmina Corp., San Jose

Titles	Total	White	Asian	Black	Latino
Officials/Managers	116	69%	16%	2%	14%
Professionals	275	45%	44%	3%	8%
Factory/Support Staff	1,221	16%	57%	3%	23%
Total	1,612	25%	52%	3%	20%

-- Seagate Technology, Scotts Valley

Titles	Total	White	Asian	Black	Latino
Officials/Managers	1,578	83%	11%	2%	3%
Professionals	5,585	70%	23%	3%	5%
Factory/Support Staff	4,864	41%	43%	7%	8%
Total	12,027	60%	29%	4%	6%

-- Sun Microsystems, Mountain View

Titles	Total	White	Asian	Black	Latino

Officials/Managers	2,753	79%	15%	3%	3%
Professionals	7,693	69%	25%	3%	3%
Factory/Support Staff	939	61%	20%	8%	11%
Total	11,385	71%	22%	3%	4%

-- Silicon Graphics, Mountain View

Titles	Total	White	Asian	Black	Latino
Officials/Managers	1,362	84%	9%	3%	3%
Professionals	5,258	78%	16%	3%	3%
Factory/Support Staff	966	75%	12%	5%	7%
Total	7,586	79%	14%	3%	4%

-- Sybase Inc., Emeryville

Titles	Total	White	Asian	Black	Latino
Officials/Managers	923	88%	7%	3%	2%
Professionals	2,606	74%	20%	4%	2%
Factory/Support Staff	278	74%	6%	13%	6%
Total	3,807	77%	16%	4%	2%

-- Symantec Corp., Cupertino

Titles	Total	White	Asian	Black	Latino
Officials/Managers	324	89%	6%	3%	2%
Professionals	1,007	83%	11%	3%	3%
Factory/Support Staff	217	76%	5%	2%	16%
Total	1,548	83%	9%	3%	5%

-- Tencor Instruments, Mountain View(c)

Titles	Total	White	Asian	Black	Latino
Officials/Managers	203	81%	12%	1%	6%
Professionals	676	63%	28%	3%	5%
Factory/Support Staff	134	53%	26%	6%	11%
Total	1,013	66%	24%	3%	6%

-- 3Com Corp., Santa Clara

Titles	Total	White	Asian	Black	Latino
Officials/Managers	643	86%	9%	2%	3%
Professionals	2,718	71%	21%	3%	5%
Factory/Support Staff	461	47%	28%	5%	19%
Total	3,822	70%	20%	3%	6%

-- VLSI Technology, San Jose

Titles	Total	White	Asian	Black	Latino
Officials/Managers	395	76%	17%	3%	3%
Professionals	1,272	57%	34%	3%	7%
Factory/Support Staff	796	37%	22%	7%	33%
Total	2,463	54%	27%	4%	15%

-- Zilog Inc., Milpitas(d)

Titles	Total	White	Asian	Black	Latino
Officials/Managers	63	81%	13%	0%	6%
Professionals	194	61%	31%	2%	5%
Factory/Support Staff	33	70%	12%	0%	18%
Total	290	66%	25%	1%	7%

Note: Professionals include positions that require four-year degrees and technical and sales jobs that require two years of college or more. Factory/support staff includes clerical and service workers as well as laborers, operators and craftworkers. Some figures do not add up to 100 because of rounding and because some workers are from other ethnic groups.

(a) - Now Owned by Fujitsu.
(b) - Now Network Associates
(c) - Now KLA-Tencor Corp.
(d) - Data available for Milpitas headquarters only. Does not include entire U.S. workforce.
Source: Company reports to the Equal Employment Opportunity Commission

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Closing the Digital Divide Early

Laura Castaneda, Julia Angwin, Chronicle Staff Writers
Monday, May 4, 1998

San Francisco Chronicle
May 4, 1998

URL: http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/1998/05/04/MN2696.DTL

A handful of Silicon Valley companies and industry groups are hoping to increase the number of blacks and Latinos in high tech by moving away from one-shot, adopt-a-school programs and launching ambitious, long-term education initiatives.

The goal is to start preparing students for high-tech careers as early as elementary school.

``Once a student gets channeled into basic math or general science at age 13 or 14, they're basically out of the game," said George Campbell, president of the New York-based National Action Council for Minorities in Engineering, a nonprofit group dedicated to increasing the number of black, Latino and American Indian engineers. For example, just 6 percent of blacks and Latinos take precalculus or physics in high school. The remaining 94 percent are effectively shut out of a college math or science program, he said. Taking note of such statistics, a few Silicon Valley groups have started trying to reach children early and follow them to college.

