

# Cyberstates

V.40

A STATE-BY-STATE OVERVIEW OF THE HIGH-TECHNOLOGY INDUSTRY



NASDAQ

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American Electronics Association

## FOREWORD

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This is the fourth annual edition of the American Electronics Association's (AEA) *Cyberstates: A State-by-State Overview of the High-Technology Industry* report. *Cyberstates 4.0* provides you with new 1998 state data on high-tech employment, wages, establishments, and payroll. We review 1993 to 1998 trends for these indicators, and for the first time include Puerto Rico. This report also includes 1999 national high-tech employment data and state high-tech export data. Another new feature is a review by state of venture capital investments and research and development (R&D) expenditures.

*Cyberstates 4.0* quantifies the economic importance of the U.S. high-technology industry. The industry has experienced explosive growth, adding 1.2 million jobs to the U.S. economy between 1993 and 1999. Similarly, high-tech wages continue to soar. The 1998 high-tech average wage of \$57,700 was 82 percent higher than the average U.S. private sector wage.

High-tech job growth continues across the nation's leading cyberstates. For example, Texas's technology industry exploded, adding more than 132,000 new jobs between 1993 and 1998. Also, for the first time, Colorado surpassed Georgia to become the nation's 10th ranked cyberstate, up from 12th in 1998.

Two new additions to *Cyberstates 4.0* include venture capital investments and research and development expenditures by state. Venture capital investments totaled \$35.6 billion in 1999, with five states – California, Massachusetts, New York, Texas, and Colorado – accounting for 70 percent of this investment. The nation's top cyberstates by R&D expenditures in 1997 were California, Michigan, New York, New Jersey, and Massachusetts.

What this report clearly demonstrates is that high technology means jobs, high-paid workers, and exports for all 50 states, the District of Columbia, and Puerto Rico. We strongly urge you to read this report along with AEA's other cyber reports – including the recently released *Cybernation 2.0: The U.S. High-Tech Industry and World Markets* – to discover how important the high-tech industry is to your state, the national, and international economy.

William T. Archey  
President and CEO  
American Electronics Association

Alfred R. Berkeley  
President  
The Nasdaq Stock Market

The American Electronics Association is the grassroots voice of the high-tech industry. As the nation's largest high-tech trade association, AEA has more than 3,000 member companies that span the spectrum of electronics and information technology companies, from semiconductors and software to mainframe computers and telecommunication systems. Founded in 1943, the nonpartisan AEA has an active grassroots network of senior industry executives, provides timely information to its members and the media, and shapes public policy at the state, national, and international levels.

In the public policy arena, AEA has taken a leading education and advocacy role in a variety of domestic and international issues. These include: reforming securities litigation law, making the research and development tax credit permanent, promoting free and fair trade, opening foreign markets to U.S. high-tech exports by supporting trade pacts, limiting the government's regulation and taxation of the Internet, lowering capital costs for emerging technology companies, and supporting human resource and immigration policies that make economic sense.

From the well known giants of the high-tech world to the next generation of dynamic, smaller companies, AEA's member companies create products that promote innovation and efficiency in virtually every industry and business sector in the United States and throughout the world. The impact of high-tech products on people's everyday lives is immeasurable. High-tech products keep people safer and healthier, enable them to be more productive at home and on the job, and contribute to a higher standard of living. Whether it's medicine or national security, education or agriculture, environment or entertainment, the high-tech industry is omnipresent and is inextricably linked to the advancement of modern society.

For information about AEA and the high-tech industry, please visit our website at [www.aeanet.org](http://www.aeanet.org).

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How does The Nasdaq Stock Market compare to other major U.S. markets? Nasdaq stands out with its distinctive structure of multiple market participants. As the world's largest electronic market, Nasdaq is not limited to trading in one centralized location. Rather, trading is executed through Nasdaq's sophisticated computer and telecommunications network – a system that transmits timely, critical investment information to more than 350,000 computer terminals in 67 countries. Without size limitations or geographical boundaries, Nasdaq's market structure allows a virtually unlimited number of market participants to trade in a company's stock.

Nasdaq's competitive market structure, combined with a wide range of products and services, attracts today's largest and fastest growing companies. In fact, more domestic and foreign companies now list on Nasdaq than on all other U.S. stock markets combined. In addition, Nasdaq outpaces all other U.S. markets in listing of new public companies – a total of 89 percent of all companies making initial public offerings traded on Nasdaq in 1999.

Nasdaq's success and dramatic growth can be attributed to its listed companies. These companies, among the world's most dynamic, include: Microsoft, Intel, Amgen, Cisco Systems, Oracle, Sun Microsystems, Yahoo!, Amazon.com, Staples, Starbucks, Dell, Apple, and MCI WorldCom.

Nasdaq companies cover the entire spectrum of the U.S. economy, from agriculture, mining, construction, and manufacturing to transportation, retail, banking, and insurance. The largest concentration of firms is in dynamic growth sectors such as information technologies (software and hardware), telecommunications, pharmaceuticals, biotechnology, finance, banking, and insurance. The breadth and exponential growth of Nasdaq companies have led to expanding interest among sophisticated investors worldwide, with more than 47 percent of Nasdaq's market capitalization residing in institutional portfolios as of September 1999.

For more information and stock quotes, visit The Nasdaq Stock Market website at [nasdaq.com](http://nasdaq.com).

# OVERVIEW

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# INTRODUCTION

*Cyberstates 4.0: A State-By-State Overview of the High-Technology Industry* is the fourth edition of AEA's annual *Cyberstates* report. Chapters one and two provide details on the most recent national employment and wage data. These chapters contain one-page, high-tech "snapshots" of the electronics and information technology industry nationally. The national employment and wage overviews also show leading industry segments and trends since 1993.

Data on venture capital investments and research and development expenditures are new features of chapter one. Both of these variables are essential factors in creating a vibrant and dynamic business climate for the high-tech industry. There is no doubt that venture capital is key to growing today's most innovative and cutting-edge businesses. Research and development is equally important for the high-tech industry that constantly must innovate, bring new products and services to market, and maximize the use of technology in the workplace.

Chapter three shows that the high-technology industry plays a critical role in employment, wages, exports, venture capital, and R&D expenditures for each state, the District of Columbia, and Puerto Rico. The importance of the high-tech industry is delineated not only in the state overview pages, but also in the appendices that rank cyberstates by high-tech jobs, wages, establishments, payroll, and exports. Additionally, states are highlighted by employment in specific technology industry segments.

Another new component of this report is the high-tech employment and occupation projections by the U.S. Bureau of Labor Statistics through 2008. These projections show that high-tech industry employment should jump from 5 million in 1999 to more than 7 million in 2008. Similarly, occupational employment is expected to more than double for the nation's computer scientists, computer engineers, and computer support specialists in the next 10 years.

In analyzing the electronics and information technology industry, we used 45 Standard Industrial Classification (SIC) codes at the 4-digit level from the U.S. government's *Standard Industrial Classification Manual 1987* to define the industry. We believe three major categories — high-tech manufacturing, communications services, and software and computer-related services — comprise the core components of today's high-technology industry and represent a solid, yet conservative, definition of our industry.

When it becomes available, data from the newly implemented North American Industrial Classification System (NAICS) will allow us to analyze a

## U.S. HIGH-TECH EMPLOYMENT 1993 vs. 1999p

	1993	1999p	Numeric Change
Electronics Manufacturing	1,845,000	1,935,000	+90,000
Communications Services	1,037,000	1,281,000	+244,000
Software and Computer-Related Services	894,000	1,779,000	+884,000
<b>Total High-Tech Employment</b>	<b>3,777,000</b>	<b>4,995,000</b>	<b>+1,218,000</b>

p = projected

## U.S. HIGH-TECH AVERAGE WAGES 1993 vs. 1998\*

	1993	1998*	Percent Change
Electronics Manufacturing	\$47,500	\$55,300	+17%
Communications Services	\$47,200	\$51,800	+10%
Software and Computer-Related Services	\$51,100	\$65,200	+28%
<b>Total High-Tech Average Wage</b>	<b>\$48,300</b>	<b>\$57,700</b>	<b>+20%</b>

\*Data for 1998 are the most recent available at the state level.

Wages are adjusted for inflation to 1998 dollars.

Source: U.S. Bureau of Labor Statistics

## U.S. HIGH-TECH GOODS EXPORTS 1993 vs. 1999

(in billions of current U.S. dollars)

	1993	1999	Percent Change
Select Industries*			
Semiconductors	\$19.1b	\$46.9b	+145%
Electronic Components	\$7.7b	\$17.1b	+124%
Communications Equipment	\$10.9b	\$22.4b	+106%
<b>Total High-Tech Goods Exports</b>	<b>\$97.9b</b>	<b>\$181.4b</b>	<b>+85%</b>

\* Not all industry sectors are represented. See page 98 for more details.

Source: *Cybernation 2.0: The U.S. High-Tech Industry and World Markets*

# INTRODUCTION

variety of new industries in detail, including the information sector of the U.S. economy. Once the new system is in place, AEA will re-evaluate its present definition.

*Cyberstates 4.0* is part of AEA's cyber report series. The cyber publications – *Cybernation 2.0*, *CyberEducation*, and *California Cybercities* – provide high-tech industry data at the city, state, national, and international levels. These publications are a “must read” for anyone who needs a complete understanding of the economic impact of America's high-tech industry. For more information on AEA's cyber reports visit, our website at [www.aeanet.org](http://www.aeanet.org) or call 800-284-4232 or 408-987-4200.

## U.S. VENTURE CAPITAL INVESTMENTS 1997 vs. 1999

(in billions of current U.S. dollars)

	1997	1999	Percent Change
Select industries*			
New Media	\$0.2b	\$2.9b	+1,204%
Telecommunications	\$1.7b	\$5.2b	+209%
Software and Computer-Related Services	\$2.4b	\$6.6b	+175%
<b>Total High-Tech Venture Capital</b>	<b>\$6.3b</b>	<b>\$20.0b</b>	<b>+218%</b>

\* Not all industry sectors are represented. See page 102 for more details.  
Source: PricewaterhouseCoopers MoneyTree Survey

## U.S. HIGH-TECH INDUSTRY EMPLOYMENT PROJECTIONS 1999 vs. 2008

	1999	2008	Percent Change
High-Tech Manufacturing	1.9m	2.1m	7%
Communications Services	1.3m	1.5m	18%
Software and Computer-Related Services	1.8m	3.5m	95%
<b>High-Tech Total</b>	<b>5.0m</b>	<b>7.1m</b>	<b>41%</b>

Source: U.S. Bureau of Labor Statistics

## SELECT U.S. HIGH-TECH UNEMPLOYMENT RATES BY OCCUPATION 1993 vs. 1999

	1993	1999
Engineers (General)	4.1%	1.6%
Math and Computer Scientists	2.7%	1.6%
Computer Equipment Operators	5.5%	3.1%

Source: U.S. Bureau of Labor Statistics

# WHAT'S NEW IN CYBERSTATES 4.0?

## HIGH-TECH EMPLOYMENT

- U.S. high-tech industry employment totaled 5 million in 1998.
- The nation's leading cyberstates in 1998 were California, Texas, New York, Illinois, and Massachusetts.
- Colorado leaped from 12th place in 1997 over Georgia and Ohio to become the 10th ranked cyberstate by employment in 1998 (see page 33).
- High-tech employment grew in **every** state between 1997 and 1998.

## HIGH-TECH WAGES

- U.S. high-tech industry wages increased to \$57,700 or by \$3,500 between 1997 and 1998, adjusted for inflation, 82 percent higher than private sector wages in 1998.
- Washington ranked first in high-tech wages at an all time high of \$106,000.
- New Jersey, California, Virginia, and Connecticut's high-tech industry wages far exceeded the U.S. average with high-tech industry workers earning more than \$65,000 in each state.

## HIGH-TECH PAYROLL

- High-tech industry payroll grew by \$32 billion to a record high of nearly \$280 billion between 1997 and 1998.
- California, Texas, and New York were the top three cyberstates by high-tech industry payroll in 1998.

## HIGH-TECH ESTABLISHMENTS

- There were nearly 195,000 high-tech industry establishments in the United States in 1998, compared with 172,000 in 1997.
- California, New York, and Texas led the nation in high-tech industry establishments in 1998.

## HIGH-TECH EXPORTS

- U.S. high-tech industry exports totaled \$181 billion in 1999, a 9 percent increase from 1998.
- California, Texas, Massachusetts, Florida, and New York, were the leading cyberstates by exports in 1999 (see page 35).

## TOP CYBERSTATES 1998

### BY HIGH-TECH EMPLOYMENT

1.	California	834,700
2.	Texas	411,000
3.	New York	328,800
4.	Illinois	217,600
5.	Massachusetts	216,700

### BY HIGH-TECH AVERAGE WAGES

1.	Washington	\$105,700
2.	New Jersey	\$68,700
3.	California	\$66,900
4.	Virginia	\$66,000
5.	Connecticut	\$65,400

### BY HIGH-TECH PAYROLL (IN BILLIONS)

1.	California	\$56b
2.	Texas	\$25b
3.	New York	\$20b
4.	Massachusetts	\$14b
5.	New Jersey	\$13b

### BY HIGH-TECH ESTABLISHMENTS

1.	California	28,800
2.	New York	13,400
3.	Texas	12,200
4.	New Jersey	10,200
5.	Illinois	10,000

Note: State-level employment data are only available through 1998.

Source: U.S. Bureau of Labor Statistics

# WHAT'S NEW IN CYBERSTATES 4.0?

## VENTURE CAPITAL INVESTMENTS

- Venture capital investments in the United States totaled \$35.6 billion in 1999, more than double the \$11.5 billion in 1997.
- California, Massachusetts, New York, Texas, and Colorado were the leading cyberstates by venture capital investments in 1999.
- The leading high-tech industry sectors for venture capital investments were software, telecommunications, networking and equipment, new media, semiconductors, electronics, and computers reaching nearly \$20 billion in 1999.

## R&D EXPENDITURES

- Total R&D expenditures in the U.S. reached \$247 billion in 1999, according to preliminary data from the National Science Foundation, jumping from \$166 billion in 1993.
- The nation's leading cyberstates by R&D expenditures in 1997 were California, Michigan, New York, New Jersey, and Massachusetts.
- The top cyberstates by R&D spending on a per capita basis in 1997 were the District of Columbia, Massachusetts, New Mexico, New Jersey, and Delaware.

## HIGH-TECH INDUSTRY EMPLOYMENT AND OCCUPATIONAL PROJECTIONS

- High-tech manufacturing employment is expected to jump from 1.9 million in 1999 to 2.1 million in 2008.
- Software and computer-related services employment is projected to nearly double from 1.8 million to 3.5 million between 1999 and 2008.
- Occupational employment for computer engineers, computer support specialists, and computer scientists is expected to double between 1998 and 2008 (see page 101).

## HIGH-TECH UNEMPLOYMENT

- Unemployment rates in the electrical engineering occupation dropped even further in 1999 to 1.2 percent from 2.1 percent in 1998 (see page 99).

## TOP CYBERSTATES

### BY HIGH-TECH EXPORTS (IN BILLIONS) 1999

	United States	\$181.4
1. California	\$53.0	
2. Texas	\$24.9	
3. Massachusetts	\$9.1	
4. Florida	\$8.0	
5. New York	\$7.6	

Source: U.S. Bureau of the Census as compiled by Global Trade Information Services

### BY VENTURE CAPITAL (IN BILLIONS) 1999

	United States	\$35.6
1. California	\$16.9	
2. Massachusetts	\$3.7	
3. New York	\$1.9	
4. Texas	\$1.5	
5. Colorado	\$1.3	

Source: PricewaterhouseCoopers MoneyTree Survey

### BY TOTAL R&D EXPENDITURES (IN BILLIONS) 1997\*

	United States	\$211
1. California	\$41.7	
2. Michigan	\$14.0	
3. New York	\$12.3	
4. New Jersey	\$12.1	
5. Massachusetts	\$11.1	

\*1997 data are the most recent available at the state level.

Source: U.S. National Science Foundation

# KEY FINDINGS

## U.S. HIGH-TECHNOLOGY INDUSTRY

### U.S. HIGH-TECH EMPLOYMENT

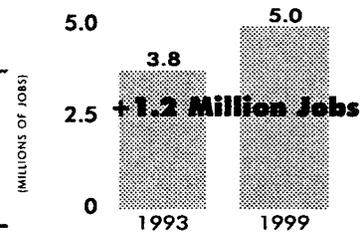
- U.S. electronics and information technology industry employment totaled 5 million in 1999, up from 3.8 million in 1993, a 32 percent increase, adding over 1.2 million jobs to the U.S. economy.
- The high-tech industry represented nearly 5 percent of the U.S. private sector workforce in 1999.
- Software and computer-related services industry employment reached 1.8 million in 1999, doubling from more than 890,000 jobs in 1993, continuing its six year employment boom.
- High-tech manufacturing employment **increased** between 1993 and 1999, adding some 90,000 jobs.
- However, U.S. high-tech manufacturing industry employment declined between 1998 and 1999, losing some 74,000 jobs. This decline was in **all** high-tech manufacturing sectors. The hardest hit sectors were computers and office equipment (-18,000 jobs) and semiconductor manufacturing (-15,000 jobs).
- Communications services industry employment jumped by 244,000 jobs between 1993 and 1999, largely due to the explosive growth in cellular phone services and the emergence of Internet companies.

### U.S. HIGH-TECH WAGES

- U.S. high-technology industry workers were paid an average annual wage of \$57,700 in 1998, a 20 percent increase from the 1993 average wage of \$48,300, adjusted for inflation.
- While high-tech wages increased 20 percent, private sector wages grew only 8 percent, between 1993 and 1998.
- The 1998 high-technology industry average wage was 82 percent higher than the private sector average wage of \$30,000, compared to a 65 percent spread in 1993.
- The best paid high-technology industry workers in 1998 were the 249,000 prepackaged software services employees, earning on average \$95,000.
- Ranked second were the 204,000 employees in the electronic computers manufacturing industry at \$82,000.

## High-tech employment soared...

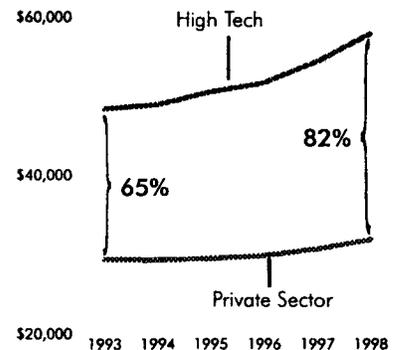
U.S. HIGH-TECH EMPLOYMENT  
1993 vs. 1999p



p = projected

## ...along with high-tech wages

U.S. HIGH-TECH WAGES  
vs. U.S. PRIVATE SECTOR WAGES  
1993 - 1998



Wages are adjusted for inflation to 1998 dollars.

Source: U.S. Bureau of Labor Statistics

# KEY FINDINGS

## LEADING CYBERSTATES

### CYBERSTATES EMPLOYMENT

- California remained the nation's leading cyberstate by industry employment, with more than 830,000 high-technology workers in 1998, a record high, adding 193,200 jobs since 1993.
- Texas was the second ranked cyberstate with 411,000 jobs. Texas added some 132,000 tech jobs to its economic base between 1993 and 1998, making it the second fastest growing cyberstate in the country, behind California by total jobs.
- Virginia, Colorado, and Georgia also were fast growing cyberstates, adding 50,300, 47,900, and 46,400 jobs, respectively, to their high-tech employment bases between 1993 and 1998.
- North Dakota, Nevada, and South Dakota were the three fastest growing cyberstates by percent job growth, with high-tech industry jobs increasing 90 percent, 74 percent, and 69 percent, respectively, between 1993 and 1998.
- Washington, Oregon, Nevada, and South Dakota leapfrogged up four places in each of their respective cyberstates rankings due to strong employment growth between 1993 and 1998. Washington's national high-tech employment ranking jumped from 19th to 15th and Oregon jumped from 23rd to 19th. Colorado also moved up two rankings breaking into the top 10 cyberstates by employment for the first time.
- Colorado also led the nation in concentration of high-tech workers for the first time in 1998, with 84 high-tech workers per 1,000 private sector workers. New Hampshire ranked second, with 83 high-tech workers per 1,000 private sector employees, followed by Massachusetts.

### CYBERSTATES WAGES

- Washington led the nation with the highest paid high-tech industry workers, earning an average wage of \$106,000 in 1998. This was nearly three times the average private sector wage.
- New Jersey edged out California with a high-tech average wage of \$68,700, compared to \$66,900 in 1998.
- High-tech industry workers in Virginia, Arizona, and California all earned nearly twice that of private sector workers in their own state.

## CYBERSTATES ON THE RISE

### BY NUMERIC HIGH-TECH EMPLOYMENT GROWTH 1993 - 1998

1. California	193,200
2. Texas	132,400
3. Virginia	50,300
4. Colorado	47,900
5. Georgia	46,400

### BY PERCENTAGE HIGH-TECH EMPLOYMENT GROWTH 1993 - 1998

1. North Dakota	90%
2. Nevada	74%
3. South Dakota	69%
4. Oregon	53%
5. Kansas	53%

### MOVING UP IN HIGH-TECH EMPLOYMENT RANKINGS 1993 - 1998

	1993	1998
Colorado	12th	10th
Georgia	13th	11th
Washington	19th	15th
Oregon	23rd	19th
Nevada	42nd	38th
South Dakota	44th	40th

Source: U.S. Bureau of Labor Statistics

# KEY FINDINGS

## CYBERSTATES PAYROLL

- The U.S. high-tech industry payroll totaled \$279 billion in 1998, up \$97 billion from \$182 billion in 1993, adjusted for inflation.
- Washington and South Dakota saw their high-tech payrolls explode. Washington's payroll tripled from \$3.7 billion to \$11 billion between 1993 and 1998; South Dakota's payroll more than doubled during the same period, adjusted for inflation.

## CYBERSTATES ESTABLISHMENTS

- High-tech industry establishments in the United States grew by 80,000 between 1993 and 1998, from 113,900 to 194,600.
- California, New York, Texas, New Jersey, and Illinois were the nation's leading cyberstates by high-tech industry establishments in 1998.
- Delaware and Nevada more than doubled the number of high-tech industry establishments in their respective states between 1993 and 1998.

## CYBERSTATES BY INDUSTRY SECTOR EMPLOYMENT

- California led the nation in all but one industry segment, photonics. New York led in photonics with over four times as many photonics manufacturing employees as California.
- Virginia's software services industry was the second largest nationwide with 55,200 workers in 1998, followed by Texas at 50,800.
- Minnesota's electromedical equipment industry ranked second in the nation with 6,800 employees, behind California at 10,500.
- California, Texas, Arizona, Oregon, and Massachusetts led the nation in semiconductor manufacturing industry employment in 1998.
- California, New York, Indiana, Pennsylvania, and Tennessee led in consumer electronics industry manufacturing employment in 1998.
- An increase in the highly-paid software services jobs has moved Colorado from 12th in 1993 to 8th in 1998 nationwide by employment, and Georgia from 14th to 9th, during the same period.

## TOP CYBERSTATES BY INDUSTRY SEGMENT EMPLOYMENT 1998

### SOFTWARE SERVICES

1. California	149,400
2. Virginia	55,200
3. Texas	50,800
4. Massachusetts	46,500
5. Maryland	35,400

### ELECTROMEDICAL EQUIPMENT MFG.

1. California	10,500
2. Minnesota	6,800
3. Florida	5,000
4. Washington	4,800
5. Massachusetts	3,800

### SEMICONDUCTOR MFG.

1. California	75,200
2. Texas	47,300
3. Arizona	36,700
4. Oregon	23,900
5. Massachusetts	11,200

### CONSUMER ELECTRONICS MFG.

1. California	18,800
2. New York	8,200
3. Indiana	7,300
4. Pennsylvania	7,200
5. Tennessee	4,500

Source: U.S. Bureau of Labor Statistics

# KEY FINDINGS

## CYBERSTATES MERCHANDISE EXPORTS

- California was the leading high-tech export state with \$53 billion in exports in 1999, up from \$51 billion in 1997.
- Texas's high-tech industry exports reached \$25 billion in 1999, making it the nation's second ranked cyberstate by electronics exports.
- Massachusetts, Florida, and New York rounded out the top five cyberstates by high-tech industry exports in 1999. Florida surpassed New York in 1998 to become the nation's fourth largest high-tech exporting state.
- High-tech exports from Delaware increased 134 percent, from \$91 million in 1997 to \$213 million in 1999.
- High-tech exports from New Mexico increased 94 percent, while exports from Nevada, Hawaii, and Mississippi also jumped significantly between 1997 and 1999, albeit from very low bases.

## CYBERSTATES VENTURE CAPITAL

- Nearly 50 percent of all 1999 venture capital investments were in California (\$16.9 billion).
- California was followed by Massachusetts (\$3.7 billion), New York (\$1.9 billion), Texas (\$1.5 billion), and Colorado (\$1.3 billion) in venture capital investments.
- California led the nation by increase of venture capital investments between 1997 and 1999, followed by Massachusetts, New York, Colorado, and Washington.

## CYBERSTATES R&D EXPENDITURES

- California was the leading state in total R&D expenditures with \$42 billion in 1997, followed by Michigan (\$14 billion), New York (\$12.3 billion), New Jersey (\$12.1 billion), and Massachusetts (\$11 billion).
- The nation's leading states in total R&D expenditures per capita in 1997 were the District of Columbia (\$5,232), Massachusetts (\$1,814), New Mexico (\$1,750), New Jersey (\$1,498), and Delaware (\$1,487).

## TOP CYBERSTATES

### BY ELECTRONICS EXPORTS 1999

	United States	\$181 billion
1. California	\$53 billion	
2. Texas	\$25 billion	
3. Massachusetts	\$9.1 billion	
4. Florida	\$8.0 billion	
5. New York	\$7.6 billion	

### CYBERSTATES ON THE RISE

#### BY NUMERIC ELECTRONICS EXPORTS GROWTH 1997 - 1999

1. Texas	\$3.9 billion
2. California	\$2.1 billion
3. New Mexico	\$1.4 billion
4. Oregon	\$1.2 billion
5. Colorado	\$0.8 billion

#### BY PERCENT ELECTRONICS EXPORTS GROWTH 1997 - 1999

1. Delaware	134%
2. New Mexico	94%
3. Nevada	84%
4. Hawaii	66%
5. Mississippi	59%

Source: U.S. Bureau of the Census as compiled by  
Global Trade Information Services

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## INTRODUCTION

This chapter focuses on U.S. high-tech employment trends between 1993 and 1999. These statistics show that since 1993, employment in the high-tech industry has soared, jumping 32 percent from 3.8 million to 5 million in 1999. Jobs in the software and computer-related services industry, one of the fastest growing employment segments of the U.S. economy, doubled from more than 890,000 to 1.8 million between 1993 and 1999.

High-tech services employment continues to grow faster than high-tech manufacturing employment. There were 86,000 more high-tech services jobs than high-tech manufacturing jobs in 1993. This gap widened to 1.1 million by 1999, with employment in the high-tech services industry growing at 58 percent. By contrast, high-tech manufacturing employment increased only 5 percent between 1993 and 1999. The high-tech services segment now employs some 3.1 million workers compared with 1.9 million for high-tech manufacturing.

One of the biggest challenges the electronics and information technology industry faces today is ensuring an adequate supply of skilled labor to fill the new jobs of the 21st century. Indeed, unemployment rates in many key high-tech professions are already extremely low, resulting in a tight labor market for skilled technical professionals. For instance, the 1999 unemployment rate for electrical and electronic engineers was 1.2 percent and 1.5 percent for computer systems analysts. Industry employment projections show that by 2008, there will be even more demand for a tech-savvy workforce, with high-tech industry employment expected to jump from 5 million to more than 7 million.

While technology jobs at all levels are becoming more highly skilled, clearly the U.S. education system is failing to deliver enough students with the required skills to fill them. AEA's *CyberEducation* report details this shortfall. Indeed, AEA is concerned that if fewer Americans receive degrees in such core technology fields like engineering and computer science, it could adversely affect the ability of the United States to remain competitive in the global marketplace. The worldwide competitiveness of the U.S. high-tech industry is detailed in AEA's report, *Cybernation 2.0: The U.S. High-Tech Industry and World Markets*.

### U.S. HIGH-TECH ANNUAL AVERAGE EMPLOYMENT 1993 - 1999p

1993	3,777,000
1994	3,848,000
1995	4,015,000
1996	4,261,000
1997	4,566,000
1998	4,840,000
1999p	4,995,000

p = projected

### SELECT HIGH-TECH UNEMPLOYMENT RATES 1993 vs. 1999

	1993	1999
Electrical and Electronic Engineering	4.0%	1.2%
Industrial Engineering	4.7%	2.1%
Mechanical Engineering	3.8%	1.9%
Electrical and Electronic Engineering Technicians	6.6%	2.5%
Computer Systems Analysts	3.1%	1.5%
Computer Programmers	2.7%	2.3%

### HIGH-TECH INDUSTRY EMPLOYMENT PROJECTIONS 1999 vs. 2008

	1999	2008	Percent Change
Select Industries*			
Computer and Office Equip. Mfg.	362,000	369,000	2%
Communication Equip. Mfg.	274,000	302,000	10%
Electronic Components-Manufacturing	640,000	820,000	28%
<b>High-Tech Total</b>	<b>5.0m</b>	<b>7.1m</b>	<b>45%</b>

\*Not all industry sectors are represented. See page 101 for more details.

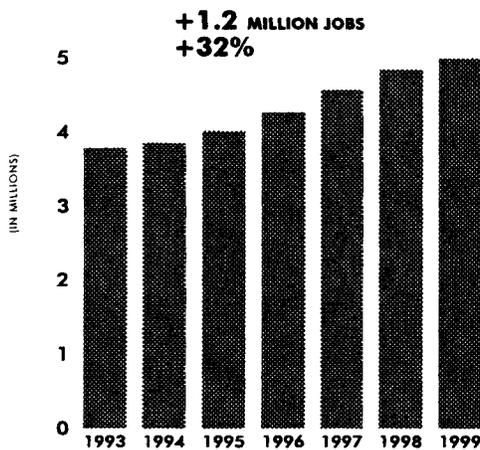
Source: U.S. Bureau of Labor Statistics



<b>TOTAL HIGH-TECH JOBS</b>	<b>4,994,832</b>
Percentage of Private Sector Workforce	4.6%
<b>HIGH-TECH MANUFACTURING JOBS</b>	<b>1,934,913</b>
Percentage of U.S. Manufacturing Workforce	10.5%
<b>HIGH-TECH SERVICES JOBS</b>	<b>3,059,919</b>
Percentage of U.S. Services Workforce	8.4%

## HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1999)

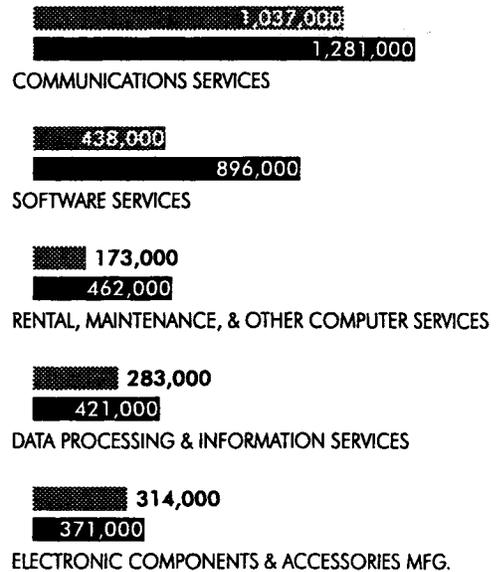


**HIGH TECH  
ADDED OVER  
1.2 MILLION  
JOBS TO THE  
U.S.  
ECONOMY  
BETWEEN  
1993 AND  
1999**

## LEADING HIGH-TECH INDUSTRY SEGMENTS

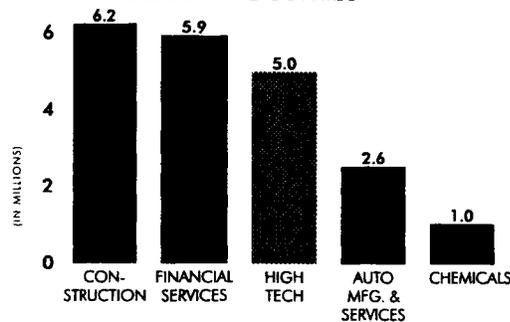
(EMPLOYMENT)

1993 1999



## EMPLOYMENT COMPARISONS

SELECT INDUSTRIES



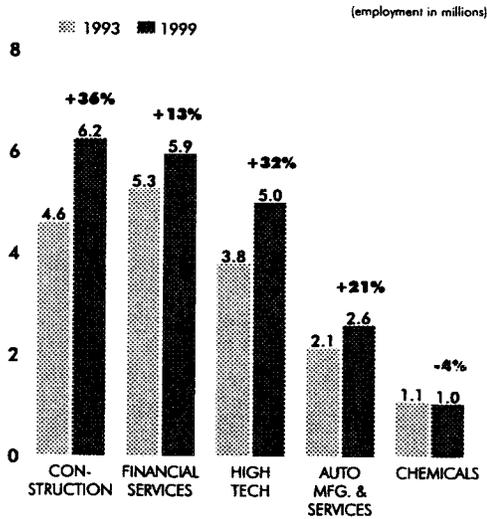
1999 data are projected.

Source: U.S. Bureau of Labor Statistics

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## High Tech Leads in Jobs and Growth

**Select Industries Employment  
1993 vs. 1999p**



p = projected

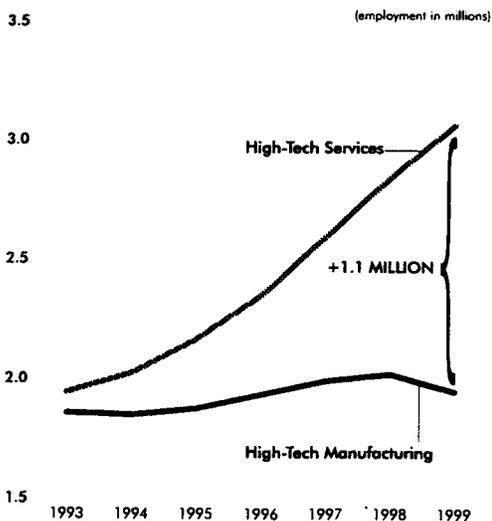
Source: U.S. Bureau of Labor Statistics

The U.S. high-tech industry employed 5 million workers in 1999. This was twice as many workers as in auto manufacturing and services, and far exceeds the one million workers in the chemical manufacturing industry.

Moreover, America's high-tech industry has been growing by leaps and bounds. Employment in the U.S. high-tech industry has jumped by 32 percent since 1993, compared to a 21 percent increase in the automotive manufacturing and services industry, and a 36 percent increase in construction industry jobs.

## Services Employment Continues to Outpace Manufacturing

**High-Tech Employment Growth  
1993 - 1999p**



p - projected

Source: U.S. Bureau of Labor Statistics

There were 1.1 million more technology services industry jobs than high-tech manufacturing jobs in 1999. Communications and software and computer-related services jobs totaled 3.1 million last year, compared to 1.9 million in 1993.

These new jobs are being fueled by the information revolution where information, skills, and talent are as valuable to companies as equipment, buildings, and capital.

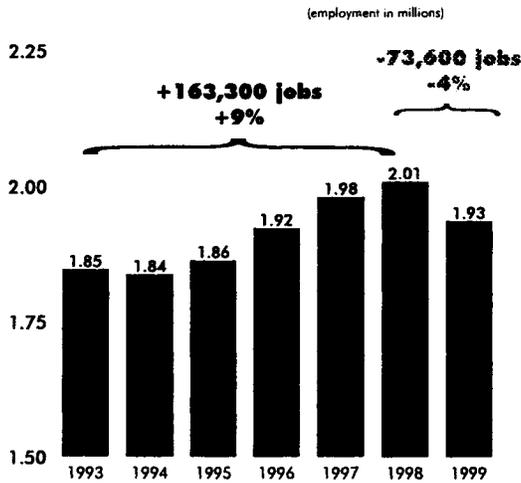
While jobs in high-tech services have been growing at breakneck speeds, technology manufacturing employment also has rebounded. Since 1993, the high-tech manufacturing sector has added nearly 90,000 new jobs to the American economy. However, between 1998 and 1999, the

high-tech manufacturing industry lost 74,000 jobs. This is the single largest high-tech manufacturing decrease for any one-year period in the 1990s.

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## High-Tech Manufacturing Rebounded . . . Until 1999

### High-Tech Manufacturing Employment 1993 - 1999p



p - projected

Source: U.S. Bureau of Labor Statistics

Employment in the high-tech manufacturing industry grew from 1.8 million to 1.9 million between 1993 and 1999, adding 89,800 jobs. Jobs in the communications equipment and the semiconductors manufacturing industries grew significantly during this period.

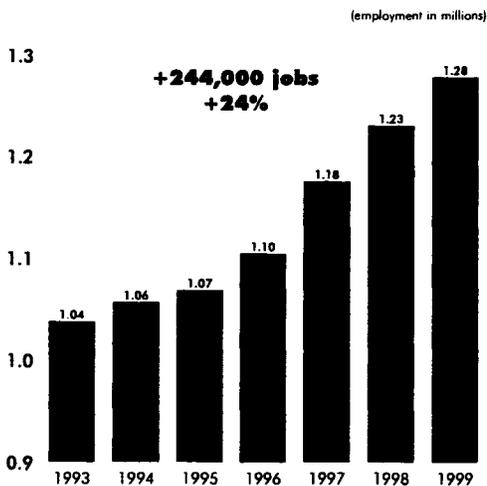
However, during the last year, jobs in the high-tech manufacturing industry dropped. Employment decreased by 74,000 jobs, or by 4 percent, between 1998 and 1999. This decline is largely attributable to improvements in productivity and downsizing by companies in an effort to control costs and maintain profits.

The recent decrease in employment has occurred across all high-tech manufacturing industry sectors. The largest hits were in computers and office equipment and semiconductors manufacturing. These industry sectors lost 18,000 jobs and 15,000 jobs, respectively.

High-tech manufacturing is the single largest manufacturing sector by employment in the United States.

## Communications Services Employment Takes Off

### Communications Services Employment 1993 - 1999p



p - projected

Source: U.S. Bureau of Labor Statistics

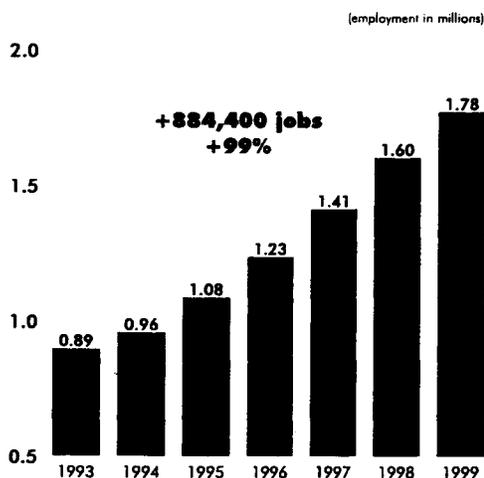
Technology convergence has prompted significant employment growth in the communications services industry. Employment in this segment increased by 24 percent, or 244,000 jobs, between 1993 and 1999.

Most of these new jobs are concentrated in the emerging sectors of wireless communications and cable services. Employment in the wireless communications services industry (radiotelephone communications) has nearly tripled in the past six years from 63,000 to 165,000. Wireless communications services employment is expected to continue to rise as mobile phone prices decline and as cell phones become more ubiquitous.

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## Software and Computer-Related Services Thrive in the New Economy

**Software & Computer-Related Services Employment  
1993 - 1999p**



Software and computer-related services industry employment exploded in the 1990s, nearly doubling from 894,000 to 1.8 million jobs between 1993 and 1999. This sector is at the center of today's "information revolution" and includes many new Internet-related jobs. This industry has been growing at a phenomenal rate during the 1990s as the Internet has led to many new business opportunities.

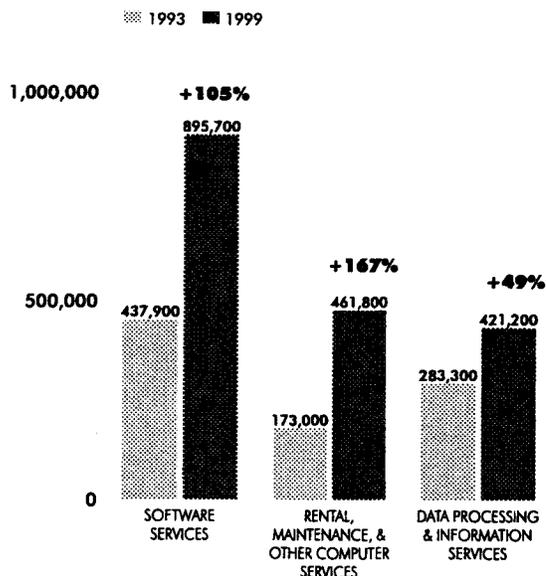
Today, companies and individuals rely increasingly on the Internet and software to improve their productivity and ultimately their lives.

p - projected

Source: U.S. Bureau of Labor Statistics

## Software and Computer Services Employment Explodes

**Software & Computer-Related Services Employment  
by Sector, 1993 vs. 1999p**



The industry segments that comprise the software and computer-related services industry experienced extraordinary growth between 1993 and 1999. Used in everything from databases to hand-held computers, software has become omnipresent in our everyday lives. There were 895,700 software services jobs in 1999, twice as many as in 1993. This segment consists of establishments that provide services like computer programming, prepackaged software, and computer integrated systems design.

Employment in the rental, maintenance, and other computer-related services industry nearly tripled, from 173,000 to 461,800 between 1993 and 1999. Many of today's newest and most innovative Internet services businesses are captured here.

As processing power and storage systems have declined in price, the need for complex and comprehensive databases has increased. This fueled the 49 percent growth in data processing and information services employment, between 1993 and 1999, increasing from 283,300 to 421,200.

p - projected

Source: U.S. Bureau of Labor Statistics

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## High-Tech Companies Create Jobs

**Job Growth in High-Tech Companies  
1993 vs. 1999**

Company	1993 Employment	1999 Employment	Job Creation	Job Growth
3Com	1,971	13,027	11,056	561%
America Online	236	12,100	11,864	5,027%
Cabletron	2,625	5,951	3,326	127%
Cisco Systems	1,451	21,000	19,549	1,347%
Dell	4,650	24,400	19,750	425%
E*Trade	20	1,735	1,715	8,575%
Intel	29,500	70,200	40,700	138%
Microsoft	14,430	31,396	16,966	118%
Novell	4,335	5,629	1,294	30%
Oracle	9,247	43,800	34,553	374%
Read-Rite	10,448	14,701	4,253	41%
Silicon Graphics	3,750	9,191	5,441	145%
Solelectron	2,000	37,936	35,936	1,796%
Yahoo!	155 (1995)	1,992	1,837	1,185%

Sources: Hoover's Online [www.hoovers.com] 1999 and Hoover's Handbooks of American Business

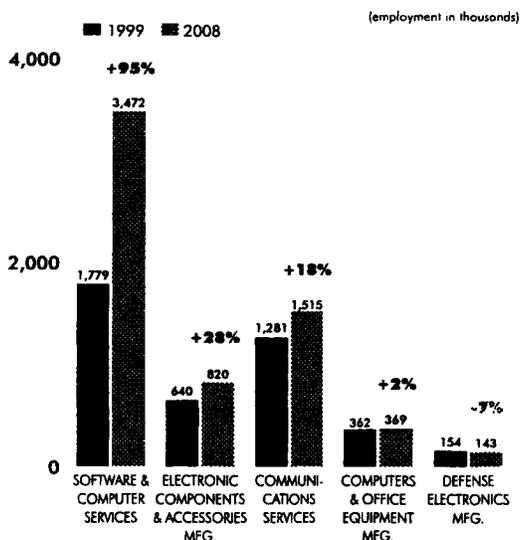
High-tech firms have been hiring employees at record levels. Many of these companies have grown from small start-ups to major multibillion dollar businesses. For example, Cisco Systems employed 1,451 employees in 1993. Since then, Cisco has added some 19,500 employees, growing by an astonishing 1,350 percent.

Even well-established technology companies have added tens of thousands of employees. Intel and Microsoft have added 40,700 and 17,000 employees since 1993, respectively.

The Internet revolution that began in 1994 has created thousands of new jobs in such new emerging companies as Yahoo! and E\*Trade.

## High-Tech Services Employment Is Projected To Continue Its Rapid Growth

**High-Tech Employment Projections  
by Industry Sector, 1999p vs. 2008p**



Employment in the services industries will continue to increase over the next decade, according to U.S. Bureau of Labor Statistics (BLS) projections. In fact, the software and computer services industry is expected to post the fastest growth by employment of all sectors in the United States, with jobs nearly doubling, from 1.8 million in 1999 to 3.5 million in 2008. Personnel supply services employment is the next fastest growing industry segment at 36 percent, jumping from 3.4 million in 1999 to 4.6 million in 2008.

BLS projects that the trend of shifting high-tech employment from manufacturing to services, which occurred during the 1990s, will continue into the next decade. Both software and computer services and

communications services industry employment are expected to increase, while employment in high-tech manufacturing industries such as defense electronics (-7 percent), photonics (-10 percent), and consumer electronics manufacturing (-17 percent) are projected to decrease.

However, BLS notes that even though employment growth might decline, increases in output will still occur because of productivity gains in these industries. In the next 10 years, high-tech industry employment will continue to require a highly skilled and educated workforce. If they possess the necessary skills, workers in these industry segments will continue to be well compensated.

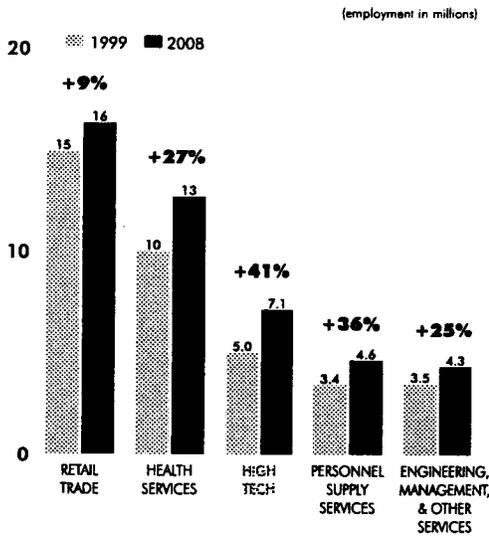
p - projected

Source: U.S. Bureau of Labor Statistics, Monthly Labor Review, November 1999

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## High-Tech Employment Projected To Thrive in Next Decade

Select Industries Employment Projections  
1999 vs. 2008p



p - projected

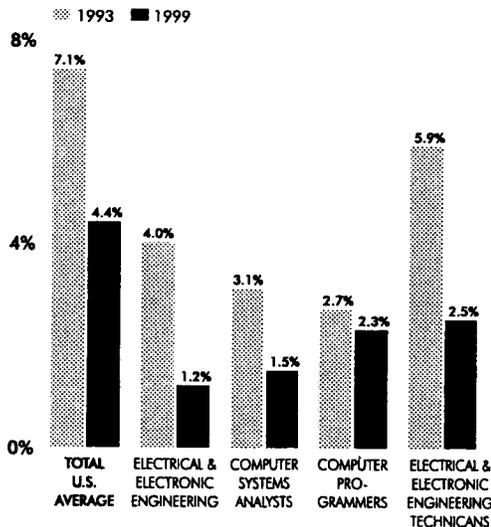
Source: U.S. Bureau of Labor Statistics

The U.S. high-technology industry is expected to remain a leader in job creation for the next 10 years. The U.S. high-tech industry is projected to create more than 2 million new jobs between 1999 and 2008 with industry employment jumping from 5 million to more than 7 million, according to BLS.

The nation's largest growing industry is expected to be health services, adding nearly 2.7 million jobs to the U.S. economic base. Other growing industries by employment to the year 2008 include personnel supply services (+1.2 million new jobs), retail trade (+1.4 million new jobs), and engineering, management, and other services (+852,000 new jobs).

## High-Tech Unemployment Rates Fall Significantly Below National Average

Select Unemployment Rates  
1993 vs. 1999



Source: U.S. Bureau of Labor Statistics, Current Population Survey

The demand and need for high-tech workers is so great that it has pushed high-tech unemployment rates by occupation down to record levels. For instance, the unemployment rate among electrical and electronic engineers in 1993 was 4 percent, compared to 1999 when it dropped to 1.2 percent. Similarly, unemployment levels among computer systems analysts fell from 3.1 percent to 1.5 percent between 1993 and 1999.

Other industry occupations with very low unemployment rates include computer programmers (2.3 percent) and electrical and electronic engineering technicians (2.5 percent). Across the major high-tech occupational groups, unemployment rates were well below the national average of 4.4 percent in 1999.

AEA members have been reporting significant unfilled job

openings in their companies. Without an adequate workforce, companies cannot properly staff their businesses. This means that some technology development is taking longer to complete and that some projects have been postponed because of the lack of staffing.

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## Tremendous Growth Projected for High-Tech Occupations

**Projected Occupational Employment in Select High-Tech Occupations  
1998 vs. 2008p  
(in thousands)**

Occupation	1998 Employment	2008 Employment	Job Creation	Job Growth	Educational Requirement
Systems Analysts	617	1,194	577	94%	Bachelor's Degree
Computer Support Specialists	429	869	440	103%	Bachelor's Degree
Computer Engineers	299	622	323	108%	Bachelor's Degree
Engineering Technicians	771	897	126	16%	Associate Degree
Computer Programmers	648	839	191	29%	Bachelor's Degree Recommended
Information Systems Managers	326	468	142	44%	Bachelor's Degree and Work Experience
Other Computer Scientists	97	212	115	119%	Bachelor's Degree
Electrical & Electronic Engineers	357	450	93	26%	Bachelor's Degree
Mechanical Engineers	220	256	36	16%	Bachelor's Degree
Data Processing Equipment Repairer	79	117	38	48%	Associate Degree or Other Certification
Electronic Semiconductor Processors	63	92	29	46%	Moderate-term On-the-Job Training
Telecommunications Mechanics	125	138	13	10%	Post-Secondary Training

An examination of U.S. occupational employment projections in select high-tech occupations between 1998 and 2008 is an indicator of future job growth. Additionally, a review of data by occupation allows for an understanding of the educational requirements to enter these fields.

The data show that occupational employment is expected to more than double for the nation's computer engineers and scientists between 1998 and 2008. Jobs for computer support specialists are projected to double from nearly 430,000 to some 870,000 between 1998 and 2008. Similar rates of growth are anticipated for computer engineers (108 percent) and all other computer scientists (119 percent). Systems analysts positions are expected to soar from 617,000 in 1998 to nearly 1.2 million by 2008.

All of these occupations require highly-skilled professionals with at least bachelor's degrees, if not postgraduate credentials. As detailed in AEA's *CyberEducation: U.S. Education and the High-Technology Workforce* report, there has been a decline in the number of graduates receiving high-tech degrees since 1990, particularly in many of today's fastest growing occupations. If this pattern continues in the face of rising demand, it could adversely affect the ability of the U.S. technology industry to remain competitive in the global marketplace. Even more worrisome is that today no formal degree programs at any academic level or any other training program can be crafted to fully support a worker throughout his working life. A flexible education system is required to keep students and workers current in today's ever changing workplace.

Interestingly, not all of the nation's fastest growing tech occupations require a full four-year university degree. There are several occupations like engineering technicians, data processing equipment repairers, and electronic semiconductor processors that require associate degrees or on-the-job training. Increasingly, community colleges are not just for students who may move to a four-year college or university, but also are key to retooling and retraining individuals with jobs.

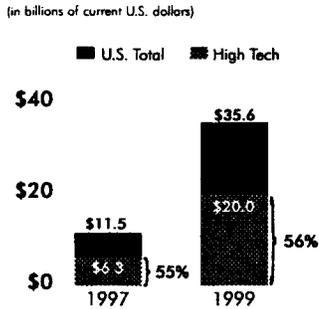
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# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## Venture Capital Investment Explodes

### High-Tech Venture Capital vs. Total Venture Capital

1997 vs. 1999



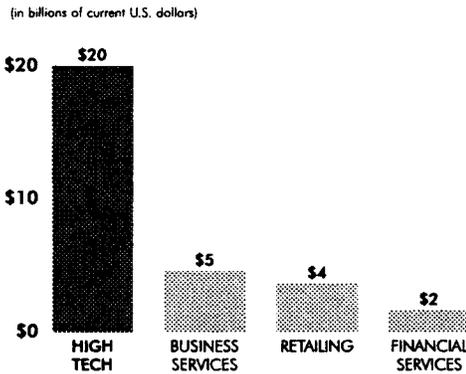
Source: PricewaterhouseCoopers, MoneyTree Survey

Venture capital investments of \$20 billion in the high-tech industry represented 56 percent of the \$35.6 billion in total venture capital spending in 1999. These venture capital expenditures play a significant role in supporting vibrant new technology start-ups.

## High-Tech Venture Capital Investment Exceeds All Other Industries

### High-Tech Venture Capital vs. Other Industries

1999



Source: PricewaterhouseCoopers, MoneyTree Survey

Venture capital investments in the high-tech industry far exceeded investments in any other industry. Investments in business services, retail, and financial services combined were less than half the total amount invested in high tech.

# CHAPTER 1: U.S. HIGH-TECH EMPLOYMENT

## Venture Capital Investments in High-Tech Soar

**Select Core High-Tech Industry Sectors  
1997 - 1999**  
(in millions of U.S. dollars)

Sectors	1997	1998	1999	Percent Change
Computers & Peripherals	\$430	\$447	\$761	77%
Electronics/Instrumentation	\$266	\$158	\$377	41%
Networking & Equipment	\$987	\$1,487	\$3,619	267%
New Media	\$222	\$482	\$2,896	1,204%
Semiconductors/Equipment	\$293	\$360	\$519	77%
Telecommunications	\$1,690	\$1,888	\$5,223	209%
Software	\$2,398	\$3,516	\$6,593	175%
<b>Total High-Tech</b>	<b>\$6,286</b>	<b>\$8,338</b>	<b>\$19,989</b>	<b>218%</b>

Source: PricewaterhouseCoopers, Moneytree Survey

Venture capital investments in the core segments of the high-tech industry soared, jumping more than 200 percent from \$6.3 billion to nearly \$20 billion between 1997 and 1999. The largest venture capital investments in 1999 were in software (\$6.7 billion), telecommunications (\$5.2 billion), networking and equipment (\$3.6 billion), and new media (\$2.9 billion). Interestingly, investments in new media, which includes businesses related to the development of portals, search engines, content-based websites, and video conferencing, exploded, increasing more than 1,200 percent from \$222 million to \$2.0 billion.

Venture capital investments in other sectors like business services and financial services also soared since 1997 (see page 102).

## CHAPTER 2: U.S. HIGH-TECH WAGES

### INTRODUCTION

This chapter examines trends in high-tech industry wages between 1993 and 1998. Clearly, employees in the nation's electronics and information technology industry are well compensated. High-tech employees made an average wage of \$57,700 in 1998, compared to the average private sector wage of \$31,700.

Many high-tech workers earn even higher salaries. For instance, there were nearly 800,000 employees in the software services industry earning an average wage of some \$74,200 in 1998, followed by workers in the computers and office equipment industry with an average wage of \$71,100. Our wage analysis also showed other important trends. High-tech wages rose steadily throughout the 1990s, adjusted for inflation. The 1998 average high-tech wage was 82 percent higher than the average private sector wage, compared to the 1993 wage differential of 65 percent.

Annual average high-tech industry wages compared favorably to other major industries like chemicals, advertising, and legal services. The only major exception was the securities and commodities industry, where the average wage was \$122,900 in 1998.

As noted in the high-tech employment chapter, competition for qualified technology employees is fierce and labor markets for electronics and information technology workers are tight. This intense competition, as the high-tech industry expands, means that wages will continue to grow for the foreseeable future.

### U.S. HIGH-TECH ANNUAL AVERAGE WAGES vs. AVERAGE PRIVATE SECTOR WAGES 1993 - 1998

Year	High Tech	Private Sector	Wage Differential
1993	\$48,269	\$29,255	65%
1994	\$48,782	\$29,142	67%
1995	\$50,386	\$29,348	72%
1996	\$51,481	\$29,694	73%
1997	\$54,165	\$30,532	77%
1998	\$57,701	\$31,722	82%

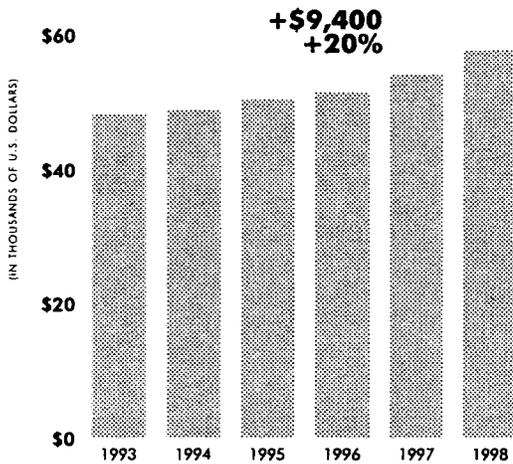
Adjusted for inflation to 1998 dollars  
Source: U.S. Bureau of Labor Statistics



<b>HIGH-TECH AVERAGE WAGE</b>	<b>\$57,701</b>
AVERAGE PRIVATE SECTOR WAGE	\$31,722
Wage Differential	82%
<b>HIGH-TECH MANUFACTURING AVERAGE WAGE</b>	<b>\$55,339</b>
AVERAGE PRIVATE SECTOR MANUFACTURING WAGE	\$40,040
Manufacturing Wage Differential	38%
<b>HIGH-TECH SERVICES AVERAGE WAGE</b>	<b>\$59,377</b>
AVERAGE PRIVATE SECTOR SERVICES WAGE	\$30,011
Services Wage Differential	98%

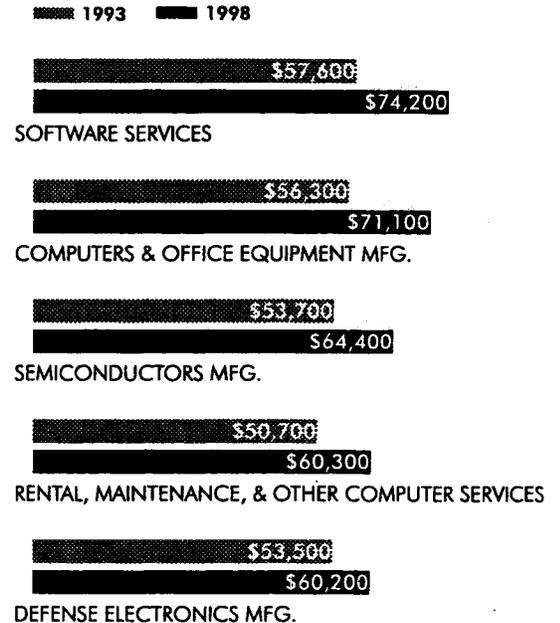
## HIGH-TECH WAGE TRENDS

(1993 - 1998)



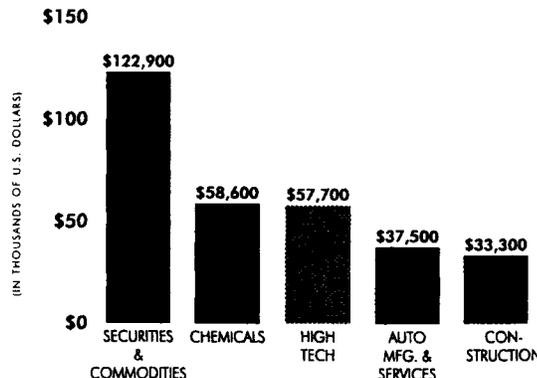
THE  
HIGH-TECH  
AVERAGE  
WAGE IS  
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## LEADING HIGH-TECH INDUSTRY SEGMENTS



## EMPLOYMENT COMPARISONS

SELECT INDUSTRIES

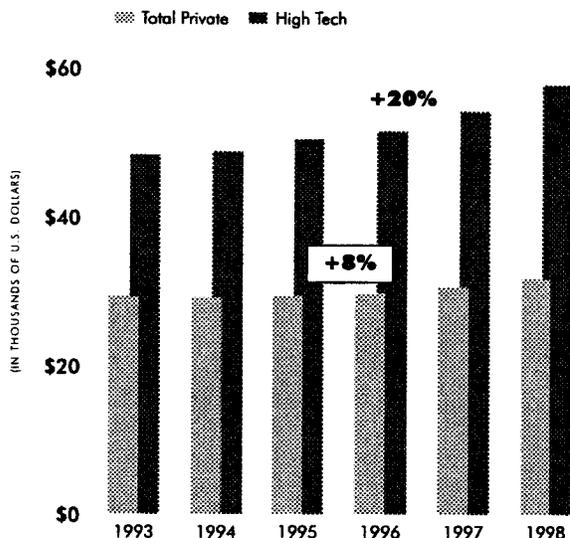


Adjusted for inflation to 1998 dollars  
Source: U.S. Bureau of Labor Statistics

# CHAPTER 2: U.S. HIGH-TECH WAGES

## U.S. High-Tech Wages Outpace Private Sector Wages

**High-Tech Wages vs. Private Sector Wages  
1993 - 1998**



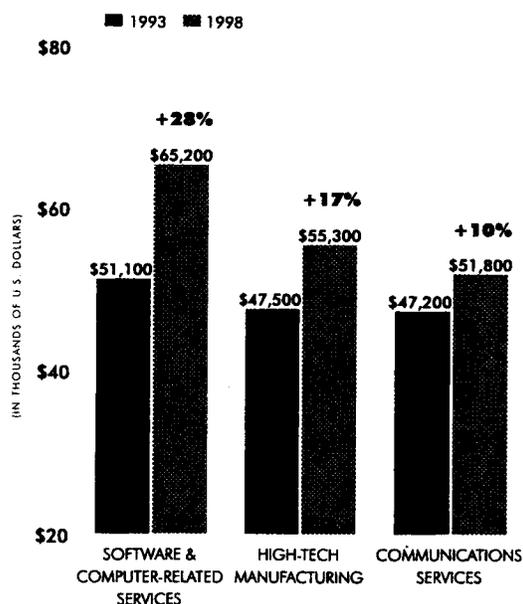
Increasingly, high-tech jobs require skilled employees with extensive education and/or training. These employees are well compensated for possessing these skills.

High-tech workers earned on average 82 percent more than the average private sector worker in 1998, \$57,700 compared to \$31,700. This is up from 65 percent in 1993. Between 1993 and 1998, high-tech wages grew by 20 percent, while private sector wages only increased by eight percent.

Adjusted for inflation to 1998 dollars  
Source: U.S. Bureau of Labor Statistics

## Software Services Pays Highest High-Tech Wages

**High-Tech Average Wages  
1993 vs. 1998**



Employees in the software and computer-related services industry sector earned the highest wages in the high-tech industry with an annual average wage of \$65,200. This was a remarkable increase of 28 percent between 1993 and 1998, adjusted for inflation.

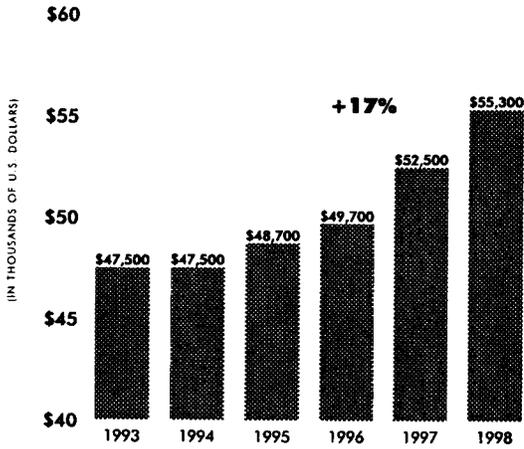
High-tech manufacturing wages also increased during the 1990s. These wages jumped by 17 percent, reaching \$55,300 in 1998. The average wage for the communications services industry was \$51,800 in 1998.

Adjusted for inflation to 1998 dollars  
Source: U.S. Bureau of Labor Statistics

# CHAPTER 2: U.S. HIGH-TECH WAGES

## U.S. High-Tech Manufacturing Wages Rise

**High-Tech Manufacturing Average Wages  
1993 - 1998**



Adjusted for inflation to 1998 dollars

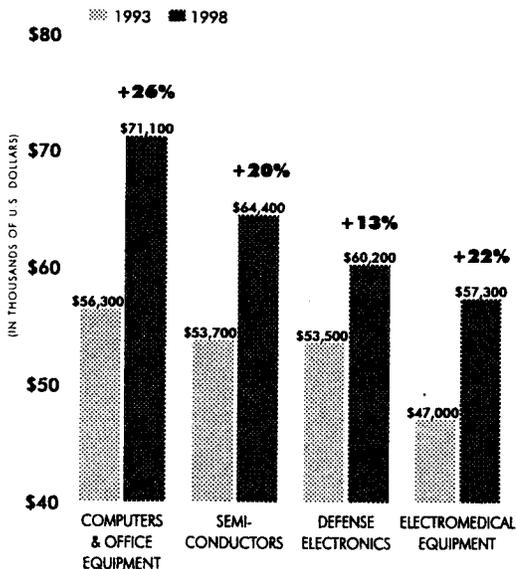
Source: U.S. Bureau of Labor Statistics

High-tech manufacturing industry wages rose from \$47,500 in 1993 to \$55,300 in 1998. Much of this wage growth occurred as a result of changes in the technology industry, including major reorganizations and innovations, that have increased the productivity of high-tech manufacturing.

Today's manufacturing industry requires workers with a higher level of skill and training than manufacturing workers of the past and these employees are well compensated for these skills.

## Computer Manufacturing Leads in High-Tech Manufacturing Wages

**High-Tech Manufacturing Wages  
1993 vs. 1998**



Adjusted for inflation to 1998 dollars

Source: U.S. Bureau of Labor Statistics

The computers and office equipment industry paid its workers \$71,100 in 1998, the highest electronics manufacturing wage. This was a 26 percent increase over the 1993 wage of \$56,300, adjusted for inflation. Wages in this industry segment grew the fastest among all electronics manufacturing sectors.

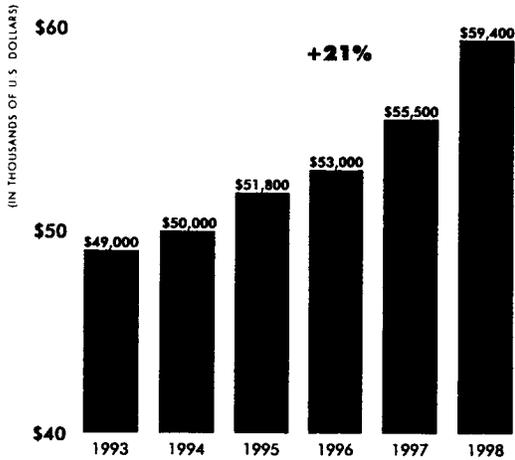
There was a 20 percent increase in semiconductors industry wages, jumping from \$53,700 in 1993 to \$64,400 in 1998, adjusted for inflation.

Wages in defense electronics and electromedical equipment manufacturing were the next highest at \$60,200 and \$57,300 in 1998, respectively.

## CHAPTER 2: U.S. HIGH-TECH WAGES

### High-Tech Services Wages Rise Faster Than Manufacturing

#### High-Tech Services Average Wages 1993 - 1998



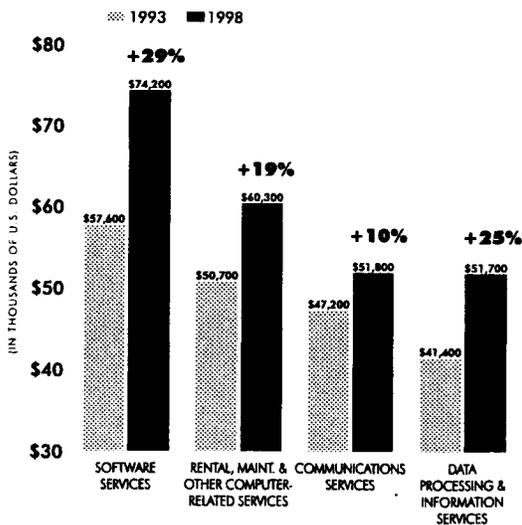
Wages in the high-tech services industry, which includes both communications services and software and computer-related services, surged 21 percent between 1993 and 1998, reaching a record high of \$59,400.

This tremendous growth is largely attributable to the increasing importance of computer software and the Internet. High-tech services industry wages rose faster than electronics manufacturing industry wages between 1993 and 1998, 21 percent compared to 17 percent.

Adjusted for inflation to 1998 dollars  
Source: U.S. Bureau of Labor Statistics

### High-Tech Services Wages Increase Dramatically

#### High-Tech Services Sector Wages 1993 vs. 1998



Not only did software services industry workers command the best paid services jobs — \$74,200 in 1998 — they also experienced the highest growth rate, with wages increasing 29 percent between 1993 and 1998, adjusted for inflation.

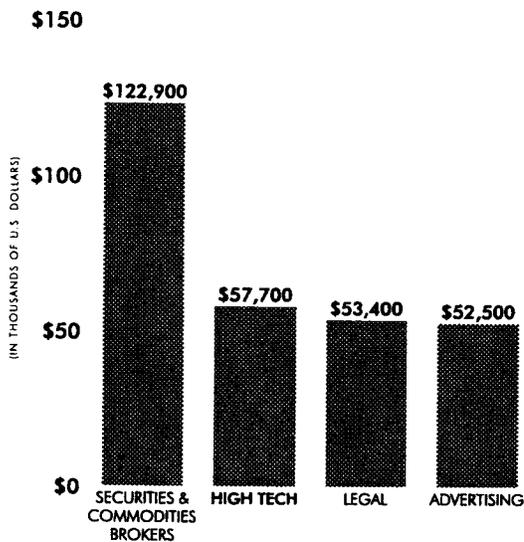
Wages in data processing and information services and rental, maintenance, and other computer-related services also experienced healthy growth rates at 25 percent and 19 percent, respectively.

Adjusted for inflation to 1998 dollars  
Source: U.S. Bureau of Labor Statistics

## CHAPTER 2: U.S. HIGH-TECH WAGES

### High-Tech Services Wages Rank Among Top Paid Industries

**High-Tech Services vs. Top Paid Services Industries  
Average Wages, 1998**



High-tech services wages compared favorably with other highly skilled professional services industries. The average wage for a high-tech services worker was \$57,700 in 1998 compared to \$53,400 for legal services and \$52,500 for advertising services.

The securities and commodities brokers industry earned significantly more with an average wage of \$122,900.

Source: U.S. Bureau of Labor Statistics

## CHAPTER 3: STATE-BY-STATE OVERVIEW

### INTRODUCTION

This chapter examines the high-technology industry in each state, the District of Columbia, and, for the first time, Puerto Rico by employment, wages, establishments, payroll, exports, venture capital investment, and research and development expenditures. Each cyberstate page captures industry employment trends since 1993 and identifies the leading high-tech industry employment segments.

The state-level technology employment picture has changed remarkably since 1993. For instance, California was the fastest growing cyberstate, adding 193,200 high-tech industry jobs to its employment base between 1993 and 1998. Texas ranked second, adding 132,400 new high-tech industry jobs, with tech employment jumping nearly 50 percent. Other cyberstates that each have added at least 40,000 tech jobs to their economic base between 1993 and 1998 are Virginia, Colorado, Georgia, Illinois, and Florida.

The country's highest paid workers were in Washington, New Jersey, California, Virginia, and Connecticut in 1998. Average wages in these cyberstates ranged from \$65,000 in Connecticut to a high of nearly \$106,000 in Washington.

Top cyberstates by exports in 1999 were California, Texas, Massachusetts, Florida, and New York. The largest increases in high-tech exports between 1997 and 1999 were in Texas, California, New Mexico, Oregon, and Colorado.

New to this edition of *Cyberstates* are data on venture capital and R&D expenditures. The top five cyberstates by venture capital investments in 1999 were California, Massachusetts, New York, Texas, and Colorado. In R&D by state, California, Michigan, New York, New Jersey, and Massachusetts led the nation. Indeed, one-fifth of all R&D in the United States is performed in California.

### TOP 5 CYBERSTATES BY HIGH-TECH EMPLOYMENT 1998

1. California	834,700
2. Texas	411,000
3. New York	328,800
4. Illinois	217,600
5. Massachusetts	216,700

### BY AVERAGE HIGH-TECH WAGES, 1998

1. Washington	\$105,700
2. New Jersey	\$68,700
3. California	\$66,900
4. Virginia	\$66,000
5. Connecticut	\$65,400

### BY HIGH-TECH EXPORTS, 1999

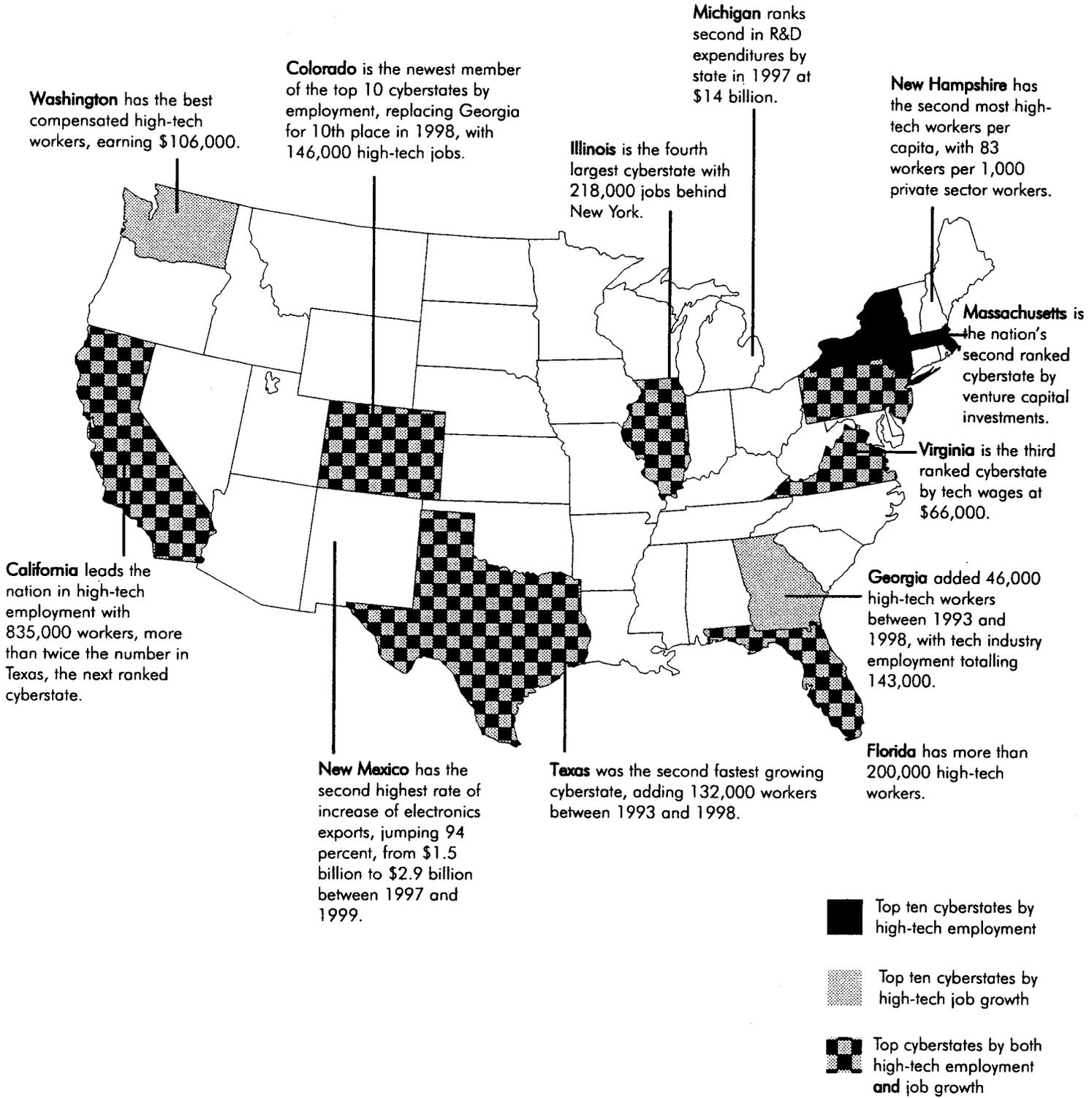
1. California	\$53 billion
2. Texas	\$25 billion
3. Massachusetts	\$9.1 billion
4. Florida	\$8.0 billion
5. New York	\$7.6 billion

Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade Information Services

### BY VENTURE CAPITAL INVESTMENTS 1999

1. California	\$16.9 billion
2. Massachusetts	\$3.7 billion
3. New York	\$1.9 billion
4. Texas	\$1.5 billion
5. Colorado	\$1.3 billion

Source: PricewaterhouseCoopers MoneyTree Survey

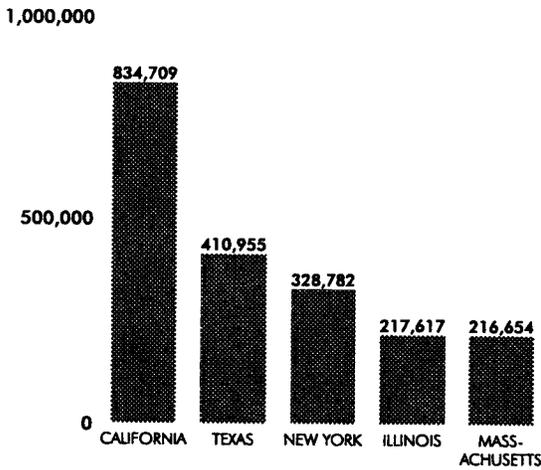


Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade Information Services

# CHAPTER 3: STATE-BY-STATE OVERVIEW

## California Is the Nation's Leading Cyberstate

**Top 5 Cyberstates by Employment  
1998**



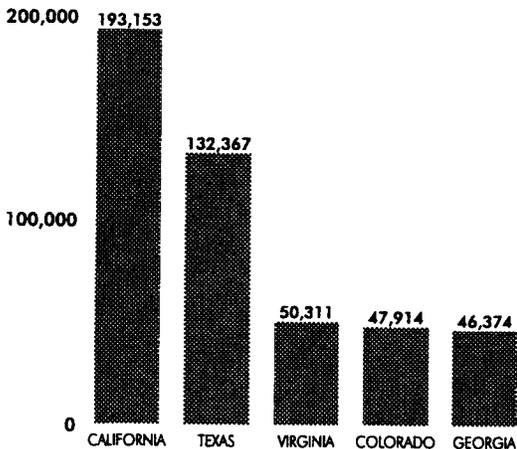
California was the nation's leading cyberstate with high-technology industry employment totaling nearly 835,000 in 1998, a record high. It employed more than twice the number of technology industry workers as second ranked Texas with 411,000.

New York, Illinois, and Massachusetts completed the list of the top five cyberstates by employment. Illinois surpassed Massachusetts in high-tech employment for the first time in 1996 and moved from 5th to 4th place in high-tech jobs.

Source: U.S. Bureau of Labor Statistics

## California Leads the Nation in New High-Tech Jobs

**High-Tech Jobs Created  
1993 - 1998**



California led the nation in high-tech industry job creation, adding more than 190,000 new technology jobs to its employment base between 1993 and 1998, a 30 percent increase.

Other soaring cyberstates in high-tech job creation since 1993 were Texas, Virginia, Colorado, and Georgia. Each state has made a commitment to supporting the technology industry. Employment in these four states has increased steadily since 1993.

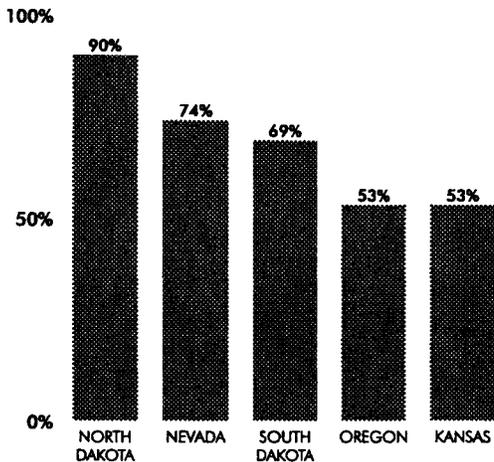
By contrast, California lost technology jobs between 1993 and 1994, due to the recession of the early 1990s and significant layoffs in the defense electronics industry.

Source: U.S. Bureau of Labor Statistics

# CHAPTER 3: STATE-BY-STATE OVERVIEW

## North Dakota and Nevada Lead in Percent Employment Growth

**Top 5 Cyberstates by High-Tech Employment Growth, 1993 - 1998**



High-tech industry employment in North Dakota nearly doubled, from 3,400 to 6,400 workers between 1993 and 1998. Nevada's high-tech industry employment jumped from 9,500 to 16,500 between 1993 and 1998, a 74 percent increase.

Other leading high-tech growth states were South Dakota, Oregon, and Kansas. Each of these states increased their employment bases by more than 50 percent.

Source: U.S. Bureau of Labor Statistics

## Washington, Oregon, Nevada, and South Dakota Leapfrog Cyberstates Rankings

**Select Cyberstates Employment Rankings 1993 - 1998**

	1993	1994	1995	1996	1997	1998
Texas	3	3	2	2	2	2
Illinois	5	5	5	4	5	4
Colorado	12	11	12	12	12	10
Georgia	13	13	11	11	10	11
Washington	19	18	18	17	16	15
Oregon	23	22	22	21	19	19
Kansas	33	33	33	33	32	29
Idaho	35	37	37	36	34	34
Nevada	42	43	42	40	38	38
South Dakota	44	42	41	42	40	40

High-tech employment has grown so rapidly in some states that they have improved their national cyberstates standing. For instance, Texas moved up from third to second place in 1995. Similarly, Colorado now ranks within the top 10, for the first time, moving from 12th to 10th place.

Some states, like Washington, Oregon, and Kansas have leapfrogged since 1993. All three of these states moved up four spaces in their rankings.

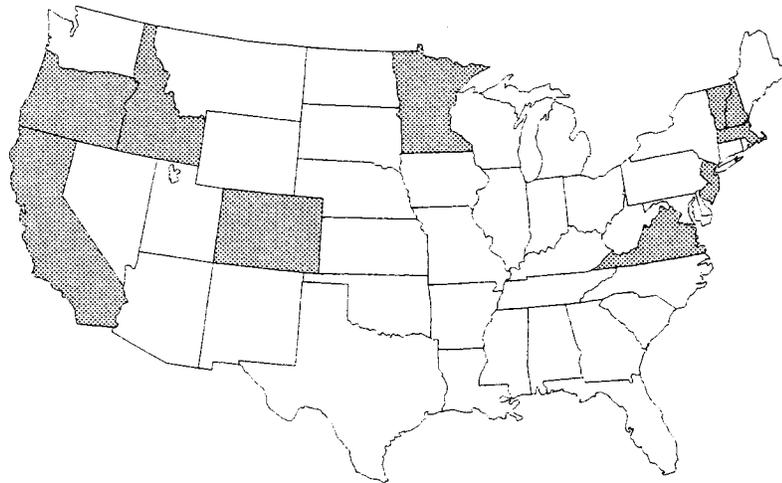
Smaller states like Nevada and South Dakota have significantly improved their national standings. Nevada ranked 42nd nationwide in 1993, and by 1998 it was 38th. Similarly, South Dakota moved from 44th to 40th.

Source: U.S. Bureau of Labor Statistics

# CHAPTER 3: STATE-BY-STATE OVERVIEW

## Colorado Has Highest Concentration of High-Tech Workers

**Top 10 Cyberstates by Concentration of High-Tech Workers  
1998**



Top ten cyberstates by concentration of high-tech workers

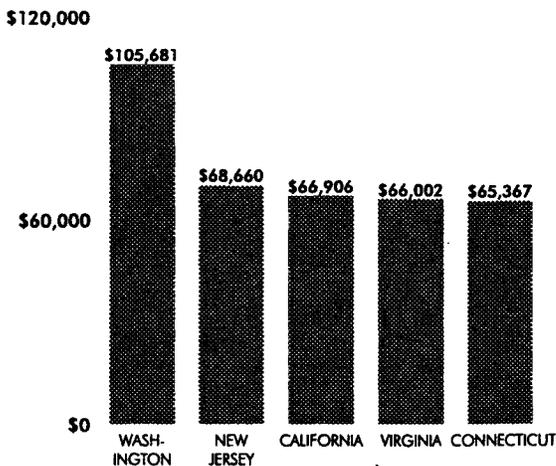
Source: U.S. Bureau of Labor Statistics

Another way to look at the importance of the high-tech industry to a state's economy is to examine the concentration of high-tech workers compared to total private sector workers. We found that Colorado led the nation in high-tech employment concentration with 84 high-tech workers per 1,000 private sector workers in 1998.

New Hampshire comes in a close second with 83 high-tech workers per 1,000 private sector workers. Rounding out the top five cyberstates by concentration were Massachusetts (79), California (70), and Virginia (64).

## Washington Leads the Nation in High-Tech Wages

**Top 5 Cyberstates by High-Tech Wages  
1998**



Source: U.S. Bureau of Labor Statistics

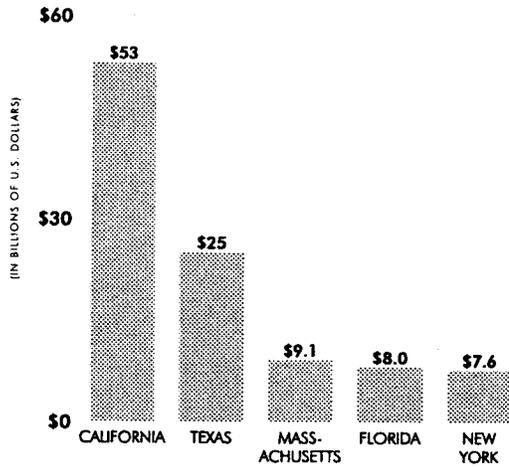
Washington state's high-tech industry workers earned by far the nation's highest average wage, \$106,000 in 1998. This, in large part, is due to the nearly 34,000 well paid software services industry workers who earned an average wage of \$218,000 in 1998. Also, Washington's high-tech average salary was over three times the private sector average wage.

New Jersey, California, Virginia, and Connecticut completed the list of top five cyberstates by high-tech wages. Tech workers in Virginia, Arizona, and California earned twice or nearly twice the private sector average wage in their own state.

## CHAPTER 3: STATE-BY-STATE OVERVIEW

### California Leads the Nation in High-Tech Exports

Top 5 Cyberstates by High-Tech Exports  
1999



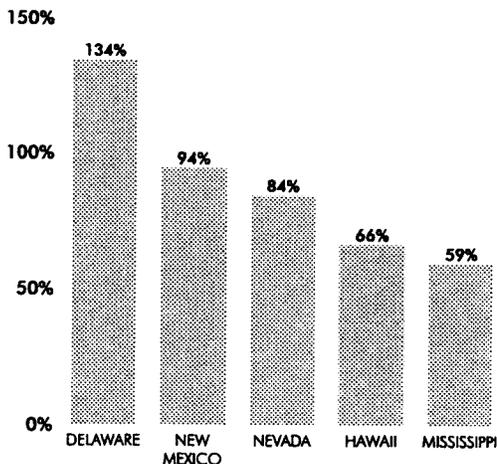
California led in high-tech industry exports with \$53 billion in 1999, an increase of four percent from \$51 billion in 1997.

Texas, Massachusetts, Florida, and New York completed the list of top high-tech exporting cyberstates in 1999. Among the top high-tech exporting states, Texas grew the fastest, jumping 18 percent from \$21 billion to \$25 billion between 1997 and 1999.

Source: U.S. Bureau of the Census as compiled by Global Trade Information Services

### Delaware Leads the Nation in High-Tech Export Growth Rates

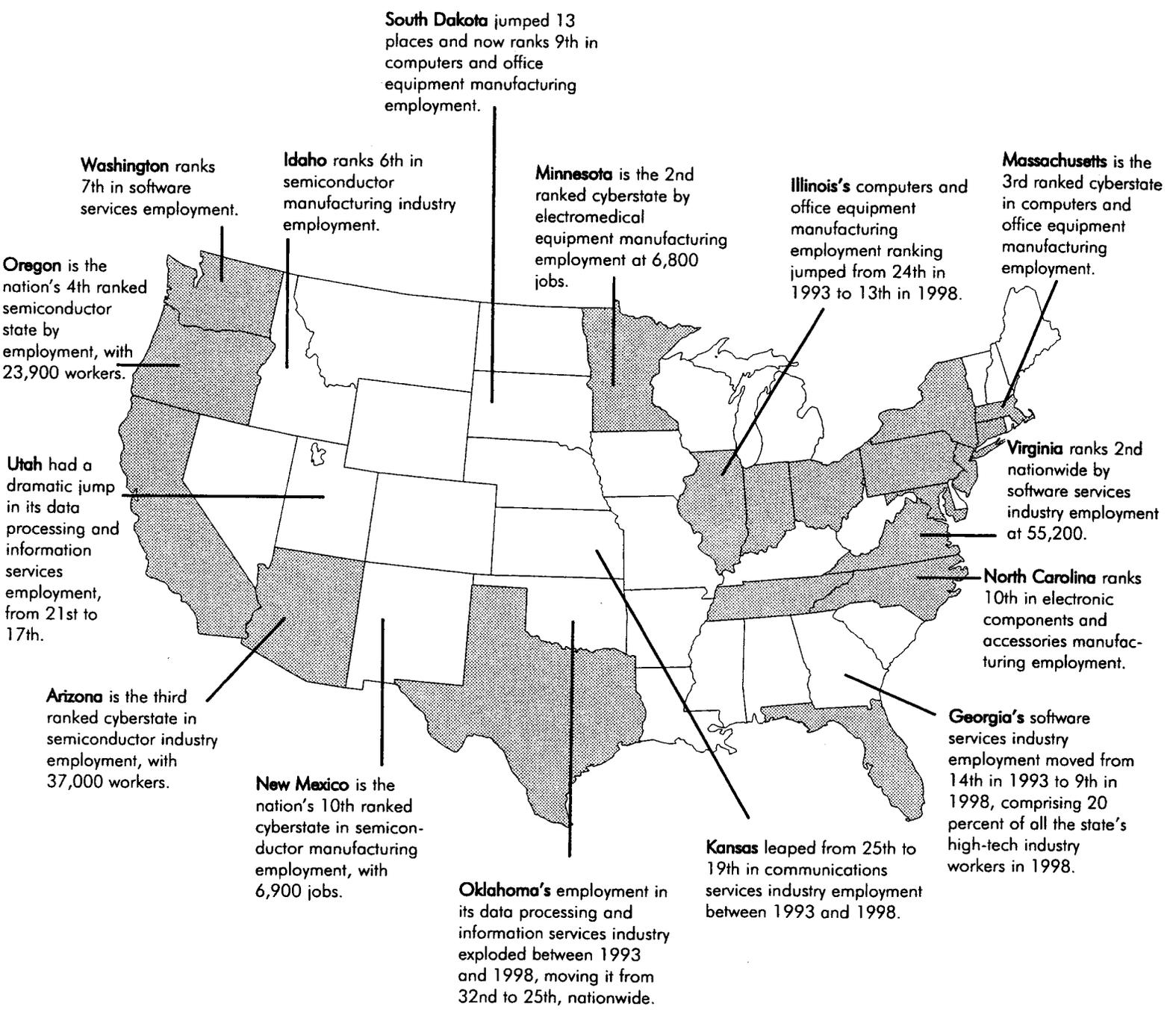
High-Tech Export Growth Rates  
1997 vs. 1999



High-tech exports from Delaware more than doubled between 1997 and 1999, jumping from \$91 million to \$213 million. At the same time, New Mexico's high-tech exports almost doubled from \$1.5 billion to \$2.9 billion. This growth is largely attributable to the state's growing semiconductor manufacturing industry.

High-tech exports from Nevada, Hawaii, and Mississippi also jumped significantly between 1997 and 1999, albeit from very low bases.

Source: U.S. Bureau of the Census as compiled by Global Trade Information Services



Leading states by high-tech industry segments

Source: U.S. Bureau of Labor Statistics

## CHAPTER 3: STATE-BY-STATE OVERVIEW

### Numerous Cyberstates Improve Their Industry Segment Rankings

<b>Select Cyberstates Employment Rankings by Industry Sector 1993 - 1998</b>						
	1993	1994	1995	1996	1997	1998
<b>Computers and Office Equipment Manufacturing</b>						
Texas	5	2	2	2	2	2
Alabama	10	11	11	8	8	8
South Dakota	22	16	14	11	10	9
Illinois	24	20	18	12	13	13
<b>Electronic Components and Accessories Manufacturing</b>						
Minnesota	9	8	8	8	8	7
North Carolina	14	14	14	11	11	10
<b>Semiconductor Manufacturing</b>						
Idaho	10	10	8	8	N/A	6
New Mexico	12	11	11	11	N/A	10
Colorado	13	12	12	12	N/A	11
<b>Communications Services</b>						
Colorado	12	11	9	10	10	9
Arizona	23	21	19	18	18	18
Kansas	25	25	24	24	21	19
<b>Data Processing and Information Services</b>						
Iowa	23	20	22	22	21	14
Utah	27	26	24	21	19	17
Oklahoma	32	31	33	31	31	25
<b>Software Services</b>						
Texas	6	6	4	4	4	3
Washington	9	9	8	8	7	7
Colorado	12	10	10	9	8	8
Georgia	14	14	11	10	9	9

Many cyberstates have carved out their own high-tech niche market in today's new technology-driven economy. Quite often these states have created a tech-friendly environment with one or more of the following characteristics: a highly skilled labor pool, nearby research universities, and/or an attractive quality of life.

Leading high-tech states like Texas, Washington, and Colorado have done extremely well in improving their state rankings in a number of industry sectors. Texas moved up three spots in both computers and office equipment manufacturing and software services industry employment. Colorado has done well in semiconductors, communications services, and software services.

Some of the nation's lesser known cyberstates are developing thriving technology industry segments. For example, Alabama and South Dakota now rank 8th and 9th in computers and office equipment industry employment. North Carolina jumped four places in electronic components manufacturing industry employment. Arizona and Kansas are nurturing a strong communications services industry. And Iowa and Utah both improved their rankings in the data processing and information services industry.

Source: U.S. Bureau of Labor Statistics

# CHAPTER 3: STATE-BY-STATE OVERVIEW

## California Leads in Nearly Every High-Tech Industry Sector

### Top Cyberstates by Industry Sector Employment 1998

#### COMPUTERS & OFFICE EQUIPMENT MANUFACTURING

1. California	95,943
2. Texas	38,871
3. Massachusetts	27,576
4. Minnesota	25,025
5. New York	24,188

#### ELECTROMEDICAL EQUIPMENT MANUFACTURING

1. California	10,509
2. Minnesota	6,754
3. Florida	4,970
4. Washington	4,829
5. Massachusetts	3,786

#### CONSUMER ELECTRONICS MANUFACTURING

1. California	18,777
2. New York	8,210
3. Indiana	7,272
4. Pennsylvania	7,227
5. Tennessee	4,500

#### PHOTONICS MANUFACTURING

1. New York	49,245
2. California	11,694
3. Massachusetts	8,914
4. Connecticut	3,522
5. New Jersey	3,072

#### COMMUNICATIONS EQUIPMENT MANUFACTURING

1. California	37,789
2. Illinois	35,445
3. Texas	33,079
4. Florida	21,013
5. North Carolina	15,112

#### COMMUNICATIONS SERVICES

1. California	138,631
2. Texas	113,788
3. New York	86,941
4. Florida	69,706
5. New Jersey	63,821

#### ELECTRONIC COMPONENTS & ACCESSORIES MANUFACTURING

1. California	82,419
2. Illinois	28,945
3. Texas	25,588
4. New York	25,228
5. Pennsylvania	16,773

#### SOFTWARE SERVICES

1. California	149,388
2. Virginia	55,222
3. Texas	50,769
4. Massachusetts	46,539
5. Maryland	35,406

#### SEMICONDUCTORS MANUFACTURING

1. California	75,218
2. Texas	47,261
3. Arizona	36,697
4. Oregon	23,943
5. Massachusetts	11,218

#### DATA PROCESSING & INFORMATION SERVICES

1. California	39,497
2. Texas	36,097
3. New York	28,435
4. New Jersey	24,389
5. Florida	21,303

#### DEFENSE ELECTRONICS MANUFACTURING

1. California	56,656
2. New York	11,562
3. Texas	10,664
4. Maryland	9,717
5. Florida	9,589

#### RENTAL, MAINTENANCE, & OTHER COMPUTER SERVICES

1. California	54,412
2. Texas	35,442
3. New York	25,784
4. Illinois	25,198
5. New Jersey	25,137

#### INDUSTRIAL ELECTRONICS MANUFACTURING

1. California	63,775
2. Massachusetts	21,014
3. Illinois	17,811
4. Pennsylvania	16,093
5. Ohio	14,158

This page shows how states rank by specific high-tech segments. High-tech businesses tend to cluster in certain regions of the country to take advantage of highly skilled workers and collective technology resources.