These programs are typically financed through grants from the federal government, corporations and nonprofit foundations.

It's too early to tell whether these programs are succeeding. But here's a summary of key initiatives:

-- Joint Venture: Silicon Valley Network's Challenge 2000

The three-year, $10 million program is trying to spark an ``educational renaissance" in the Silicon Valley by working with eight teams of schools for at least three years each.

Each team is composed of at least one elementary school, one middle school and one high school that feed into each other.

The teachers work with Joint Venture to decide what kind of help they need. Five have picked literacy, and three have chosen math and science. Challenge 2000 finds the best curricula for teaching these skills, then buys books and computers and trains teachers.

The program has had some successes. In the Morgan Hill Unified School District, the percentage of fourth-graders who could solve math problems at or above grade level jumped from 12 percent to 90 percent in one year.

At Dorsa Elementary in East San Jose, the percentage of fifth- graders reading at or above grade level jumped from 30 percent to 62 percent in one year.

-- Workforce Silicon Valley:

Workforce Silicon Valley is a four-year, $4 million collaboration among the high-tech industry, education, government, labor and the community to help more Silicon Valley

youth get high-skill jobs.

The program, which began in 1995, informs students of the skills and education they will need to work in fields such as information technology, multimedia, health care, biosciences, financial services and advanced manufacturing.

The program serves 17 high schools and seven community colleges in the Bay Area.

The program is also trying to develop a new performance-based assessment system to gauge students' readiness for college-level and high-skill work.

-- Hewlett-Packard's Diversity in Education Initiative

Hewlett-Packard is trying to expand the pool of qualified women and minority high-tech employees by improving math and science programs from kindergarten to college.

``The idea is to get kids interested in math and science when they're in grade school, and keep them interested as they move up the ladder to college,'' said Ron Gonzales, Hewlett-Packard's Education Program Manager.

In 1997 Hewlett-Packard launched its initiative, which commits about $5 million over five years to Northeastern University in Boston, University of Texas at El Paso, University of California at Los Angeles and San Jose State University.

These universities work with local elementary, junior high and high schools in their neighborhoods. University educators help the K-12 schools adopt science and math education reform, use hands- on science to stimulate interest in the subject and prepare students for algebra, geometry and college prep high school courses.

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Critics Call for Training U.S. Workers

San Francisco Chronicle
April 29, 1998

Julia Angwin, Chronicle Staff Writer
Wednesday, April 29, 1998

URL: http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/1998/04/29/BU67906.DTL

Silicon Valley firms are lobbying Congress to increase the number of foreign engineers they are allowed to hire. But opponents say it would be better to train U.S. workers for the jobs.

The debate could affect the growth and competitiveness of some Silicon Valley firms.

The tech industry claims that more visas are necessary to help fill an estimated 300,000 openings for programmers, systems analysts and engineers. Critics say companies and the U.S. government should invest more in training Americans for high-tech jobs.

"It's a wake-up call for us to make education a national priority," said Senator Barbara Boxer, a California Democrat.

Sponsored by Senator Spencer Abraham, R-Mich., the legislation now before Congress would raise the annual number of temporary immigration visas for skilled workers (H-1Bs) to 95,000 from 65,000 for the next five years. To get an H-1B visa, a foreign national must have a college degree and be sponsored by a U.S. employer. The process costs the employer about $2,000 in legal fees and takes two to three months. Last year, all 65,000 visas were handed out by the end of August. This year, the supply is expected to run dry by the end of May.

Lawmakers are scrambling to raise the immigration quota before then. The Senate Judiciary Committee approved the bill, S.1723, on April 2, and the Senate will vote on it this spring.

However, the Clinton administration opposes the legislation because it does not promote more education for U.S. workers.

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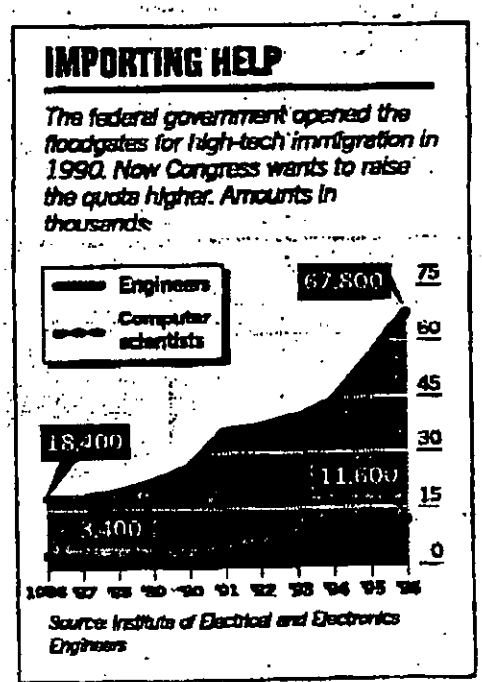

Valley Can't Ignore The `Digital Divide'

Wednesday, May 6, 1998
San Francisco Chronicle
CHRONICLE SECTIONS

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THE STRONG reaction to Monday's story about the lack of African Americans and Latinos in the high-tech industry was not surprising.

After all, the concept of affirmative action does not fit easily into the culture of Silicon Valley. The high-tech industry views itself as an entrepreneurial mecca that prospers when it is allowed to operate on its own terms -- without the regulatory and social burdens that are accepted in less competitive industries.

``We hire the best people for the job, regardless of race, color or creed, and we find that we end up with a pretty fair mix of people," said T.J. Rodgers, chief executive officer of Cypress Semiconductor, where blacks represent 3 percent and Latinos represent 6 percent of the workforce, according to the latest federal figures.

It would not be fair to lay the entire blame for the lack of diversity on Silicon Valley companies, since shortcomings in the nation's educational system are an enormous factor in the dearth of blacks and Latinos in the high-tech labor pool.

Still, the industry's diversity effort found by Julia Angwin and Laura Casteneda, authors of ``The Digital Divide" stories, falls short of acceptable.

Silicon Valley has moral, political and

A safe place to talk

"So more and more people object to having racial quotas of any kind. Is this a surprise?"
--from the About Race topic

ON THE GATE

Wire up, plug in, and log on: Technology on The Gate.

very pragmatic reasons to do a better job of recruiting and retaining a diverse workforce.

As much as the valley regards itself as a near-sovereign success story, the fact of the matter is that many of the companies are getting fat government contracts -- which come with a pledge to make an effort to hire more minorities. Silicon Valley executives also have been pushing Congress to lift visa limits so they can fill openings with foreign workers, citing a shortage of candidates in the United States. Its immediate mission should be to increase its minority recruitment. Some of those companies openly admit that they have not surveyed the talent pool at colleges with high minority enrollments, or scouted at minority job fairs.

This is an industry that relies heavily on word-of-mouth referrals. Its executives should realize that it may take an extra effort to find minority applicants who are not tapped into that network.

Silicon Valley has a long-term stake in incorporating diversity as a core value. African Americans and Latinos earning bachelor's degrees in math, engineering and computer sciences increased sharply between 1985 and 1995.

It just does not look that way in the valley.

Computerworld
January 26, 1998

The numbers game

Rochelle Garner & David Weldon

350,000 vacant IT jobs! A 40% drop in IT grads! 1.3 million more IT workers needed in the next decade! Where do they get these numbers? In a two-part series, Computerworld looks at the alarming predictions about the IT workforce and explains what the numbers really mean.

They say numbers don't lie. And on the face of it, the numbers are downright dire.

This year alone, 346,000 IT-related jobs will remain unfilled, says the Information Technology Association of America (ITAA).

The demand for trained workers is increasing by 95,000 IT jobs per year, according to the U.S. Bureau of Labor Statistics. And between 1994 and 2005, U.S. businesses will generate a demand for more than 1.3 million additional information technology professionals. says the Labor Bureau.

The Department of Education reports that the number of students graduating with bachelor's degrees in computer science declined more than 40% between 1986 and 1994.

Now comes the truly scary part: That gap will cost U.S. businesses $500 billion per year in lost revenue, $10 billion per year in lost business income and $15 billion per year in compensation, according to Howard Rubin, a consultant and chairman of computer science at Hunter College, in Pound Ridge, N.Y. That's because, for every dollar spent on information systems salaries, a company can expect to generate $43 in revenue, he says. Under that assumption, a company could lose $2.4 million per year for each IS pro it can't hire, Rubin's math suggests.

Gee, no wonder so many people representing the state and the federal governments and the IT industry are running around like extras in a disaster movie.

There is just one problem: This particular set may be built on a

foundation of flawed assumptions, presumptions, old or incomplete data and extreme leaps of faith. Which isn't to say that the skills shortage isn't real -- it is, by all accounts. But this future blockbuster could turn into a major bust. That's why it pays to examine just where these folks get their numbers.