Of the 13 high-tech sectors, California is the employment leader in all but one area. New York ranks first in photonics manufacturing. In fact, it employs four times as many workers as second ranked California.

However, many smaller cyberstates show their strengths in particular industry sectors when we look at the second and third ranked cyberstates.

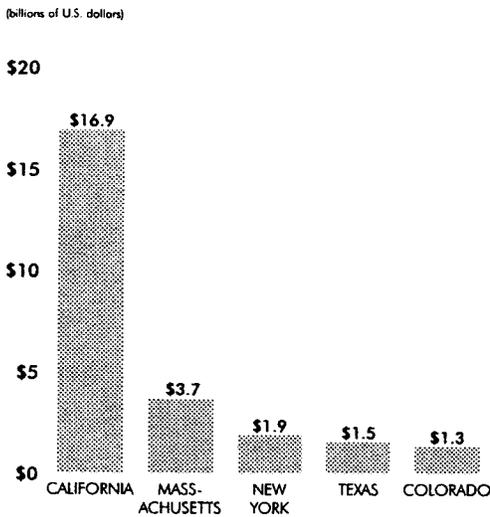
For instance, Virginia ranks second in software services with more than 55,000 employees in this well paid industry segment. Minnesota is second in electromedical equipment manufacturing with 6,800 employees, and Indiana ranks third in consumer electronics manufacturing with 7,300.

While it may come as no surprise that California and Texas hold the first and second positions in semiconductor manufacturing industry employment, many people may not know that Arizona ranks third (36,700) and Oregon fourth (23,900) in this important high-tech sector.

## CHAPTER 3: STATE-BY-STATE OVERVIEW

### California Commands Nearly Half of All U.S. Venture Capital Investments

#### Top 5 Cyberstates by Venture Capital Investments 1999



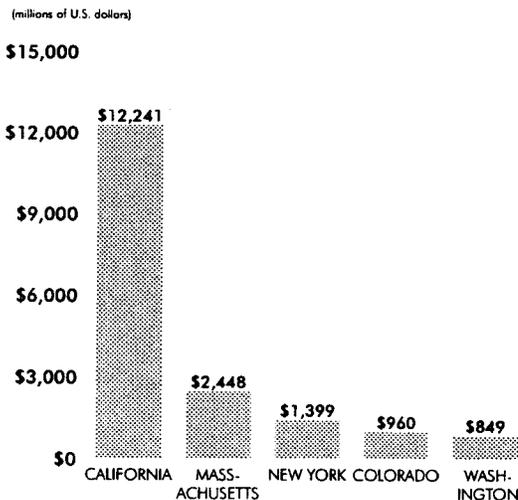
Source: PricewaterhouseCoopers MoneyTree Survey

California commanded 47 percent – nearly one half – of all U.S. venture capital investments in 1999. Massachusetts received the second highest investments in 1999, followed by New York and Texas. What was most surprising was that Colorado was the fifth largest recipient of venture capital, at \$1.3 billion in 1999. Clearly, these new investments have helped propel this state to its current position as the 10th ranked cyberstate by jobs.

These data cover all venture capital investments, including those outside of high-technology. Venture capital helps to fuel today's high-tech industry, enabling small technology start-up companies to develop ideas and bring them to market.

### California Leads the Nation in Increase of Venture Capital Investments

#### Increase in Venture Capital Investments 1997 - 1999



Source: PricewaterhouseCoopers MoneyTree Survey

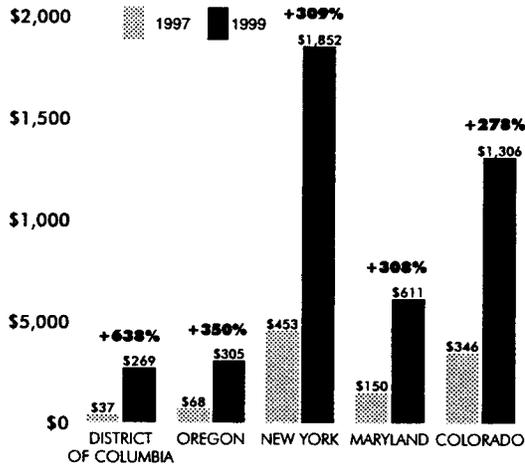
California led the nation by increase of venture capital investments between 1997 and 1999. In fact, venture capital investments in California increased by more than \$12 billion, representing more than half of the total U.S. increase.

Other top dollar increases were recorded in Massachusetts, New York, Colorado, and Washington. The venture capital increases in Colorado and Washington contributed to the improved cyberstates rankings in both states between 1997 and 1998.

## CHAPTER 3: STATE-BY-STATE OVERVIEW

### District of Columbia Leads in Percent Growth of Venture Capital Investments

**Top 5 Cyberstates by Venture Capital Investments  
Growth, 1997 - 1999**

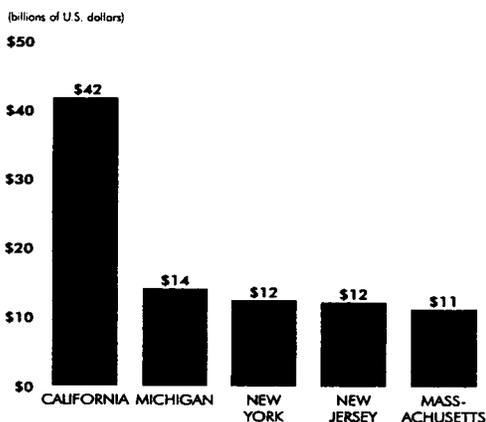


Washington, D.C. had the highest growth rate of venture capital investments, increasing more than 600 percent between 1997 and 1999 (where venture capital investments totaled at least \$100 million). Venture capital investments increased by more than 300 percent in Oregon, New York, and Maryland. Colorado was the fifth fastest growing state, with investments increasing some 280 percent.

Source: PricewaterhouseCoopers MoneyTree Survey

### California Performs One-Fifth of America's R&D

**Top Cyberstates by R&D Performed  
1997\***



California performed \$42 billion in research and development in 1997, accounting for 20 percent of the nation's total performance of \$211 billion. High-tech companies in this top ranked cyberstate were responsible for a great deal of this research and development.

Michigan performed the second highest research and development in 1997, largely due to the automotive industry. Top ranked cyberstates New York, New Jersey, and Massachusetts rounded out the top five leading R&D states.

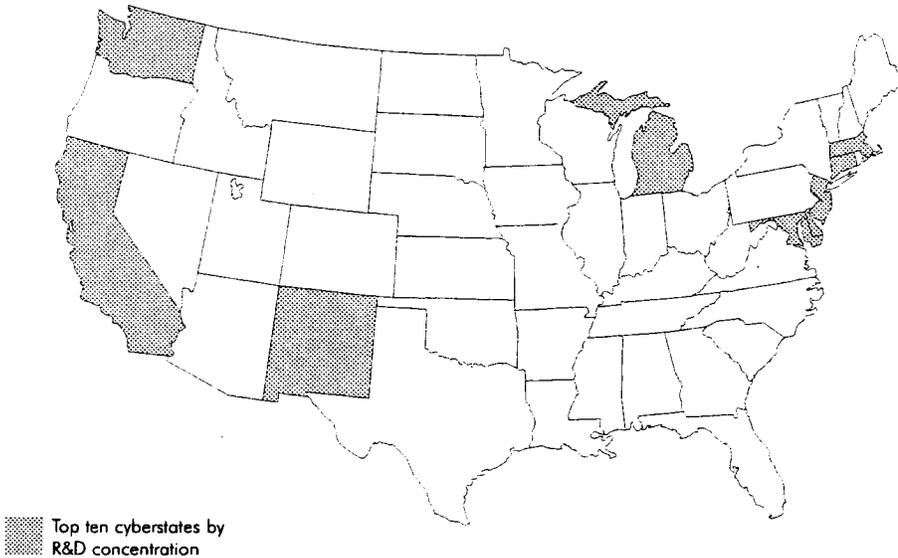
\* 1997 data are the most recent available.

Source: National Science Foundation

# CHAPTER 3: STATE-BY-STATE OVERVIEW

## District of Columbia Has Highest Concentration of Research and Development

Top 10 Cyberstates by Concentration of R&D  
1997\*



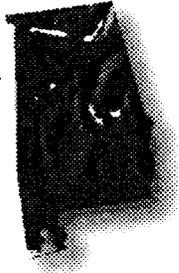
\* 1997 data are the most recent available.

Source: National Science Foundation

The District of Columbia, by far, had the highest concentration of R&D per capita in the nation — \$5,200 per capita in 1997. Much of this spending can be attributed to funding by the federal government. Many high-tech companies in Washington, D.C., suburban Maryland, and Northern Virginia have been attracted to the area because of the proximity to federal agencies.

Massachusetts boasted the second highest concentration of R&D, with \$1,800 per capita in 1997. Indeed, many high-tech companies locate in the Boston area to have close access to the city's leading research universities. New Mexico was the third ranked R&D performing state per capita, largely due to the Los Alamos National Laboratory. New Jersey and Delaware boasted the fourth and fifth highest R&D spending per capita, respectively. Both states are home to leading-edge chemical companies and New Jersey was the 7th ranked cyberstate by high-tech employment.

## AND THE HIGH-TECH INDUSTRY



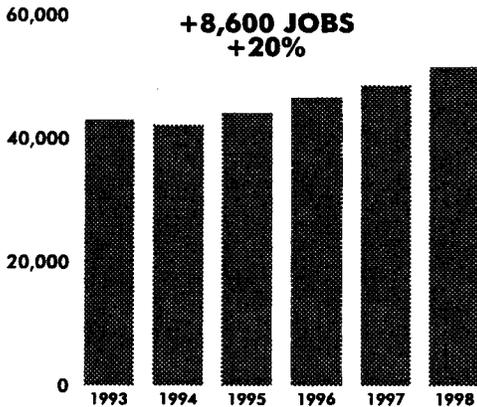
<b>JOBS</b>	<b>51,551</b>
<b>ESTABLISHMENTS</b>	<b>2,171</b>
<b>PAYROLL</b>	<b>\$2.2b</b>
<b>AVERAGE WAGE</b>	<b>\$42,817</b>
AVERAGE PRIVATE SECTOR WAGE	\$26,499

### STATE RANKINGS

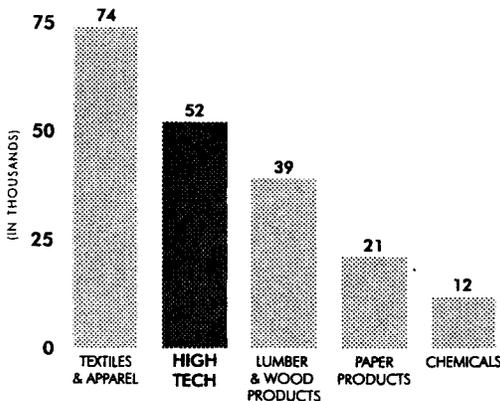
**24TH** IN HIGH-TECH EMPLOYMENT  
**35TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



### EMPLOYMENT COMPARISONS



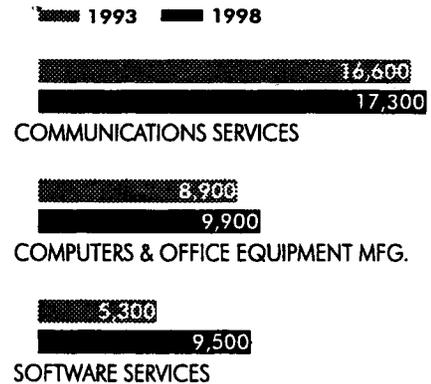
**34**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**ALABAMA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**30TH** IN R&D PER CAPITA (1997)  
**29TH** IN VENTURE CAPITAL INVESTMENTS (1999)

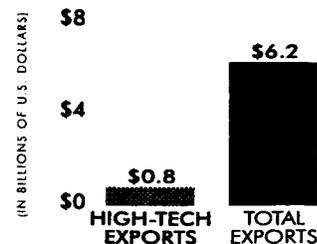
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

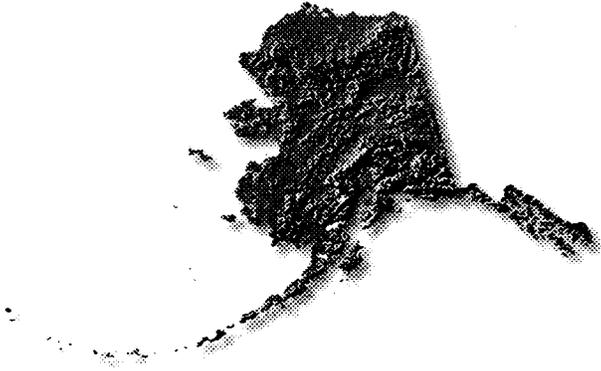


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **14%**



## AND THE HIGH-TECH INDUSTRY



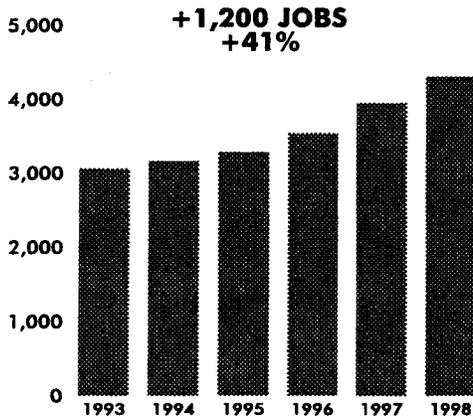
<b>JOBS</b>	<b>4,307</b>
<b>ESTABLISHMENTS</b>	<b>298</b>
<b>PAYROLL</b>	<b>\$218m</b>
<b>AVERAGE WAGE</b>	<b>\$50,694</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$32,033</b>

### STATE RANKINGS

**51st** IN HIGH-TECH EMPLOYMENT  
**21st** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



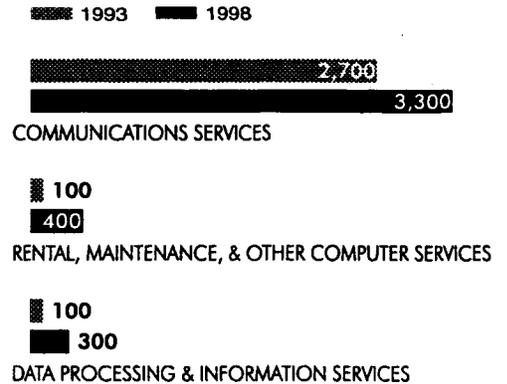
**22**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**ALASKA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

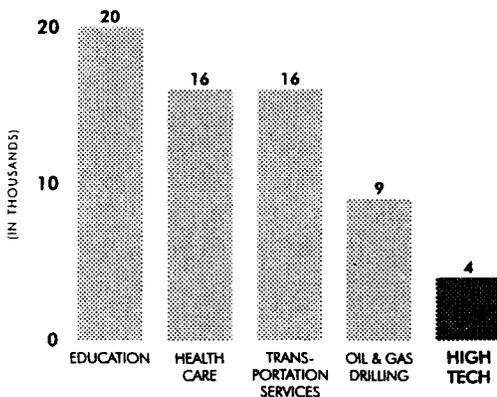
**41st** IN R&D PER CAPITA (1997)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

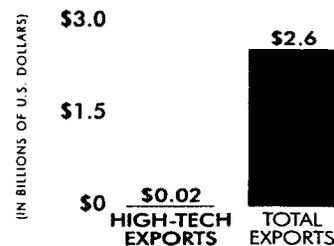


### EMPLOYMENT COMPARISONS



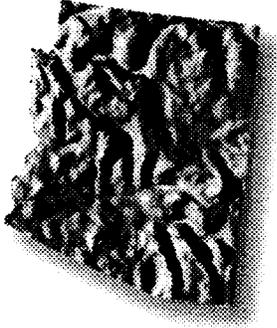
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **1%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, and U.S. National Science Foundation

## AND THE HIGH-TECH INDUSTRY



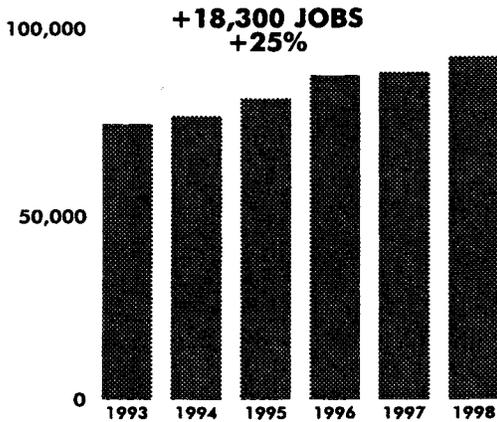
<b>JOBS</b>	<b>92,375</b>
<b>ESTABLISHMENTS</b>	<b>3,009</b>
<b>PAYROLL</b>	<b>\$5.2b</b>
<b>AVERAGE WAGE</b>	<b>\$55,817</b>
AVERAGE PRIVATE SECTOR WAGE	\$28,850

### STATE RANKINGS

**18th** IN HIGH-TECH EMPLOYMENT  
**14th** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



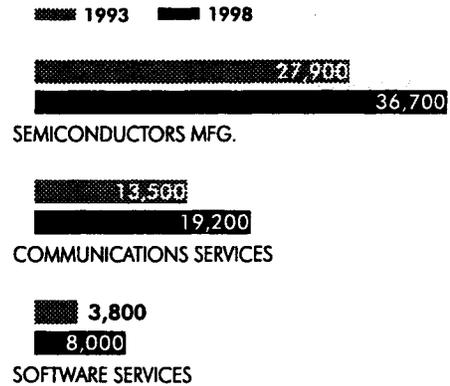
**52**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**ARIZONA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

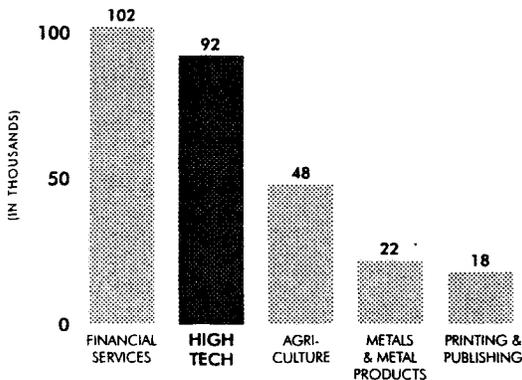
**25th** IN R&D PER CAPITA (1997)  
**20th** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

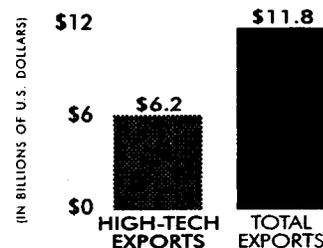


### EMPLOYMENT COMPARISONS

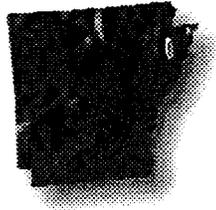


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **52%**



## AND THE HIGH-TECH INDUSTRY



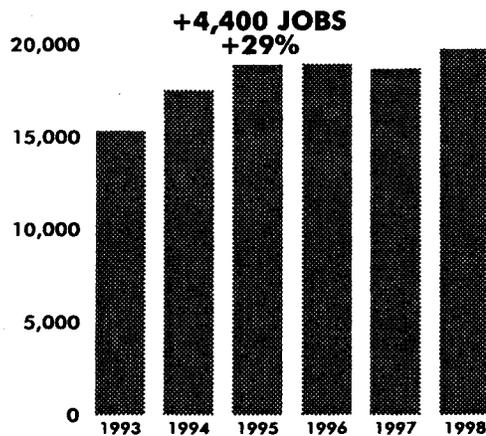
<b>JOBS</b>	<b>19,712</b>
<b>ESTABLISHMENTS</b>	<b>1,114</b>
<b>PAYROLL</b>	<b>\$815m</b>
<b>AVERAGE WAGE</b>	<b>\$41,332</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$24,086</b>

### STATE RANKINGS

**38TH** IN HIGH-TECH EMPLOYMENT  
**37TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



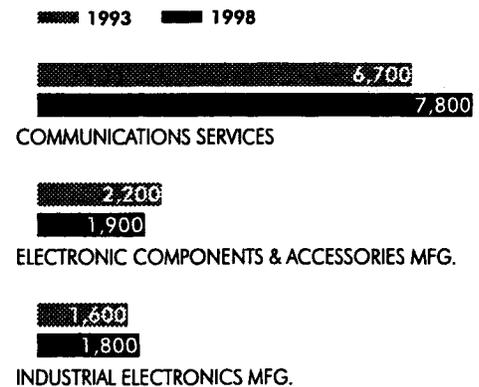
**21**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**ARKANSAS**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

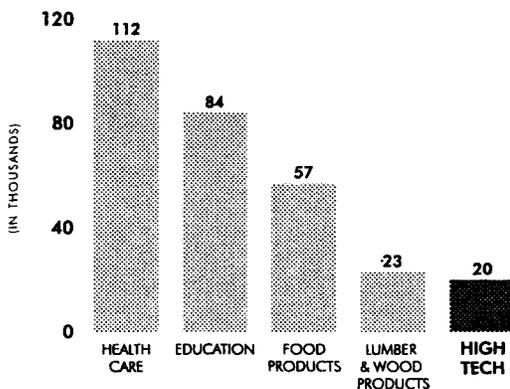
**50TH** IN R&D PER CAPITA (1997)  
**34TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

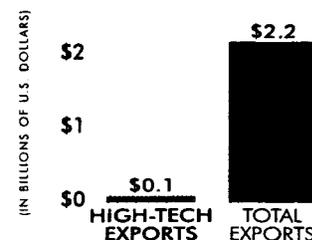


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **4%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



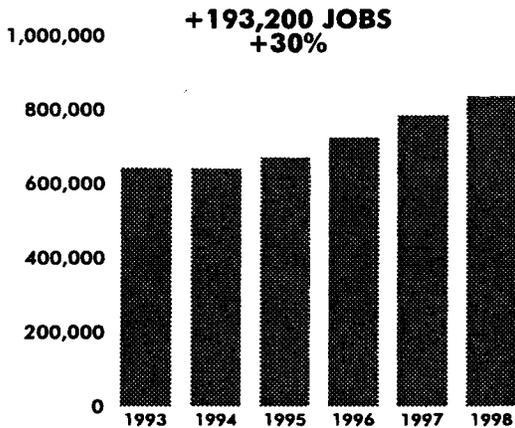
<b>JOBS</b>	<b>834,709</b>
<b>ESTABLISHMENTS</b>	<b>28,839</b>
<b>PAYROLL</b>	<b>\$55.8b</b>
<b>AVERAGE WAGE</b>	<b>\$66,906</b>
AVERAGE PRIVATE SECTOR WAGE	\$34,841

### STATE RANKINGS

**1ST** IN HIGH-TECH EMPLOYMENT  
**3RD** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



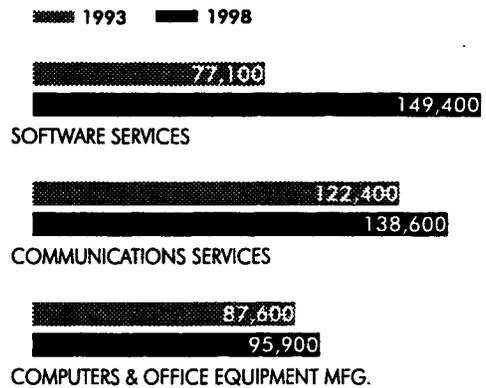
**70**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**CALIFORNIA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

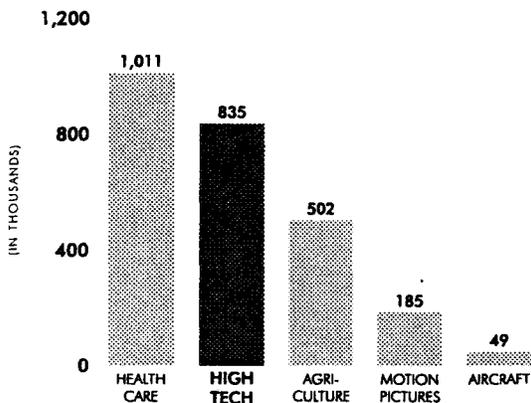
**9TH** IN R&D PER CAPITA (1997)  
**1ST** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

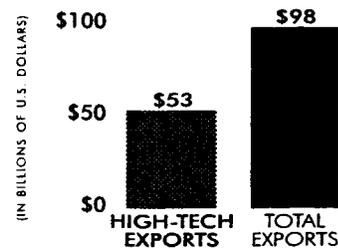


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **54%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



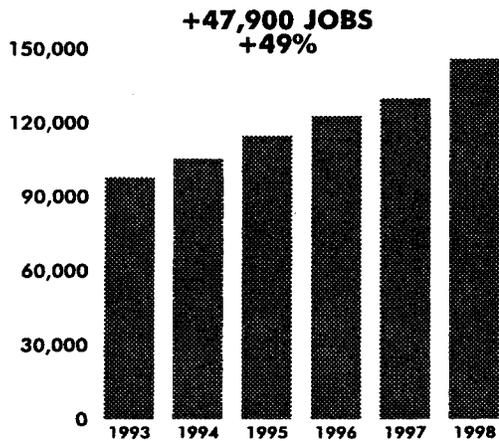
<b>JOBS</b>	<b>145,655</b>
<b>ESTABLISHMENTS</b>	<b>5,531</b>
<b>PAYROLL</b>	<b>\$8.8b</b>
<b>AVERAGE WAGE</b>	<b>\$60,418</b>
AVERAGE PRIVATE SECTOR WAGE	\$32,210

### STATE RANKINGS

**10TH** IN HIGH-TECH EMPLOYMENT  
**8TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



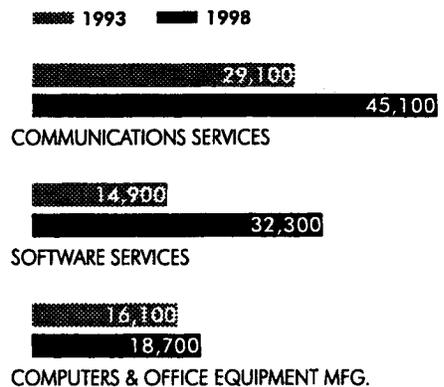
**84**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**COLORADO**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

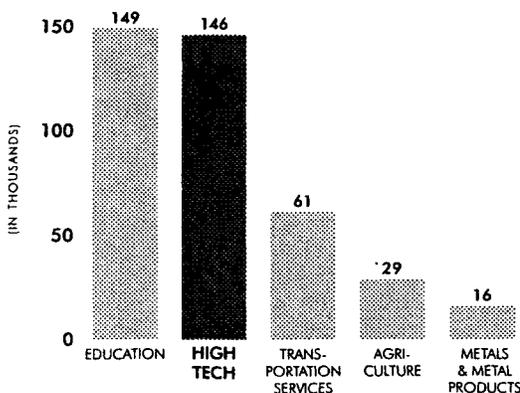
**13TH** IN R&D PER CAPITA (1997)  
**5TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

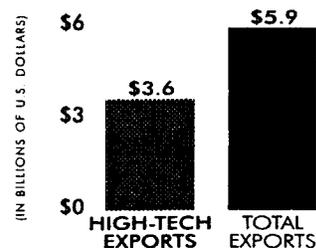


### EMPLOYMENT COMPARISONS



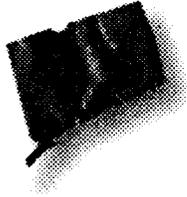
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **61%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



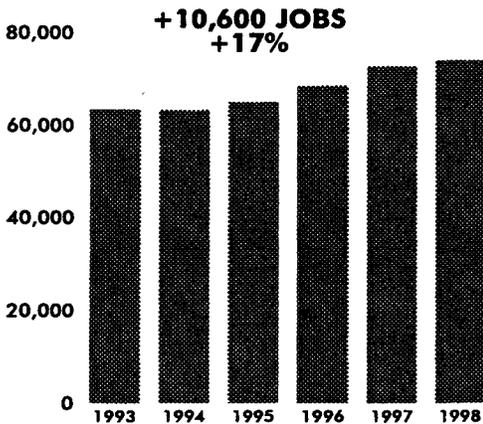
<b>JOBS</b>	<b>73,889</b>
<b>ESTABLISHMENTS</b>	<b>3,305</b>
<b>PAYROLL</b>	<b>\$4.8b</b>
<b>AVERAGE WAGE</b>	<b>\$65,367</b>
AVERAGE PRIVATE SECTOR WAGE	\$41,086

### STATE RANKINGS

**21st** IN HIGH-TECH EMPLOYMENT  
**5th** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



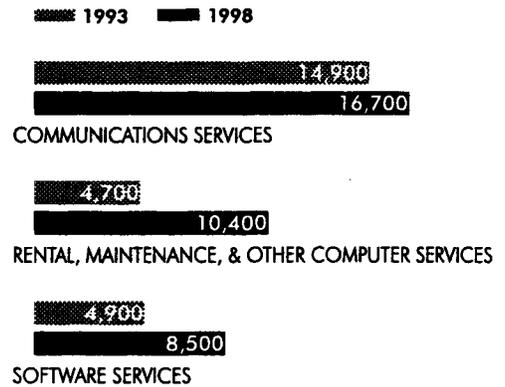
**52**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**CONNECTICUT**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

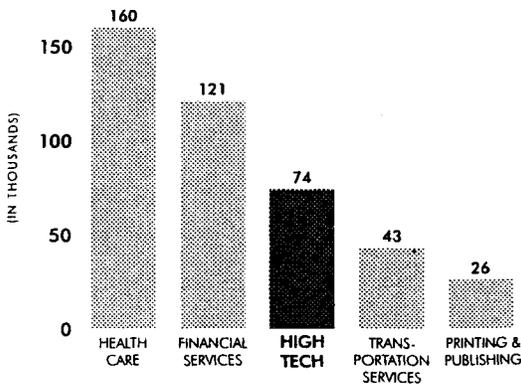
**10th** IN R&D PER CAPITA (1997)  
**15th** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

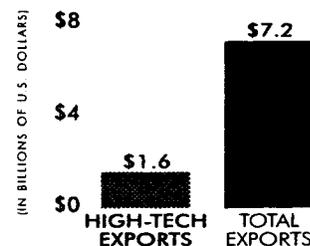


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **22%**



## AND THE HIGH-TECH INDUSTRY



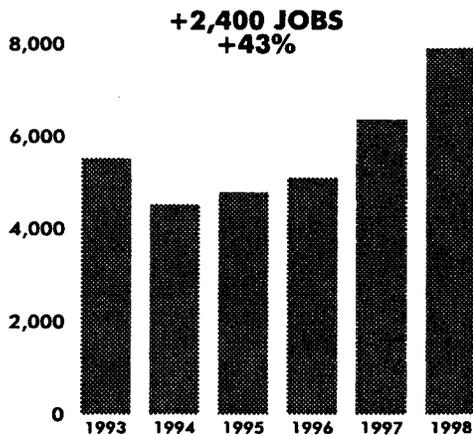
<b>JOBS</b>	<b>7,902</b>
<b>ESTABLISHMENTS</b>	<b>615</b>
<b>PAYROLL</b>	<b>\$443m</b>
<b>AVERAGE WAGE</b>	<b>\$56,109</b>
AVERAGE PRIVATE SECTOR WAGE	\$34,020

### STATE RANKINGS

**47TH** IN HIGH-TECH EMPLOYMENT  
**13TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



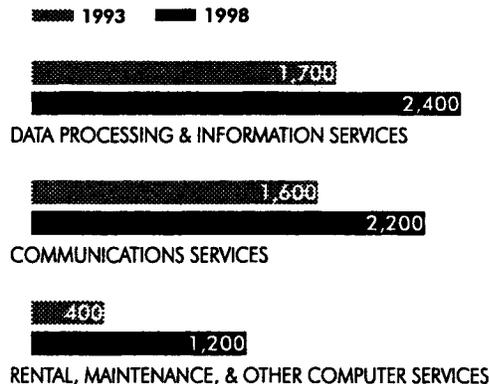
**23**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**DELAWARE**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

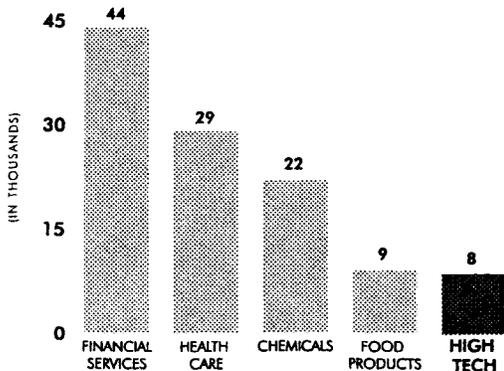
**5TH** IN R&D PER CAPITA (1997)  
**36TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

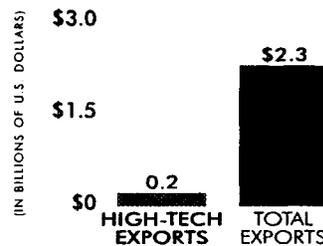


### EMPLOYMENT COMPARISONS

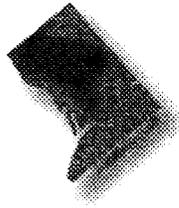


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **9%**



# AND THE HIGH-TECH INDUSTRY



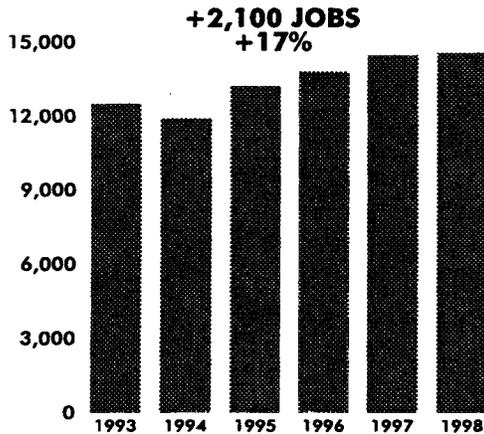
<b>JOBS</b>	<b>14,542</b>
<b>ESTABLISHMENTS</b>	<b>852</b>
<b>PAYROLL</b>	<b>\$876m</b>
<b>AVERAGE WAGE</b>	<b>\$60,238</b>
AVERAGE PRIVATE SECTOR WAGE	\$45,245

### STATE RANKINGS

**42ND** IN HIGH-TECH EMPLOYMENT  
**10TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



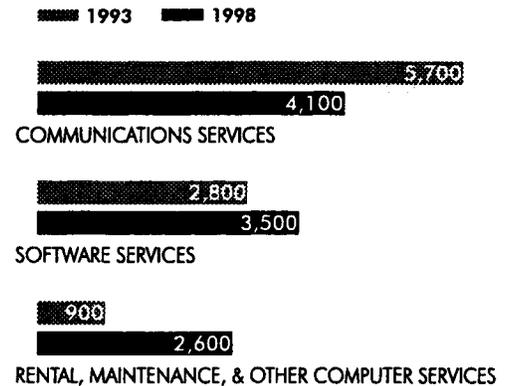
**39**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**THE DISTRICT**  
**OF COLUMBIA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

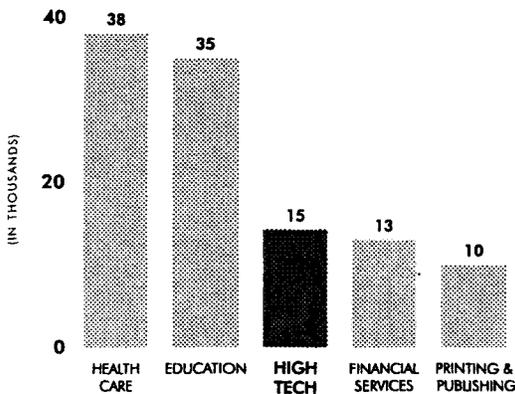
**1ST** IN R&D PER CAPITA (1997)  
**19TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

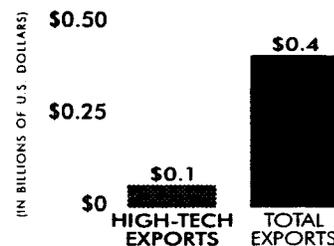


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **15%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



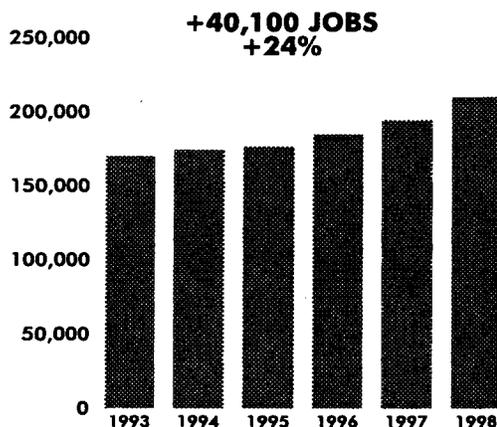
<b>JOBS</b>	<b>209,890</b>
<b>ESTABLISHMENTS</b>	<b>9,027</b>
<b>PAYROLL</b>	<b>\$9.7b</b>
<b>AVERAGE WAGE</b>	<b>\$46,066</b>
AVERAGE PRIVATE SECTOR WAGE	\$27,585

### STATE RANKINGS

**6TH** IN HIGH-TECH EMPLOYMENT  
**29TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

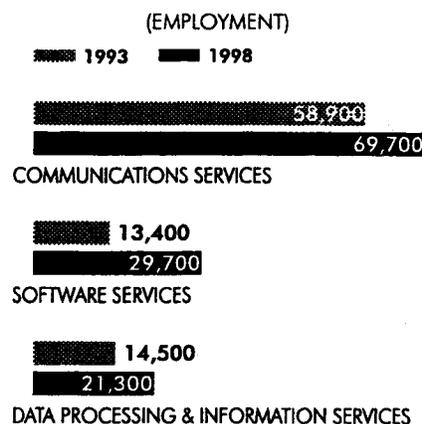


**37**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**FLORIDA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

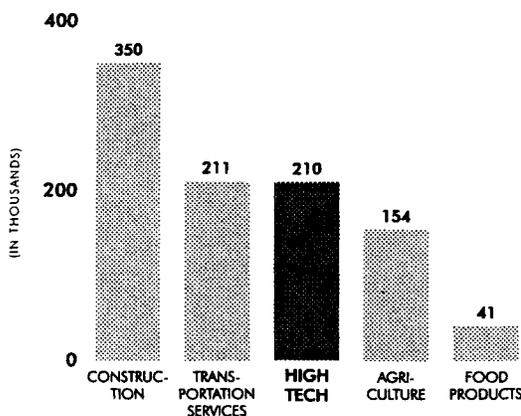
### BUSINESS ENVIRONMENT

**33RD** IN R&D PER CAPITA (1997)  
**11TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

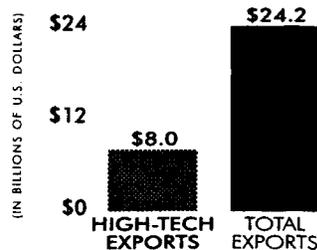


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **33%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>142,648</b>
<b>ESTABLISHMENTS</b>	<b>6,753</b>
<b>PAYROLL</b>	<b>\$8.1b</b>
<b>AVERAGE WAGE</b>	<b>\$56,850</b>
AVERAGE PRIVATE SECTOR WAGE	\$31,141

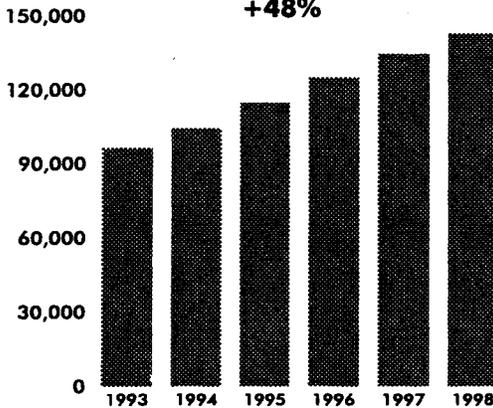
### STATE RANKINGS

**11TH** IN HIGH-TECH EMPLOYMENT  
**12TH** IN HIGH-TECH AVERAGE WAGE

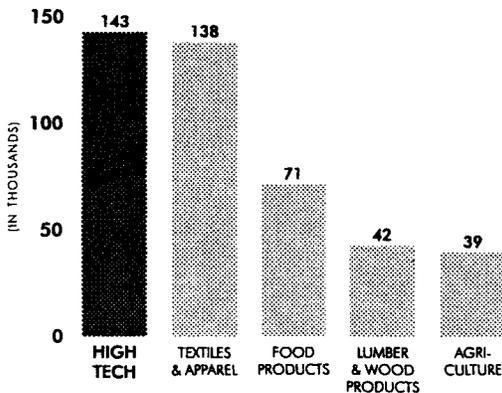
### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+46,400 JOBS**  
**+48%**



### EMPLOYMENT COMPARISONS



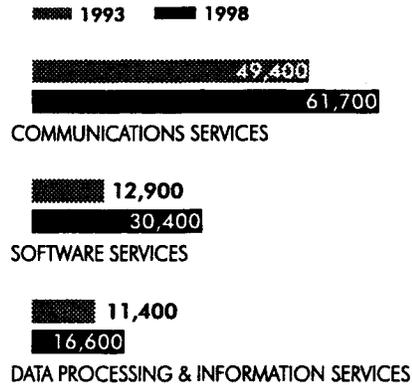
**46**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**GEORGIA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**35TH** IN R&D PER CAPITA (1997)  
**10TH** IN VENTURE CAPITAL INVESTMENTS (1999)

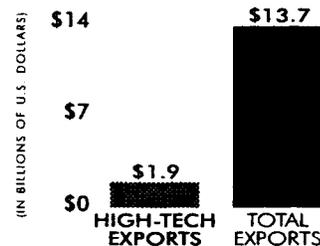
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **14%**



## AND THE HIGH-TECH INDUSTRY



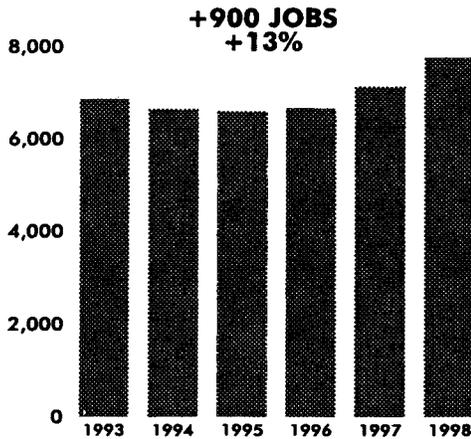
<b>JOBS</b>	<b>7,757</b>
<b>ESTABLISHMENTS</b>	<b>474</b>
<b>PAYROLL</b>	<b>\$369m</b>
<b>AVERAGE WAGE</b>	<b>\$47,537</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$27,662</b>

### STATE RANKINGS

**48TH** IN HIGH-TECH EMPLOYMENT  
**26TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



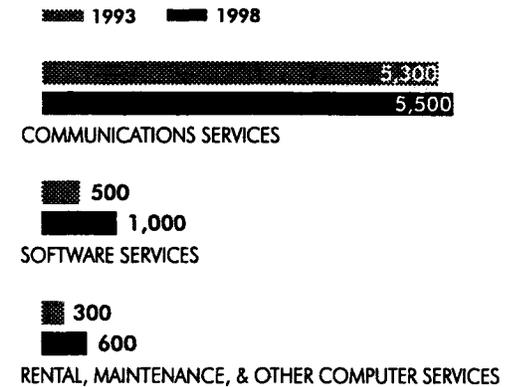
**18**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**HAWAII**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

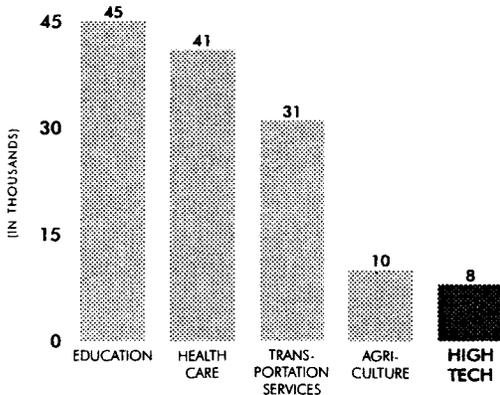
**39TH** IN R&D PER CAPITA (1997)  
**39TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

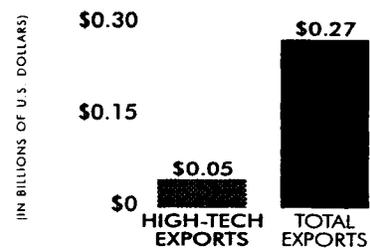


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **17%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>24,807</b>
<b>ESTABLISHMENTS</b>	<b>695</b>
<b>PAYROLL</b>	<b>\$1.1b</b>
<b>AVERAGE WAGE</b>	<b>\$44,552</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$24,555</b>

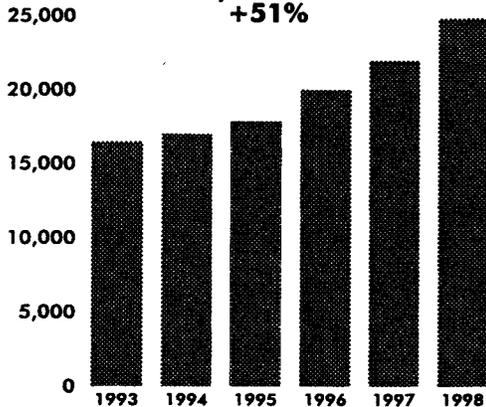
### STATE RANKINGS

**34TH** IN HIGH-TECH EMPLOYMENT  
**30TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+8,400 JOBS**  
**+51%**



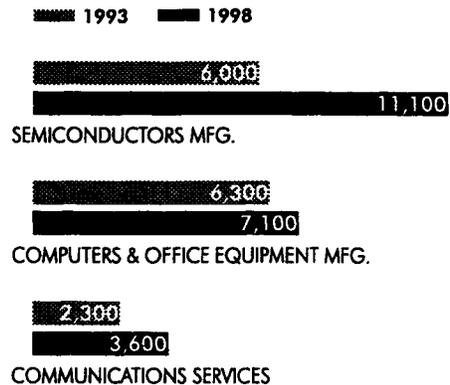
**58**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**IDAHO**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

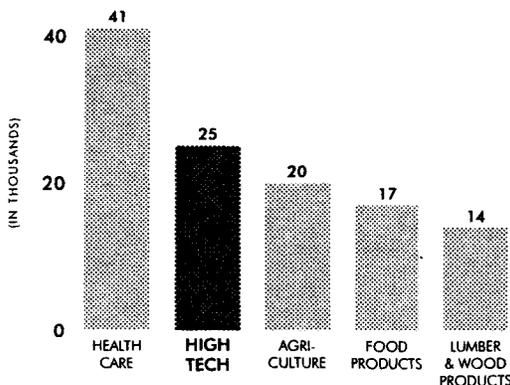
**12TH** IN R&D PER CAPITA (1997)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

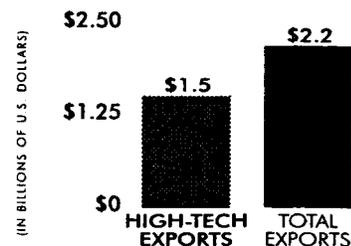


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **69%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, and U.S. National Science Foundation

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>217,617</b>
<b>ESTABLISHMENTS</b>	<b>9,976</b>
<b>PAYROLL</b>	<b>\$12.0b</b>
<b>AVERAGE WAGE</b>	<b>\$55,245</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$34,739</b>

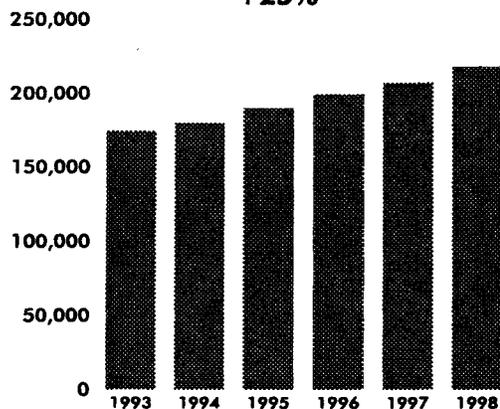
### STATE RANKINGS

**4TH** IN HIGH-TECH EMPLOYMENT  
**15TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+43,500 JOBS**  
**+25%**



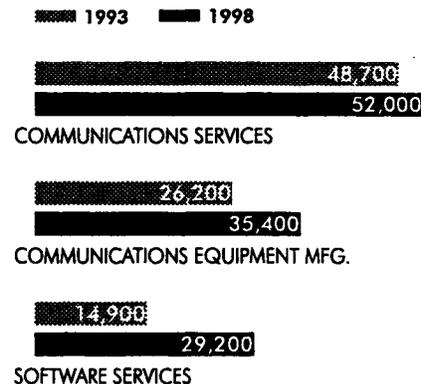
**43**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**ILLINOIS**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