IT demand for jobs vs. supply of workers

Let's start with the ITAA figures that show workforce demand. The ITAA is the political lobbying association that represents 11,000 technology businesses. Its 1997 report, "The IT Workforce Gap at the Dawn of a New Century," says companies face a 190,000-person shortfall in the IT field. Since the report was released, the ITAA has doubled that figure to 346,000 in its updated study, "Help Wanted: A Call for Collaborative Action for the New Millennium," prepared by Virginia Polytechnic Institute and State University.

The report received immediate attention and was cited by news organizations around the country earlier this month. Suddenly, the heads of the U.S. departments of labor, commerce and education were being summoned to speak before journalists on the growing "crisis."

How did the ITAA get its numbers? In 1997, it sent out 2,000 surveys to a random selection of its members and collated 271 responses. And for the new study, Virginia Polytechnic conducted telephone interviews with 532 IT vendor and IT user companies.

The return rate or survey base isn't statistically suspect in either report, but the way the ITAA expanded the results to represent 103,607 technology and nontechnology companies is. Both polls represent no more than one-half of 1% of IT organizations, according to ITAA numbers. And if at the surveyed companies the IT staffs were small overall, the number of "core IT" jobs ITAA is tracking would be small. Job vacancies that show up would appear to be very high vacancy rates and would be projected outward to represent the entire IT workforce.

And the Labor Bureau's belief that U.S. businesses will crave more than 1 million computer engineers, systems analysts and computer programmers by 2005? That seems more likely, considering the bureau's ability to rigorously measure nearly everything under the U.S. sun. But there's a catch: The labor group gleaned its data by polling the nation's private and public sector for projected growth at a time when the U.S. economy and IT industry have never

been stronger.

Now consider a similar study, reported in 1993 by the National Science Foundation's Ad Hoc Working Group on science, engineering and mathematics professionals. The report's conclusion: "It is not entirely possible, and will probably never be possible, to predict with a high degree of accuracy ... shortages on surpluses of scientists and engineers several years into the future. Limitations on projections are especially severe for demand, since demand is a function of the economic cycle and of global events that are difficult, if not impossible, to predict."

Clearly, there's a presumption that this unprecedented growth will continue unchecked. But things change, as evidenced by the seemingly unstoppable downsizing in the early 1990s. That's the premise behind the criticisms leveled by the American Engineering Association and Institute of Electrical and Electronics Engineers, Inc. (IEEE). Both groups charge the ITAA with the political agenda of convincing the government to eliminate the 65,000-person cap on H-1B visas for qualified foreign labor.

Foreign labor

Foreign national workers

65,000 foreign national professionals can be sponsored by U.S. companies each year.

The annual cap of 65,000 H-1B visas was reached for the first time Aug. 25, 1997.

Labor crisis or not, companies are experiencing a serious skills shortage. That explains why the ITAA is so hot on its campaign to increase the number of H-1B work visas issued to skilled foreign nationals.

"We have made this our No. 1 priority," Susan Marshall, ITAA's vice president of information services, told the San Jose Mercury News.

Salaries

One thing is certain, though: Salary and compensation costs are on the rise. How high they'll rise is open to debate. Computerworld's latest annual salary survey indicates annual salary increases

averaging 9% for IT professionals. The ITAA maintains that salaries are increasing by 20% to 28%. How to explain the discrepancy?

One way might be to examine who exactly is being polled. Computerworld, for example, primarily surveys the users of technology (such as corporate IT professionals), not providers of technology products and services (such as vendor IT professionals, contractors and consultants). The ITAA's constituency is technology business.

Rising enrollments in IT degree programs

Now examine the gap between supply and demand. According to the U.S. Department of Education, the number of bachelor's degrees in computer science dropped 40% from 1986 to 1994.

"We have no reason to believe that trend will change," says John Sargent, co-author of the Department of Commerce's report, "America's New Deficit."

Perhaps. And yet, when you combine the number of bachelor's degrees with the number of master's degrees and doctorates awarded, the overall decline has been only 26%. What's more, this trend statistically began to increase in 1992 and has increased every year since.

SUPPORTING EVIDENCE

Anecdotal evidence also indicates that IT enrollments have been rising dramatically over the past two years.

Universities around the country began to report sizable jumps in computer science department enrollments. Some of the leading IT colleges say their IT enrollments are up 25% to 40% this year.