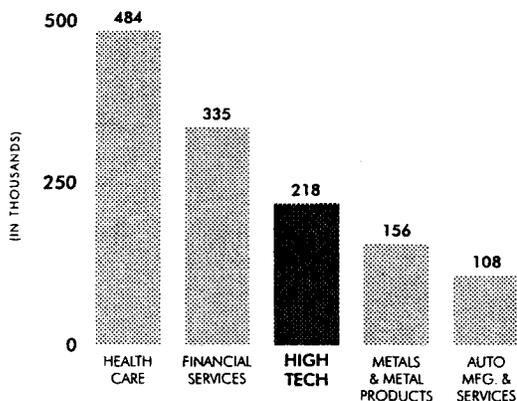
**18TH** IN R&D PER CAPITA (1997)  
**8TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

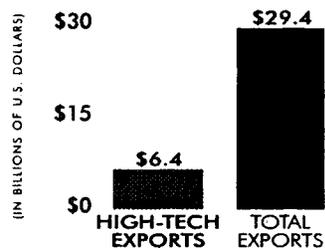


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **22%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>66,794</b>
<b>ESTABLISHMENTS</b>	<b>2,892</b>
<b>PAYROLL</b>	<b>\$2.7b</b>
<b>AVERAGE WAGE</b>	<b>\$40,790</b>
AVERAGE PRIVATE SECTOR WAGE	\$29,139

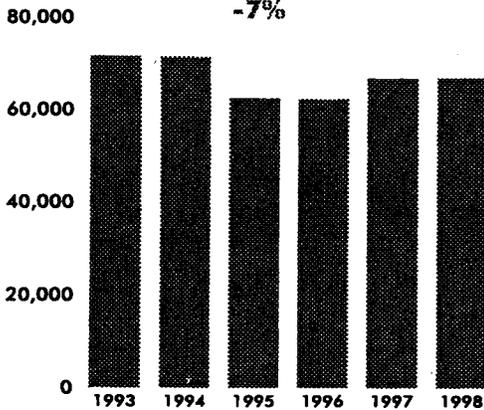
### STATE RANKINGS

**22ND** IN HIGH-TECH EMPLOYMENT  
**39TH** IN HIGH-TECH AVERAGE WAGE

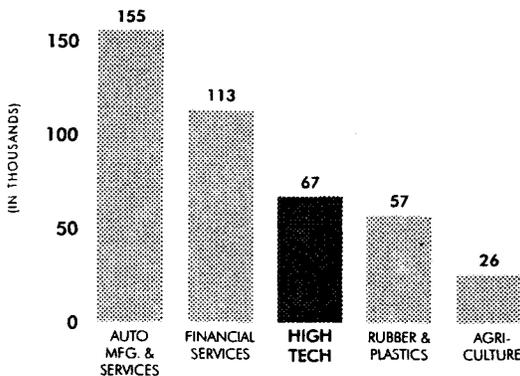
### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**-4,700 JOBS**  
**-7%**



### EMPLOYMENT COMPARISONS



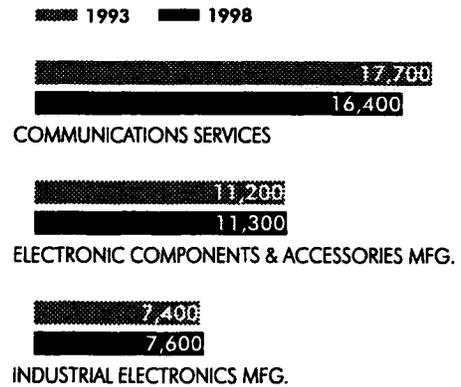
**27**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**INDIANA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**23RD** IN R&D PER CAPITA (1997)  
**44TH** IN VENTURE CAPITAL INVESTMENTS (1999)

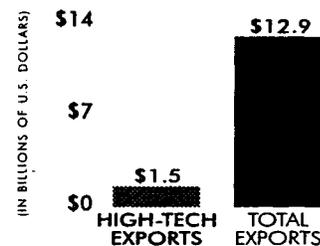
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

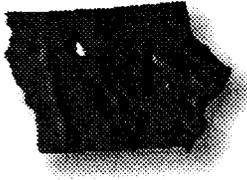


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **12%**



## AND THE HIGH-TECH INDUSTRY



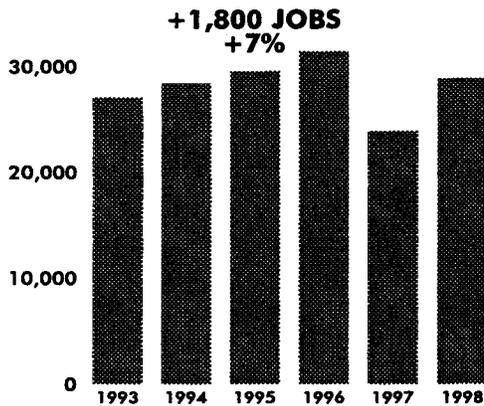
<b>JOBS</b>	<b>28,873</b>
<b>ESTABLISHMENTS</b>	<b>1,662</b>
<b>PAYROLL</b>	<b>\$1.1b</b>
<b>AVERAGE WAGE</b>	<b>\$37,292</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$25,629</b>

### STATE RANKINGS

**33RD** IN HIGH-TECH EMPLOYMENT  
**45TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



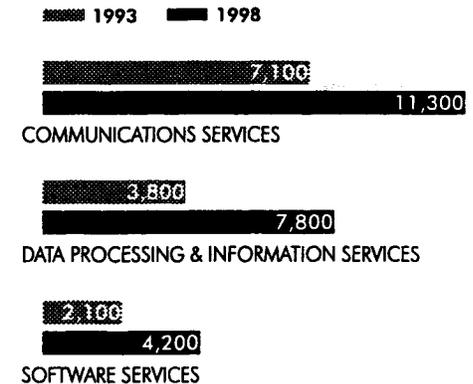
**24**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**IOWA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

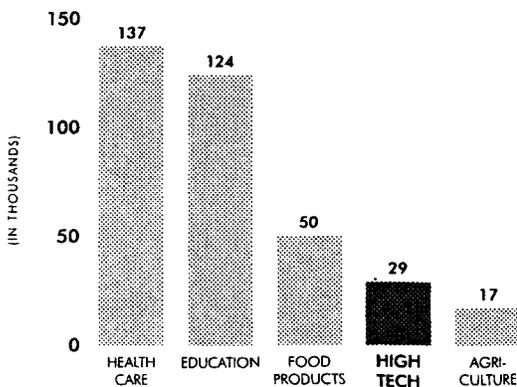
**31ST** IN R&D PER CAPITA (1997)  
**33RD** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

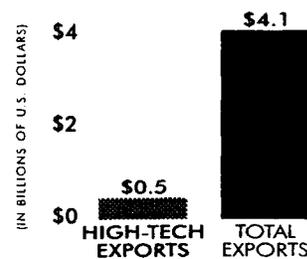


### EMPLOYMENT COMPARISONS

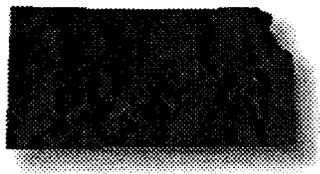


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **11%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>34,651</b>
<b>ESTABLISHMENTS</b>	<b>1,832</b>
<b>PAYROLL</b>	<b>\$1.6b</b>
<b>AVERAGE WAGE</b>	<b>\$46,672</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$27,021</b>

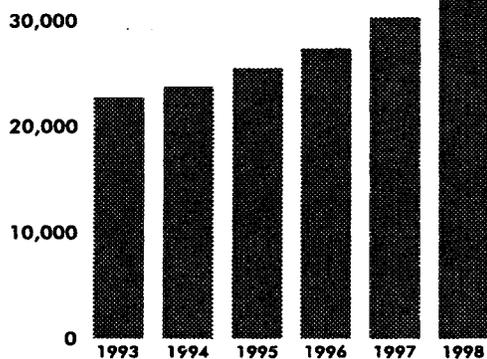
### STATE RANKINGS

**29TH** IN HIGH-TECH EMPLOYMENT  
**28TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+12,000 JOBS**  
**+53%**



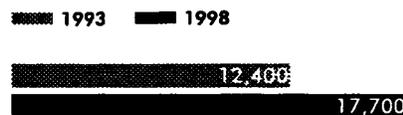
**33**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**KANSAS**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**26TH** IN R&D PER CAPITA (1997)  
**35TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)



COMMUNICATIONS SERVICES

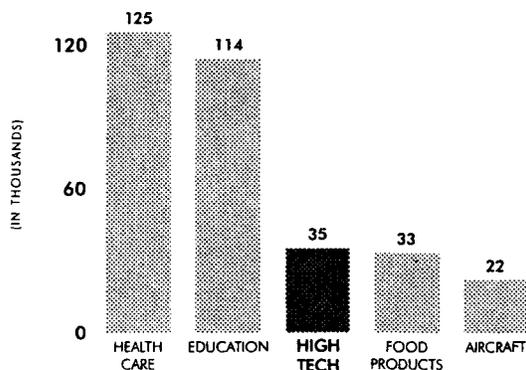


SOFTWARE SERVICES



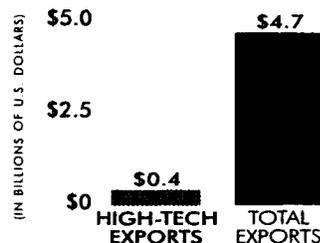
RENTAL, MAINTENANCE, & OTHER COMPUTER SERVICES

### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **9%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>34,554</b>
<b>ESTABLISHMENTS</b>	<b>1,645</b>
<b>PAYROLL</b>	<b>\$1.3b</b>
<b>AVERAGE WAGE</b>	<b>\$37,460</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$26,598</b>

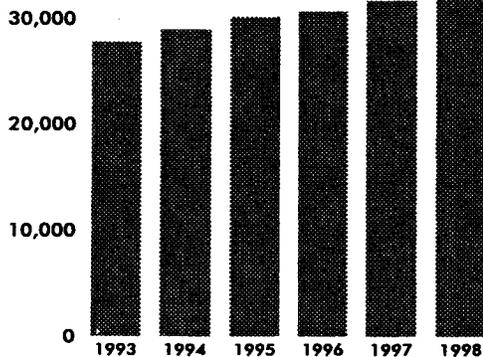
### STATE RANKINGS

**30TH** IN HIGH-TECH EMPLOYMENT  
**44TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+6,800 JOBS**  
**+25%**



**24**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**KENTUCKY**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

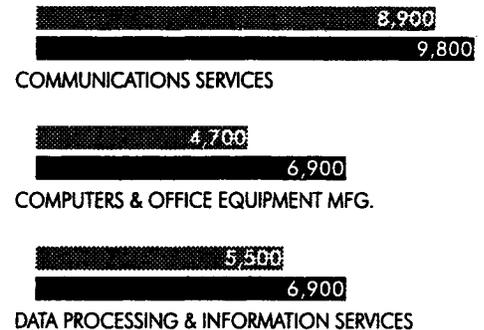
### BUSINESS ENVIRONMENT

**47TH** IN R&D PER CAPITA (1997)  
**25TH** IN VENTURE CAPITAL INVESTMENTS (1999)

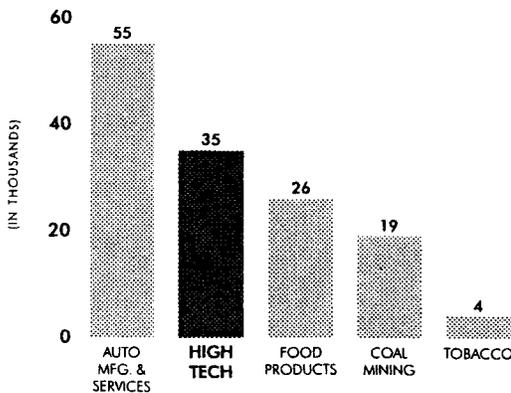
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998

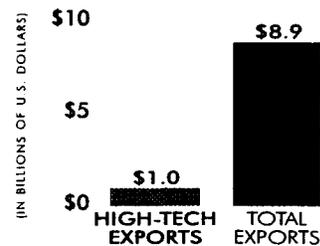


### EMPLOYMENT COMPARISONS



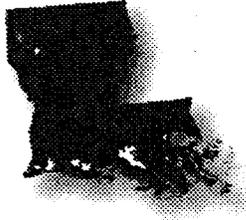
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **11%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>22,137</b>
<b>ESTABLISHMENTS</b>	<b>1,540</b>
<b>PAYROLL</b>	<b>\$884m</b>
<b>AVERAGE WAGE</b>	<b>\$39,926</b>
AVERAGE PRIVATE SECTOR WAGE	\$27,103

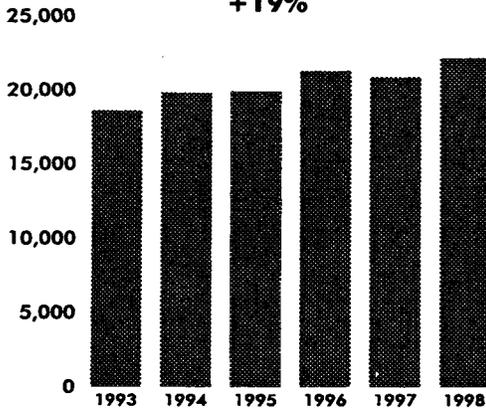
### STATE RANKINGS

**36TH** IN HIGH-TECH EMPLOYMENT  
**42ND** IN HIGH-TECH AVERAGE WAGE

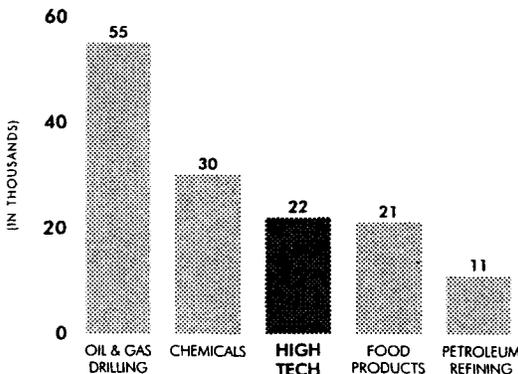
### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+3,600 JOBS**  
**+19%**



### EMPLOYMENT COMPARISONS



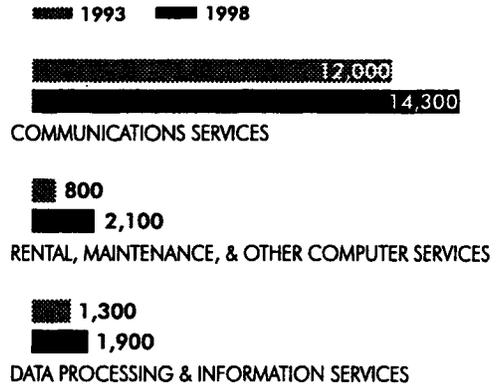
**15**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**LOUISIANA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**48TH** IN R&D PER CAPITA (1997)  
**30TH** IN VENTURE CAPITAL INVESTMENTS (1999)

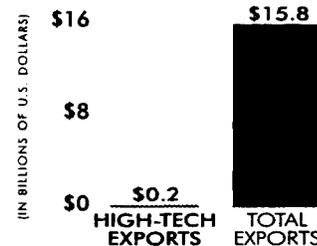
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **1%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>12,045</b>
<b>ESTABLISHMENTS</b>	<b>738</b>
<b>PAYROLL</b>	<b>\$485m</b>
<b>AVERAGE WAGE</b>	<b>\$40,277</b>
AVERAGE PRIVATE SECTOR WAGE	\$25,448

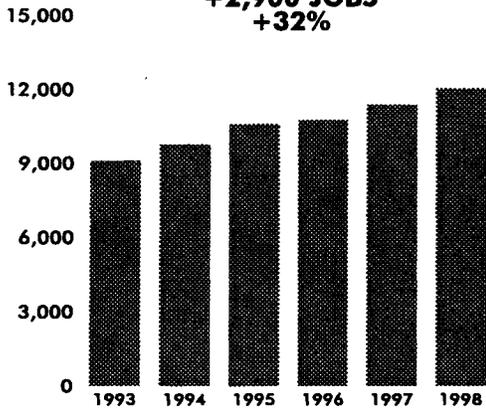
### STATE RANKINGS

**45TH** IN HIGH-TECH EMPLOYMENT  
**41ST** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+2,900 JOBS**  
**+32%**



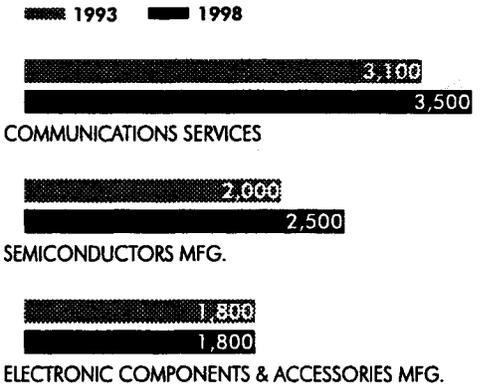
**26**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**MAINE**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

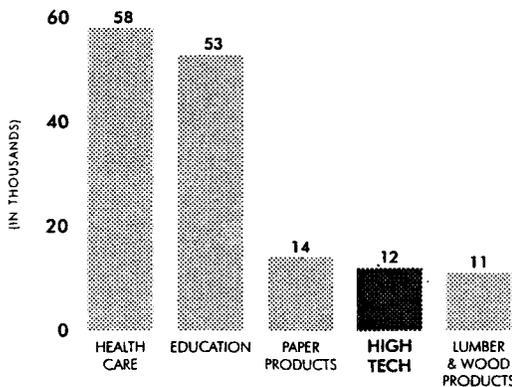
**49TH** IN R&D PER CAPITA (1997)  
**37TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

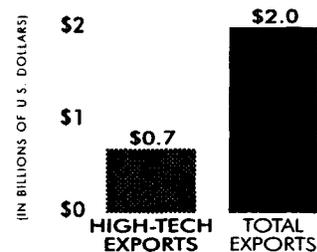


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **35%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>103,773</b>
<b>ESTABLISHMENTS</b>	<b>5,228</b>
<b>PAYROLL</b>	<b>\$6.1b</b>
<b>AVERAGE WAGE</b>	<b>\$58,942</b>
AVERAGE PRIVATE SECTOR WAGE	\$32,081

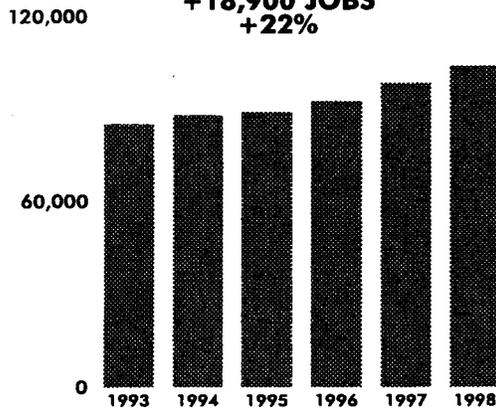
### STATE RANKINGS

**16TH** IN HIGH-TECH EMPLOYMENT  
**11TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+18,900 JOBS**  
**+22%**



**56**

**OF EVERY**

**1,000**

**PRIVATE SECTOR**

**WORKERS IN**

**MARYLAND**

**ARE EMPLOYED**

**BY HIGH-TECH**

**FIRMS**

### BUSINESS ENVIRONMENT

**6TH** IN R&D PER CAPITA (1997)  
**13TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998



SOFTWARE SERVICES

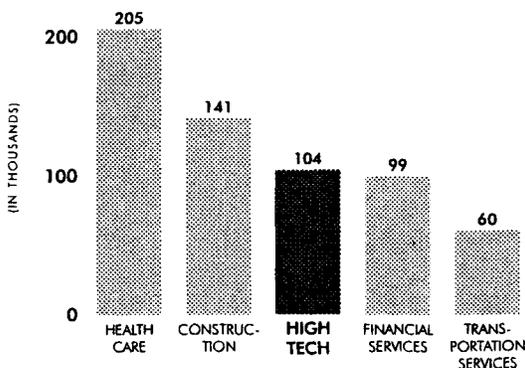


COMMUNICATIONS SERVICES



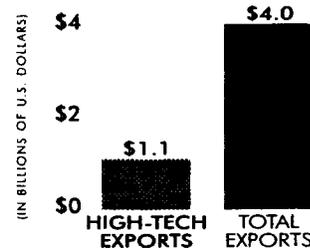
RENTAL, MAINTENANCE, & OTHER COMPUTER SERVICES

### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **27%**



## AND THE HIGH-TECH INDUSTRY



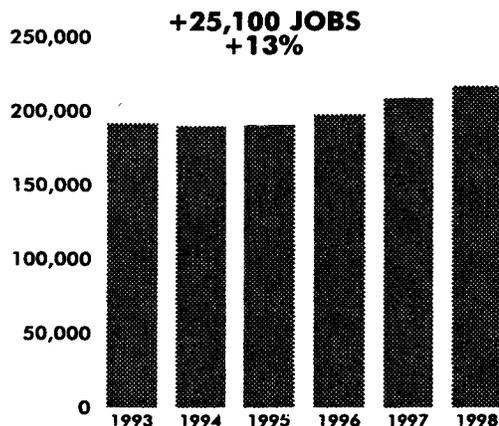
<b>JOBS</b>	<b>216,654</b>
<b>ESTABLISHMENTS</b>	<b>7,457</b>
<b>PAYROLL</b>	<b>\$14.0b</b>
<b>AVERAGE WAGE</b>	<b>\$64,404</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$37,902</b>

### STATE RANKINGS

**5TH** IN HIGH-TECH EMPLOYMENT  
**6TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



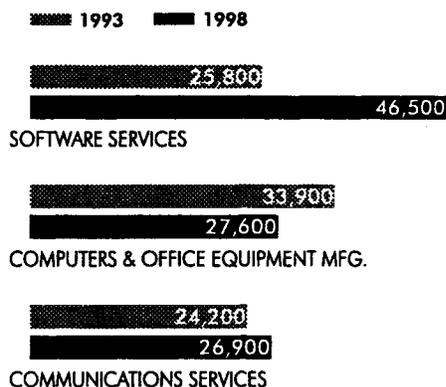
**79**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**MASSACHUSETTS**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

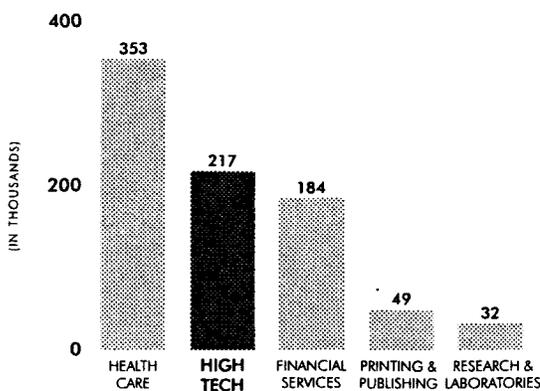
**2ND** IN R&D PER CAPITA (1997)  
**2ND** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

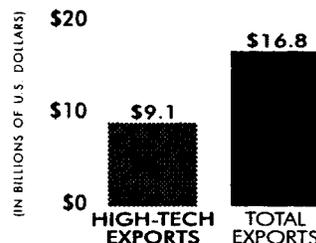


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **54%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>100,951</b>
<b>ESTABLISHMENTS</b>	<b>5,007</b>
<b>PAYROLL</b>	<b>\$5.1b</b>
<b>AVERAGE WAGE</b>	<b>\$50,974</b>
AVERAGE PRIVATE SECTOR WAGE	\$34,615

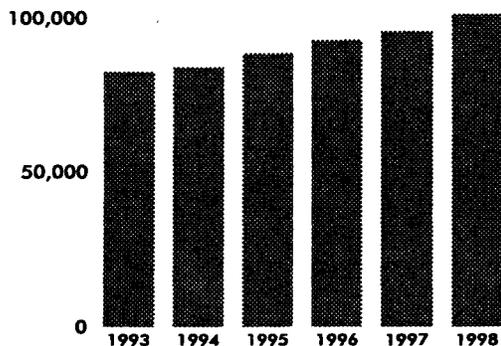
### STATE RANKINGS

**17TH** IN HIGH-TECH EMPLOYMENT  
**20TH** IN HIGH-TECH AVERAGE WAGE

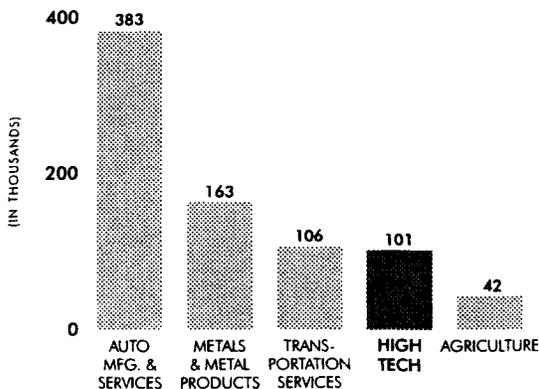
### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+18,600 JOBS**  
**+23%**



### EMPLOYMENT COMPARISONS



**27**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**MICHIGAN**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

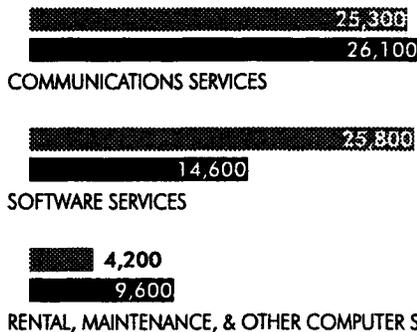
### BUSINESS ENVIRONMENT

**7TH** IN R&D PER CAPITA (1997)  
**26TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

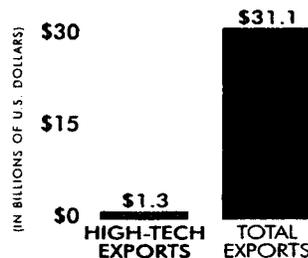
(EMPLOYMENT)

1993 1998

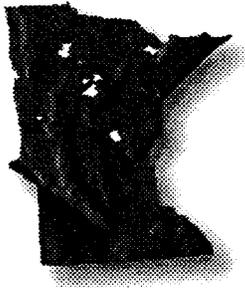


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **4%**



## AND THE HIGH-TECH INDUSTRY



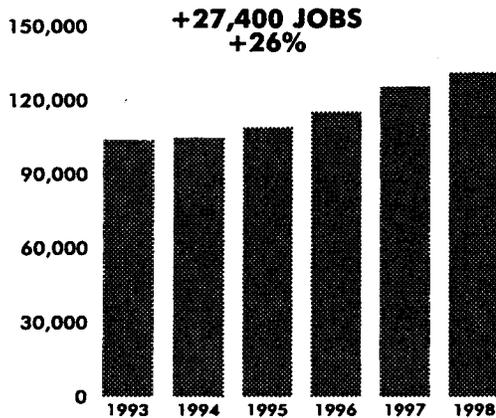
<b>JOBS</b>	<b>131,127</b>
<b>ESTABLISHMENTS</b>	<b>5,329</b>
<b>PAYROLL</b>	<b>\$6.7b</b>
<b>AVERAGE WAGE</b>	<b>\$51,201</b>
AVERAGE PRIVATE SECTOR WAGE	\$32,010

### STATE RANKINGS

**13TH** IN HIGH-TECH EMPLOYMENT  
**18TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

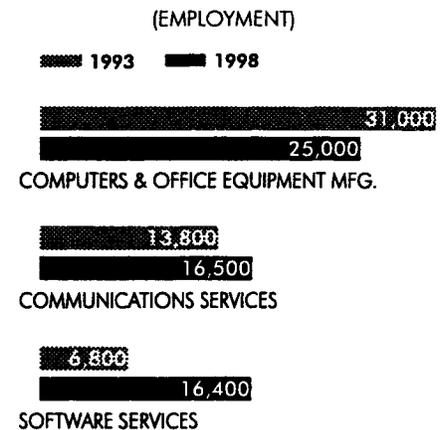


**61**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**MINNESOTA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

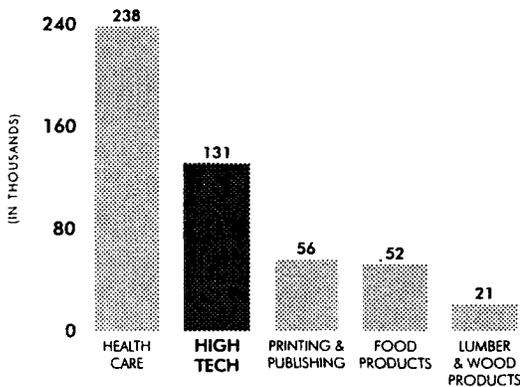
### BUSINESS ENVIRONMENT

**14TH** IN R&D PER CAPITA (1997)  
**16TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

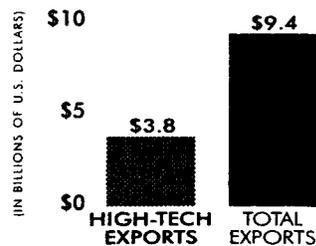


### EMPLOYMENT COMPARISONS



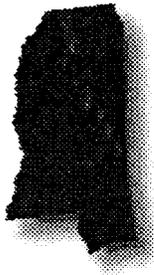
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **40%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



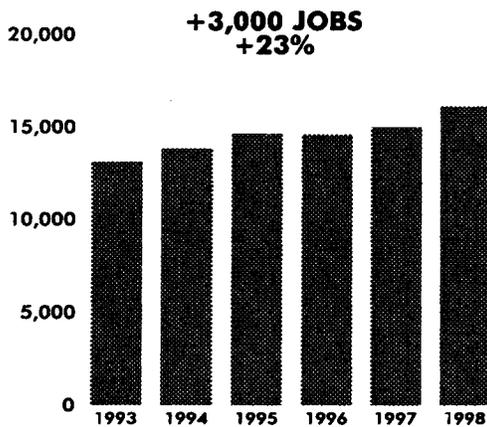
<b>JOBS</b>	<b>16,103</b>
<b>ESTABLISHMENTS</b>	<b>900</b>
<b>PAYROLL</b>	<b>\$588m</b>
<b>AVERAGE WAGE</b>	<b>\$36,510</b>
AVERAGE PRIVATE SECTOR WAGE	\$23,553

### STATE RANKINGS

**40TH** IN HIGH-TECH EMPLOYMENT  
**48TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



18

OF EVERY

1,000

PRIVATE SECTOR

WORKERS IN

MISSISSIPPI

ARE EMPLOYED

BY HIGH-TECH

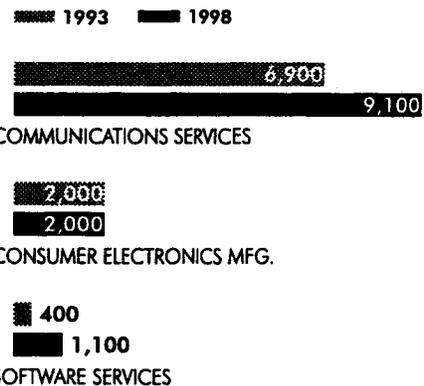
FIRMS

### BUSINESS ENVIRONMENT

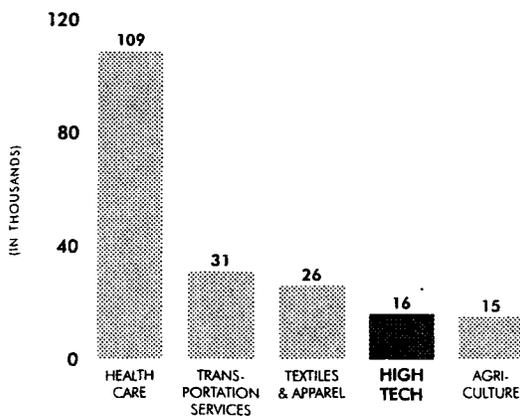
**46TH** IN R&D PER CAPITA (1997)  
**42ND** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

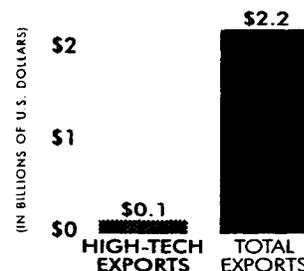


### EMPLOYMENT COMPARISONS

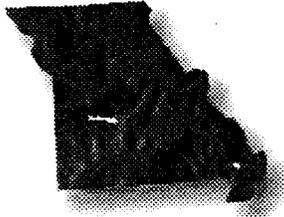


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **7%**



## AND THE HIGH-TECH INDUSTRY

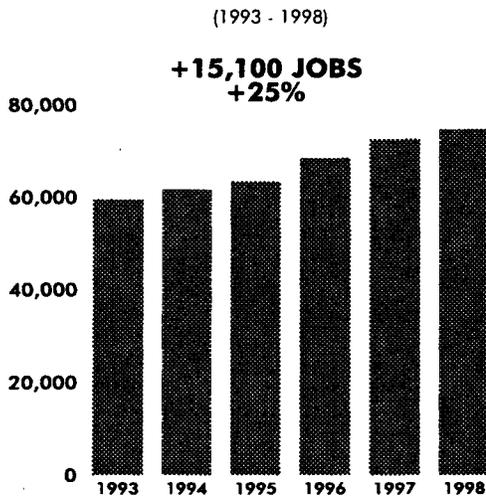


<b>JOBS</b>	<b>74,590</b>
<b>ESTABLISHMENTS</b>	<b>3,548</b>
<b>PAYROLL</b>	<b>\$3.6b</b>
<b>AVERAGE WAGE</b>	<b>\$48,010</b>
AVERAGE PRIVATE SECTOR WAGE	\$28,993

### STATE RANKINGS

**20TH** IN HIGH-TECH EMPLOYMENT  
**25TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

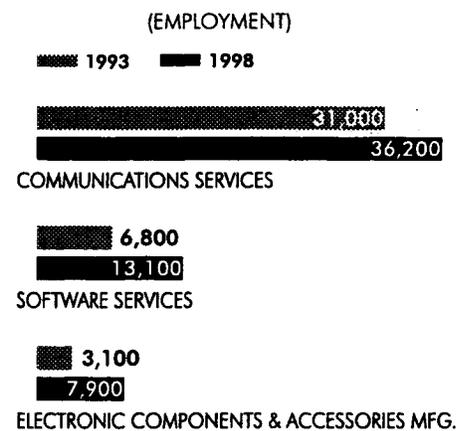


**34**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**MISSOURI**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

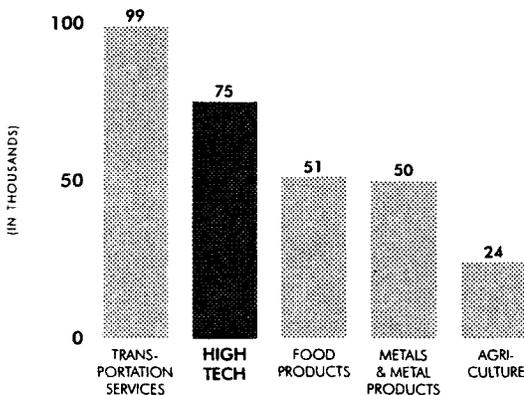
### BUSINESS ENVIRONMENT

**32ND** IN R&D PER CAPITA (1997)  
**18TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

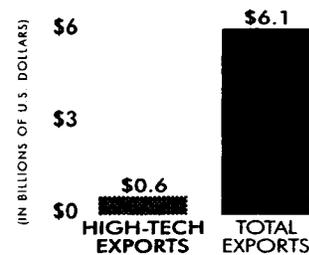


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **10%**



## AND THE HIGH-TECH INDUSTRY



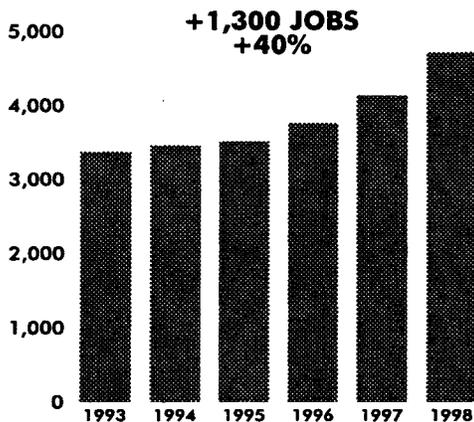
<b>JOBS</b>	<b>4,716</b>
<b>ESTABLISHMENTS</b>	<b>559</b>
<b>PAYROLL</b>	<b>\$158m</b>
<b>AVERAGE WAGE</b>	<b>\$33,483</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$21,683</b>

### STATE RANKINGS

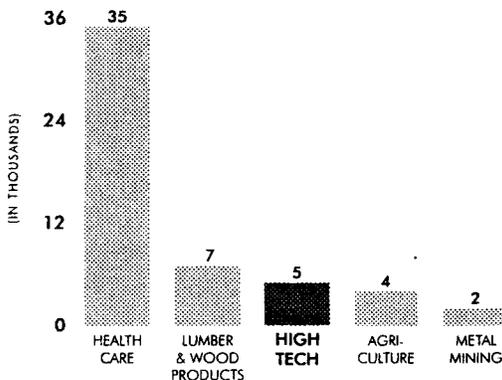
**50TH** IN HIGH-TECH EMPLOYMENT  
**50TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



### EMPLOYMENT COMPARISONS



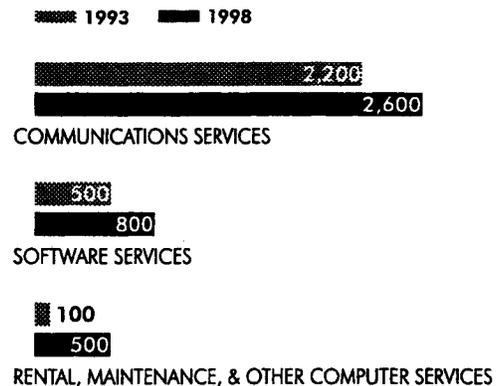
**16**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**MONTANA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**40TH** IN R&D PER CAPITA (1997)  
**38TH** IN VENTURE CAPITAL INVESTMENTS (1999)

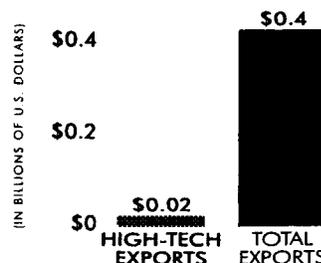
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

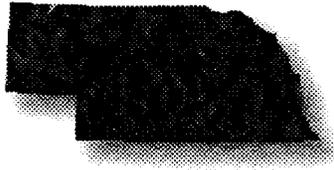


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **6%**



## AND THE HIGH-TECH INDUSTRY



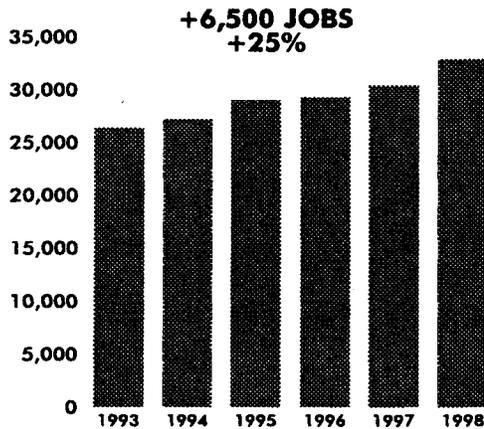
<b>JOBS</b>	<b>32,890</b>
<b>ESTABLISHMENTS</b>	<b>1,093</b>
<b>PAYROLL</b>	<b>\$1.3b</b>
<b>AVERAGE WAGE</b>	<b>\$40,739</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$25,151</b>

### STATE RANKINGS

**31<sup>ST</sup>** IN HIGH-TECH EMPLOYMENT  
**40<sup>TH</sup>** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



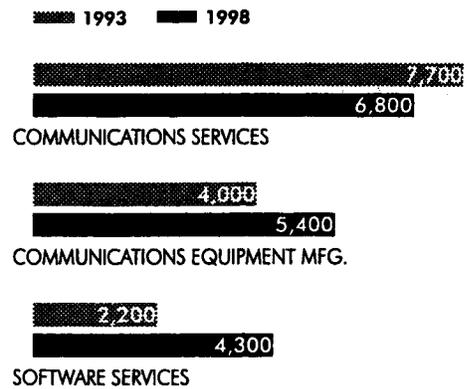
**47**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NEBRASKA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

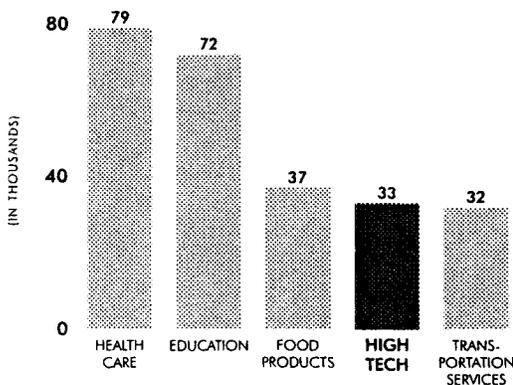
**45<sup>TH</sup>** IN R&D PER CAPITA (1997)  
**45<sup>TH</sup>** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

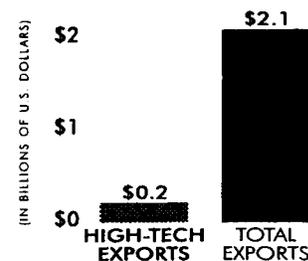


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **10%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>16,495</b>
<b>ESTABLISHMENTS</b>	<b>1,228</b>
<b>PAYROLL</b>	<b>\$722m</b>
<b>AVERAGE WAGE</b>	<b>\$43,797</b>
AVERAGE PRIVATE SECTOR WAGE	\$29,376

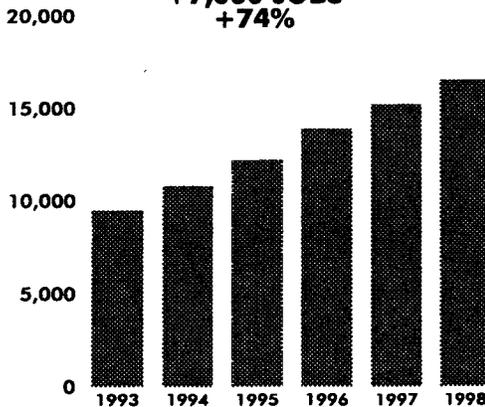
### STATE RANKINGS

**39TH** IN HIGH-TECH EMPLOYMENT  
**33RD** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+7,000 JOBS**  
**+74%**



**20**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NEVADA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**34TH** IN R&D PER CAPITA (1997)  
**41ST** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998



COMMUNICATIONS SERVICES

600

2,200

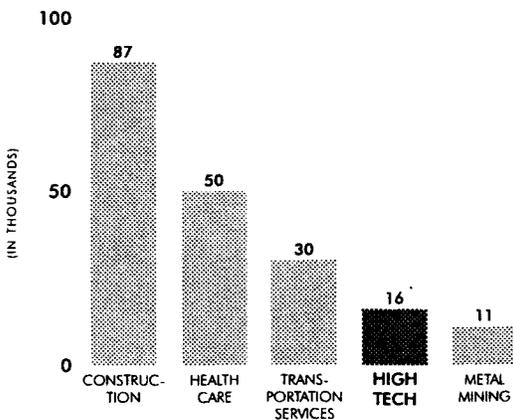
DATA PROCESSING & INFORMATION SERVICES

1,600

1,900

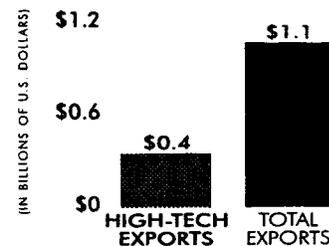
INDUSTRIAL ELECTRONICS MFG.

### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **33%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>41,682</b>
<b>ESTABLISHMENTS</b>	<b>1,817</b>
<b>PAYROLL</b>	<b>\$2.3b</b>
<b>AVERAGE WAGE</b>	<b>\$54,754</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$31,141</b>

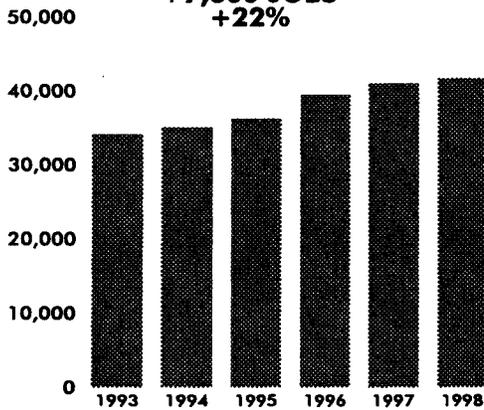
### STATE RANKINGS

**27<sup>TH</sup>** IN HIGH-TECH EMPLOYMENT  
**17<sup>TH</sup>** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+7,600 JOBS**  
**+22%**



**83**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NEW**  
**HAMPSHIRE**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

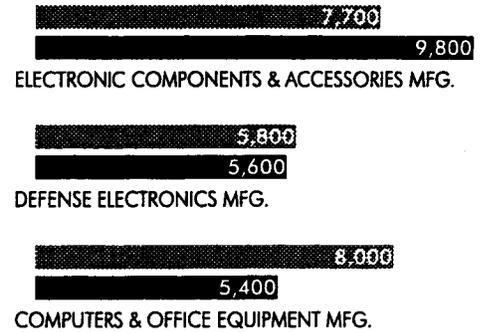
### BUSINESS ENVIRONMENT

**16<sup>TH</sup>** IN R&D PER CAPITA (1997)  
**21<sup>ST</sup>** IN VENTURE CAPITAL INVESTMENTS (1999)

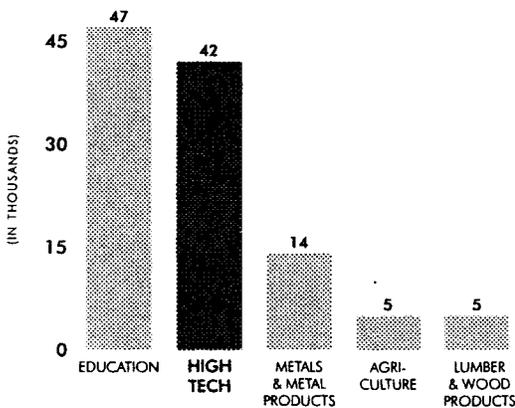
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998

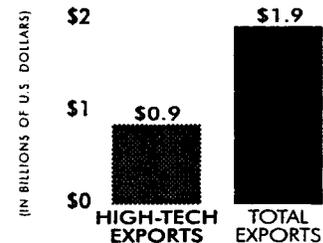


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **45%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>184,377</b>
<b>ESTABLISHMENTS</b>	<b>10,234</b>
<b>PAYROLL</b>	<b>\$12.7b</b>
<b>AVERAGE WAGE</b>	<b>\$68,660</b>
AVERAGE PRIVATE SECTOR WAGE	\$38,479

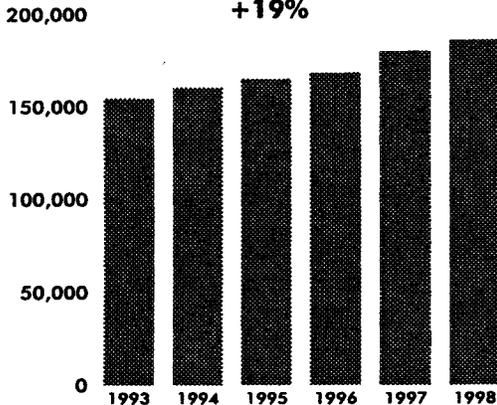
### STATE RANKINGS

**7TH** IN HIGH-TECH EMPLOYMENT  
**2ND** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+30,000 JOBS**  
**+19%**



**59**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NEW JERSEY**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**4TH** IN R&D PER CAPITA (1997)  
**7TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998



COMMUNICATIONS SERVICES

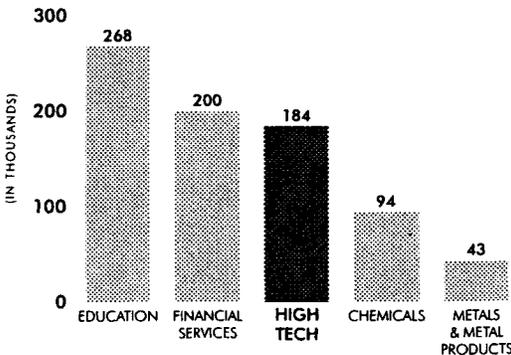


SOFTWARE SERVICES



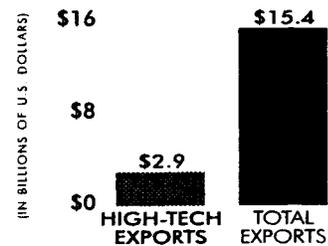
RENTAL, MAINTENANCE, & OTHER COMPUTER SERVICES

### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **19%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



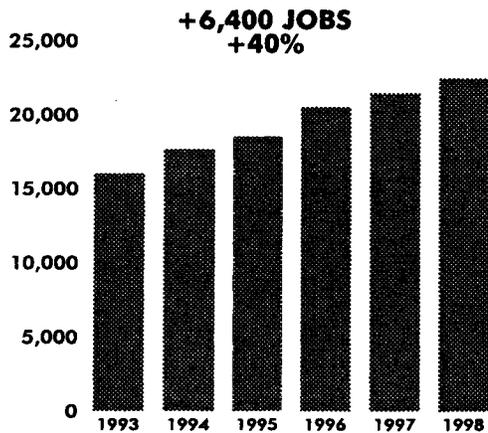
<b>JOBS</b>	<b>22,455</b>
<b>ESTABLISHMENTS</b>	<b>944</b>
<b>PAYROLL</b>	<b>\$985m</b>
<b>AVERAGE WAGE</b>	<b>\$43,875</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$24,697</b>

### STATE RANKINGS

**35TH** IN HIGH-TECH EMPLOYMENT  
**32ND** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



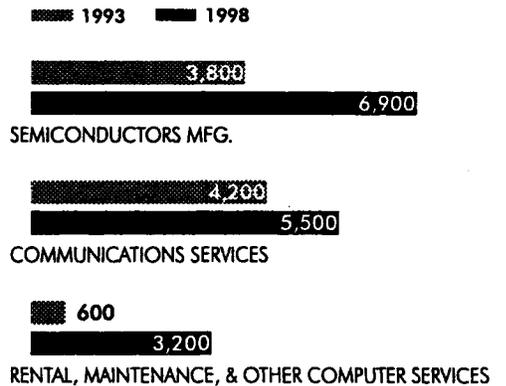
**41**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NEW MEXICO**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

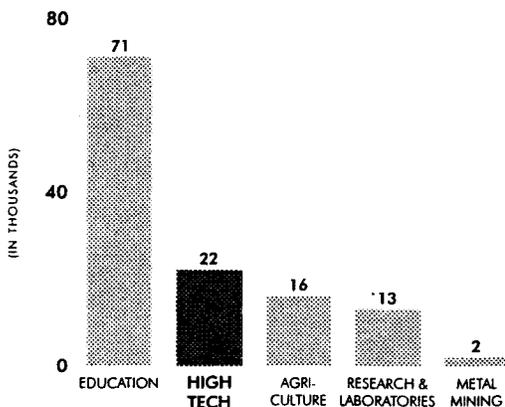
**3RD** IN R&D PER CAPITA (1997)  
**47TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

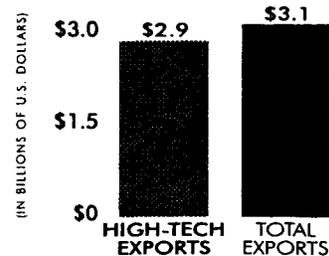


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **92%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



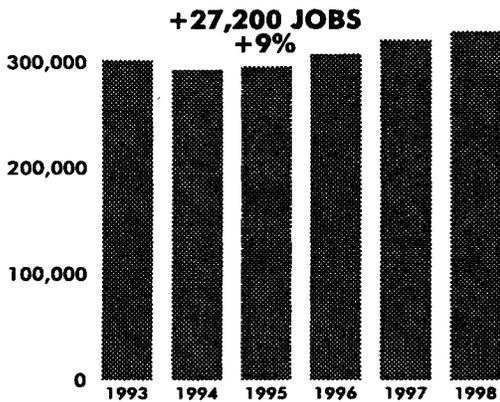
<b>JOBS</b>	<b>328,782</b>
<b>ESTABLISHMENTS</b>	<b>13,368</b>
<b>PAYROLL</b>	<b>\$20.3b</b>
<b>AVERAGE WAGE</b>	<b>\$61,773</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$41,111</b>

### STATE RANKINGS

**3RD** IN HIGH-TECH EMPLOYMENT  
**7TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



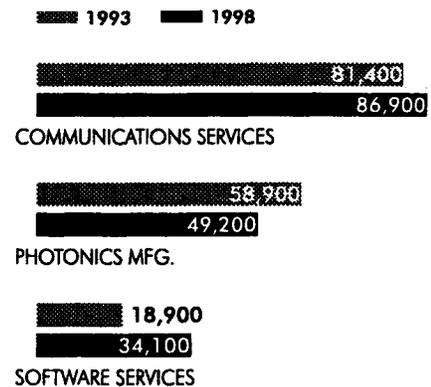
**49**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NEW YORK**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

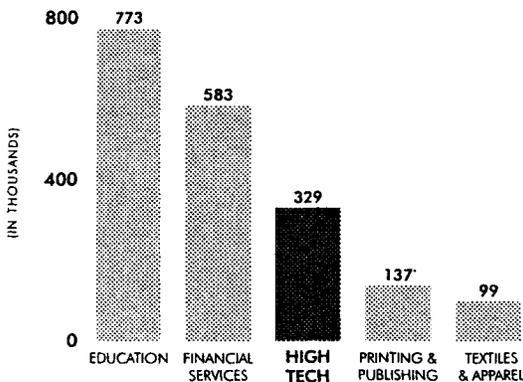
**17TH** IN R&D PER CAPITA (1997)  
**3RD** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

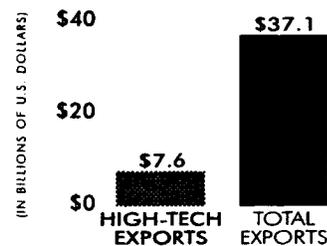


### EMPLOYMENT COMPARISONS

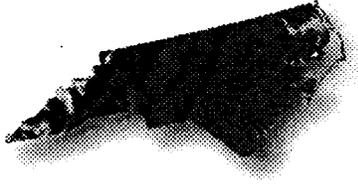


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **20%**



## AND THE HIGH-TECH INDUSTRY



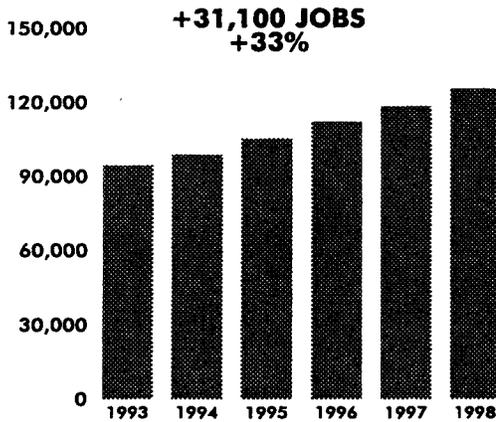
<b>JOBS</b>	<b>125,576</b>
<b>ESTABLISHMENTS</b>	<b>4,067</b>
<b>PAYROLL</b>	<b>\$6.2b</b>
<b>AVERAGE WAGE</b>	<b>\$49,443</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$27,953</b>

### STATE RANKINGS

**14th** IN HIGH-TECH EMPLOYMENT  
**23rd** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



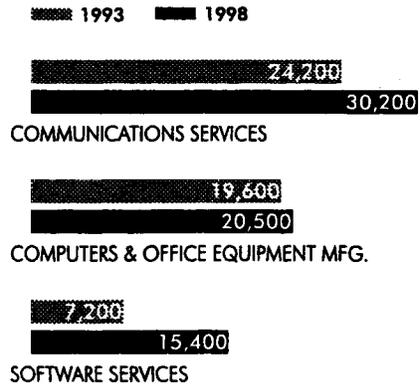
**40**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NORTH**  
**CAROLINA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

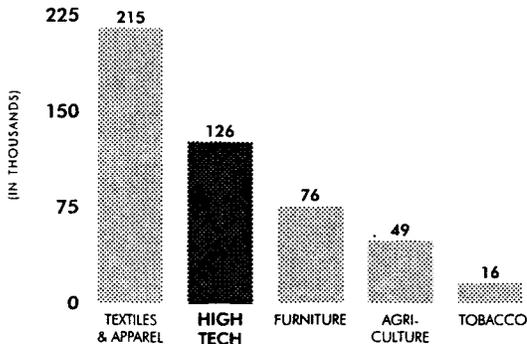
**21st** IN R&D PER CAPITA (1997)  
**12th** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

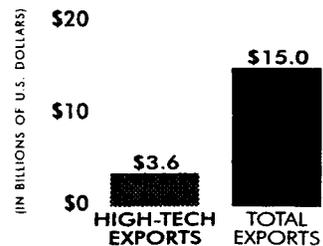


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **24%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>6,425</b>
<b>ESTABLISHMENTS</b>	<b>297</b>
<b>PAYROLL</b>	<b>\$185m</b>
<b>AVERAGE WAGE</b>	<b>\$28,781</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$22,570</b>

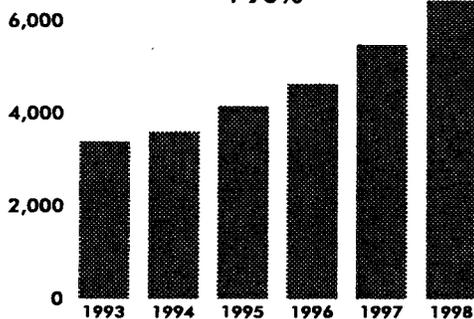
### STATE RANKINGS

**49th** IN HIGH-TECH EMPLOYMENT  
**51st** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+3,100 JOBS**  
**+90%**



**26**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**NORTH**  
**DAKOTA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

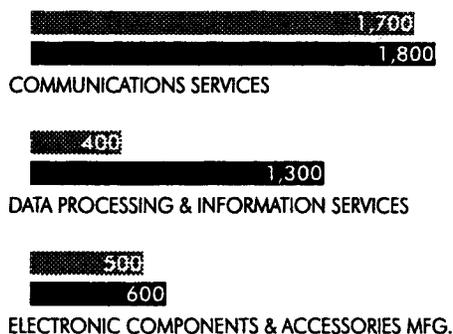
### BUSINESS ENVIRONMENT

**44th** IN R&D PER CAPITA (1997)

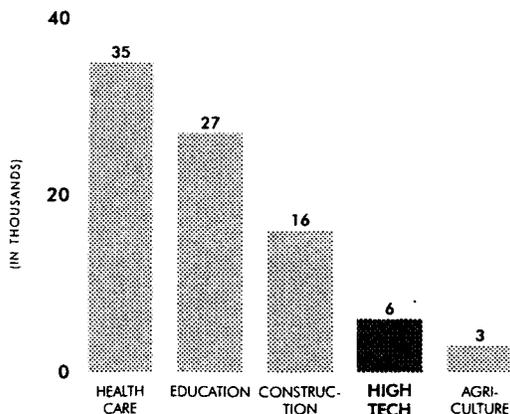
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998

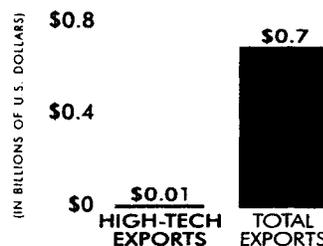


### EMPLOYMENT COMPARISONS

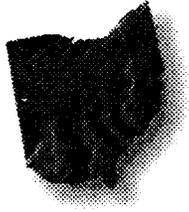


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **2%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>139,517</b>
<b>ESTABLISHMENTS</b>	<b>5,883</b>
<b>PAYROLL</b>	<b>\$6.5b</b>
<b>AVERAGE WAGE</b>	<b>\$46,779</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$30,130</b>

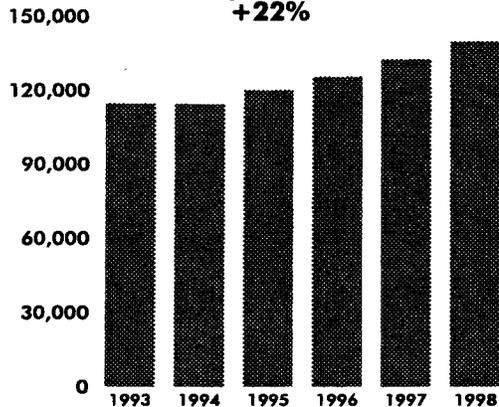
### STATE RANKINGS

**12TH** IN HIGH-TECH EMPLOYMENT  
**27TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+25,100 JOBS**  
**+22%**



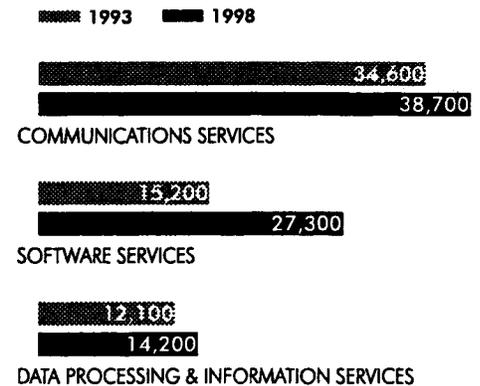
**30**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**OHIO**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

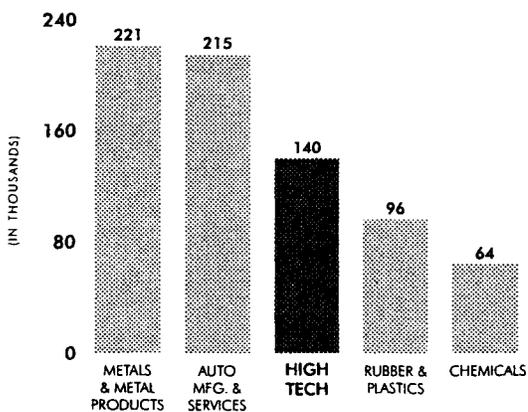
**20TH** IN R&D PER CAPITA (1997)  
**23RD** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

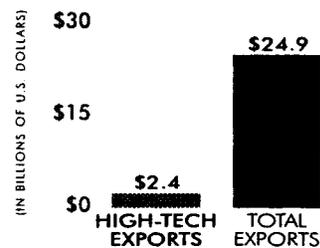


### EMPLOYMENT COMPARISONS



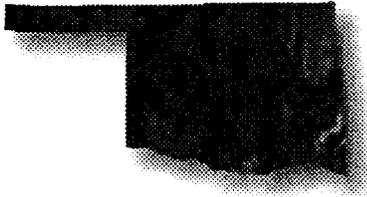
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **9%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>34,716</b>
<b>ESTABLISHMENTS</b>	<b>1,841</b>
<b>PAYROLL</b>	<b>\$1.4b</b>
<b>AVERAGE WAGE</b>	<b>\$39,059</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$24,871</b>

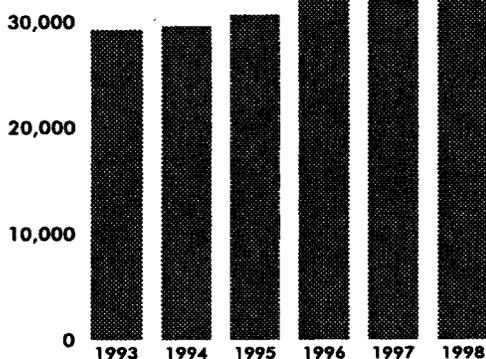
### STATE RANKINGS

**28TH** IN HIGH-TECH EMPLOYMENT  
**43RD** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+5,500 JOBS**  
**+19%**



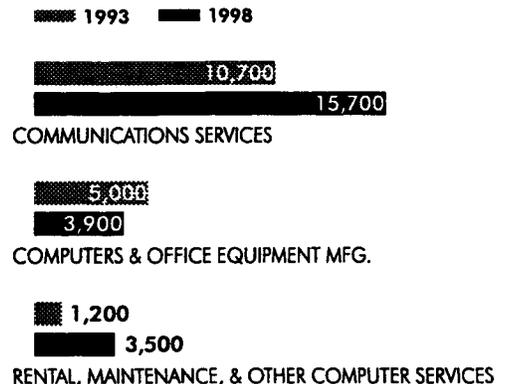
**31**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**OKLAHOMA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

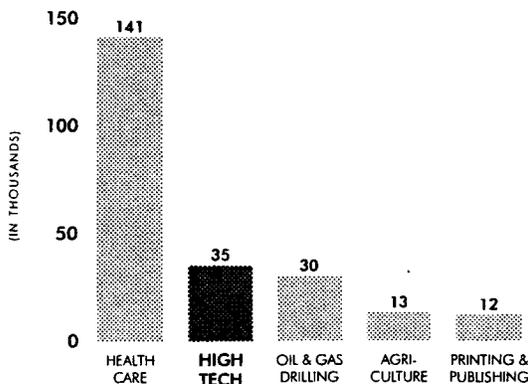
**42ND** IN R&D PER CAPITA (1997)  
**31ST** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

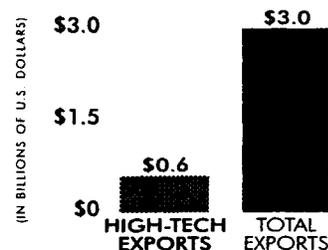


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **20%**



## AND THE HIGH-TECH INDUSTRY



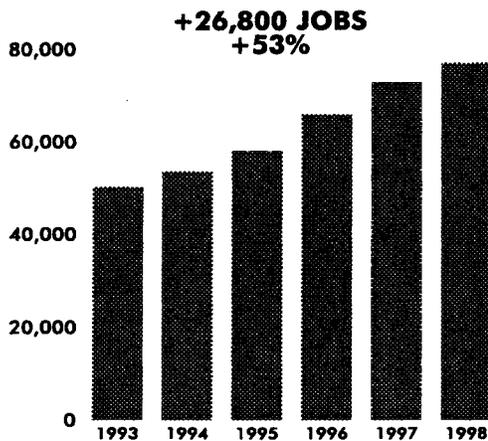
<b>JOBS</b>	<b>76,995</b>
<b>ESTABLISHMENTS</b>	<b>2,618</b>
<b>PAYROLL</b>	<b>\$4.2b</b>
<b>AVERAGE WAGE</b>	<b>\$54,771</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$29,046</b>

### STATE RANKINGS

**19TH** IN HIGH-TECH EMPLOYMENT  
**16TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

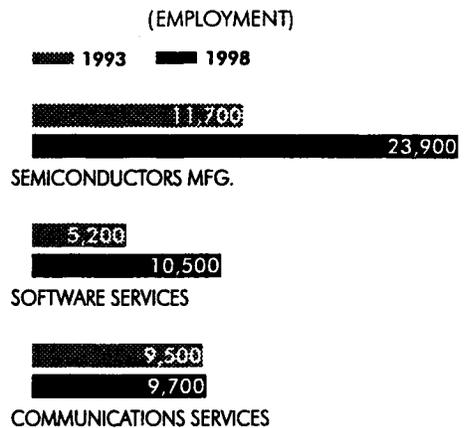


**58**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**OREGON**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

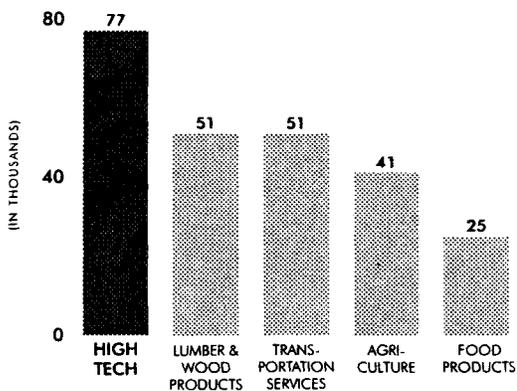
### BUSINESS ENVIRONMENT

**28TH** IN R&D PER CAPITA (1997)  
**17TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

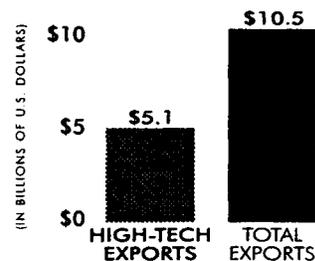


### EMPLOYMENT COMPARISONS



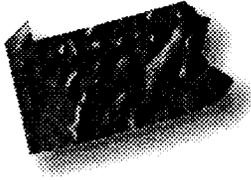
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **49%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>170,184</b>
<b>ESTABLISHMENTS</b>	<b>6,556</b>
<b>PAYROLL</b>	<b>\$8.7b</b>
<b>AVERAGE WAGE</b>	<b>\$51,040</b>
AVERAGE PRIVATE SECTOR WAGE	\$31,109

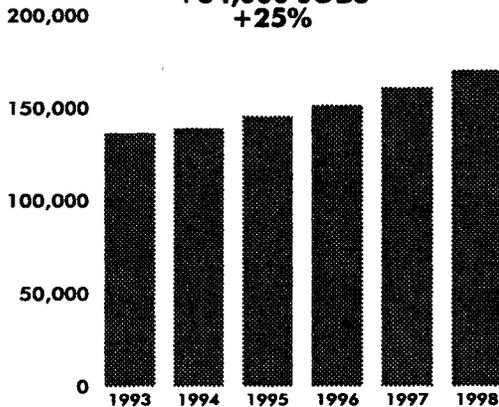
### STATE RANKINGS

**8TH** IN HIGH-TECH EMPLOYMENT  
**19TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+34,000 JOBS**  
**+25%**



**36**

**OF EVERY**

**1,000**

**PRIVATE SECTOR**

**WORKERS IN**

**PENNSYLVANIA**

**ARE EMPLOYED**

**BY HIGH-TECH**

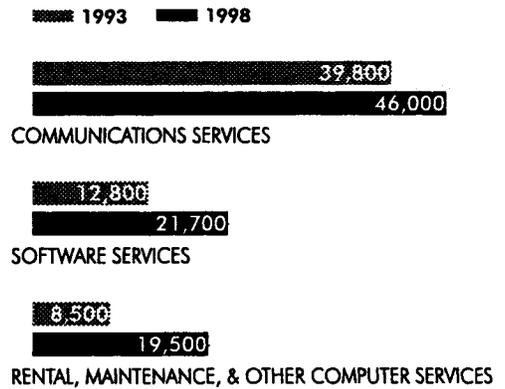
**FIRMS**

### BUSINESS ENVIRONMENT

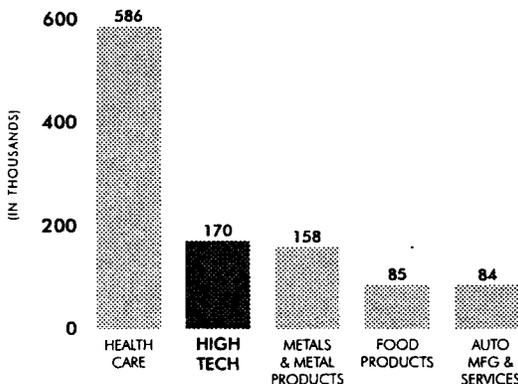
**15TH** IN R&D PER CAPITA (1997)  
**14TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

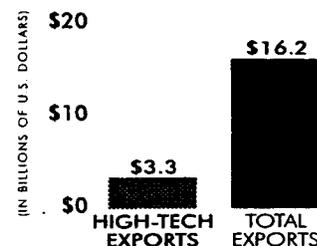


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **21%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY

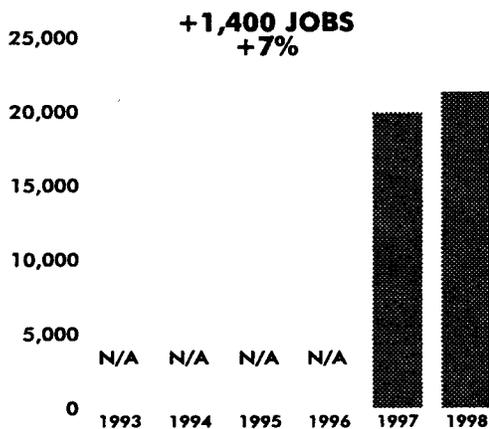
<b>JOBS</b>	<b>21,285</b>
<b>ESTABLISHMENTS</b>	<b>389</b>
<b>PAYROLL</b>	<b>\$514m</b>
<b>AVERAGE WAGE</b>	<b>\$24,169</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$16,949</b>

### STATE RANKINGS

**37th** IN HIGH-TECH EMPLOYMENT  
**52nd** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

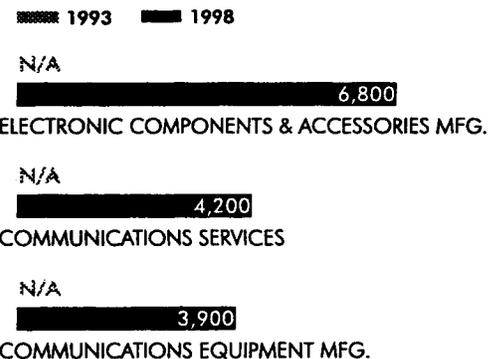


### BUSINESS ENVIRONMENT

**46th** IN VENTURE CAPITAL INVESTMENTS (1999)

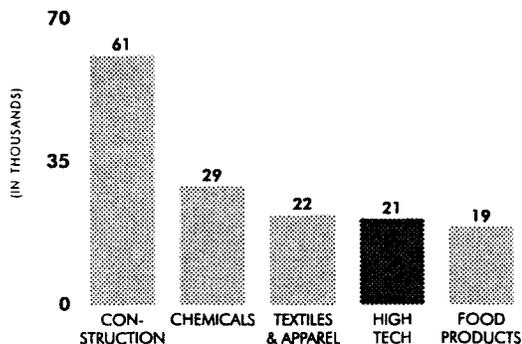
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)



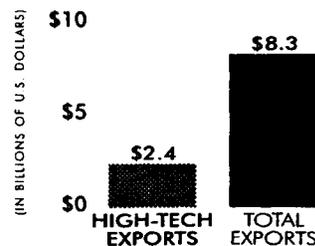
**22**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**PUERTO RICO**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **28%**



Data available for only 1997 and 1998.

Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade Information Services, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>14,353</b>
<b>ESTABLISHMENTS</b>	<b>760</b>
<b>PAYROLL</b>	<b>\$714m</b>
<b>AVERAGE WAGE</b>	<b>\$49,765</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$28,977</b>

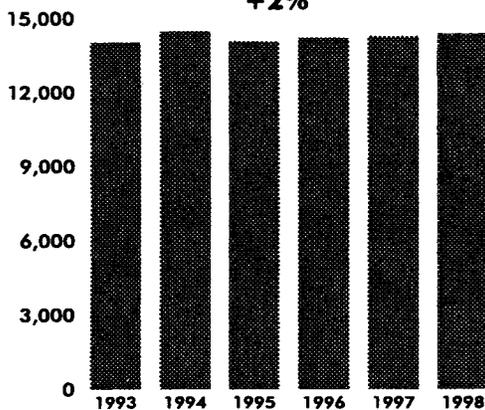
### STATE RANKINGS

**43RD** IN HIGH-TECH EMPLOYMENT  
**22ND** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+350 JOBS**  
**+2%**



**37**

**OF EVERY**

**1,000**

**PRIVATE SECTOR**

**WORKERS IN**

**RHODE ISLAND**

**ARE EMPLOYED**

**BY HIGH-TECH**

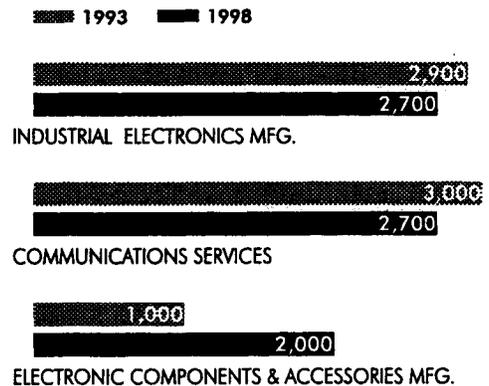
**FIRMS**

### BUSINESS ENVIRONMENT

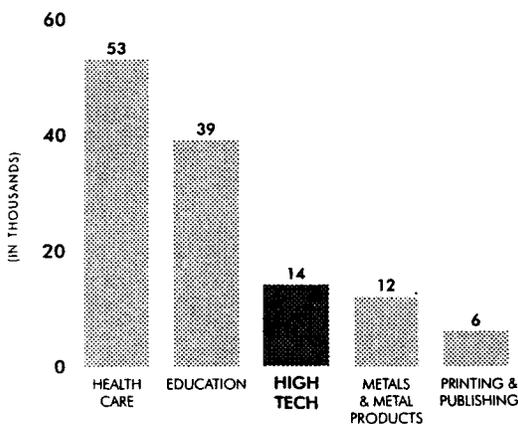
**11TH** IN R&D PER CAPITA (1997)  
**43RD** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

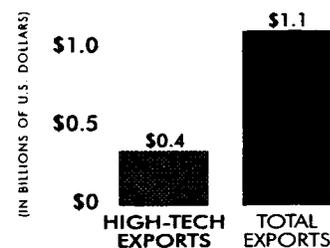


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **31%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



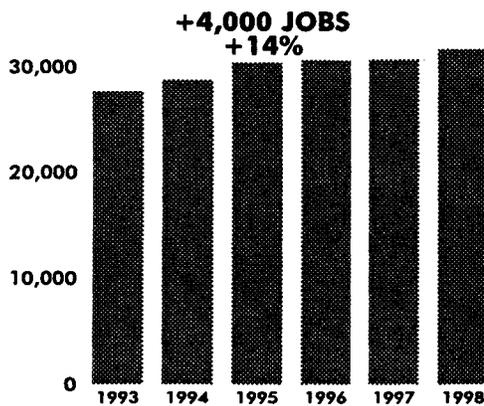
<b>JOBS</b>	<b>31,656</b>
<b>ESTABLISHMENTS</b>	<b>1,562</b>
<b>PAYROLL</b>	<b>\$1.3b</b>
<b>AVERAGE WAGE</b>	<b>\$41,015</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$25,825</b>

### STATE RANKINGS

**32<sup>ND</sup>** IN HIGH-TECH EMPLOYMENT  
**38<sup>TH</sup>** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



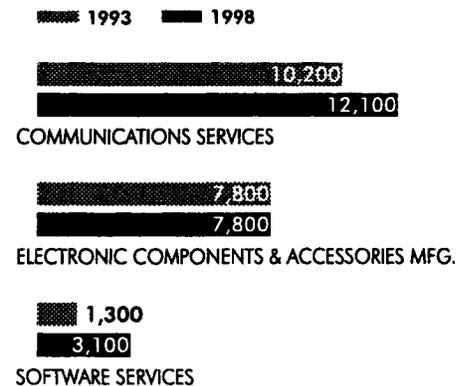
**22**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**SOUTH**  
**CAROLINA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

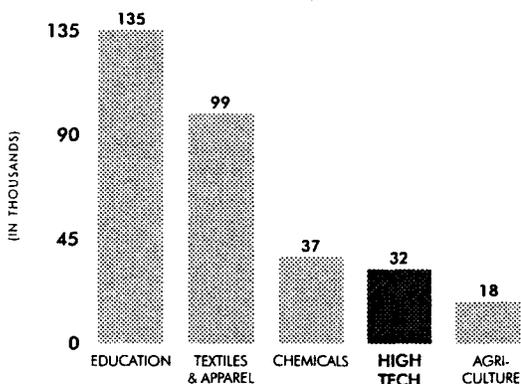
**37<sup>TH</sup>** IN R&D PER CAPITA (1997)  
**28<sup>TH</sup>** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

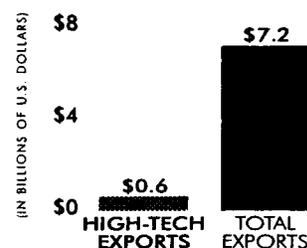


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **8%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>15,249</b>
<b>ESTABLISHMENTS</b>	<b>417</b>
<b>PAYROLL</b>	<b>\$564m</b>
<b>AVERAGE WAGE</b>	<b>\$37,006</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$22,280</b>

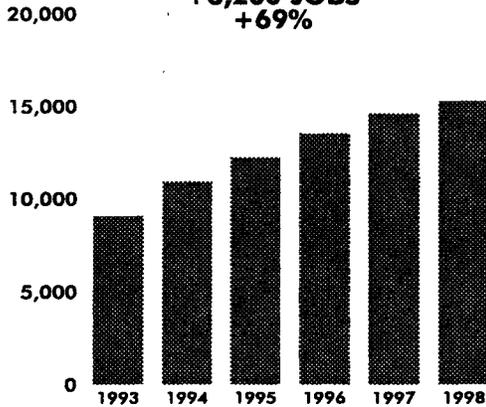
### STATE RANKINGS

**41<sup>ST</sup>** IN HIGH-TECH EMPLOYMENT  
**47<sup>TH</sup>** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+6,200 JOBS**  
**+69%**



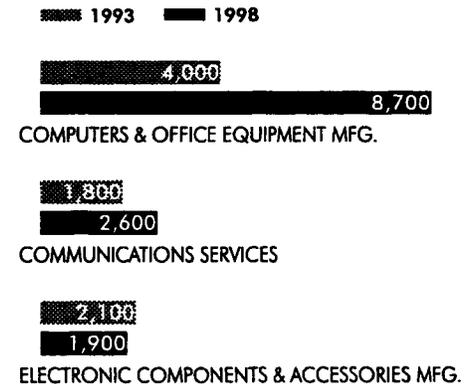
**53**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**SOUTH**  
**DAKOTA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

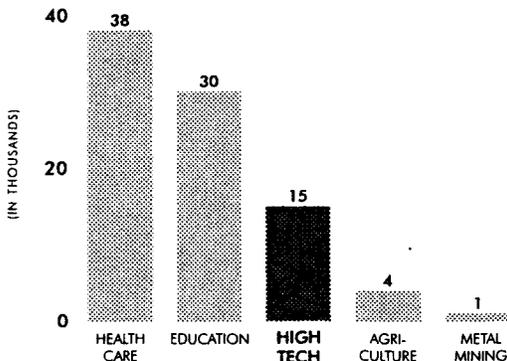
**51<sup>ST</sup>** IN R&D PER CAPITA (1997)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

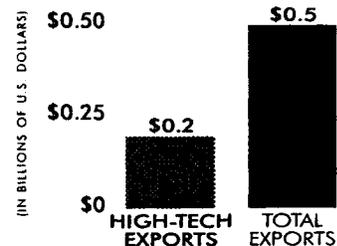


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **40%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>44,090</b>
<b>ESTABLISHMENTS</b>	<b>2,149</b>
<b>PAYROLL</b>	<b>\$1.9b</b>
<b>AVERAGE WAGE</b>	<b>\$43,973</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$28,370</b>

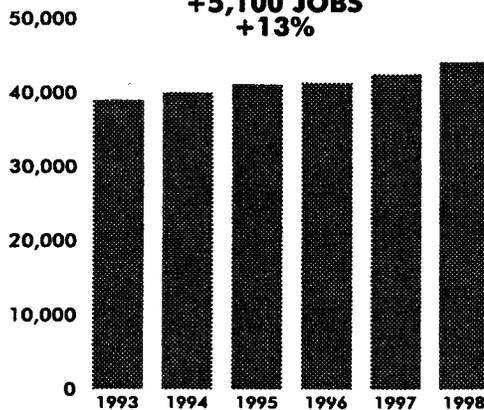
### STATE RANKINGS

**25TH** IN HIGH-TECH EMPLOYMENT  
**31ST** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+5,100 JOBS**  
**+13%**



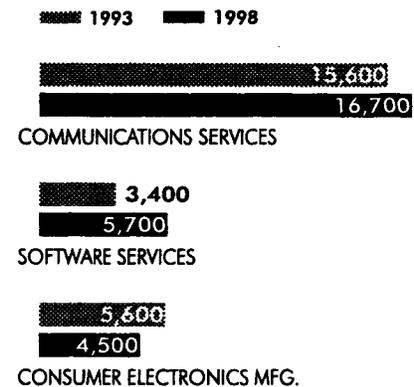
**20**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**TENNESSEE**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

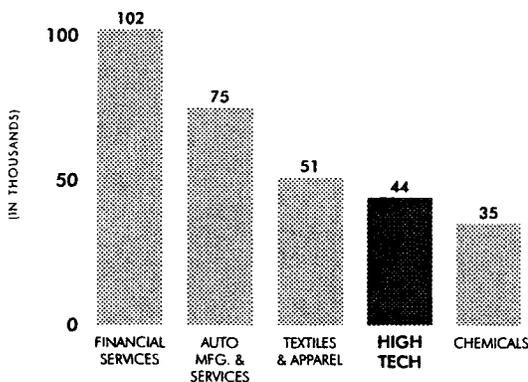
**36TH** IN R&D PER CAPITA (1997)  
**22ND** IN VENTURE CAPITAL INVESTMENTS (1997)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

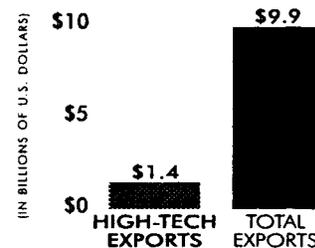


### EMPLOYMENT COMPARISONS



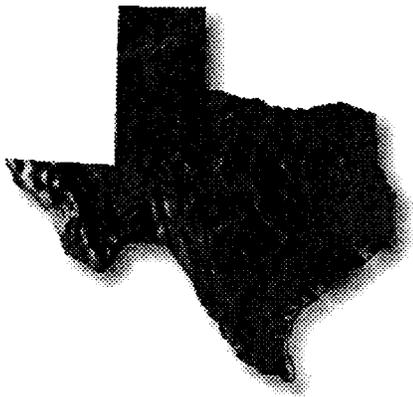
### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **14%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



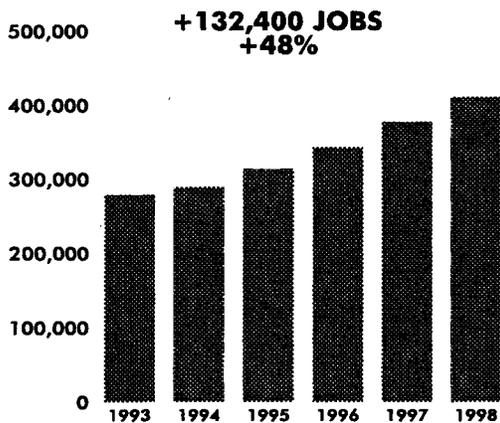
<b>JOBS</b>	<b>410,955</b>
<b>ESTABLISHMENTS</b>	<b>12,228</b>
<b>PAYROLL</b>	<b>\$24.8b</b>
<b>AVERAGE WAGE</b>	<b>\$60,265</b>
AVERAGE PRIVATE SECTOR WAGE	\$32,090

### STATE RANKINGS

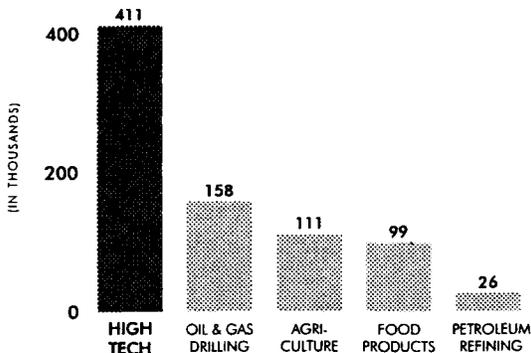
**2<sup>ND</sup>** IN HIGH-TECH EMPLOYMENT  
**9<sup>TH</sup>** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



### EMPLOYMENT COMPARISONS



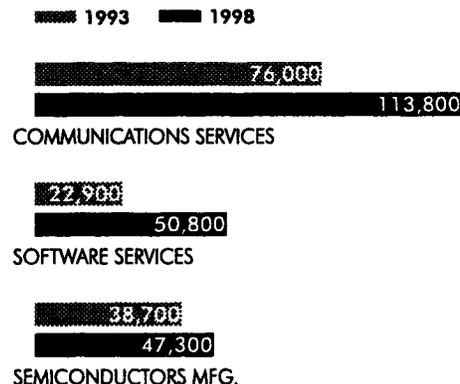
**56**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**TEXAS**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

**27<sup>TH</sup>** IN R&D PER CAPITA (1997)  
**4<sup>TH</sup>** IN VENTURE CAPITAL INVESTMENTS (1999)

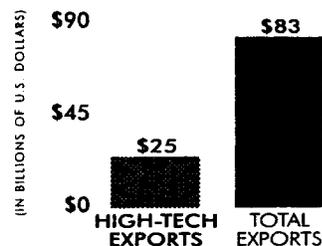
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **30%**



## AND THE HIGH-TECH INDUSTRY



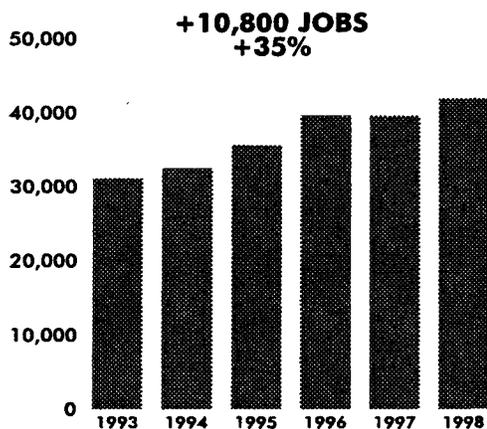
<b>JOBS</b>	<b>41,896</b>
<b>ESTABLISHMENTS</b>	<b>1,808</b>
<b>PAYROLL</b>	<b>\$1.8b</b>
<b>AVERAGE WAGE</b>	<b>\$43,518</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$26,487</b>

### STATE RANKINGS

**26TH** IN HIGH-TECH EMPLOYMENT  
**34TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



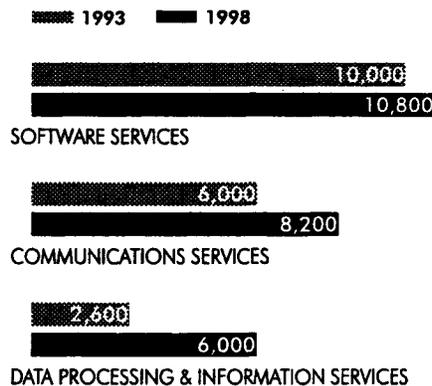
**51**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**UTAH**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

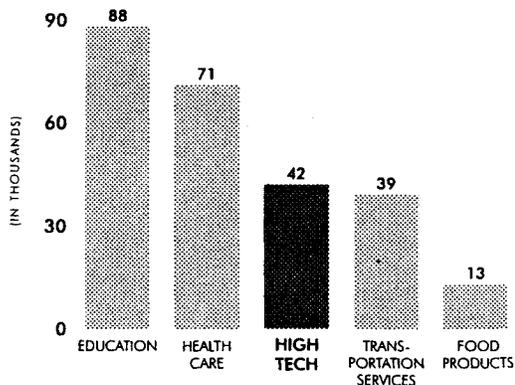
**19TH** IN R&D PER CAPITA (1997)  
**27TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

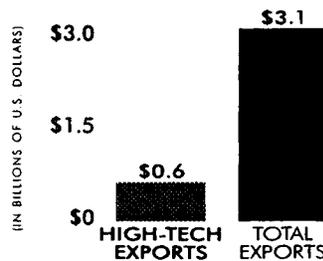


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **20%**



## AND THE HIGH-TECH INDUSTRY



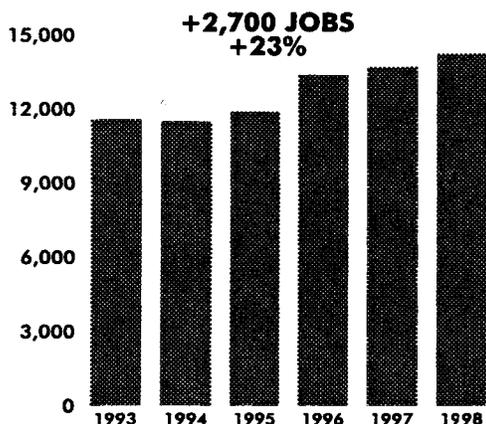
<b>JOBS</b>	<b>14,233</b>
<b>ESTABLISHMENTS</b>	<b>500</b>
<b>PAYROLL</b>	<b>\$689m</b>
<b>AVERAGE WAGE</b>	<b>\$48,409</b>
AVERAGE PRIVATE SECTOR WAGE	\$26,202

### STATE RANKINGS

**44TH** IN HIGH-TECH EMPLOYMENT  
**24TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



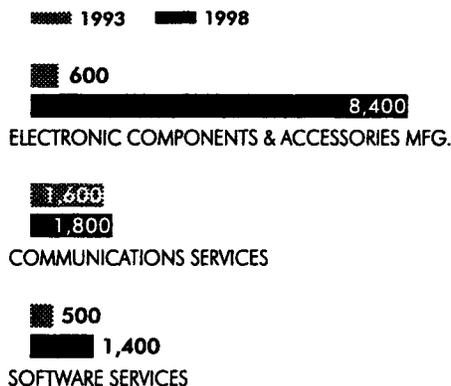
**60**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**VERMONT**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

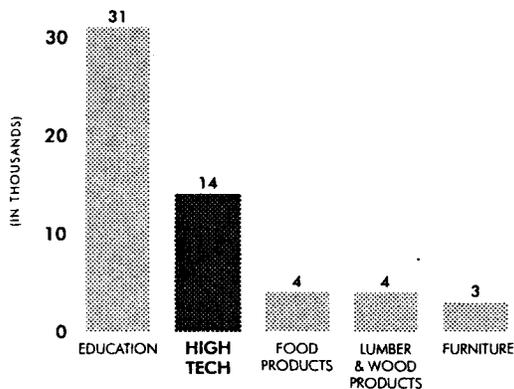
**24TH** IN R&D PER CAPITA (1997)  
**40TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

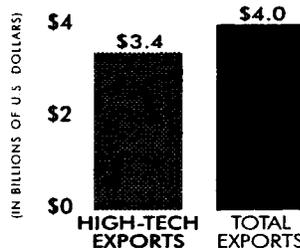


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **85%**



## AND THE HIGH-TECH INDUSTRY



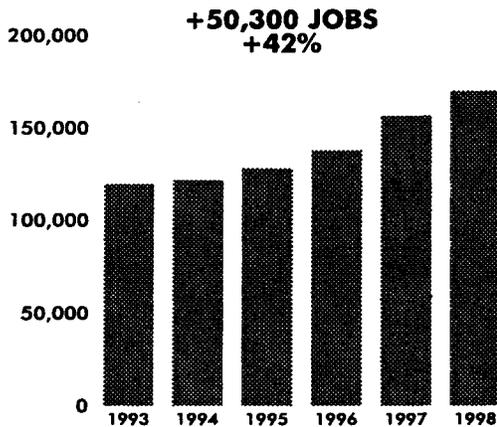
<b>JOBS</b>	<b>169,653</b>
<b>ESTABLISHMENTS</b>	<b>6,830</b>
<b>PAYROLL</b>	<b>\$11.2b</b>
<b>AVERAGE WAGE</b>	<b>\$66,002</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$30,917</b>

### STATE RANKINGS

**9TH** IN HIGH-TECH EMPLOYMENT  
**4TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



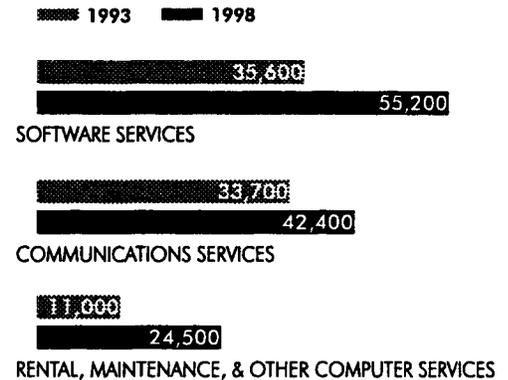
**64**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**VIRGINIA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

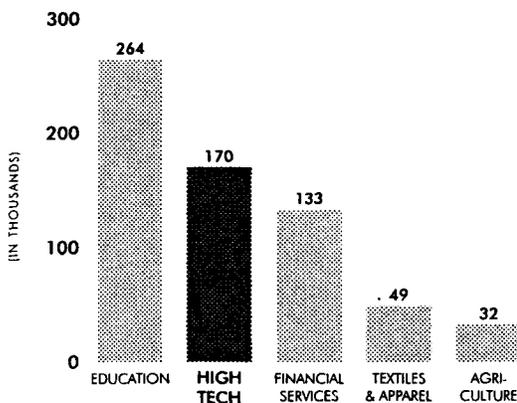
**22ND** IN R&D PER CAPITA (1997)  
**9TH** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

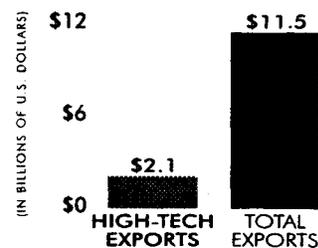


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **18%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



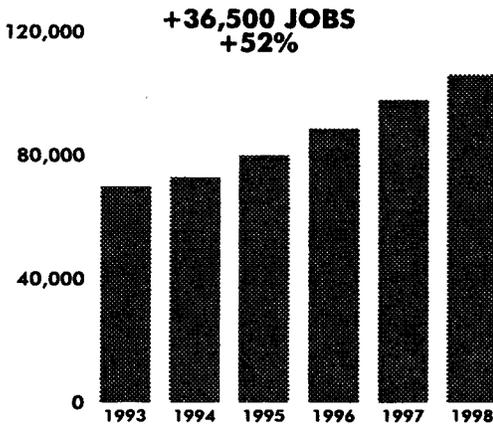
<b>JOBS</b>	<b>106,080</b>
<b>ESTABLISHMENTS</b>	<b>4,095</b>
<b>PAYROLL</b>	<b>\$11.2b</b>
<b>AVERAGE WAGE</b>	<b>\$105,681*</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$32,914</b>

\*Software employees earned an average wage of \$218,000.