And principal academic speakers at the ITAA's national workforce convocation on Jan. 12-13 took issue with the claim of declining enrollments. Confirming that IT enrollments have skyrocketed were Dr. Stuart Lynn from the University of California at Berkeley, Norman Matloff from the University of California at Davis and Dr. Graham Spanier from Penn State University, in University Park, Pa.

By itself, the measure of computer science graduates is an easy yardstick that signifies little. Universities now offer as many as

two dozen different IT-related degrees -- from management information systems and library science, to software quality.

Computerworld contacted 10 of the leading IT university programs and found 24 noncomputer science -- but IT-related -- degrees being offered.

Equally important, most current IT workers earned their degrees in unrelated fields, such as business or even psychology. According to the National Science Foundation, only 29% of all computer scientists, systems analysts and programmers now working actually received a degree in computer science. A full 35% earned bachelor's degrees in engineering or other natural sciences.

Other IT professionals received degrees in liberal arts or other fields, and many others have no science-related degrees.

"The ITAA and Commerce Department wanted evidence to support the panic that terrible things are going on," says Cliff Adelman, a senior research analyst at the Department of Education. "Lots of people graduate in fields other than computer science."

Training

According to the IEEE, the answer to the skills shortage lies in the ready pool of retirees and laid-off workers who can learn information technologies fast.

"Last year saw 380,000 corporate jobs cut," says Shankar Lakhavani, chairman of the IEEE Workforce Committee. "Let's say, for the sake of argument, that 15% of those people were technical, or at least possess a logical mind. That's 57,000 people a year who can be trained easily and rapidly in IT."

That's trained in-house, of course. Once again, the ITAA has figures, only this time it cites a National Association of Manufacturers report. The report's conclusion: U.S. companies spend more than $210 billion per year on workforce training.

There seems to be no disagreement that this training spending will increase dramatically.

Conclusion

Still, no matter how you slice it, IT workers are moving on at 25%

turnover rates - or worse. They leave for better pay and better working conditions. Dominique Black, CEO of Advanced Technology Staffing, in Redwood Shores, Calif., says many IT workers have gone independent.

"We estimate that 800,000 of the total 2.5 million IT workforce are contract workers," Black says, Qo one really knows, because no one tracks that information at a sufficient level of detail, he says. "We are moving to a free-agent nation."

Many employers consider jobs filled by contractors as "vacancies," a fact confirmed by participants at this month's ITAA convocation.

What do these numbers mean? The only sure answer is that the nation's IT workforce is changing so fast it will soon be unrecognizable. Whether we are on the cusp of a crisis, at a dramatic transformation or something in between will be explored next week.

Busin

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Tech worker crunch can vanish, for a price

By Dan Gillmor
SAN JOSE MERCURY NEWS

The technology industry says there's such a shortage of technology workers that we must not only spend more taxpayer money to train workers, but drastically loosen immigration rules.

But on close examination, the shortage does not appear to be of workers per se, but of workers who are the right age and frame of mind: young and willing to work at the salary levels the industry would like to pay.

Norman Matloff, professor of computer science at the University of California at Davis, put it this way in an interesting essay: "The industry claims there is a shortage of workers when what they really mean is that there is a shortage of cheap workers, in the form of new college graduates and imported foreign nationals."

I tend to believe it because I've come to understand Silicon Valley's "employment modus operandi: Hire platoons of Generation Xers who are willing to sign over their lives to the company, working ungodly hours in return for decent money and stock options. They may burn out at an early age, but, hey, that's the way things work.

Matloff also points out that major tech companies, including some that are wailing loudest about the problem, hire only a tiny percentage of applicants. Maybe that signifies a generally putrid quality of applicants. Then again, maybe it suggests the talent pool isn't as shallow as the industry claims.

Even If there is a shortage, executives' complaints reek of hypocrisy. Every year, when executive pay packages become public, bosses defend their own lavish compensation by citing "immutable laws of supply and demand (even though executive pay is frequently established through sleazy daisy chain of interlock mutual back-rubbing). There aren't enough good executive go around, they insist: Those megamlillons in pay and bonuses are simply the free market at work.

When this principle moves down the food chain--that is when rank-and-file workers find themselves in a decent bargaining position for once--suddenly free-market economy is broken.

The industry also loves to complain about the lousy U.S. public education system, citing it a reason for the alleged shortage.

If the industry succeeds in ramming the immigration increase through Congress, let's hope Congress extracts something return. One approach, suggested by Sen. Dianne Feinstein,D-Calif), is to require the industry to offer 'extraordinary help' to schools, ensuring that there are more qualified workers available" in the future.