**STATE RANKINGS**  
**15th** IN HIGH-TECH EMPLOYMENT  
**1st** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)



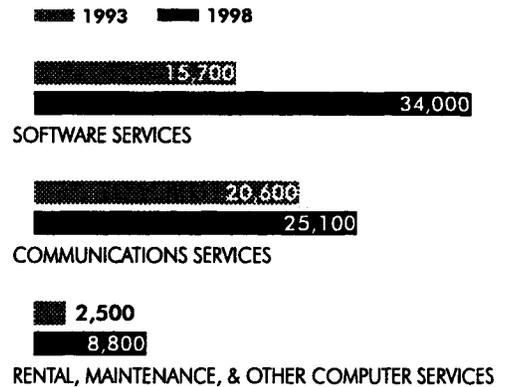
**49**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**WASHINGTON**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

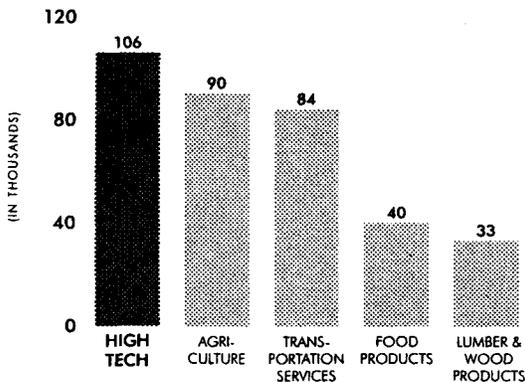
**8th** IN R&D PER CAPITA (1997)  
**6th** IN VENTURE CAPITAL INVESTMENTS (1999)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

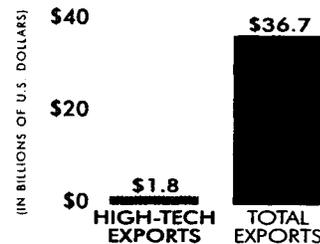


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **5%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>10,316</b>
<b>ESTABLISHMENTS</b>	<b>733</b>
<b>PAYROLL</b>	<b>\$372m</b>
<b>AVERAGE WAGE</b>	<b>\$36,019</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$24,915</b>

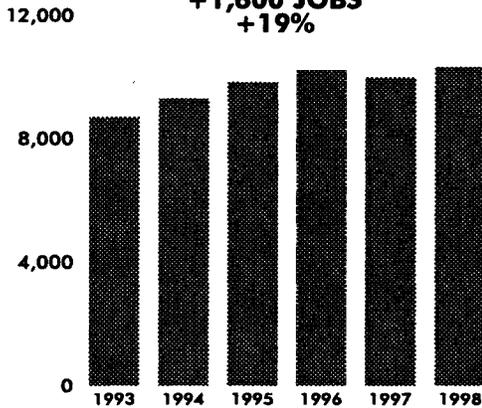
### STATE RANKINGS

**46TH** IN HIGH-TECH EMPLOYMENT  
**49TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+1,600 JOBS**  
**+19%**

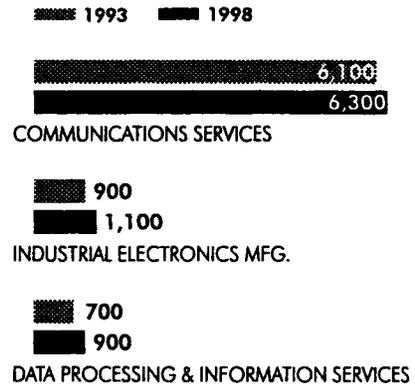


### BUSINESS ENVIRONMENT

**38TH** IN R&D PER CAPITA (1997)  
**32ND** IN VENTURE CAPITAL INVESTMENTS (1999)

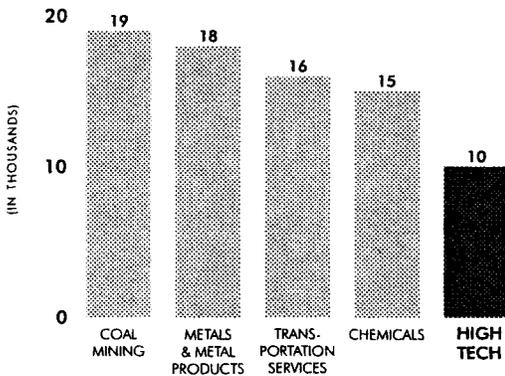
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)



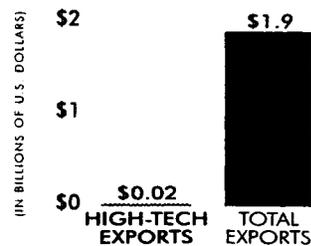
**19**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**WEST VIRGINIA**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### EMPLOYMENT COMPARISONS

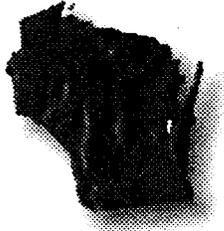


### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **1%**



## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>60,531</b>
<b>ESTABLISHMENTS</b>	<b>2,562</b>
<b>PAYROLL</b>	<b>\$2.5b</b>
<b>AVERAGE WAGE</b>	<b>\$41,705</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$28,128</b>

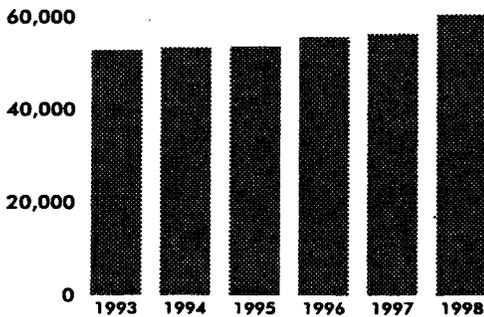
### STATE RANKINGS

**23RD** IN HIGH-TECH EMPLOYMENT  
**36TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+7,800 JOBS**  
**+15%**



**26**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**WISCONSIN**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

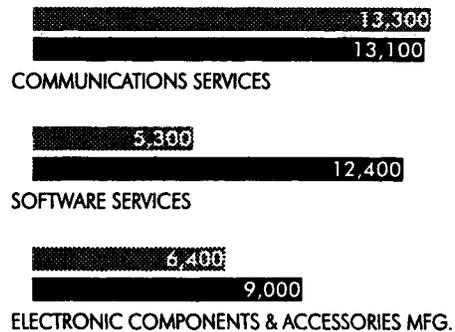
### BUSINESS ENVIRONMENT

**29TH** IN R&D PER CAPITA (1997)  
**24TH** IN VENTURE CAPITAL INVESTMENTS (1999)

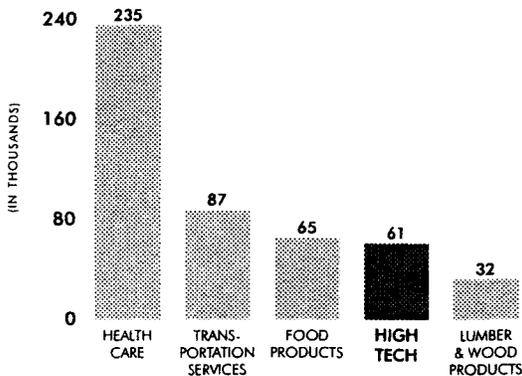
### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

1993 1998

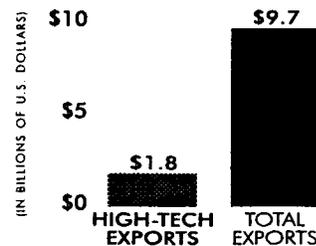


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **19%**



Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of the Census as compiled by Global Trade International Services, U.S. National Science Foundation, and PricewaterhouseCoopers

## AND THE HIGH-TECH INDUSTRY



<b>JOBS</b>	<b>2,310</b>
<b>ESTABLISHMENTS</b>	<b>327</b>
<b>PAYROLL</b>	<b>\$86m</b>
<b>AVERAGE WAGE</b>	<b>\$37,237</b>
<b>AVERAGE PRIVATE SECTOR WAGE</b>	<b>\$24,254</b>

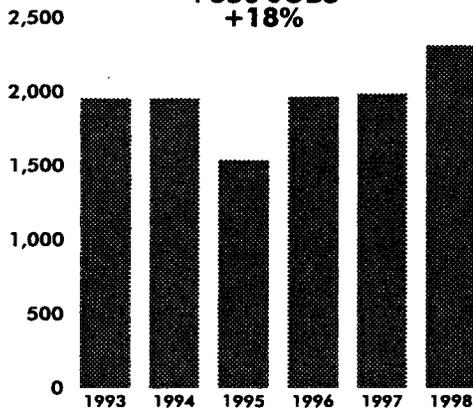
### STATE RANKINGS

**52ND** IN HIGH-TECH EMPLOYMENT  
**46TH** IN HIGH-TECH AVERAGE WAGE

### HIGH-TECH EMPLOYMENT TRENDS

(1993 - 1998)

**+350 JOBS**  
**+18%**



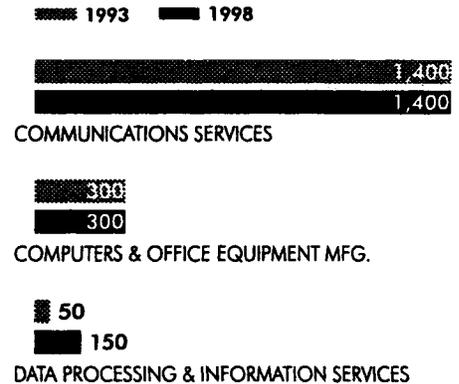
**14**  
**OF EVERY**  
**1,000**  
**PRIVATE SECTOR**  
**WORKERS IN**  
**WYOMING**  
**ARE EMPLOYED**  
**BY HIGH-TECH**  
**FIRMS**

### BUSINESS ENVIRONMENT

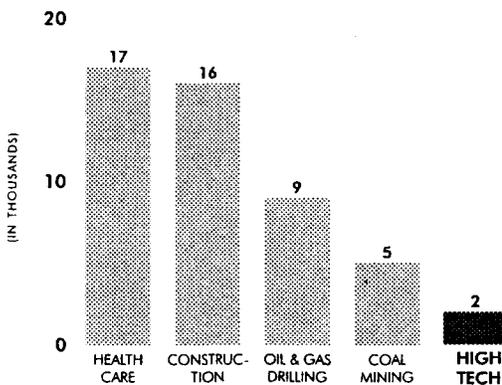
**43RD** IN R&D PER CAPITA (1997)

### LEADING HIGH-TECH INDUSTRY SEGMENTS

(EMPLOYMENT)

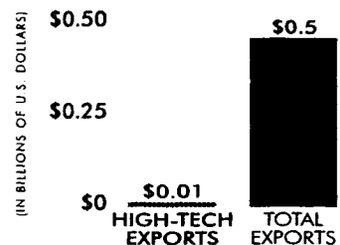


### EMPLOYMENT COMPARISONS



### INTERNATIONAL TRADE - 1999

HIGH-TECH PERCENTAGE OF TOTAL EXPORTS = **3%**



# U.S. HIGH-TECH EMPLOYMENT

## APPENDIX A.1

### U.S. EMPLOYMENT IN THE HIGH-TECH INDUSTRY, 1993 - 1999p

	1993	1994	1995	1996	1997	1998	1999p	% Change 1993-1999
<b>HIGH-TECH MANUFACTURING</b>								
Computers and Office Equipment								
Electronic Computers	215,890	202,313	192,012	189,123	195,214	204,082	186,246	-14%
Computer Storage Devices	38,007	38,019	40,466	43,089	44,439	42,410	42,454	12%
Computer Terminals	17,447	18,099	20,225	20,906	20,932	21,542	N/A	N/A
Computer Peripherals	57,382	58,078	60,448	68,932	73,713	74,559	72,270	26%
Calculating and Accounting Machines	9,063	8,993	9,910	9,264	9,188	9,450	N/A	N/A
Office Machines	28,012	27,404	26,946	26,847	27,705	27,948	N/A	N/A
Total	365,801	352,906	350,007	358,162	371,192	379,991	361,631	-1%
Consumer Electronics								
Household Audio and Video Equipment	59,448	62,604	55,394	54,353	55,095	54,478	53,536	-10%
Phonographic Records and Prerecorded Tapes and Disks	23,977	26,330	27,618	28,221	26,875	26,124	26,854	12%
Total	83,425	88,934	83,012	82,575	81,971	80,602	80,390	-4%
Communications Equipment								
Telephone and Telegraph Apparatus	110,596	108,889	112,192	116,470	118,792	123,230	119,493	8%
Radio and TV Broadcast and Communications Equipment	104,322	109,384	123,745	126,350	128,086	128,333	126,117	21%
Other Communications Equipment	24,733	25,226	27,614	29,455	29,731	29,532	28,503	15%
Total	239,651	243,500	263,552	272,276	276,610	281,095	274,113	14%
Electronic Components and Accessories								
Electron Tubes	24,852	24,701	24,583	22,741	22,556	22,026	21,117	-15%
Printed Circuit Boards	98,785	104,229	117,630	126,476	135,218	141,625	142,721	44%
Electronic Capacitors	19,528	19,831	21,580	20,367	19,970	18,720	17,783	-9%
Electronic Resistors	10,026	10,150	10,714	10,547	10,228	9,459	9,034	-10%
Electronic Coils, Transformers, and Inductors	17,227	16,755	18,633	18,502	18,676	17,654	16,680	-3%
Electronic Connectors	15,705	16,138	17,184	18,475	20,240	20,828	20,236	29%
Other Electronic Components	127,770	133,107	135,850	137,903	145,383	147,873	143,475	12%
Total	313,893	324,911	346,174	355,011	372,272	378,185	371,045	18%
Semiconductors								
Total	213,586	219,983	235,229	257,068	275,991	283,875	268,990	26%
Defense Electronics								
Total	205,519	182,401	158,696	160,146	159,602	160,291	153,839	-25%
Industrial Electronics								
Laboratory Apparatus	10,190	10,164	9,643	10,221	10,112	9,951	10,448	3%
Environmental Controls	43,306	43,999	43,285	42,321	41,492	40,023	39,128	-10%
Process Control Instruments	60,024	61,836	63,963	66,101	66,047	67,350	64,997	8%
Fluid Meters and Counting Devices	12,370	12,526	11,838	11,900	11,756	11,675	10,618	-14%
Instruments To Measure Electricity	72,689	72,030	70,793	74,153	75,715	77,614	73,921	2%
Laboratory Analytical Instruments	27,663	26,977	27,586	30,520	31,279	32,073	32,410	17%
Other Measuring and Controlling Devices	39,727	37,640	40,888	40,866	41,257	43,040	40,174	1%
Total	265,970	265,172	267,996	276,084	277,658	281,727	271,696	2%
Electromedical Equipment								
X-Ray Apparatus and Tubes and Related Irradiation Apparatus	10,531	10,653	12,666	12,638	12,954	13,202	12,732	21%
Electromedical and Electrotherapeutic Apparatus	38,615	41,394	42,337	43,161	44,015	44,714	43,872	14%
Total	49,146	52,047	55,003	55,799	56,969	57,916	56,604	15%
Photonics								
Optical Instruments and Lenses	17,243	18,462	18,165	20,339	22,516	23,420	23,198	35%
Photographic Equipment and Lenses	90,919	88,308	84,575	84,828	85,396	81,367	73,408	-19%
Total	108,162	106,770	102,740	105,167	107,912	104,787	96,605	-11%
<b>Total Manufacturing</b>	<b>1,845,153</b>	<b>1,836,624</b>	<b>1,862,409</b>	<b>1,922,288</b>	<b>1,980,177</b>	<b>2,008,469</b>	<b>1,934,913</b>	<b>5%</b>
<b>COMMUNICATIONS SERVICES</b>								
Radiotelephone Communications	63,032	80,436	99,840	123,127	149,391	163,308	164,816	161%
Telephone Communications	813,684	806,448	786,758	781,779	819,398	847,745	886,430	9%
Telegraph and Other Message Communications	7,171	7,664	8,031	8,391	8,980	9,810	10,084	41%
Cable and Other Pay Television Services	135,985	144,160	155,470	169,475	175,165	185,571	193,880	43%
Other Communications Services	17,344	17,582	18,218	21,314	22,322	23,944	26,063	50%
Total	1,037,217	1,056,290	1,068,318	1,104,086	1,175,256	1,230,378	1,281,273	24%
<b>SOFTWARE AND COMPUTER-RELATED SERVICES</b>								
Software Services								
Computer Programming Services	186,711	208,779	243,150	278,264	323,549	373,621	410,271	120%
Prepackaged Software	142,774	153,342	178,514	200,000	223,116	248,704	289,327	103%
Computer Integrated Systems Design	108,456	117,813	128,866	144,916	161,525	176,991	196,093	81%
Total	437,941	479,934	550,530	623,180	708,190	799,316	895,692	105%
Data Processing and Information Services								
Computer Processing and Data Preparation	209,530	210,258	224,012	233,517	245,346	248,910	271,617	30%
Information Retrieval Services	47,921	47,306	55,953	69,793	81,243	100,262	117,985	146%
Computer Facilities Management Services	25,857	24,188	25,486	27,794	27,643	28,851	31,584	22%
Total	283,308	281,752	305,451	331,104	354,232	378,023	421,187	49%
Rental, Maintenance, and Other Computer-Related Services								
Computer Rental and Leasing	9,654	8,887	8,778	8,841	8,567	9,908	9,751	1%
Computer Maintenance and Repair	42,529	44,586	47,794	52,905	56,954	59,063	61,401	44%
Other Computer-Related Services	120,824	139,935	171,424	218,139	282,132	355,325	390,615	223%
Total	173,007	193,408	227,996	279,885	347,653	424,296	461,768	167%
Total Software and Computer-Related Services	894,257	955,095	1,083,979	1,234,170	1,410,076	1,601,630	1,778,646	99%
<b>Total High-Tech Services</b> (Includes Communications Services and Software and Computer-Related Services)	<b>1,931,474</b>	<b>2,011,385</b>	<b>2,152,297</b>	<b>2,338,256</b>	<b>2,585,332</b>	<b>2,832,008</b>	<b>3,059,919</b>	<b>58%</b>
<b>TOTAL HIGH-TECH INDUSTRY</b>	<b>3,776,627</b>	<b>3,648,009</b>	<b>4,014,706</b>	<b>4,260,544</b>	<b>4,565,509</b>	<b>4,840,477</b>	<b>4,994,832</b>	<b>32%</b>

Some totals may not equal the sum of individual sectors due to rounding.  
p - projected based on growth rates from the Current Employment Survey.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

## U.S. AVERAGE WAGES IN THE HIGH-TECH INDUSTRY, 1993 - 1998

(adjusted for inflation to 1998 dollars)

	1993	1994	1995	1996	1997	1998	% Change 1993-1998
<b>HIGH-TECH MANUFACTURING</b>							
Computers and Office Equipment							
Electronic Computers	\$61,925	\$60,897	\$63,206	\$64,892	\$71,830	\$82,147	33%
Computer Storage Devices	\$47,757	\$49,848	\$56,288	\$58,267	\$60,941	\$63,057	32%
Computer Terminals	\$56,826	\$54,842	\$54,687	\$57,904	\$64,765	\$69,614	23%
Computer Peripherals	\$46,776	\$47,000	\$48,547	\$51,277	\$58,866	\$55,439	19%
Calculating and Accounting Machines	\$51,989	\$50,877	\$51,656	\$53,415	\$53,470	\$53,375	3%
Office Machines	\$45,743	\$45,460	\$46,930	\$47,968	\$50,065	\$51,869	13%
Total	\$56,348	\$55,655	\$57,802	\$59,501	\$65,475	\$71,123	26%
Consumer Electronics							
Household Audio and Video Equipment	\$38,359	\$38,875	\$34,903	\$36,743	\$39,200	\$41,138	7%
Phonographic Records and Prerecorded Tapes and Disks	\$46,550	\$45,557	\$48,343	\$48,318	\$49,401	\$54,418	17%
Total	\$40,714	\$40,853	\$39,374	\$40,699	\$42,544	\$45,442	12%
Communications Equipment							
Telephone and Telegraph Apparatus	\$51,113	\$51,872	\$53,278	\$55,762	\$59,333	\$63,801	25%
Radio & TV Broadcast and Communications Equipment	\$46,865	\$46,523	\$47,345	\$46,777	\$49,421	\$51,793	11%
Other Communications Equipment	\$40,418	\$40,156	\$42,078	\$43,090	\$45,579	\$49,646	23%
Total	\$48,160	\$48,256	\$49,319	\$50,223	\$53,264	\$56,832	18%
Electronic Components and Accessories							
Electron Tubes	\$42,444	\$43,437	\$43,844	\$42,814	\$43,802	\$43,000	1%
Printed Circuit Boards	\$31,055	\$31,542	\$31,601	\$31,731	\$33,347	\$33,664	8%
Electronic Capacitors	\$28,583	\$28,962	\$29,209	\$28,838	\$30,739	\$30,522	7%
Electronic Resistors	\$27,455	\$27,290	\$27,709	\$28,149	\$29,383	\$29,957	9%
Electronic Coils, Transformers, and Inductors	\$24,041	\$24,471	\$23,993	\$24,640	\$25,649	\$26,677	11%
Electronic Connectors	\$33,454	\$33,662	\$33,482	\$33,608	\$34,590	\$35,718	7%
Other Electronic Components	\$34,624	\$34,659	\$34,970	\$35,349	\$36,550	\$37,467	8%
Total	\$32,876	\$33,174	\$33,207	\$33,352	\$34,664	\$35,234	7%
Semiconductors							
Total	\$53,667	\$54,685	\$57,689	\$57,041	\$61,016	\$64,431	20%
Defense Electronics							
Total	\$53,450	\$54,087	\$55,916	\$58,871	\$58,840	\$60,249	13%
Industrial Electronics							
Laboratory Apparatus	\$36,360	\$37,333	\$36,548	\$36,876	\$38,669	\$39,372	8%
Environmental Controls	\$36,122	\$36,300	\$36,426	\$37,517	\$38,865	\$40,332	12%
Process Control Instruments	\$40,879	\$40,920	\$41,344	\$42,073	\$44,309	\$46,168	13%
Fluid Meters and Counting Devices	\$37,352	\$37,112	\$37,184	\$36,476	\$37,394	\$38,511	3%
Instruments To Measure Electricity	\$49,861	\$52,466	\$55,609	\$56,735	\$60,095	\$62,290	25%
Laboratory Analytical Instruments	\$45,111	\$46,820	\$48,334	\$50,493	\$50,961	\$54,090	20%
Other Measuring and Controlling Devices	\$40,717	\$40,713	\$41,149	\$41,604	\$43,412	\$43,433	7%
Total	\$42,638	\$43,543	\$44,651	\$45,740	\$47,918	\$49,707	17%
Electromedical Equipment							
X-Ray Apparatus and Tubes and Related Irradiation Apparatus	\$49,379	\$51,001	\$52,925	\$53,514	\$58,240	\$58,208	18%
Electromedical and Electrotherapeutic Apparatus	\$46,310	\$47,468	\$49,422	\$51,217	\$51,278	\$57,028	23%
Total	\$46,967	\$48,191	\$50,228	\$51,737	\$52,861	\$57,297	22%
Photonics							
Optical Instruments and Lenses	\$43,838	\$44,805	\$47,199	\$46,416	\$47,733	\$50,487	15%
Photographic Equipment and Lenses	\$53,624	\$52,844	\$55,409	\$56,097	\$56,880	\$57,830	8%
Total	\$52,064	\$51,454	\$53,957	\$54,225	\$54,972	\$56,188	8%
<b>Total Manufacturing</b>	<b>\$47,474</b>	<b>\$47,504</b>	<b>\$48,705</b>	<b>\$49,669</b>	<b>\$52,474</b>	<b>\$55,339</b>	<b>17%</b>
<b>COMMUNICATIONS SERVICES</b>							
Radiotelephone Communications	\$43,829	\$42,951	\$42,692	\$42,078	\$43,133	\$45,656	4%
Telephone Communications	\$49,517	\$50,695	\$51,948	\$52,254	\$53,522	\$55,035	11%
Telegraph and Other Message Communications	\$52,982	\$53,674	\$57,358	\$57,765	\$58,143	\$61,116	15%
Cable and Other Pay Television Services	\$34,575	\$34,693	\$37,074	\$36,938	\$38,209	\$41,224	19%
Other Communications Services	\$48,304	\$49,771	\$50,981	\$50,473	\$54,476	\$56,414	17%
Total	\$47,216	\$47,928	\$48,942	\$48,776	\$49,972	\$51,783	10%
<b>SOFTWARE AND COMPUTER-RELATED SERVICES</b>							
Software Services							
Computer Programming Services	\$54,286	\$55,427	\$57,038	\$58,637	\$60,878	\$63,993	18%
Prepackaged Software	\$62,557	\$64,408	\$69,146	\$73,123	\$81,361	\$95,404	53%
Computer Integrated Systems Design	\$56,792	\$57,396	\$59,185	\$61,017	\$63,145	\$65,918	16%
Total	\$57,603	\$58,780	\$61,467	\$63,839	\$67,848	\$74,193	29%
Data Processing and Information Services							
Computer Processing and Data Preparation	\$40,461	\$40,198	\$42,450	\$44,320	\$45,231	\$46,732	16%
Information Retrieval Services	\$42,453	\$43,117	\$46,016	\$47,312	\$50,505	\$62,439	47%
Computer Facilities Management Services	\$47,171	\$49,530	\$51,886	\$51,498	\$54,546	\$57,498	22%
Total	\$41,410	\$41,489	\$43,891	\$45,553	\$47,167	\$51,720	25%
Rental, Maintenance, and Other Computer-Related Services							
Computer Rental and Leasing	\$58,799	\$57,741	\$58,961	\$61,663	\$62,007	\$59,979	2%
Computer Maintenance and Repair	\$41,713	\$40,927	\$41,187	\$41,365	\$41,545	\$41,864	0%
Other Computer-Related Services	\$53,174	\$54,347	\$55,763	\$56,870	\$60,246	\$63,383	19%
Total	\$50,671	\$51,409	\$52,830	\$54,090	\$57,226	\$60,308	19%
Total Software and Computer-Related Services	\$51,132	\$52,187	\$54,698	\$56,723	\$60,034	\$65,211	28%
<b>Total High-Tech Services</b>	<b>\$49,029</b>	<b>\$49,950</b>	<b>\$51,841</b>	<b>\$52,970</b>	<b>\$55,460</b>	<b>\$59,377</b>	<b>21%</b>
(Includes Communications Services and Software and Computer-Related Services)							
<b>TOTAL HIGH-TECH INDUSTRY</b>	<b>\$48,269</b>	<b>\$48,782</b>	<b>\$50,386</b>	<b>\$51,481</b>	<b>\$54,165</b>	<b>\$57,701</b>	<b>20%</b>

## U.S. PAYROLL IN THE HIGH-TECH INDUSTRY, 1993 - 1998

(adjusted for inflation to millions of 1998 dollars)

	1993	1994	1995	1996	1997	1998	% Change 1993-1998
<b>HIGH-TECH MANUFACTURING</b>							
Computers and Office Equipment							
Electronic Computers	\$13,369	\$12,320	\$12,136	\$12,273	\$14,022	\$16,765	25%
Computer Storage Devices	\$1,815	\$1,895	\$2,278	\$2,511	\$2,708	\$2,674	47%
Computer Terminals	\$991	\$993	\$1,106	\$1,211	\$1,356	\$1,500	51%
Computer Peripherals	\$2,684	\$2,730	\$2,935	\$3,535	\$4,339	\$4,133	54%
Calculating and Accounting Machines	\$471	\$458	\$512	\$495	\$491	\$504	7%
Office Machines	\$1,281	\$1,246	\$1,265	\$1,288	\$1,387	\$1,450	13%
Total	\$20,612	\$19,641	\$20,231	\$21,311	\$24,304	\$27,026	31%
Consumer Electronics							
Household Audio and Video Equipment	\$2,280	\$2,434	\$1,933	\$1,997	\$2,160	\$2,241	-2%
Phonographic Records and Prerecorded Tapes and Disks	\$1,116	\$1,200	\$1,335	\$1,364	\$1,328	\$1,422	27%
Total	\$3,397	\$3,633	\$3,269	\$3,361	\$3,487	\$3,663	8%
Communications Equipment							
Telephone and Telegraph Apparatus	\$5,653	\$5,648	\$5,977	\$6,495	\$7,048	\$7,862	39%
Radio & TV Broadcast and Communications Equipment	\$4,889	\$5,089	\$5,859	\$5,910	\$6,330	\$6,647	36%
Other Communications Equipment	\$1,000	\$1,013	\$1,162	\$1,269	\$1,355	\$1,466	47%
Total	\$11,542	\$11,750	\$12,998	\$13,674	\$14,733	\$15,975	38%
Electronic Components and Accessories							
Electron Tubes	\$1,055	\$1,073	\$1,078	\$974	\$988	\$947	-10%
Printed Circuit Boards	\$3,068	\$3,288	\$3,717	\$4,013	\$4,509	\$4,768	55%
Electronic Capacitors	\$558	\$574	\$630	\$587	\$614	\$571	2%
Electronic Resistors	\$275	\$277	\$297	\$297	\$301	\$283	3%
Electronic Coils, Transformers, and Inductors	\$414	\$410	\$447	\$456	\$479	\$471	14%
Electronic Connectors	\$525	\$543	\$575	\$621	\$700	\$744	42%
Other Electronic Components	\$4,424	\$4,613	\$4,751	\$4,875	\$5,314	\$5,540	25%
Total	\$10,319	\$10,779	\$11,495	\$11,823	\$12,904	\$13,325	29%
Semiconductors							
Total	\$11,463	\$12,030	\$13,570	\$14,664	\$16,840	\$18,290	60%
Defense Electronics							
Total	\$10,985	\$9,866	\$8,874	\$9,428	\$9,391	\$9,657	-12%
Industrial Electronics							
Laboratory Apparatus	\$371	\$379	\$352	\$377	\$391	\$392	6%
Environmental Controls	\$1,564	\$1,597	\$1,577	\$1,588	\$1,613	\$1,614	3%
Process Control Instruments	\$2,454	\$2,530	\$2,644	\$2,781	\$2,927	\$3,109	27%
Fluid Meters and Counting Devices	\$462	\$465	\$440	\$434	\$440	\$450	-3%
Instruments To Measure Electricity	\$3,624	\$3,779	\$3,937	\$4,207	\$4,550	\$4,835	33%
Laboratory Analytical Instruments	\$1,248	\$1,263	\$1,333	\$1,541	\$1,594	\$1,735	39%
Other Measuring and Controlling Devices	\$1,618	\$1,532	\$1,683	\$1,700	\$1,791	\$1,869	16%
Total	\$11,340	\$11,546	\$11,966	\$12,628	\$13,305	\$14,004	23%
Electromedical Equipment							
X-Ray Apparatus and Tubes and Related Irradiation Apparatus	\$520	\$543	\$670	\$676	\$754	\$768	48%
Electromedical and Electrotherapeutic Apparatus	\$1,788	\$1,965	\$2,092	\$2,211	\$2,257	\$2,550	43%
Total	\$2,308	\$2,508	\$2,763	\$2,887	\$3,011	\$3,318	44%
Photonics							
Optical Instruments and Lenses	\$756	\$827	\$857	\$944	\$1,075	\$1,182	56%
Photographic Equipment and Lenses	\$4,875	\$4,667	\$4,686	\$4,759	\$4,857	\$4,705	-3%
Total	\$5,631	\$5,494	\$5,544	\$5,703	\$5,932	\$5,888	5%
<b>Total Manufacturing</b>	<b>\$87,597</b>	<b>\$87,247</b>	<b>\$90,710</b>	<b>\$95,478</b>	<b>\$103,908</b>	<b>\$111,147</b>	<b>27%</b>
<b>COMMUNICATIONS SERVICES</b>							
Radiotelephone Communications	\$2,763	\$3,455	\$4,262	\$5,181	\$6,444	\$7,456	170%
Telephone Communications	\$40,291	\$40,883	\$40,870	\$40,851	\$43,855	\$46,656	16%
Telegraph and Other Message Communications	\$380	\$411	\$461	\$485	\$522	\$600	58%
Cable and Other Pay Television Services	\$4,702	\$5,001	\$5,764	\$6,260	\$6,693	\$7,650	63%
Other Communications Services	\$838	\$875	\$929	\$1,076	\$1,216	\$1,351	61%
Total	\$48,973	\$50,626	\$52,286	\$53,853	\$58,730	\$63,712	30%
<b>SOFTWARE AND COMPUTER-RELATED SERVICES</b>							
Software Services							
Computer Programming Services	\$10,136	\$11,572	\$13,869	\$16,317	\$19,697	\$23,909	136%
Prepackaged Software	\$8,932	\$9,876	\$12,344	\$14,625	\$18,153	\$23,727	166%
Computer Integrated Systems Design	\$6,159	\$6,762	\$7,627	\$8,842	\$10,199	\$11,667	89%
Total	\$25,227	\$28,211	\$33,839	\$39,783	\$48,050	\$59,303	135%
Data Processing and Information Services							
Computer Processing and Data Preparation	\$8,478	\$8,452	\$9,509	\$10,350	\$11,097	\$11,632	37%
Information Retrieval Services	\$2,034	\$2,040	\$2,575	\$3,302	\$4,103	\$6,260	208%
Computer Facilities Management Services	\$1,220	\$1,198	\$1,322	\$1,431	\$1,508	\$1,659	36%
Total	\$11,732	\$11,690	\$13,406	\$15,083	\$16,708	\$19,551	67%
Rental, Maintenance, and Other Computer-Related Services							
Computer Rental and Leasing	\$568	\$513	\$518	\$545	\$531	\$594	5%
Computer Maintenance and Repair	\$1,774	\$1,825	\$1,969	\$2,188	\$2,366	\$2,473	39%
Other Computer-Related Services	\$6,425	\$7,605	\$9,559	\$12,405	\$16,997	\$22,522	251%
Total	\$8,766	\$9,943	\$12,045	\$15,139	\$19,895	\$25,589	192%
Total Software and Computer-Related Services	\$45,725	\$49,843	\$59,291	\$70,005	\$84,652	\$104,443	128%
<b>Total High-Tech Services</b>	<b>\$94,698</b>	<b>\$100,469</b>	<b>\$111,577</b>	<b>\$123,658</b>	<b>\$143,382</b>	<b>\$168,156</b>	<b>78%</b>
(Includes Communications Services and Software and Computer-Related Services)							
<b>TOTAL HIGH-TECH INDUSTRY</b>	<b>\$182,295</b>	<b>\$187,715</b>	<b>\$202,287</b>	<b>\$219,336</b>	<b>\$247,290</b>	<b>\$279,302</b>	<b>53%</b>

Some totals may not equal the sum of individual sectors due to rounding.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

# U.S. HIGH-TECH ESTABLISHMENTS

## APPENDIX A.4

### U.S. ESTABLISHMENTS IN THE HIGH-TECH INDUSTRY, 1993 - 1998

	1993	1994	1995	1996	1997	1998	% Change 1993-1998
<b>HIGH-TECH MANUFACTURING</b>							
Computers and Office Equipment							
Electronic Computers	973	1,004	920	907	934	998	3%
Computer Storage Devices	226	233	237	239	239	240	6%
Computer Terminals	122	131	109	109	122	137	12%
Computer Peripherals	1,062	1,127	1,090	1,143	1,154	1,169	10%
Calculating and Accounting Machines	99	101	107	112	115	126	27%
Office Machines	254	262	242	245	243	247	-3%
Total	2,736	2,859	2,706	2,757	2,807	2,917	7%
Consumer Electronics							
Household Audio and Video Equipment	616	646	668	708	715	728	18%
Phonographic Records and Prerecorded Tapes and Disks	551	585	545	552	605	614	11%
Total	1,167	1,231	1,213	1,260	1,320	1,342	15%
Communications Equipment							
Telephone and Telegraph Apparatus	756	821	817	881	893	909	20%
Radio & TV Broadcast and Communications Equipment	957	989	1,045	1,103	1,139	1,199	25%
Other Communications Equipment	543	554	570	590	600	616	13%
Total	2,257	2,364	2,432	2,574	2,632	2,724	21%
Electronic Components and Accessories							
Electron Tubes	135	132	118	112	114	124	-8%
Printed Circuit Boards	1,934	2,029	2,077	2,078	2,117	2,181	13%
Electronic Capacitors	125	129	127	122	128	126	1%
Electronic Resistors	99	96	99	99	101	100	1%
Electronic Coils, Transformers, and Inductors	394	386	387	390	392	392	-1%
Electronic Connectors	200	210	207	209	216	211	5%
Other Electronic Components	2,566	2,644	2,593	2,637	2,656	2,658	4%
Total	5,455	5,627	5,609	5,648	5,724	5,792	6%
Semiconductors							
Total	1,075	1,132	1,147	1,252	1,350	1,449	35%
Defense Electronics							
Total	876	863	834	843	834	817	-7%
Industrial Electronics							
Laboratory Apparatus	201	207	196	208	213	218	8%
Environmental Controls	424	429	428	437	459	477	13%
Process Control Instruments	1,428	1,465	1,546	1,586	1,633	1,692	18%
Fluid Meters and Counting Devices	225	243	231	251	237	258	15%
Instruments To Measure Electricity	1,051	1,098	1,059	1,068	1,063	1,136	8%
Laboratory Analytical Instruments	489	508	513	538	554	574	17%
Other Measuring and Controlling Devices	987	1,026	1,061	1,110	1,131	1,187	20%
Total	4,807	4,976	5,035	5,198	5,290	5,542	15%
Electromedical Equipment							
X-Ray Apparatus and Tubes and Related Irradiation Apparatus	158	167	177	183	187	192	22%
Electromedical and Electrotherapeutic Apparatus	430	475	471	503	517	542	26%
Total	588	642	648	686	704	734	25%
Photonics							
Optical Instruments and Lenses	443	447	461	473	487	510	15%
Photographic Equipment and Lenses	885	921	893	938	968	1,024	16%
Total	1,328	1,368	1,354	1,411	1,455	1,534	16%
<b>Total Manufacturing</b>	<b>20,289</b>	<b>21,062</b>	<b>20,978</b>	<b>21,629</b>	<b>22,116</b>	<b>22,851</b>	<b>13%</b>
<b>COMMUNICATIONS SERVICES</b>							
Radiotelephone Communications	2,702	3,372	4,032	4,987	6,160	7,050	161%
Telephone Communications	18,738	20,197	20,967	21,710	22,277	22,538	20%
Telegraph and Other Message Communications	512	516	543	570	595	609	19%
Cable and Other Pay Television Services	4,792	5,009	5,160	5,322	5,299	5,508	15%
Other Communications Services	848	917	959	1,102	1,219	1,305	54%
Total	27,592	30,012	31,662	33,691	35,550	37,010	34%
<b>SOFTWARE AND COMPUTER-RELATED SERVICES</b>							
Software Services							
Computer Programming Services	18,669	20,590	23,572	27,187	31,231	36,869	97%
Prepackaged Software	7,530	8,290	9,421	10,261	11,173	11,968	59%
Computer Integrated Systems Design	5,243	5,833	6,478	7,154	7,952	8,970	71%
Total	31,442	34,713	39,471	44,602	50,356	57,807	84%
Data Processing and Information Services							
Computer Processing and Data Preparation	6,639	6,664	7,216	7,509	7,990	8,576	29%
Information Retrieval Services	1,667	1,786	2,230	3,277	4,541	5,956	257%
Computer Facilities Management Services	763	720	784	834	892	899	18%
Total	9,069	9,170	10,230	11,620	13,423	15,431	70%
Rental, Maintenance, and Other Computer-Related Services							
Computer Rental and Leasing	1,141	1,033	1,025	1,015	963	966	-15%
Computer Maintenance and Repair	5,048	5,304	5,505	5,722	5,893	6,117	21%
Other Computer-Related Services	19,309	22,274	27,326	33,923	43,230	54,396	182%
Total	25,498	28,611	33,856	40,660	50,086	61,479	141%
<b>Total Software and Computer-Related Services</b>	<b>66,010</b>	<b>72,495</b>	<b>83,558</b>	<b>96,883</b>	<b>113,864</b>	<b>134,710</b>	<b>104%</b>
<b>Total High-Tech Services</b> (Includes Communications Services and Software and Computer-Related Services)	<b>93,602</b>	<b>102,507</b>	<b>115,220</b>	<b>130,574</b>	<b>149,414</b>	<b>171,720</b>	<b>83%</b>
<b>TOTAL HIGH-TECH INDUSTRY</b>	<b>113,891</b>	<b>123,569</b>	<b>136,198</b>	<b>152,203</b>	<b>171,530</b>	<b>194,571</b>	<b>71%</b>

Some totals may not equal the sum of individual sectors due to rounding.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

## U.S. HIGH-TECH MERCHANDISE TRADE WITH THE WORLD, 1993 - 1999

(in millions of current U.S. dollars)

	1993	1994	1995	1996	1997	1998	1999	% Change 1993-1999
<b>EXPORTS</b>								
Computers and Office Equipment	\$31,234	\$35,217	\$41,774	\$45,696	\$51,542	\$47,4447	\$48,551	55%
Consumer Electronics	\$6,810	\$7,861	\$8,306	\$8,406	\$9,403	\$8,785	\$9,318	37%
Communications Equipment	\$10,875	\$13,071	\$16,074	\$16,703	\$20,583	\$20,880	\$22,358	106%
Electronic Components	\$7,665	\$9,768	\$11,618	\$12,819	\$15,212	\$15,598	\$17,146	124%
Semiconductors	\$19,122	\$25,178	\$34,153	\$35,769	\$38,861	\$37,646	\$46,870	145%
Industrial Electronics	\$14,856	\$16,687	\$19,538	\$21,006	\$24,211	\$23,615	\$24,515	65%
Electromedical Equipment	\$4,726	\$5,304	\$5,949	\$6,318	\$6,732	\$7,037	\$7,496	59%
Photonics	\$2,646	\$2,912	\$3,341	\$3,777	\$4,496	\$4,865	\$5,138	94%
Total	\$97,934	\$115,997	\$140,753	\$150,495	\$171,040	\$165,877	\$181,392	85%
<b>IMPORTS</b>								
Computers and Office Equipment	\$41,031	\$49,595	\$60,412	\$64,170	\$72,733	\$75,006	\$83,601	104%
Consumer Electronics	\$15,939	\$19,136	\$19,867	\$18,622	\$19,735	\$22,531	\$23,553	48%
Communications Equipment	\$13,056	\$15,440	\$16,996	\$18,047	\$19,671	\$22,679	\$30,192	131%
Electronic Components	\$9,959	\$11,686	\$13,772	\$14,879	\$16,748	\$17,070	\$18,711	88%
Semiconductors	\$19,483	\$26,156	\$39,043	\$36,707	\$36,880	\$33,416	\$37,622	93%
Industrial Electronics	\$7,490	\$9,025	\$10,592	\$11,347	\$12,647	\$13,756	\$15,332	105%
Electromedical Equipment	\$3,483	\$3,357	\$3,735	\$3,871	\$3,998	\$4,511	\$4,911	41%
Photonics	\$4,847	\$5,705	\$6,499	\$6,700	\$7,505	\$7,351	\$7,525	55%
Total	\$115,286	\$140,100	\$170,915	\$174,342	\$189,917	\$196,319	\$221,447	92%
<b>TWO-WAY</b>								
Computers and Office Equipment	\$72,265	\$84,812	\$102,186	\$109,866	\$124,276	\$122,453	\$132,153	83%
Consumer Electronics	\$22,749	\$26,997	\$28,173	\$27,028	\$29,137	\$31,316	\$32,871	45%
Communications Equipment	\$23,931	\$28,510	\$33,071	\$34,750	\$40,254	\$43,558	\$52,550	120%
Electronic Components	\$17,624	\$21,454	\$25,389	\$27,697	\$31,961	\$32,667	\$35,856	103%
Semiconductors	\$38,605	\$51,334	\$73,196	\$72,476	\$75,742	\$71,066	\$84,492	119%
Industrial Electronics	\$22,345	\$25,712	\$30,130	\$32,353	\$36,857	\$37,371	\$39,847	78%
Electromedical Equipment	\$8,208	\$8,661	\$9,683	\$10,190	\$10,730	\$11,548	\$12,407	51%
Photonics	\$7,493	\$8,617	\$9,840	\$10,477	\$12,001	\$12,216	\$12,663	69%
Total	\$213,221	\$256,098	\$311,668	\$324,837	\$360,957	\$362,196	\$402,840	89%
<b>BALANCE</b>								
Computers and Office Equipment	-\$9,798	-\$14,379	-\$18,638	-\$18,473	-\$21,191	-\$27,559	-\$35,050	
Consumer Electronics	-\$9,128	-\$11,275	-\$11,560	-\$10,216	-\$10,332	-\$13,746	-\$14,236	
Communications Equipment	-\$2,181	-\$2,369	-\$922	-\$1,344	\$912	-\$1,799	-\$7,833	
Electronic Components	-\$2,294	-\$1,918	-\$2,154	-\$2,060	-\$1,536	-\$1,472	-\$1,565	
Semiconductors	-\$361	-\$978	-\$4,889	-\$938	\$1,981	\$4,233	\$9,249	
Industrial Electronics	\$7,366	\$7,663	\$8,945	\$9,659	\$11,564	\$9,860	\$9,183	
Electromedical Equipment	\$1,243	\$1,947	\$2,214	\$2,447	\$2,734	\$2,526	\$2,585	
Photonics	-\$2,201	-\$2,794	-\$3,158	-\$2,923	-\$3,009	-\$2,486	-\$2,387	
Total	-\$17,352	-\$24,103	-\$30,162	-\$23,848	-\$18,877	-\$30,443	-\$40,055	
Total U.S. Exports to the World	\$465,091	\$512,626	\$584,742	\$625,075	\$689,182	\$682,138	\$692,821	49%
Total U.S. Imports from the World	\$580,659	\$663,256	\$743,543	\$795,289	\$870,671	\$911,896	\$1,024,766	76%
Total Two-Way Trade	\$1,045,750	\$1,175,882	\$1,328,285	\$1,420,364	\$1,558,886	\$1,594,034	\$1,717,587	64%
Total Trade Balance	-\$115,568	-\$150,629	-\$158,801	-\$170,214	-\$180,522	-\$229,758	-\$331,945	
Electronics Portion of Exports	21%	23%	24%	24%	25%	24%	26%	
Electronics Portion of Imports	20%	21%	23%	22%	22%	22%	22%	
Electronics Portion of Total Trade	20%	22%	23%	23%	23%	23%	23%	

Some totals may not equal the sum of the individual sectors due to rounding.  
Data are reported on a Total Census Basis.

Source: Cybernation 2.0: The U.S. High-Tech Industry and World Markets, American Electronics Association

### U.S. UNEMPLOYMENT RATES IN SELECT HIGH-TECH OCCUPATIONS, 1993 - 1999

	1993	1994	1995	1996	1997	1998	1999
<b>Engineers (General)</b>	<b>4.1%</b>	<b>3.5%</b>	<b>2.4%</b>	<b>1.8%</b>	<b>1.4%</b>	<b>1.6%</b>	<b>1.6%</b>
Aerospace Engineering	4.6%	3.9%	3.4%	2.5%	1.6%	1.5%	1.4%
Chemical Engineering	4.8%	0.8%	0.2%	2.0%	0.8%	0.6%	1.5%
Electrical and Electronic Engineering	4.0%	4.3%	2.4%	1.3%	0.9%	1.9%	1.2%
Industrial Engineering	4.7%	2.6%	2.3%	2.1%	1.6%	1.9%	2.1%
Mechanical Engineering	3.8%	3.7%	1.8%	1.5%	1.3%	1.2%	1.9%
Engineering, Other	3.4%	4.0%	3.3%	2.0%	2.0%	1.9%	1.3%
<b>Engineering Technology (General)</b>	<b>5.9%</b>	<b>3.9%</b>	<b>3.4%</b>	<b>3.4%</b>	<b>2.0%</b>	<b>2.8%</b>	<b>2.5%</b>
Electrical and Electronic Technicians	6.6%	3.3%	3.5%	3.4%	2.2%	2.2%	2.5%
Mechanical Engineering Technicians	N/A	N/A	3.4%	N/A	N/A	N/A	N/A
Engineering Technicians, Other	4.2%	4.1%	2.3%	4.6%	2.1%	3.4%	1.4%
<b>Math and Computer Scientists (General)</b>	<b>2.7%</b>	<b>2.0%</b>	<b>1.8%</b>	<b>1.3%</b>	<b>1.1%</b>	<b>1.2%</b>	<b>1.6%</b>
Computer Systems Analyst	3.1%	1.8%	1.9%	1.3%	1.1%	1.3%	1.5%
Operations and System Researchers	1.9%	2.7%	1.5%	1.2%	1.4%	0.8%	1.4%
<b>Technicians: Engineering and Science (General)</b>	<b>3.6%</b>	<b>3.0%</b>	<b>2.5%</b>	<b>2.1%</b>	<b>2.5%</b>	<b>2.3%</b>	<b>2.4%</b>
Broadcast Equipment Operators	3.9%	1.9%	3.3%	2.3%	4.0%	3.2%	3.4%
Computer Programmers	2.7%	2.1%	1.8%	1.6%	1.6%	1.4%	2.3%
Technicians, Other	4.0%	4.1%	2.9%	3.8%	4.4%	3.8%	6.1%
<b>Computer Equipment Operators</b>	<b>5.5%</b>	<b>6.1%</b>	<b>4.4%</b>	<b>3.8%</b>	<b>3.2%</b>	<b>3.3%</b>	<b>3.1%</b>
<b>Electrical and Electronic Equipment Repairers</b>	<b>4.8%</b>	<b>4.5%</b>	<b>2.9%</b>	<b>3.3%</b>	<b>2.5%</b>	<b>2.1%</b>	<b>2.9%</b>
Electrical Repairers, Communication and Industrial Repairers	6.5%	7.3%	2.4%	3.0%	2.2%	2.3%	3.4%
Data Processing Equipment Repairers	5.2%	3.7%	3.1%	4.6%	4.2%	3.0%	4.2%
<b>Telephone Line Installers and Repairers</b>	<b>1.9%</b>	<b>1.7%</b>	<b>2.4%</b>	<b>4.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>N/A</b>
Telephone Installers and Repairers	2.5%	3.1%	3.1%	1.6%	1.0%	1.5%	1.8%

### U.S. HIGH TECH INDUSTRY EMPLOYMENT PROJECTIONS, 1999 vs. 2008

(in thousands)

	<u>1999</u>	<u>2008</u>	<u>% Change</u> <u>1999-2008</u>	<u>Numeric</u> <u>Change</u> <u>1999-2008</u>
<b>HIGH TECH</b>				
Computer and Office Equipment Manufacturing	362	369	2%	7
Consumer Electronics Manufacturing	80	67	-17%	-13
Communications Equipment Manufacturing	274	302	10%	28
Electronic Components and Accessories (including Semiconductors)	640	820	28%	180
Defense Electronics Manufacturing	154	143	-7%	-11
Industrial Electronics	295	300	2%	5
Photonics	76	69	-10%	-7
<b>Total Manufacturing</b>	<b>1,935</b>	<b>2,070</b>	<b>7%</b>	<b>135</b>
<b>Communications Services</b>	<b>1,281</b>	<b>1,515</b>	<b>18%</b>	<b>234</b>
<b>Software and Computer-Related Services</b>	<b>1,779</b>	<b>3,472</b>	<b>95%</b>	<b>1,693</b>
<b>HIGH-TECH EMPLOYMENT</b>	<b>4,995</b>	<b>7,057</b>	<b>41%</b>	<b>2,062</b>

### U.S. SELECT INDUSTRY EMPLOYMENT PROJECTIONS, 1999 vs. 2008

(in thousands)

	<u>1999</u>	<u>2008</u>	<u>% Change</u> <u>1999-2008</u>	<u>Numeric</u> <u>Change</u> <u>1999-2008</u>
Aircraft Manufacturing Services	1,814	2,150	19%	336
Amusement and Recreation Services	1,696	2,108	24%	412
Automotive Manufacturing and Services	2,577	2,975	15%	398
Chemical Manufacturing	1,032	1,043	1%	11
Construction	6,236	6,535	5%	299
Education Services (private only)	2,270	2,690	19%	421
Engineering, Management, and Other Services	3,476	4,328	25%	852
Fabricated Metal Products	1,489	1,519	2%	31
Financial Services	6,107	6,717	10%	610
Food and Kindred Products	1,685	1,721	2%	36
Health Services	9,973	12,667	27%	2,694
Hotels	1,737	2,030	17%	293
Legal Services	1,002	1,200	20%	198
Member Organizations	2,402	2,600	8%	198
Personal Services	1,206	1,317	9%	111
Personnel Supply Services	3,405	4,623	36%	1,218
Printing and Publishing	1,553	1,545	-1%	-8
Retail Trade	14,883	16,281	9%	1,398
Rubber and Plastic	1,019	1,130	11%	111
Social Services (private only)	2,782	3,678	32%	896
Textiles and Apparel	1,246	1,087	-13%	-159
Trucking and Warehousing	1,813	1,944	7%	131
Wholesale Trade	7,004	7,330	5%	326

## U.S. OCCUPATIONAL EMPLOYMENT PROJECTIONS IN SELECT HIGH-TECH OCCUPATION, 1998 vs. 2008

	1998	2008	% Change 1998-2008	Numeric Change 1998-2008	Education and Training
<b>Engineering, Natural Science, and Computer and Information Systems Managers</b>	<b>326</b>	<b>468</b>	<b>44%</b>	<b>142</b>	<b>Bachelor's degree and work experience</b>
<b>Engineers</b>	<b>1,462</b>	<b>1,752</b>	<b>20%</b>	<b>290</b>	<b>Bachelor's degree</b>
Aerospace Engineers	53	58	9%	5	Bachelor's degree
Chemical Engineers	48	53	10%	5	Bachelor's degree
Civil Engineers	195	236	21%	41	Bachelor's degree
Electrical and Electronic Engineers	357	450	26%	93	Bachelor's degree
Industrial Engineers, except Safety Engineers	126	142	13%	16	Bachelor's degree
Materials Engineers	20	21	5%	1	Bachelor's degree
Mechanical Engineers	220	256	16%	36	Bachelor's degree
<b>Computer, Mathematical, and Operations Research Occupations</b>	<b>1,653</b>	<b>3,182</b>	<b>92%</b>	<b>1,529</b>	<b>Master's degree preferred</b>
Computer Systems Analysts, Engineers, and Scientists	1,530	3,052	99%	1,522	Bachelor's degree and work experience
Computer Engineers and Scientists	914	1,858	103%	944	Bachelor's degree
Computer Engineers	299	622	108%	323	Bachelor's degree
Computer Support Specialists	429	869	103%	440	Bachelor's degree
Database Administrators	87	155	78%	68	Bachelor's degree
All Other Computer Scientists	97	212	119%	115	Bachelor's degree
Systems Analysts	617	1,194	94%	577	Bachelor's degree
Statisticians	17	17	0%	0	Master's degree
Mathematicians and All Other Mathematical Scientists	14	13	-7%	-1	Doctoral degree
<b>Engineering and Science Technicians and Technologists</b>	<b>1351</b>	<b>1,525</b>	<b>13%</b>	<b>174</b>	
Engineering Technicians	771	897	16%	126	Associate degree
Electrical and Electronic Technicians and Technologists	335	391	17%	56	Associate degree
All Other Engineering Technicians and Technologists	437	506	16%	69	Associate degree
<b>Computer Programmers</b>	<b>648</b>	<b>839</b>	<b>29%</b>	<b>191</b>	<b>Bachelor's degree recommended</b>
<b>Computer Operators</b>	<b>251</b>	<b>187</b>	<b>-25%</b>	<b>-64</b>	<b>On-the-job training</b>
Peripheral Equipment Operators	27	17	-37%	-10	On-the-job training
Computer Operators, except Peripheral Equipment	224	170	-24%	-54	On-the-job training
<b>Electrical and Electronic Equipment Mechanics, Installers, and Repairers</b>	<b>409</b>	<b>472</b>	<b>15%</b>	<b>63</b>	
Computer, Automated Teller, and Office Machine Repairers	138	184	33%	46	Associate degree or other certification
Data Processing Equipment Repairers	79	117	48%	38	Associate degree or other certification
Office Machine and Cash Register Servicers	58	67	16%	9	Associate degree or other certification
Telecommunications Equipment Mechanics, Installers, and Repairers	125	138	10%	13	Post-secondary training
Radio Mechanics	7	7	0%	0	Post-secondary training
Telephone Equipment Installers and Repairers	69	75	9%	6	Post-secondary training
Central Office and PBX Installers and Repairers	44	59	34%	15	Post-secondary training
Station Installers and Repairers, Telephone	24	16	-33%	-8	Post-secondary training
All Other Telecommunications Equipment Mechanics, Installers, and Repairers	49	56	14%	7	Post-secondary training
Miscellaneous Electrical & Electronic Equipment Mechanics, Installers, and Repairers	146	150	3%	4	Repair experience & knowledge of electronics
Electronic Home Entertainment Equipment Repairers	36	31	-14%	-5	Repair experience & knowledge of electronics
Electronics Repairers, Commercial and Industrial Equipment	72	81	13%	9	Repair experience & strong knowledge of elector
All Other Electrical and Electronic Equipment Mechanics, Installers, and Repairers	39	38	-3%	-1	Repair experience & knowledge of electronics
<b>Electrical and Electronic Equipment Assemblers, Precision</b>	<b>201</b>	<b>213</b>	<b>6%</b>	<b>12</b>	<b>Experience in lesser skill assembling</b>
<b>Electronic Semiconductor Processors</b>	<b>63</b>	<b>92</b>	<b>46%</b>	<b>29</b>	<b>Moderate-term on-the-job training</b>

### U.S. HIGH-TECH VENTURE CAPITAL INVESTMENTS, 1997 - 1999

(in millions of current U.S. dollars)

	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>% Change 1997-1999</u>
Computers and Peripherals	\$429.9	\$447.2	\$761.1	77%
Electronics/Instrumentation	\$266.3	\$157.7	\$376.6	41%
Networking and Equipment	\$986.7	\$1,486.8	\$3,619.2	267%
New Media	\$222.1	\$482.2	\$2,896.4	1,204%
Semiconductors/Equipment	\$293.1	\$359.7	\$519.2	77%
Telecommunications	\$1,690.2	\$1,888.2	\$5,222.7	209%
Software	\$2,397.7	\$3,516.4	\$6,593.3	175%
<b>TOTAL HIGH-TECH</b>	<b>\$6,286.0</b>	<b>\$8,338.2</b>	<b>\$19,988.5</b>	<b>218%</b>
<b>TOTAL ALL INDUSTRIES (INCLUDING HIGH TECH)</b>	<b>\$11,482.0</b>	<b>\$14,233.0</b>	<b>\$35,592.0</b>	<b>210%</b>
High-Tech as % of Total	55%	59%	56%	

### U.S. SELECT INDUSTRY VENTURE CAPITAL INVESTMENTS, 1997 - 1999

(in millions of current U.S. dollars)

	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>% Change 1997-1999</u>
Biotechnology	\$714.5	\$667.6	\$1,041.4	45.8%
Business Services	\$566.5	\$733.7	\$4,562.6	705.4%
Consumer Services	\$197.0	\$307.7	\$1,126.7	472%
Financial Services	\$213.6	\$551.9	\$1,607.5	652.6%
Healthcare Services	\$1,053.8	\$1,151.3	\$1,593.4	51%
Industrial	\$538.6	\$468.9	\$551.9	2%
Medical Devices	\$599.4	\$734.7	\$1,090.0	82%
Pharmaceuticals	\$201.5	\$259.8	\$164.2	-19%
Publishing/Broadcasting	\$239.5	\$226.6	\$274.4	15%
Retailing/Distribution	\$871.8	\$793.0	\$3,591.3	311.9%

## EMPLOYMENT IN THE HIGH-TECH INDUSTRY BY STATE, 1993 - 1998

	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>% Change 1993-1998</u>
United States	3,776,627	3,848,009	4,014,706	4,260,544	4,565,509	4,840,477	28%
Alabama	42,929	42,210	44,060	46,606	48,570	51,551	20%
Alaska	3,058	3,161	3,282	3,541	3,945	4,307	41%
Arizona	74,110	76,361	81,127	87,270	88,234	92,375	25%
Arkansas	15,319	17,539	18,885	18,934	18,664	19,712	29%
California	641,556	640,144	669,350	723,976	783,752	834,709	30%
Colorado	97,741	105,265	114,529	122,546	129,681	145,655	49%
Connecticut	63,293	63,142	64,864	68,331	72,599	73,889	17%
Delaware	5,522	4,520	4,777	5,094	6,354	7,902	43%
District of Columbia	12,477	11,891	13,185	13,775	14,439	14,542	17%
Florida	169,803	174,064	176,426	184,457	194,154	209,890	24%
Georgia	96,274	104,293	114,577	124,842	134,362	142,648	48%
Hawaii	6,854	6,642	6,594	6,656	7,127	7,757	13%
Idaho	16,446	16,980	17,828	19,959	21,942	24,807	51%
Illinois	174,122	179,526	189,491	198,899	206,925	217,617	25%
Indiana	71,512	71,343	62,370	62,218	66,646	66,794	-7%
Iowa	27,069	28,392	29,551	31,430	23,885	28,873	7%
Kansas	22,684	23,736	25,498	27,341	30,299	34,651	53%
Kentucky	27,741	28,916	30,101	30,647	31,647	34,554	25%
Louisiana	18,563	19,777	19,862	21,256	20,850	22,137	19%
Maine	9,104	9,762	10,594	10,759	11,372	12,045	32%
Maryland	84,902	87,861	88,915	92,392	98,390	103,773	22%
Massachusetts	191,525	189,642	190,158	197,491	208,418	216,654	13%
Michigan	82,355	83,837	88,325	92,551	95,434	100,951	23%
Minnesota	103,721	104,646	108,947	115,215	125,417	131,127	26%
Mississippi	13,102	13,804	14,620	14,587	14,979	16,103	23%
Missouri	59,480	61,586	63,381	68,393	72,507	74,590	25%
Montana	3,371	3,454	3,513	3,757	4,131	4,716	40%
Nebraska	26,355	27,200	28,988	29,265	30,404	32,890	25%
Nevada	9,461	10,770	12,175	13,871	15,182	16,495	74%
New Hampshire	34,064	34,989	36,139	39,396	40,965	41,682	22%
New Jersey	154,421	160,281	164,930	168,059	179,671	184,377	19%
New Mexico	16,007	17,654	18,492	20,494	21,447	22,455	40%
New York	301,569	292,419	295,650	307,511	320,943	328,782	9%
North Carolina	94,488	98,744	105,375	112,085	118,314	125,576	33%
North Dakota	3,375	3,592	4,139	4,622	5,462	6,425	90%
Ohio	114,444	114,185	120,004	125,357	132,349	139,517	22%
Oklahoma	29,238	29,561	30,634	33,552	32,076	34,716	19%
Oregon	50,175	53,527	57,965	65,918	72,758	76,995	53%
Pennsylvania	136,199	138,781	145,535	151,366	160,881	170,184	25%
Puerto Rico	N/A	N/A	N/A	N/A	19,901	21,285	N/A
Rhode Island	14,008	14,463	14,053	14,190	14,254	14,353	2%
South Carolina	27,652	28,734	30,390	30,599	30,663	31,656	14%
South Dakota	9,039	10,925	12,218	13,519	14,583	15,249	69%
Tennessee	38,986	40,017	41,076	41,342	42,496	44,090	13%
Texas	278,588	289,185	313,746	343,075	377,248	410,955	48%
Utah	31,095	32,420	35,545	39,556	39,523	41,896	35%
Vermont	11,575	11,484	11,884	13,364	13,691	14,233	23%
Virginia	119,342	121,490	127,958	137,596	156,258	169,653	42%
Washington	69,607	72,661	79,820	88,484	97,794	106,080	52%
West Virginia	8,702	9,298	9,825	10,212	9,983	10,316	19%
Wisconsin	52,711	53,363	53,578	55,576	56,376	60,531	15%
Wyoming	1,950	1,952	1,534	1,962	1,983	2,310	18%

### ANNUAL AVERAGE WAGES IN THE HIGH-TECH INDUSTRY BY STATE, 1993 - 1998

(adjusted for inflation to 1998 dollars)

	1993	1994	1995	1996	1997	1998	% Change 1993-1998
United States:	\$48,269	\$48,782	\$50,386	\$51,481	\$54,165	\$57,701	20%
Alabama	\$40,745	\$42,292	\$42,394	\$41,444	\$41,557	\$42,817	5%
Alaska	\$52,034	\$52,893	\$52,005	\$49,924	\$52,640	\$50,694	-3%
Arizona	\$46,184	\$46,916	\$47,946	\$47,596	\$50,419	\$55,817	21%
Arkansas	\$36,637	\$35,290	\$36,274	\$36,760	\$38,716	\$41,332	13%
California	\$54,951	\$55,714	\$59,152	\$60,186	\$63,881	\$66,906	22%
Colorado	\$48,507	\$48,967	\$50,385	\$52,120	\$55,693	\$60,418	25%
Connecticut	\$52,030	\$53,335	\$55,500	\$56,156	\$59,326	\$65,367	26%
Delaware	\$46,011	\$50,330	\$50,502	\$53,647	\$53,481	\$56,109	22%
District of Columbia	\$53,007	\$55,190	\$53,254	\$56,865	\$63,531	\$60,238	14%
Florida	\$43,342	\$44,047	\$44,333	\$43,758	\$44,096	\$46,066	6%
Georgia	\$47,982	\$48,673	\$50,100	\$51,237	\$53,295	\$56,850	18%
Hawaii	\$45,010	\$45,450	\$45,660	\$46,272	\$46,895	\$47,537	6%
Idaho	\$43,200	\$49,206	\$55,261	\$47,611	\$45,451	\$44,552	3%
Illinois	\$46,176	\$46,295	\$48,185	\$49,260	\$54,011	\$55,245	20%
Indiana	\$38,589	\$39,657	\$36,157	\$36,843	\$37,880	\$40,790	6%
Iowa	\$36,208	\$36,557	\$36,777	\$36,777	\$36,403	\$37,292	3%
Kansas	\$42,644	\$41,027	\$42,003	\$42,174	\$44,398	\$46,672	9%
Kentucky	\$34,871	\$33,713	\$33,899	\$34,803	\$35,942	\$37,460	7%
Louisiana	\$40,454	\$40,381	\$40,656	\$39,012	\$39,271	\$39,926	-1%
Maine	\$37,732	\$36,805	\$36,339	\$36,484	\$39,925	\$40,277	7%
Maryland	\$52,757	\$53,161	\$53,144	\$53,852	\$55,942	\$58,942	12%
Massachusetts	\$52,894	\$53,678	\$56,822	\$58,209	\$60,176	\$64,404	22%
Michigan	\$44,708	\$45,064	\$45,198	\$45,573	\$47,818	\$50,974	14%
Minnesota	\$44,417	\$44,628	\$45,688	\$46,988	\$48,757	\$51,201	15%
Mississippi	\$35,487	\$36,369	\$35,934	\$35,612	\$38,793	\$36,510	3%
Missouri	\$44,106	\$43,652	\$45,259	\$45,193	\$46,132	\$48,010	9%
Montana	\$35,973	\$36,360	\$36,855	\$34,122	\$33,406	\$33,483	-7%
Nebraska	\$36,119	\$36,527	\$37,086	\$38,752	\$45,648	\$40,739	13%
Nevada	\$41,138	\$40,840	\$40,625	\$40,927	\$42,332	\$43,797	6%
New Hampshire	\$47,564	\$47,084	\$48,245	\$48,765	\$50,799	\$54,754	15%
New Jersey	\$55,853	\$57,545	\$60,020	\$61,162	\$63,768	\$68,660	23%
New Mexico	\$40,987	\$41,977	\$42,038	\$40,425	\$43,218	\$43,875	7%
New York	\$54,695	\$54,547	\$55,512	\$57,755	\$58,108	\$61,773	13%
North Carolina	\$44,691	\$43,780	\$45,268	\$46,896	\$48,916	\$49,443	11%
North Dakota	\$31,430	\$31,779	\$29,875	\$29,526	\$29,408	\$28,781	-8%
Ohio	\$41,707	\$42,927	\$42,998	\$42,985	\$44,343	\$46,779	12%
Oklahoma	\$38,159	\$38,913	\$38,313	\$37,406	\$38,504	\$39,059	2%
Oregon	\$45,233	\$46,647	\$49,498	\$49,856	\$52,306	\$54,771	21%
Pennsylvania	\$44,365	\$44,838	\$45,521	\$46,242	\$47,752	\$51,040	15%
Puerto Rico	N/A	N/A	N/A	N/A	\$22,867	\$24,169	N/A
Rhode Island	\$43,149	\$43,481	\$45,279	\$45,163	\$47,311	\$49,765	15%
South Carolina	\$37,456	\$37,551	\$38,531	\$37,528	\$37,597	\$41,015	10%
South Dakota	\$26,974	\$26,775	\$28,954	\$31,161	\$31,957	\$37,006	37%
Tennessee	\$37,906	\$38,511	\$39,195	\$40,186	\$42,578	\$43,973	16%
Texas	\$48,327	\$48,849	\$50,404	\$51,916	\$54,829	\$60,265	25%
Utah	\$40,075	\$39,492	\$40,618	\$40,179	\$41,547	\$43,518	9%
Vermont	\$53,434	\$49,249	\$48,874	\$48,549	\$48,054	\$48,409	-9%
Virginia	\$49,658	\$50,254	\$52,070	\$54,308	\$57,666	\$66,002	33%
Washington	\$52,867	\$56,496	\$61,286	\$69,302	\$82,383	\$105,681	100%
West Virginia	\$34,751	\$33,783	\$33,048	\$32,595	\$33,840	\$36,019	4%
Wisconsin	\$38,088	\$39,110	\$39,449	\$40,029	\$39,539	\$41,705	9%
Wyoming	\$35,403	\$36,198	\$40,076	\$33,637	\$34,898	\$37,237	5%

### ESTABLISHMENTS IN THE HIGH-TECH INDUSTRY BY STATE, 1993 - 1998

	1993	1994	1995	1996	1997	1998	% Change 1993-1998
United States	113,891	123,569	136,198	152,203	171,530	194,571	71%
Alabama	1,269	1,361	1,484	1,658	1,906	2,171	71%
Alaska	191	212	247	271	289	298	56%
Arizona	1,847	2,014	2,193	2,405	2,697	3,009	63%
Arkansas	707	770	825	896	983	1,114	58%
California	17,064	18,356	21,242	23,118	24,758	28,839	69%
Colorado	2,839	3,161	3,617	4,257	4,946	5,531	95%
Connecticut	2,185	2,281	2,490	2,676	2,983	3,305	51%
Delaware	275	257	298	386	470	615	124%
District of Columbia	611	656	734	771	771	852	39%
Florida	4,968	5,448	5,863	6,518	7,265	9,027	82%
Georgia	3,516	3,900	4,333	5,011	5,844	6,753	92%
Hawaii	380	418	354	389	444	474	25%
Idaho	410	434	492	546	626	695	70%
Illinois	5,742	6,202	6,760	7,813	8,753	9,976	74%
Indiana	1,793	1,951	2,131	2,296	2,598	2,892	61%
Iowa	1,109	1,189	1,247	1,360	1,468	1,662	50%
Kansas	1,074	1,144	1,223	1,368	1,531	1,832	71%
Kentucky	983	1,016	1,129	1,286	1,413	1,645	67%
Louisiana	865	970	1,078	1,199	1,296	1,540	78%
Maine	418	451	490	526	647	738	77%
Maryland	3,188	3,434	3,655	4,103	4,671	5,228	64%
Massachusetts	3,990	4,492	4,979	5,597	6,423	7,457	87%
Michigan	2,752	3,154	3,510	4,023	4,467	5,007	82%
Minnesota	2,792	3,107	3,392	4,016	4,740	5,329	91%
Mississippi	601	632	682	732	842	900	50%
Missouri	2,170	2,341	2,571	2,870	3,192	3,548	64%
Montana	347	375	411	477	513	559	61%
Nebraska	674	724	761	839	948	1,093	62%
Nevada	564	665	763	902	1,055	1,228	118%
New Hampshire	1,069	1,176	1,294	1,460	1,641	1,817	70%
New Jersey	5,575	6,104	6,881	7,840	8,994	10,234	84%
New Mexico	668	692	728	754	846	944	41%
New York	8,081	8,784	9,636	10,696	12,012	13,368	65%
North Carolina	2,184	2,398	2,615	3,066	3,526	4,067	86%
North Dakota	246	244	256	268	266	297	21%
Ohio	3,694	3,889	4,053	4,597	5,283	5,883	59%
Oklahoma	1,357	1,440	1,457	1,579	1,703	1,841	36%
Oregon	1,555	1,704	1,869	2,065	2,359	2,618	68%
Pennsylvania	3,983	4,229	4,552	4,997	5,768	6,556	65%
Puerto Rico	N/A	N/A	N/A	N/A	344	389	N/A
Rhode Island	452	488	531	587	650	760	68%
South Carolina	853	933	1,025	1,127	1,303	1,562	83%
South Dakota	306	304	324	358	369	417	36%
Tennessee	1,324	1,445	1,583	1,785	1,971	2,149	62%
Texas	7,200	7,664	8,502	9,298	10,806	12,228	70%
Utah	981	1,089	1,211	1,389	1,605	1,808	84%
Vermont	325	348	378	426	469	500	54%
Virginia	3,806	4,146	4,523	5,140	5,956	6,830	79%
Washington	2,291	2,498	2,758	3,158	3,575	4,095	79%
West Virginia	545	562	584	616	668	733	34%
Wisconsin	1,630	1,868	2,043	2,253	2,482	2,562	57%
Wyoming	201	212	183	234	262	327	63%

## ANNUAL PAYROLL IN THE HIGH-TECH INDUSTRY BY STATE, 1993 - 1998

(adjusted for inflation to millions of 1998 dollars)

	1993	1994	1995	1996	1997	1998	% Change 1993-1998
United States	\$182,295	\$187,715	\$202,287	\$219,336	\$247,290	\$279,302	53%
Alabama	\$1,749	\$1,785	\$1,868	\$1,932	\$2,018	\$2,207	26%
Alaska	\$159	\$167	\$171	\$177	\$208	\$218	37%
Arizona	\$3,423	\$3,583	\$3,890	\$4,154	\$4,449	\$5,156	51%
Arkansas	\$561	\$619	\$685	\$696	\$723	\$815	45%
California	\$35,254	\$35,665	\$39,593	\$43,573	\$50,066	\$55,847	58%
Colorado	\$4,741	\$5,155	\$5,771	\$6,387	\$7,222	\$8,800	86%
Connecticut	\$3,293	\$3,368	\$3,600	\$3,837	\$4,307	\$4,830	47%
Delaware	\$254	\$227	\$241	\$273	\$340	\$443	75%
District of Columbia	\$661	\$656	\$702	\$783	\$917	\$876	32%
Florida	\$7,360	\$7,667	\$7,822	\$8,071	\$8,561	\$9,669	31%
Georgia	\$4,619	\$5,076	\$5,740	\$6,397	\$7,161	\$8,109	76%
Hawaii	\$308	\$302	\$301	\$308	\$334	\$369	20%
Idaho	\$710	\$836	\$985	\$950	\$997	\$1,105	56%
Illinois	\$8,040	\$8,311	\$9,131	\$9,798	\$11,176	\$12,022	50%
Indiana	\$2,760	\$2,829	\$2,255	\$2,292	\$2,525	\$2,725	-1%
Iowa	\$980	\$1,038	\$1,087	\$1,156	\$869	\$1,077	10%
Kansas	\$967	\$974	\$1,071	\$1,153	\$1,345	\$1,617	67%
Kentucky	\$967	\$975	\$1,020	\$1,067	\$1,137	\$1,294	34%
Louisiana	\$751	\$799	\$808	\$829	\$819	\$884	18%
Maine	\$344	\$359	\$385	\$393	\$454	\$485	41%
Maryland	\$4,479	\$4,671	\$4,725	\$4,975	\$5,504	\$6,117	37%
Massachusetts	\$10,130	\$10,180	\$10,805	\$11,496	\$12,542	\$13,953	38%
Michigan	\$3,682	\$3,778	\$3,992	\$4,218	\$4,564	\$5,146	40%
Minnesota	\$4,607	\$4,670	\$4,978	\$5,414	\$6,115	\$6,714	46%
Mississippi	\$465	\$502	\$525	\$519	\$581	\$588	26%
Missouri	\$2,623	\$2,688	\$2,869	\$3,091	\$3,345	\$3,581	37%
Montana	\$121	\$126	\$129	\$128	\$138	\$158	30%
Nebraska	\$952	\$994	\$1,075	\$1,134	\$1,388	\$1,340	41%
Nevada	\$389	\$440	\$495	\$568	\$643	\$722	86%
New Hampshire	\$1,620	\$1,647	\$1,744	\$1,921	\$2,081	\$2,282	41%
New Jersey	\$8,625	\$9,223	\$9,899	\$10,279	\$11,457	\$12,659	47%
New Mexico	\$656	\$741	\$777	\$828	\$927	\$985	50%
New York	\$16,494	\$15,951	\$16,412	\$17,760	\$18,649	\$20,310	23%
North Carolina	\$4,223	\$4,323	\$4,770	\$5,256	\$5,787	\$6,209	47%
North Dakota	\$106	\$114	\$124	\$136	\$161	\$185	74%
Ohio	\$4,773	\$4,902	\$5,160	\$5,388	\$5,869	\$6,527	37%
Oklahoma	\$1,116	\$1,150	\$1,174	\$1,255	\$1,235	\$1,356	22%
Oregon	\$2,270	\$2,497	\$2,869	\$3,286	\$3,806	\$4,217	86%
Pennsylvania	\$6,043	\$6,223	\$6,625	\$6,999	\$7,682	\$8,686	44%
Puerto Rico	N/A	N/A	N/A	N/A	\$455	\$514	N/A
Rhode Island	\$604	\$629	\$636	\$641	\$674	\$714	18%
South Carolina	\$1,036	\$1,079	\$1,171	\$1,148	\$1,153	\$1,298	25%
South Dakota	\$244	\$293	\$354	\$421	\$466	\$564	131%
Tennessee	\$1,478	\$1,541	\$1,610	\$1,661	\$1,809	\$1,939	31%
Texas	\$13,463	\$14,126	\$15,814	\$17,811	\$20,684	\$24,766	84%
Utah	\$1,246	\$1,280	\$1,444	\$1,589	\$1,642	\$1,823	46%
Vermont	\$619	\$566	\$581	\$649	\$658	\$689	11%
Virginia	\$5,926	\$6,105	\$6,663	\$7,473	\$9,011	\$11,197	89%
Washington	\$3,680	\$4,105	\$4,892	\$6,132	\$8,057	\$11,211	205%
West Virginia	\$302	\$314	\$325	\$333	\$338	\$372	23%
Wisconsin	\$2,008	\$2,087	\$2,114	\$2,225	\$2,229	\$2,524	26%
Wyoming	\$69	\$71	\$61	\$66	\$69	\$86	25%

## EXPORTS IN THE HIGH-TECH INDUSTRY BY STATE, 1997 - 1999

(in millions of current U.S. dollars)

	1997	1998	1999	% Change 1997-1999
United States	\$171,040	\$165,877	\$181,392	6%
Alabama	\$1,363	\$911	\$848	-38%
Alaska	\$34	\$14	\$17	-49%
Arizona	\$9,165	\$6,083	\$6,178	-33%
Arkansas	\$109	\$162	\$85	-23%
California	\$50,856	\$48,794	\$52,956	4%
Colorado	\$2,780	\$3,034	\$3,615	30%
Connecticut	\$1,440	\$1,417	\$1,559	8%
Delaware	\$91	\$198	\$213	134%
District of Columbia	\$61	\$40	\$61	-1%
Florida	\$7,315	\$7,679	\$8,027	10%
Georgia	\$1,961	\$1,879	\$1,919	-2%
Hawaii	\$28	\$30	\$46	66%
Idaho	\$992	\$786	\$1,518	53%
Illinois	\$7,302	\$7,109	\$6,399	-12%
Indiana	\$1,325	\$1,361	\$1,544	17%
Iowa	\$396	\$489	\$461	16%
Kansas	\$303	\$354	\$424	40%
Kentucky	\$845	\$851	\$960	14%
Louisiana	\$182	\$173	\$162	-11%
Maine	\$524	\$694	\$698	33%
Maryland	\$819	\$986	\$1,095	34%
Massachusetts	\$8,945	\$8,398	\$9,070	1%
Michigan	\$1,610	\$1,305	\$1,347	-16%
Minnesota	\$3,302	\$3,381	\$3,779	14%
Mississippi	\$92	\$108	\$146	59%
Missouri	\$400	\$448	\$606	52%
Montana	\$22	\$23	\$24	10%
Nebraska	\$168	\$193	\$213	27%
Nevada	\$191	\$194	\$352	84%
New Hampshire	\$706	\$803	\$867	23%
New Jersey	\$2,398	\$2,589	\$2,931	22%
New Mexico	\$1,479	\$1,594	\$2,868	94%
New York	\$7,769	\$7,536	\$7,583	-2%
North Carolina	\$3,531	\$3,467	\$3,587	2%
North Dakota	\$13	\$8	\$12	-5%
Ohio	\$2,377	\$2,396	\$2,361	-1%
Oklahoma	\$576	\$608	\$596	4%
Oregon	\$3,897	\$4,258	\$5,093	31%
Pennsylvania	\$3,165	\$3,123	\$3,342	6%
Puerto Rico	\$1,768	\$1,767	\$2,363	34%
Rhode Island	\$332	\$366	\$351	6%
South Carolina	\$467	\$597	\$605	30%
South Dakota	\$173	\$166	\$195	13%
Tennessee	\$1,033	\$1,248	\$1,428	38%
Texas	\$21,072	\$21,646	\$24,934	18%
Utah	\$635	\$611	\$636	0%
Vermont	\$3,244	\$3,108	\$3,419	5%
Virginia	\$1,347	\$1,633	\$2,098	56%
Washington	\$1,981	\$1,838	\$1,798	-9%
West Virginia	\$27	\$27	\$20	-28%
Wisconsin	\$1,837	\$1,845	\$1,795	-2%
Wyoming	\$10	\$13	\$12	26%
Unspecified	\$8,415	\$7,493	\$8,174	-3%

Amounts shown are in nominal U.S. dollars.

State totals do not equal the U.S. total due to minor revision differences in the state trade data.

Source: U.S. Bureau of the Census as compiled by Global Trade Information Services

### VENTURE CAPITAL INVESTMENTS BY STATE, 1997 - 1999

(in millions of U.S. dollars)

	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>% Change 1997-1999</u>
United States	\$11,482	\$14,233	\$35,592	210%
Alabama	\$33	\$77	\$59	81%
Alaska	\$0	\$0	\$0	N/A
Arizona	\$110	\$141	\$251	129%
Arkansas	\$5	\$7	\$27	430%
California	\$4,633	\$5,769	\$16,873	264%
Colorado	\$346	\$490	\$1,306	278%
Connecticut	\$192	\$246	\$521	171%
Delaware	\$2	\$10	\$25	1,165%
District of Columbia	\$37	\$67	\$269	638%
Florida	\$358	\$301	\$726	103%
Georgia	\$290	\$299	\$740	155%
Hawaii	\$17	\$1	\$14	-21%
Idaho	\$1	\$41	\$0	-100%
Illinois	\$307	\$396	\$777	153%
Indiana	\$15	\$26	\$8	-44%
Iowa	\$22	\$24	\$27	23%
Kansas	\$57	\$18	\$26	-54%
Kentucky	\$31	\$37	\$106	244%
Louisiana	\$32	\$48	\$49	54%
Maine	\$4	\$9	\$19	363%
Maryland	\$149	\$298	\$611	310%
Massachusetts	\$1,209	\$1,697	\$3,657	203%
Michigan	\$65	\$115	\$106	62%
Minnesota	\$189	\$230	\$461	144%
Mississippi	\$1	\$5	\$11	980%
Missouri	\$124	\$130	\$284	128%
Montana	\$15	\$0	\$16	8%
Nebraska	\$0	\$5	\$6	N/A
Nevada	\$42	\$4	\$11	-74%
New Hampshire	\$63	\$137	\$233	269%
New Jersey	\$382	\$266	\$816	113%
New Mexico	\$8	\$4	\$4	-48%
New York	\$453	\$558	\$1,852	309%
North Carolina	\$215	\$305	\$685	219%
North Dakota	\$1	\$1	\$0	-100%
Ohio	\$97	\$174	\$130	34%
Oklahoma	\$6	\$32	\$33	436%
Oregon	\$68	\$35	\$305	350%
Pennsylvania	\$290	\$336	\$566	95%
Puerto Rico	\$0	\$0	\$5	N/A
Rhode Island	\$1	\$14	\$9	1,770%
South Carolina	\$82	\$66	\$82	-1%
South Dakota	\$0	\$0	\$0	N/A
Tennessee	\$103	\$68	\$159	54%
Texas	\$701	\$816	\$1,520	117%
Utah	\$75	\$57	\$93	25%
Vermont	*	\$1	\$13	4,942%
Virginia	\$236	\$412	\$751	218%
Washington	\$357	\$401	\$1,206	238%
West Virginia	\$0	\$1	\$31	N/A
Wisconsin	\$58	\$61	\$113	94%
Wyoming	\$0	\$0	\$0	N/A

\*less than \$500,000

Source: PricewaterhouseCoopers MoneyTree Survey

## TOTAL R&D BY STATE, 1993 - 1997

(in millions of U.S. dollars)

	1993	1995	1997	% Change 1993-1997
United States	\$165,412	\$183,232	\$211,586	28%
Alabama	\$1,967	\$1,681	\$1,637	-17%
Alaska	\$130	\$163	\$136	4%
Arizona	\$1,608	\$1,995	\$2,410	50%
Arkansas	\$301	\$330	\$272	-10%
California	\$33,721	\$36,133	\$41,670	24%
Colorado	\$2,864	\$2,603	\$3,205	12%
Connecticut	\$2,809	\$4,311	\$3,454	23%
Delaware	\$1,247	\$1,149	\$1,089	-13%
District of Columbia	\$2,543	\$3,128	\$2,768	9%
Florida	\$3,526	\$5,223	\$4,784	36%
Georgia	\$1,577	\$2,113	\$2,272	44%
Hawaii	\$380	\$509	\$275	-28%
Idaho	\$477	\$914	\$1,270	166%
Illinois	\$6,768	\$7,487	\$8,034	19%
Indiana	\$2,560	\$3,163	\$3,149	23%
Iowa	\$902	\$1,391	\$980	9%
Kansas	\$463	\$764	\$1,351	192%
Kentucky	\$429	\$594	\$526	23%
Louisiana	\$470	\$423	\$554	18%
Maine	\$114	\$345	\$149	30%
Maryland	\$7,442	\$6,519	\$7,395	-1%
Massachusetts	\$9,468	\$9,969	\$11,097	17%
Michigan	\$10,778	\$13,275	\$13,991	30%
Minnesota	\$2,922	\$3,087	\$3,605	23%
Mississippi	\$325	\$315	\$370	14%
Missouri	\$1,789	\$2,499	\$1,826	2%
Montana	\$85	\$119	\$199	135%
Nebraska	\$295	\$336	\$275	-7%
Nevada	\$218	\$445	\$517	137%
New Hampshire	\$438	\$598	\$799	82%
New Jersey	\$9,182	\$9,128	\$12,067	31%
New Mexico	\$2,752	\$3,295	\$3,028	10%
New York	\$10,975	\$10,954	\$12,307	12%
North Carolina	\$2,745	\$3,191	\$4,667	70%
North Dakota	\$91	\$98	\$116	27%
Ohio	\$6,395	\$5,314	\$7,145	12%
Oklahoma	\$533	\$529	\$644	21%
Oregon	\$774	\$1,089	\$1,520	96%
Pennsylvania	\$8,278	\$6,919	\$8,209	-1%
Rhode Island	\$484	\$896	\$1,040	115%
South Carolina	\$713	\$996	\$1,040	46%
South Dakota	\$58	\$55	\$71	23%
Tennessee	\$1,214	\$1,402	\$1,566	29%
Texas	\$6,966	\$8,385	\$9,487	36%
Utah	\$753	\$1,144	\$1,381	83%
Vermont	\$343	\$308	\$314	-8%
Virginia	\$2,939	\$3,897	\$4,136	41%
Washington	\$5,422	\$5,241	\$7,543	39%
West Virginia	\$280	\$475	\$427	53%
Wisconsin	\$1,851	\$2,226	\$2,256	22%
Wyoming	\$63	\$87	\$87	38%
Other/unknown	\$4,427	\$5,805	\$12,161	175%

Data are not available for Puerto Rico.  
Not adjusted for inflation

Source: U.S. National Science Foundation

## HIGH-TECH EMPLOYMENT, 1998

Rank	State	Employment
	United States	4,840,477
1.	California	834,709
2.	Texas	410,955
3.	New York	328,782
4.	Illinois	217,617
5.	Massachusetts	216,654
6.	Florida	209,890
7.	New Jersey	184,377
8.	Pennsylvania	170,184
9.	Virginia	169,653
10.	Colorado	145,655
11.	Georgia	142,648
12.	Ohio	139,517
13.	Minnesota	131,127
14.	North Carolina	125,576
15.	Washington	106,080
16.	Maryland	103,773
17.	Michigan	100,951
18.	Arizona	92,375
19.	Oregon	76,995
20.	Missouri	74,590
21.	Connecticut	73,889
22.	Indiana	66,794
23.	Wisconsin	60,531
24.	Alabama	51,551
25.	Tennessee	44,090
26.	Utah	41,896
27.	New Hampshire	41,682
28.	Oklahoma	34,716
29.	Kansas	34,651
30.	Kentucky	34,554
31.	Nebraska	32,890
32.	South Carolina	31,656
33.	Iowa	28,873
34.	Idaho	24,807
35.	New Mexico	22,455
36.	Louisiana	22,137
37.	Puerto Rico	21,285
38.	Arkansas	19,712
39.	Nevada	16,495
40.	Mississippi	16,103
41.	South Dakota	15,249
42.	District of Columbia	14,542
43.	Rhode Island	14,353
44.	Vermont	14,233
45.	Maine	12,045
46.	West Virginia	10,316
47.	Delaware	7,902
48.	Hawaii	7,757
49.	North Dakota	6,425
50.	Montana	4,716
51.	Alaska	4,307
52.	Wyoming	2,310

## HIGH-TECH WAGES, 1998

Rank	State	Wages
	United States	\$57,701
1.	Washington	\$105,681
2.	New Jersey	\$68,660
3.	California	\$66,906
4.	Virginia	\$66,002
5.	Connecticut	\$65,367
6.	Massachusetts	\$64,404
7.	New York	\$61,773
8.	Colorado	\$60,418
9.	Texas	\$60,265
10.	District of Columbia	\$60,238
11.	Maryland	\$58,942
12.	Georgia	\$56,850
13.	Delaware	\$56,109
14.	Arizona	\$55,817
15.	Illinois	\$55,245
16.	Oregon	\$54,771
17.	New Hampshire	\$54,754
18.	Minnesota	\$51,201
19.	Pennsylvania	\$51,040
20.	Michigan	\$50,974
21.	Alaska	\$50,694
22.	Rhode Island	\$49,765
23.	North Carolina	\$49,443
24.	Vermont	\$48,409
25.	Missouri	\$48,010
26.	Hawaii	\$47,537
27.	Ohio	\$46,779
28.	Kansas	\$46,672
29.	Florida	\$46,066
30.	Idaho	\$44,552
31.	Tennessee	\$43,973
32.	New Mexico	\$43,875
33.	Nevada	\$43,797
34.	Utah	\$43,518
35.	Alabama	\$42,817
36.	Wisconsin	\$41,705
37.	Arkansas	\$41,332
38.	South Carolina	\$41,015
39.	Indiana	\$40,790
40.	Nebraska	\$40,739
41.	Maine	\$40,277
42.	Louisiana	\$39,926
43.	Oklahoma	\$39,059
44.	Kentucky	\$37,460
45.	Iowa	\$37,292
46.	Wyoming	\$37,237
47.	South Dakota	\$37,006
48.	Mississippi	\$36,510
49.	West Virginia	\$36,019
50.	Montana	\$33,483
51.	North Dakota	\$28,781
52.	Puerto Rico	\$24,169

State totals do not equal the U.S. total due to undisclosed data at the state level.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

# CYBERSTATES RANKINGS

## APPENDIX C.2

### CYBERSTATES RANKINGS BY HIGH-TECH EMPLOYMENT, 1993 - 1998

	1993	1994	1995	1996	1997	1998
California	1	1	1	1	1	1
Texas	3	3	2	2	2	2
New York	2	2	3	3	3	3
Illinois	5	5	5	4	5	4
Massachusetts	4	4	4	5	4	5
Florida	6	6	6	6	6	6
New Jersey	7	7	7	7	7	7
Pennsylvania	8	8	8	8	8	8
Virginia	9	9	9	9	9	9
Colorado	12	11	12	12	12	10
Georgia	13	13	11	11	10	11
Ohio	10	10	10	10	11	12
Minnesota	11	12	13	13	13	13
North Carolina	14	14	14	14	14	14
Washington	19	18	18	17	16	15
Maryland	15	15	15	16	15	16
Michigan	16	16	16	15	17	17
Arizona	17	17	17	18	18	18
Oregon	23	22	22	21	19	19
Missouri	21	21	20	19	21	20
Connecticut	20	20	19	20	20	21
Indiana	18	19	21	22	22	22
Wisconsin	22	23	23	23	23	23
Alabama	24	24	24	24	24	24
Tennessee	25	25	25	25	25	25
Utah	27	27	27	26	27	26
New Hampshire	26	26	26	27	26	27
Oklahoma	28	28	28	28	28	28
Kansas	33	33	33	33	32	29
Kentucky	29	29	30	30	29	30
Nebraska	32	32	32	32	31	31
South Carolina	30	30	29	31	30	32
Iowa	31	31	31	29	33	33
Idaho	35	37	37	36	34	34
New Mexico	36	35	36	35	35	35
Louisiana	34	34	34	34	36	36
Puerto Rico	N/A	N/A	N/A	N/A	37	37
Arkansas	37	36	35	37	38	38
Nevada	42	43	42	40	39	39
Mississippi	39	39	38	38	40	40
South Dakota	44	42	41	42	41	41
District of Columbia	40	40	40	41	42	42
Rhode Island	38	38	39	39	43	43
Vermont	41	41	43	43	44	44
Maine	43	44	44	44	45	45
West Virginia	45	45	45	45	46	46
Delaware	47	47	47	47	48	47
Hawaii	46	46	46	46	47	48
North Dakota	48	48	48	48	49	49
Montana	49	49	49	49	50	50
Alaska	50	50	50	50	51	51
Wyoming	51	51	51	51	52	52

### HIGH-TECH ESTABLISHMENTS, 1998

Rank	State	Establishments
	United States	194,571
1.	California	28,839
2.	New York	13,368
3.	Texas	12,228
4.	New Jersey	10,234
5.	Illinois	9,976
6.	Florida	9,027
7.	Massachusetts	7,457
8.	Virginia	6,830
9.	Georgia	6,753
10.	Pennsylvania	6,556
11.	Ohio	5,883
12.	Colorado	5,531
13.	Minnesota	5,329
14.	Maryland	5,228
15.	Michigan	5,007
16.	Washington	4,095
17.	North Carolina	4,067
18.	Missouri	3,548
19.	Connecticut	3,305
20.	Arizona	3,009
21.	Indiana	2,892
22.	Oregon	2,618
23.	Wisconsin	2,562
24.	Alabama	2,171
25.	Tennessee	2,149
26.	Oklahoma	1,841
27.	Kansas	1,832
28.	New Hampshire	1,817
29.	Utah	1,808
30.	Iowa	1,662
31.	Kentucky	1,645
32.	South Carolina	1,562
33.	Louisiana	1,540
34.	Nevada	1,228
35.	Arkansas	1,114
36.	Nebraska	1,093
37.	New Mexico	944
38.	Mississippi	900
39.	District of Columbia	852
40.	Rhode Island	760
41.	Maine	738
42.	West Virginia	733
43.	Idaho	695
44.	Delaware	615
45.	Montana	559
46.	Vermont	500
47.	Hawaii	474
48.	South Dakota	417
49.	Puerto Rico	389
50.	Wyoming	327
51.	Alaska	298
52.	North Dakota	297

### HIGH-TECH PAYROLL, 1998

(in thousands)

Rank	State	Payroll
	United States	\$279,302,259
1.	California	\$55,846,692
2.	Texas	\$24,766,266
3.	New York	\$20,309,784
4.	Massachusetts	\$13,953,321
5.	New Jersey	\$12,659,295
6.	Illinois	\$12,022,327
7.	Washington	\$11,210,626
8.	Virginia	\$11,197,394
9.	Florida	\$9,668,883
10.	Colorado	\$8,800,212
11.	Pennsylvania	\$8,686,271
12.	Georgia	\$8,109,474
13.	Minnesota	\$6,713,801
14.	Ohio	\$6,526,508
15.	North Carolina	\$6,208,813
16.	Maryland	\$6,116,593
17.	Arizona	\$5,156,101
18.	Michigan	\$5,145,894
19.	Connecticut	\$4,829,888
20.	Oregon	\$4,217,108
21.	Missouri	\$3,581,093
22.	Indiana	\$2,724,506
23.	Wisconsin	\$2,524,453
24.	New Hampshire	\$2,282,246
25.	Alabama	\$2,207,284
26.	Tennessee	\$1,938,761
27.	Utah	\$1,823,223
28.	Kansas	\$1,617,215
29.	Oklahoma	\$1,355,964
30.	Nebraska	\$1,339,896
31.	South Carolina	\$1,298,376
32.	Kentucky	\$1,294,404
33.	Idaho	\$1,105,200
34.	Iowa	\$1,076,736
35.	New Mexico	\$985,204
36.	Louisiana	\$883,834
37.	District of Columbia	\$875,987
38.	Arkansas	\$814,734
39.	Nevada	\$722,432
40.	Rhode Island	\$714,271
41.	Vermont	\$689,011
42.	Mississippi	\$587,923
43.	South Dakota	\$564,301
44.	Puerto Rico	\$514,430
45.	Maine	\$485,137
46.	Delaware	\$443,372
47.	West Virginia	\$371,573
48.	Hawaii	\$368,743
49.	Alaska	\$218,337
50.	North Dakota	\$184,918
51.	Montana	\$157,907
52.	Wyoming	\$86,018

State totals do not equal the U.S. total due to undisclosed data at the state level.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

### HIGH-TECH EXPORTS, 1999

(in millions of current U.S. dollars)

Rank	State	High-Tech Exports
	United States	\$181,392
1.	California	\$52,956
2.	Texas	\$24,934
3.	Massachusetts	\$9,070
4.	Florida	\$8,027
5.	New York	\$7,583
6.	Illinois	\$6,399
7.	Arizona	\$6,178
8.	Oregon	\$5,093
9.	Minnesota	\$3,779
10.	Colorado	\$3,615
11.	North Carolina	\$3,587
12.	Vermont	\$3,419
13.	Pennsylvania	\$3,342
14.	New Jersey	\$2,931
15.	New Mexico	\$2,868
16.	Puerto Rico	\$2,363
17.	Ohio	\$2,361
18.	Virginia	\$2,098
19.	Georgia	\$1,919
20.	Washington	\$1,798
21.	Wisconsin	\$1,795
22.	Connecticut	\$1,559
23.	Indiana	\$1,544
24.	Idaho	\$1,518
25.	Tennessee	\$1,428
26.	Michigan	\$1,347
27.	Maryland	\$1,095
28.	Kentucky	\$960
29.	New Hampshire	\$867
30.	Alabama	\$848
31.	Maine	\$698
32.	Utah	\$636
33.	Missouri	\$606
34.	South Carolina	\$605
35.	Oklahoma	\$596
36.	Iowa	\$461
37.	Kansas	\$424
38.	Nevada	\$352
39.	Rhode Island	\$351
40.	Delaware	\$213
41.	Nebraska	\$213
42.	South Dakota	\$195
43.	Louisiana	\$162
44.	Mississippi	\$146
45.	Arkansas	\$85
46.	District of Columbia	\$61
47.	Hawaii	\$46
48.	Montana	\$24
49.	West Virginia	\$20
50.	Alaska	\$17
51.	Wyoming	\$12
52.	North Dakota	\$12

### HIGH-TECH EXPORTS VS. TOTAL EXPORTS, 1999

(in millions of current U.S. dollars)

Rank	State	High-Tech Exports	Total Exports	Concentration
	United States	\$181,392	\$692,821	26%
1.	New Mexico	\$2,868	\$3,133	92%
2.	Vermont	\$3,419	\$4,023	85%
3.	Idaho	\$1,518	\$2,191	69%
4.	Colorado	\$3,615	\$5,931	61%
5.	California	\$52,956	\$97,920	54%
6.	Massachusetts	\$9,070	\$16,805	54%
7.	Arizona	\$6,178	\$11,824	52%
8.	Oregon	\$5,093	\$10,471	49%
9.	New Hampshire	\$867	\$1,930	45%
10.	Minnesota	\$3,779	\$9,373	40%
11.	South Dakota	\$195	\$495	40%
12.	Maine	\$698	\$2,014	35%
13.	Florida	\$8,027	\$24,155	33%
14.	Nevada	\$352	\$1,067	33%
15.	Rhode Island	\$351	\$1,116	31%
16.	Texas	\$24,934	\$83,177	30%
17.	Puerto Rico	\$2,363	\$8,301	28%
18.	Maryland	\$1,095	\$4,009	27%
19.	North Carolina	\$3,587	\$15,007	24%
20.	Illinois	\$6,399	\$29,432	22%
21.	Connecticut	\$1,559	\$7,231	22%
22.	Pennsylvania	\$3,342	\$16,170	21%
23.	New York	\$7,583	\$37,067	20%
24.	Utah	\$636	\$3,134	20%
25.	Oklahoma	\$596	\$2,987	20%
26.	New Jersey	\$2,931	\$15,354	19%
27.	Wisconsin	\$1,795	\$9,673	19%
28.	Virginia	\$2,098	\$11,483	18%
29.	Hawaii	\$46	\$274	17%
30.	District of Columbia	\$61	\$412	15%
31.	Tennessee	\$1,428	\$9,868	14%
32.	Georgia	\$1,919	\$13,749	14%
33.	Alabama	\$848	\$6,192	14%
34.	Indiana	\$1,544	\$12,910	12%
35.	Iowa	\$461	\$4,094	11%
36.	Kentucky	\$960	\$8,877	11%
37.	Nebraska	\$213	\$2,096	10%
38.	Missouri	\$606	\$6,059	10%
39.	Ohio	\$2,361	\$24,883	9%
40.	Delaware	\$213	\$2,287	9%
41.	Kansas	\$424	\$4,669	9%
42.	South Carolina	\$605	\$7,150	8%
43.	Mississippi	\$146	\$2,216	7%
44.	Montana	\$24	\$427	6%
45.	Washington	\$1,798	\$36,731	5%
46.	Michigan	\$1,347	\$31,086	4%
47.	Arkansas	\$85	\$2,177	4%
48.	Wyoming	\$12	\$458	3%
49.	North Dakota	\$12	\$699	2%
50.	West Virginia	\$20	\$1,893	1%
51.	Louisiana	\$162	\$15,842	1%
52.	Alaska	\$17	\$2,564	1%

State totals do not equal the U.S. total due to minor revision differences in the state trade data.

Source: U.S. Bureau of the Census as compiled by Global Trade Information Services

**HIGH-TECH WORKERS PER 1,000 PRIVATE SECTOR WORKERS, 1998**

Rank	State	Employment Concentration
	United States	46.08
1.	Colorado	84.38
2.	New Hampshire	82.94
3.	Massachusetts	79.39
4.	California	70.18
5.	Virginia	63.79
6.	Minnesota	60.76
7.	Vermont	60.26
8.	New Jersey	58.73
9.	Oregon	58.36
10.	Idaho	57.57
11.	Texas	56.03
12.	Maryland	55.67
13.	South Dakota	52.76
14.	Arizona	52.04
15.	Connecticut	51.86
16.	Utah	50.62
17.	Washington	49.30
18.	New York	48.85
19.	Nebraska	46.60
20.	Georgia	46.07
21.	Illinois	43.46
22.	New Mexico	41.32
23.	North Carolina	40.01
24.	District of Columbia	38.83
25.	Rhode Island	37.02
26.	Florida	36.93
27.	Pennsylvania	36.31
28.	Alabama	33.81
29.	Missouri	33.67
30.	Kansas	32.73
31.	Oklahoma	30.59
32.	Ohio	29.96
33.	Indiana	26.90
34.	Michigan	26.56
35.	Wisconsin	26.46
36.	North Dakota	25.91
37.	Maine	25.74
38.	Kentucky	24.32
39.	Iowa	24.27
40.	Delaware	23.32
41.	South Carolina	21.76
42.	Puerto Rico	21.66
43.	Alaska	21.64
44.	Arkansas	21.38
45.	Nevada	20.28
46.	Tennessee	19.93
47.	West Virginia	18.89
48.	Hawaii	18.19
49.	Mississippi	17.81
50.	Montana	16.04
51.	Louisiana	14.83
52.	Wyoming	13.79

**HIGH-TECH ANNUAL AVERAGE WAGE VS. ANNUAL AVERAGE PRIVATE SECTOR WAGE, 1998**

Rank	State	High-Tech Wage	Private Sector Wage	% Difference
	United States	\$57,701	\$31,722	81.9%
1.	Washington	\$105,681	\$32,914	221.1%
2.	Virginia	\$66,002	\$30,917	113.5%
3.	Arizona	\$55,817	\$28,850	93.5%
4.	California	\$66,906	\$34,841	92.0%
5.	Oregon	\$54,771	\$29,046	88.6%
6.	Texas	\$60,265	\$32,090	87.8%
7.	Colorado	\$60,418	\$32,210	87.6%
8.	Vermont	\$48,409	\$26,202	84.8%
9.	Maryland	\$58,942	\$32,081	83.7%
10.	Georgia	\$56,850	\$31,141	82.6%
11.	Idaho	\$44,552	\$24,555	81.4%
12.	New Jersey	\$68,660	\$38,479	78.4%
13.	New Mexico	\$43,875	\$24,697	77.6%
14.	North Carolina	\$49,443	\$27,953	76.9%
15.	New Hampshire	\$54,754	\$31,141	75.8%
16.	Kansas	\$46,672	\$27,021	72.7%
17.	Hawaii	\$47,537	\$27,662	71.8%
18.	Rhode Island	\$49,765	\$28,977	71.7%
19.	Arkansas	\$41,332	\$24,086	71.6%
20.	Massachusetts	\$64,404	\$37,902	69.9%
21.	Florida	\$46,066	\$27,585	67.0%
22.	South Dakota	\$37,006	\$22,280	66.1%
23.	Missouri	\$48,010	\$28,993	65.6%
24.	Delaware	\$56,109	\$34,020	64.9%
25.	Utah	\$43,518	\$26,487	64.3%
26.	Pennsylvania	\$51,040	\$31,109	64.1%
27.	Nebraska	\$40,739	\$25,151	62.0%
28.	Alabama	\$42,817	\$26,499	61.6%
29.	Minnesota	\$51,201	\$32,010	60.0%
30.	Connecticut	\$65,367	\$41,086	59.1%
31.	Illinois	\$55,245	\$34,739	59.0%
32.	South Carolina	\$41,015	\$25,825	58.8%
33.	Maine	\$40,277	\$25,448	58.3%
34.	Alaska	\$50,694	\$32,033	58.3%
35.	Oklahoma	\$39,059	\$24,871	57.0%
36.	Ohio	\$46,779	\$30,130	55.3%
37.	Mississippi	\$36,510	\$23,553	55.0%
38.	Tennessee	\$43,973	\$28,370	55.0%
39.	Montana	\$33,483	\$21,683	54.4%
40.	Wyoming	\$37,237	\$24,254	53.5%
41.	New York	\$61,773	\$41,111	50.3%
42.	Nevada	\$43,797	\$29,376	49.1%
43.	Wisconsin	\$41,705	\$28,128	48.3%
44.	Louisiana	\$39,926	\$27,103	47.3%
45.	Michigan	\$50,974	\$34,615	47.3%
46.	Iowa	\$37,292	\$25,629	45.5%
47.	West Virginia	\$36,019	\$24,915	44.6%
48.	Puerto Rico	\$24,169	\$16,949	42.6%
49.	Kentucky	\$37,460	\$26,598	40.8%
50.	Indiana	\$40,790	\$29,139	40.0%
51.	District of Columbia	\$60,238	\$45,245	33.1%
52.	North Dakota	\$28,781	\$22,570	27.5%

## HIGH-TECH EMPLOYMENT PERCENT CHANGE 1997 - 1998

Rank	State	% Change 1997-1998
	United States High Tech	6.0%
	U.S. Private Sector	2.8%
1.	Delaware	24.4%
2.	Iowa	20.9%
3.	North Dakota	17.6%
4.	Wyoming	16.5%
5.	Kansas	14.4%
6.	Montana	14.2%
7.	Idaho	13.1%
8.	Colorado	12.3%
9.	Kentucky	9.2%
10.	Alaska	9.2%
11.	Texas	8.9%
12.	Hawaii	8.8%
13.	Nevada	8.6%
14.	Virginia	8.6%
15.	Washington	8.5%
16.	Oklahoma	8.2%
17.	Nebraska	8.2%
18.	Florida	8.1%
19.	Mississippi	7.5%
20.	Wisconsin	7.4%
21.	Puerto Rico	7.0%
22.	California	6.5%
23.	Louisiana	6.2%
24.	Georgia	6.2%
25.	North Carolina	6.1%
26.	Alabama	6.1%
27.	Utah	6.0%
28.	Maine	5.9%
29.	Oregon	5.8%
30.	Pennsylvania	5.8%
31.	Michigan	5.8%
32.	Arkansas	5.6%
33.	Maryland	5.5%
34.	Ohio	5.4%
35.	Illinois	5.2%
36.	New Mexico	4.7%
37.	Arizona	4.7%
38.	South Dakota	4.6%
39.	Minnesota	4.6%
40.	Vermont	4.0%
41.	Massachusetts	4.0%
42.	Tennessee	3.8%
43.	West Virginia	3.3%
44.	South Carolina	3.2%
45.	Missouri	2.9%
46.	New Jersey	2.6%
47.	New York	2.4%
48.	Connecticut	1.8%
49.	New Hampshire	1.8%
50.	District of Columbia	0.7%
51.	Rhode Island	0.7%
52.	Indiana	0.2%

## HIGH-TECH EMPLOYMENT NUMERIC CHANGE 1997 - 1998

Rank	State	Numeric Change 1997-1998
	United States High Tech	274,968
	U.S. Private Sector	2,876,100
1.	California	50,957
2.	Texas	33,707
3.	Colorado	15,974
4.	Florida	15,736
5.	Virginia	13,395
6.	Illinois	10,692
7.	Pennsylvania	9,303
8.	Georgia	8,286
9.	Washington	8,286
10.	Massachusetts	8,236
11.	New York	7,839
12.	North Carolina	7,262
13.	Ohio	7,168
14.	Minnesota	5,710
15.	Michigan	5,517
16.	Maryland	5,383
17.	Iowa	4,988
18.	New Jersey	4,706
19.	Kansas	4,352
20.	Oregon	4,237
21.	Wisconsin	4,155
22.	Arizona	4,141
23.	Alabama	2,981
24.	Kentucky	2,907
25.	Idaho	2,865
26.	Oklahoma	2,640
27.	Nebraska	2,486
28.	Utah	2,373
29.	Missouri	2,083
30.	Tennessee	1,594
31.	Delaware	1,548
32.	Puerto Rico	1,384
33.	Nevada	1,313
34.	Connecticut	1,290
35.	Louisiana	1,287
36.	Mississippi	1,124
37.	Arkansas	1,048
38.	New Mexico	1,008
39.	South Carolina	993
40.	North Dakota	963
41.	New Hampshire	717
42.	Maine	673
43.	South Dakota	666
44.	Hawaii	630
45.	Montana	585
46.	Vermont	542
47.	Alaska	362
48.	West Virginia	333
49.	Wyoming	327
50.	Indiana	148
51.	District of Columbia	103
52.	Rhode Island	99

State totals do not equal the U.S. total due to undisclosed data at the state level.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

**HIGH-TECH EMPLOYMENT  
PERCENT CHANGE  
1993 - 1998**

Rank	State	% Change 1993-1998
	United States High Tech	28%
	U.S. Private Sector	15%
1.	North Dakota	90%
2.	Nevada	74%
3.	South Dakota	69%
4.	Oregon	53%
5.	Kansas	53%
6.	Washington	52%
7.	Idaho	51%
8.	Colorado	49%
9.	Georgia	48%
10.	Texas	48%
11.	Delaware	43%
12.	Virginia	42%
13.	Alaska	41%
14.	New Mexico	40%
15.	Montana	40%
16.	Utah	35%
17.	North Carolina	33%
18.	Maine	32%
19.	California	30%
20.	Arkansas	29%
21.	Minnesota	26%
22.	Missouri	25%
23.	Illinois	25%
24.	Pennsylvania	25%
25.	Nebraska	25%
26.	Arizona	25%
27.	Kentucky	25%
28.	Florida	24%
29.	Vermont	23%
30.	Mississippi	23%
31.	Michigan	23%
32.	New Hampshire	22%
33.	Maryland	22%
34.	Ohio	22%
35.	Alabama	20%
36.	New Jersey	19%
37.	Louisiana	19%
38.	Oklahoma	19%
39.	West Virginia	19%
40.	Wyoming	18%
41.	Connecticut	17%
42.	District of Columbia	17%
43.	Wisconsin	15%
44.	South Carolina	14%
45.	Hawaii	13%
46.	Massachusetts	13%
47.	Tennessee	13%
48.	New York	9%
49.	Iowa	7%
50.	Rhode Island	2%
51.	Indiana	-7%
	Puerto Rico	N/A

**HIGH-TECH EMPLOYMENT  
NUMERIC CHANGE  
1993 - 1998**

Rank	State	Numeric Change 1993-1998
	United States High Tech	1,063,850
	U.S. Private Sector	13,848,300
1.	California	193,153
2.	Texas	132,367
3.	Virginia	50,311
4.	Colorado	47,914
5.	Georgia	46,374
6.	Illinois	43,495
7.	Florida	40,087
8.	Washington	36,473
9.	Pennsylvania	33,985
10.	North Carolina	31,088
11.	New Jersey	29,956
12.	Minnesota	27,406
13.	New York	27,213
14.	Oregon	26,820
15.	Massachusetts	25,129
16.	Ohio	25,073
17.	Maryland	18,871
18.	Michigan	18,596
19.	Arizona	18,265
20.	Missouri	15,110
21.	Kansas	11,967
22.	Utah	10,801
23.	Connecticut	10,596
24.	Alabama	8,622
25.	Idaho	8,361
26.	Wisconsin	7,820
27.	New Hampshire	7,618
28.	Nevada	7,034
29.	Kentucky	6,813
30.	Nebraska	6,535
31.	New Mexico	6,448
32.	South Dakota	6,210
33.	Oklahoma	5,478
34.	Tennessee	5,104
35.	Arkansas	4,393
36.	South Carolina	4,004
37.	Louisiana	3,574
38.	North Dakota	3,050
39.	Mississippi	3,001
40.	Maine	2,941
41.	Vermont	2,658
42.	Delaware	2,380
43.	District of Columbia	2,065
44.	Iowa	1,804
45.	West Virginia	1,614
46.	Montana	1,345
47.	Alaska	1,249
48.	Hawaii	903
49.	Wyoming	360
50.	Rhode Island	345
51.	Indiana	-4,718
	Puerto Rico	N/A

State totals do not equal the U.S. total due to undisclosed data at the state level.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

## HIGH-TECH ANNUAL AVERAGE WAGE PERCENT CHANGE 1993 - 1998 (adjusted for inflation)

Rank	State	% Change	
		1993-1998	
	United States High Tech	19.54%	
	U.S. Private Sector	8.43%	
1.	Washington	99.90%	
2.	South Dakota	37.19%	
3.	Virginia	32.91%	
4.	Connecticut	25.63%	
5.	Texas	24.70%	
6.	Colorado	24.55%	
7.	New Jersey	22.93%	
8.	Delaware	21.95%	
9.	Massachusetts	21.76%	
10.	California	21.75%	
11.	Oregon	21.09%	
12.	Arizona	20.86%	
13.	Illinois	19.64%	
14.	Georgia	18.48%	
15.	Tennessee	16.00%	
16.	Rhode Island	15.33%	
17.	Minnesota	15.27%	
18.	New Hampshire	15.12%	
19.	Pennsylvania	15.05%	
20.	Michigan	14.02%	
21.	District of Columbia	13.64%	
22.	New York	12.94%	
23.	Arkansas	12.81%	
24.	Nebraska	12.79%	
25.	Ohio	12.16%	
26.	Maryland	11.72%	
27.	North Carolina	10.63%	
28.	South Carolina	9.50%	
29.	Wisconsin	9.50%	
30.	Kansas	9.44%	
31.	Missouri	8.85%	
32.	Utah	8.59%	
33.	Kentucky	7.43%	
34.	New Mexico	7.05%	
35.	Maine	6.75%	
36.	Nevada	6.46%	
37.	Florida	6.29%	
38.	Indiana	5.70%	
39.	Hawaii	5.61%	
40.	Wyoming	5.18%	
41.	Alabama	5.09%	
42.	West Virginia	3.65%	
43.	Idaho	3.13%	
44.	Iowa	2.99%	
45.	Mississippi	2.88%	
46.	Oklahoma	2.36%	
47.	Louisiana	-1.31%	
48.	Alaska	-2.58%	
49.	Montana	-6.92%	
50.	North Dakota	-8.43%	
51.	Vermont	-9.40%	
	Puerto Rico	N/A	

## HIGH-TECH ANNUAL AVERAGE WAGE NUMERIC CHANGE 1993 - 1998 (adjusted for inflation to 1998 dollars)

Rank	State	Numeric Change	
		1993-1998	
	United States High Tech	\$9,432	
	U.S. Private Sector	\$2,467	
1.	Washington	\$52,814	
2.	Virginia	\$16,344	
3.	Connecticut	\$13,336	
4.	New Jersey	\$12,806	
5.	California	\$11,954	
6.	Texas	\$11,938	
7.	Colorado	\$11,911	
8.	Massachusetts	\$11,510	
9.	Delaware	\$10,098	
10.	South Dakota	\$10,031	
11.	Arizona	\$9,633	
12.	Oregon	\$9,538	
13.	Illinois	\$9,069	
14.	Georgia	\$8,868	
15.	District of Columbia	\$7,231	
16.	New Hampshire	\$7,189	
17.	New York	\$7,078	
18.	Minnesota	\$6,783	
19.	Pennsylvania	\$6,675	
20.	Rhode Island	\$6,615	
21.	Michigan	\$6,266	
22.	Maryland	\$6,185	
23.	Tennessee	\$6,067	
24.	Ohio	\$5,072	
25.	North Carolina	\$4,752	
26.	Arkansas	\$4,694	
27.	Nebraska	\$4,619	
28.	Kansas	\$4,027	
29.	Missouri	\$3,904	
30.	Wisconsin	\$3,617	
31.	South Carolina	\$3,559	
32.	Utah	\$3,443	
33.	New Mexico	\$2,888	
34.	Florida	\$2,724	
35.	Nevada	\$2,659	
36.	Kentucky	\$2,589	
37.	Maine	\$2,545	
38.	Hawaii	\$2,527	
39.	Indiana	\$2,201	
40.	Alabama	\$2,073	
41.	Wyoming	\$1,834	
42.	Idaho	\$1,352	
43.	West Virginia	\$1,268	
44.	Iowa	\$1,084	
45.	Mississippi	\$1,023	
46.	Oklahoma	\$900	
47.	Louisiana	-\$528	
48.	Alaska	-\$1,341	
49.	Montana	-\$2,490	
50.	North Dakota	-\$2,649	
51.	Vermont	-\$5,025	
	Puerto Rico	N/A	

**HIGH-TECH EXPORTS  
PERCENT CHANGE  
1997 - 1999**

(based on current U.S. dollars)

<u>Rank</u>	<u>State</u>	<u>% Change 1997-1999</u>
	United States	6%
1.	Delaware	134%
2.	New Mexico	94%
3.	Nevada	84%
4.	Hawaii	66%
5.	Mississippi	59%
6.	Virginia	56%
7.	Idaho	53%
8.	Missouri	52%
9.	Kansas	40%
10.	Tennessee	38%
11.	Maryland	34%
12.	Puerto Rico	34%
13.	Maine	33%
14.	Oregon	31%
15.	Colorado	30%
16.	South Carolina	30%
17.	Nebraska	27%
18.	Wyoming	26%
19.	New Hampshire	23%
20.	New Jersey	22%
21.	Texas	18%
22.	Indiana	17%
23.	Iowa	16%
24.	Minnesota	14%
25.	Kentucky	14%
26.	South Dakota	13%
27.	Montana	10%
28.	Florida	10%
29.	Connecticut	8%
30.	Rhode Island	6%
31.	Pennsylvania	6%
32.	Vermont	5%
33.	California	4%
34.	Oklahoma	4%
35.	North Carolina	2%
36.	Massachusetts	1%
37.	Utah	0%
38.	District of Columbia	-1%
39.	Ohio	-1%
40.	Georgia	-2%
41.	Wisconsin	-2%
42.	New York	-2%
43.	North Dakota	-5%
44.	Washington	-9%
45.	Louisiana	-11%
46.	Illinois	-12%
47.	Michigan	-16%
48.	Arkansas	-23%
49.	West Virginia	-28%
50.	Arizona	-33%
51.	Alabama	-38%
52.	Alaska	-49%

**HIGH-TECH EXPORTS  
NUMERIC CHANGE  
1997 - 1999**

(in millions of current U.S. dollars)

<u>Rank</u>	<u>State</u>	<u>Numeric Change 1997-1999</u>
	United States	\$10,352
1.	Texas	\$3,861
2.	California	\$2,100
3.	New Mexico	\$1,389
4.	Oregon	\$1,196
5.	Colorado	\$835
6.	Virginia	\$751
7.	Florida	\$712
8.	Puerto Rico	\$595
9.	New Jersey	\$533
10.	Idaho	\$526
11.	Minnesota	\$477
12.	Tennessee	\$395
13.	Maryland	\$276
14.	Indiana	\$219
15.	Missouri	\$206
16.	Pennsylvania	\$177
17.	Vermont	\$175
18.	Maine	\$175
19.	New Hampshire	\$161
20.	Nevada	\$161
21.	South Carolina	\$138
22.	Massachusetts	\$125
23.	Delaware	\$122
24.	Kansas	\$121
25.	Connecticut	\$119
26.	Kentucky	\$115
27.	Iowa	\$65
28.	North Carolina	\$56
29.	Mississippi	\$54
30.	Nebraska	\$45
31.	South Dakota	\$22
32.	Oklahoma	\$20
33.	Rhode Island	\$20
34.	Hawaii	\$18
35.	Wyoming	\$3
36.	Montana	\$2
37.	Utah	\$1
38.	District of Columbia	\$0
39.	North Dakota	-\$1
40.	West Virginia	-\$8
41.	Ohio	-\$16
42.	Alaska	-\$17
43.	Louisiana	-\$20
44.	Arkansas	-\$25
45.	Georgia	-\$42
46.	Wisconsin	-\$42
47.	Washington	-\$183
48.	New York	-\$186
49.	Michigan	-\$263
50.	Alabama	-\$516
51.	Illinois	-\$903
52.	Arizona	-\$2,987

Amounts shown are in nominal U.S. dollars.  
State totals do not equal the U.S. total due to minor revision differences in the state trade data.

Source: U.S. Bureau of the Census as compiled by Global Trade Information Services

## VENTURE CAPITAL INVESTMENTS

1999 (in millions of U.S. dollars)

Rank	State	1999 Total
	United States	\$35,592
1.	California	\$16,873
2.	Massachusetts	\$3,657
3.	New York	\$1,852
4.	Texas	\$1,520
5.	Colorado	\$1,306
6.	Washington	\$1,206
7.	New Jersey	\$816
8.	Illinois	\$777
9.	Virginia	\$751
10.	Georgia	\$740
11.	Florida	\$726
12.	North Carolina	\$685
13.	Maryland	\$611
14.	Pennsylvania	\$566
15.	Connecticut	\$521
16.	Minnesota	\$461
17.	Oregon	\$305
18.	Missouri	\$284
19.	District of Columbia	\$269
20.	Arizona	\$251
21.	New Hampshire	\$233
22.	Tennessee	\$159
23.	Ohio	\$130
24.	Wisconsin	\$113
25.	Kentucky	\$106
26.	Michigan	\$106
27.	Utah	\$93
28.	South Carolina	\$82
29.	Alabama	\$59
30.	Louisiana	\$49
31.	Oklahoma	\$33
32.	West Virginia	\$31
33.	Iowa	\$27
34.	Arkansas	\$27
35.	Kansas	\$26
36.	Delaware	\$25
37.	Maine	\$19
38.	Montana	\$16
39.	Hawaii	\$14
40.	Vermont	\$13
41.	Nevada	\$11
42.	Mississippi	\$11
43.	Rhode Island	\$9
44.	Indiana	\$8
45.	Nebraska	\$6
46.	Puerto Rico	\$5
47.	New Mexico	\$4
48.	Alaska	\$0
48.	Idaho	\$0
48.	North Dakota	\$0
48.	Wyoming	\$0

## VENTURE CAPITAL INVESTMENTS

### NUMERIC CHANGE

1997 - 1999

Rank	State	Numeric Change 1997-1999
	United States	\$24,110
1.	California	\$12,241
2.	Massachusetts	\$2,448
3.	New York	\$1,399
4.	Colorado	\$960
5.	Washington	\$849
6.	Texas	\$819
7.	Virginia	\$515
8.	Illinois	\$470
9.	North Carolina	\$470
10.	Maryland	\$462
11.	Georgia	\$450
12.	New Jersey	\$433
13.	Florida	\$368
14.	Connecticut	\$329
15.	Pennsylvania	\$275
16.	Minnesota	\$272
17.	Oregon	\$238
18.	District of Columbia	\$233
19.	New Hampshire	\$170
20.	Missouri	\$159
21.	Arizona	\$141
22.	Kentucky	\$75
23.	Tennessee	\$56
24.	Wisconsin	\$55
25.	Michigan	\$41
26.	Ohio	\$33
27.	West Virginia	\$31
28.	Oklahoma	\$27
29.	Alabama	\$26
30.	Delaware	\$23
31.	Arkansas	\$22
32.	Utah	\$18
33.	Louisiana	\$17
34.	Maine	\$15
35.	Vermont	\$12
36.	Mississippi	\$10
37.	Rhode Island	\$9
38.	Nebraska	\$6
39.	Puerto Rico	\$5
40.	Iowa	\$5
41.	Montana	\$1
42.	South Carolina	-\$1
43.	Idaho	-\$1
44.	North Dakota	-\$1
45.	New Mexico	-\$4
46.	Hawaii	-\$4
47.	Indiana	-\$7
48.	Kansas	-\$31
49.	Nevada	-\$31

## VENTURE CAPITAL INVESTMENTS

### PERCENT CHANGE

1997 - 1999

Rank	State	% Change 1997-1999
	United States	210%
1.	Vermont	4942%
2.	Rhode Island	1770%
3.	Delaware	1165%
4.	Mississippi	980%
5.	District of Columbia	638%
6.	Oklahoma	463%
7.	Arkansas	430%
8.	Maine	363%
9.	Oregon	350%
10.	Maryland	310%
11.	New York	309%
12.	Colorado	278%
13.	New Hampshire	269%
14.	California	264%
15.	Kentucky	244%
16.	Washington	238%
17.	North Carolina	219%
18.	Virginia	218%
19.	Massachusetts	203%
20.	Connecticut	171%
21.	Georgia	155%
22.	Illinois	153%
23.	Minnesota	144%
24.	Arizona	129%
25.	Missouri	128%
26.	Texas	117%
27.	New Jersey	113%
28.	Florida	103%
29.	Pennsylvania	95%
30.	Wisconsin	94%
31.	Alabama	81%
32.	Michigan	62%
33.	Louisiana	54%
34.	Tennessee	54%
35.	Ohio	34%
36.	Utah	25%
37.	Iowa	23%
38.	Montana	8%
39.	South Carolina	-1%
40.	Hawaii	-21%
41.	Indiana	-44%
42.	New Mexico	-48%
43.	Kansas	-54%
44.	Nevada	-74%
45.	Idaho	-100%
46.	North Dakota	-100%

## R&D BY STATE, 1997

(in millions of U.S. dollars)

Rank	State	R&D
	United States	\$211,268
1.	California	\$41,670
2.	Michigan	\$13,991
3.	New York	\$12,307
4.	New Jersey	\$12,067
5.	Massachusetts	\$11,097
6.	Texas	\$9,487
7.	Pennsylvania	\$8,209
8.	Illinois	\$8,034
9.	Washington	\$7,543
10.	Maryland	\$7,395
11.	Ohio	\$7,145
12.	Florida	\$4,784
13.	North Carolina	\$4,667
14.	Virginia	\$4,136
15.	Minnesota	\$3,605
16.	Connecticut	\$3,454
17.	Colorado	\$3,205
18.	Indiana	\$3,149
19.	New Mexico	\$3,028
20.	District of Columbia	\$2,768
21.	Arizona	\$2,410
22.	Georgia	\$2,272
23.	Wisconsin	\$2,256
24.	Missouri	\$1,826
25.	Alabama	\$1,637
26.	Tennessee	\$1,566
27.	Oregon	\$1,520
28.	Utah	\$1,381
29.	Kansas	\$1,351
30.	Idaho	\$1,270
31.	Delaware	\$1,089
32.	Rhode Island	\$1,040
33.	South Carolina	\$1,040
34.	Iowa	\$980
35.	New Hampshire	\$799
36.	Oklahoma	\$644
37.	Louisiana	\$554
38.	Kentucky	\$526
39.	Nevada	\$517
40.	West Virginia	\$427
41.	Mississippi	\$370
42.	Vermont	\$314
43.	Nebraska	\$275
44.	Hawaii	\$275
45.	Arkansas	\$272
46.	Montana	\$199
47.	Maine	\$149
48.	Alaska	\$136
49.	North Dakota	\$116
50.	Wyoming	\$87
51.	South Dakota	\$71
	Other/unknown	\$12,161

## R&D PER CAPITA BY STATE, 1997

Rank	State	R&D per Capita
	United States	\$789
1.	District of Columbia	\$5,232
2.	Massachusetts	\$1,814
3.	New Mexico	\$1,750
4.	New Jersey	\$1,498
5.	Delaware	\$1,487
6.	Maryland	\$1,452
7.	Michigan	\$1,431
8.	Washington	\$1,345
9.	California	\$1,291
10.	Connecticut	\$1,056
11.	Rhode Island	\$1,054
12.	Idaho	\$1,049
13.	Colorado	\$823
14.	Minnesota	\$769
15.	Pennsylvania	\$683
16.	New Hampshire	\$681
17.	New York	\$679
18.	Illinois	\$675
19.	Utah	\$671
20.	Ohio	\$639
21.	North Carolina	\$629
22.	Virginia	\$614
23.	Indiana	\$537
24.	Vermont	\$533
25.	Arizona	\$529
26.	Kansas	\$520
27.	Texas	\$488
28.	Oregon	\$469
29.	Wisconsin	\$436
30.	Alabama	\$379
31.	Iowa	\$344
32.	Missouri	\$338
33.	Florida	\$326
34.	Nevada	\$308
35.	Georgia	\$303
36.	Tennessee	\$292
37.	South Carolina	\$277
38.	West Virginia	\$235
39.	Hawaii	\$231
40.	Montana	\$227
41.	Alaska	\$223
42.	Oklahoma	\$194
43.	Wyoming	\$181
44.	North Dakota	\$181
45.	Nebraska	\$166
46.	Mississippi	\$135
47.	Kentucky	\$134
48.	Louisiana	\$127
49.	Maine	\$120
50.	Arkansas	\$108
51.	South Dakota	\$97

## R&D BY STATE PERCENT CHANGE 1993 - 1997

Rank	State	% Change 1993-1997
	United States	27%
1.	Kansas	192%
2.	Idaho	166%
3.	Nevada	137%
4.	Montana	135%
5.	Rhode Island	115%
6.	Oregon	96%
7.	Utah	83%
8.	New Hampshire	82%
9.	North Carolina	70%
10.	West Virginia	53%
11.	Arizona	50%
12.	South Carolina	46%
13.	Georgia	44%
14.	Virginia	41%
15.	Washington	39%
16.	Wyoming	38%
17.	Texas	36%
18.	Florida	36%
19.	New Jersey	31%
20.	Maine	30%
21.	Michigan	30%
22.	Tennessee	29%
23.	North Dakota	27%
24.	California	24%
25.	Minnesota	23%
26.	South Dakota	23%
27.	Indiana	23%
28.	Connecticut	23%
29.	Kentucky	23%
30.	Wisconsin	22%
31.	Oklahoma	21%
32.	Illinois	19%
33.	Louisiana	18%
34.	Massachusetts	17%
35.	Mississippi	14%
36.	New York	12%
37.	Colorado	12%
38.	Ohio	12%
39.	New Mexico	10%
40.	District of Columbia	9%
41.	Iowa	9%
42.	Alaska	4%
43.	Missouri	2%
44.	Maryland	-1%
45.	Pennsylvania	-1%
46.	Nebraska	-7%
47.	Vermont	-8%
48.	Arkansas	-10%
49.	Delaware	-13%
50.	Alabama	-17%
51.	Hawaii	-28%

## R&D BY STATE NUMERIC CHANGE 1993 - 1997 *(in millions of U.S. dollars)*

Rank	State	Numeric Change 1993-1997
	United States	\$45,419
1.	California	\$7,949
2.	Michigan	\$3,213
3.	New Jersey	\$2,885
4.	Texas	\$2,521
5.	Washington	\$2,121
6.	North Carolina	\$1,922
7.	Massachusetts	\$1,629
8.	New York	\$1,332
9.	Illinois	\$1,266
10.	Florida	\$1,258
11.	Virginia	\$1,197
12.	Kansas	\$888
13.	Arizona	\$802
14.	Idaho	\$793
15.	Ohio	\$750
16.	Oregon	\$746
17.	Georgia	\$695
18.	Minnesota	\$683
19.	Connecticut	\$645
20.	Utah	\$628
21.	Indiana	\$589
22.	Rhode Island	\$556
23.	Wisconsin	\$405
24.	New Hampshire	\$361
25.	Tennessee	\$352
26.	Colorado	\$341
27.	South Carolina	\$327
28.	Nevada	\$299
29.	New Mexico	\$276
30.	District of Columbia	\$225
31.	West Virginia	\$147
32.	Montana	\$114
33.	Oklahoma	\$111
34.	Kentucky	\$97
35.	Louisiana	\$84
36.	Iowa	\$78
37.	Mississippi	\$45
38.	Missouri	\$37
39.	Maine	\$35
40.	North Dakota	\$25
41.	Wyoming	\$24
42.	South Dakota	\$13
43.	Alaska	\$6
44.	Nebraska	-\$20
45.	Vermont	-\$29
46.	Arkansas	-\$29
47.	Maryland	-\$47
48.	Pennsylvania	-\$69
49.	Hawaii	-\$105
50.	Delaware	-\$158
51.	Alabama	-\$330

## COMPUTERS AND OFFICE EQUIPMENT MFG. BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	379,991
1.	California	95,943
2.	Texas	38,871
3.	Massachusetts	27,576
4.	Minnesota	25,025
5.	New York	24,188
6.	North Carolina	20,500
7.	Colorado	18,673
8.	Alabama	9,942
9.	South Dakota	8,714
10.	Ohio	8,567
11.	Pennsylvania	8,484
12.	Washington	7,583
13.	Illinois	7,497
14.	Idaho	7,093
15.	Kentucky	6,934
16.	Oregon	6,623
17.	Connecticut	6,371
18.	Florida	6,020
19.	New Hampshire	5,438
20.	Wisconsin	5,315
21.	Utah	5,283
22.	New Jersey	4,453
23.	Virginia	4,207
24.	Oklahoma	3,902
25.	Arizona	3,302
26.	Georgia	3,051
27.	Michigan	2,441
28.	Tennessee	1,041
29.	Maryland	985
30.	South Carolina	985
31.	Iowa	867
32.	Puerto Rico	844
33.	Nevada	454
34.	Indiana	400
35.	Mississippi	342
36.	Missouri	310
37.	Wyoming	275
38.	New Mexico	264
39.	Vermont	142
40.	Arkansas	120
41.	Kansas	67
42.	District of Columbia	65
43.	Louisiana	56
44.	Montana	23
45.	West Virginia	18

## CONSUMER ELECTRONICS MFG. BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	80,602
1.	California	18,777
2.	New York	8,210
3.	Indiana	7,272
4.	Pennsylvania	7,227
5.	Tennessee	4,500
6.	Illinois	4,218
7.	Massachusetts	2,632
8.	Florida	2,614
9.	Texas	2,364
10.	Georgia	2,350
11.	North Carolina	2,232
12.	Mississippi	2,000
13.	Washington	1,563
14.	New Jersey	1,319
15.	Minnesota	1,227
16.	Michigan	1,099
17.	Wisconsin	1,011
18.	Kentucky	999
19.	Connecticut	988
20.	Utah	794
21.	Arkansas	788
22.	Ohio	750
23.	Oregon	744
24.	Alabama	705
25.	Arizona	583
26.	Oklahoma	386
27.	Missouri	302
28.	New Mexico	256
29.	Maryland	222
30.	Nebraska	218
31.	Maine	161
32.	New Hampshire	71
33.	Virginia	49
34.	District of Columbia	44

State totals do not equal the U.S. total due to undisclosed data at the state level.  
States not shown in the above tables either have no employees in this specific high-tech segment or the data are not disclosed.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

## COMMUNICATIONS EQUIPMENT MFG. BY 1998 EMPLOYMENT

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	281,095
1.	California	37,789
2.	Illinois	35,445
3.	Texas	33,079
4.	Florida	21,013
5.	North Carolina	15,112
6.	Massachusetts	14,944
7.	New York	11,271
8.	Ohio	8,589
9.	Georgia	6,909
10.	Pennsylvania	6,626
11.	Maryland	6,527
12.	New Jersey	6,414
13.	Virginia	6,134
14.	Nebraska	5,368
15.	Minnesota	5,241
16.	Colorado	5,125
17.	Connecticut	4,665
18.	Indiana	3,924
19.	Puerto Rico	3,894
20.	New Hampshire	3,216
21.	Washington	3,138
22.	Kansas	2,424
23.	Alabama	2,319
24.	Tennessee	2,306
25.	Oregon	2,192
26.	Missouri	1,910
27.	Arizona	1,581
28.	Utah	1,301
29.	District of Columbia	1,152
30.	Wisconsin	1,077
31.	Mississippi	1,050
32.	Maine	917
33.	New Mexico	843
34.	Michigan	811
35.	South Carolina	602
36.	South Dakota	586
37.	Kentucky	313
38.	Oklahoma	278
39.	Nevada	182
40.	Rhode Island	93
41.	Montana	17
42.	Idaho	16
43.	Vermont	7

## ELECTRONIC COMPONENTS AND ACCESSORIES MFG. BY 1998 EMPLOYMENT

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	378,185
1.	California	82,419
2.	Illinois	28,945
3.	Texas	25,588
4.	New York	25,228
5.	Pennsylvania	16,773
6.	Massachusetts	16,498
7.	Minnesota	13,070
8.	Florida	13,051
9.	Indiana	11,269
10.	North Carolina	10,725
11.	Ohio	10,513
12.	New Hampshire	9,760
13.	Wisconsin	8,991
14.	New Jersey	8,533
15.	Vermont	8,400
16.	Michigan	8,268
17.	Missouri	7,874
18.	South Carolina	7,797
19.	Colorado	7,445
20.	Arizona	6,924
21.	Oregon	6,896
22.	Puerto Rico	6,763
23.	Connecticut	6,352
24.	Washington	5,842
25.	Virginia	5,592
26.	Georgia	4,577
27.	Maryland	4,014
28.	Alabama	3,689
29.	Utah	3,590
30.	Nebraska	2,194
31.	Rhode Island	2,013
32.	Arkansas	1,936
33.	South Dakota	1,933
34.	Maine	1,836
35.	New Mexico	1,798
36.	Tennessee	1,639
37.	Oklahoma	1,602
38.	Kentucky	1,505
39.	Iowa	1,386
40.	Nevada	1,128
41.	Kansas	1,020
42.	Idaho	725
43.	North Dakota	553
44.	Mississippi	500
45.	Louisiana	473
46.	West Virginia	312
47.	Montana	207
48.	Delaware	63
49.	District of Columbia	13

State totals do not equal the U.S. total due to undisclosed data at the state level.  
States not shown in the above tables either have no employees in this specific high-tech segment or the data are not disclosed.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

**SEMICONDUCTORS MFG.  
BY 1998 EMPLOYMENT**

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	283,875
1.	California	75,218
2.	Texas	47,261
3.	Arizona	36,697
4.	Oregon	23,943
5.	Massachusetts	11,218
6.	Idaho	11,139
7.	New York	9,994
8.	Florida	9,652
9.	Pennsylvania	8,155
10.	New Mexico	6,893
11.	Colorado	5,556
12.	Virginia	5,086
13.	Washington	3,540
14.	New Jersey	2,838
15.	Minnesota	2,626
16.	Maine	2,480
17.	Ohio	1,809
18.	New Hampshire	1,748
19.	North Carolina	1,342
20.	Utah	763
21.	Connecticut	564
22.	South Dakota	433
23.	Indiana	407
24.	Michigan	321
25.	Puerto Rico	299
26.	Wisconsin	238
27.	Oklahoma	168
28.	Georgia	122
29.	Nevada	49
30.	Iowa	36
31.	Kansas	35
32.	Tennessee	21
33.	Alabama	20

**DEFENSE ELECTRONICS MFG.  
BY 1998 EMPLOYMENT**

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	160,291
1.	California	56,656
2.	New York	11,562
3.	Texas	10,664
4.	Maryland	9,717
5.	Florida	9,589
6.	New Jersey	9,223
7.	Massachusetts	6,228
8.	New Hampshire	5,600
9.	Virginia	3,479
10.	Minnesota	3,450
11.	Colorado	3,178
12.	Indiana	2,745
13.	Washington	2,132
14.	Pennsylvania	1,978
15.	Michigan	1,829
16.	Connecticut	1,797
17.	Wisconsin	1,728
18.	Oklahoma	1,395
19.	Kansas	1,217
20.	New Mexico	1,100
21.	Missouri	1,000
21.	Rhode Island	1,000
23.	Oregon	948
24.	Alabama	831
25.	Georgia	697
26.	Utah	650
27.	North Carolina	648
28.	Mississippi	327
29.	Arkansas	229
30.	Louisiana	203
31.	Ohio	120

State totals do not equal the U.S. total due to undisclosed data at the state level.  
States not shown in the above tables either have no employees in this specific high-tech segment or the data are not disclosed.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

### INDUSTRIAL ELECTRONICS MFG. BY 1998 EMPLOYMENT

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	281,727
1.	California	63,775
2.	Massachusetts	21,014
3.	Illinois	17,811
4.	Pennsylvania	16,093
5.	Ohio	14,158
6.	Texas	13,873
7.	Minnesota	13,390
8.	New York	10,113
9.	Michigan	8,911
10.	Indiana	7,559
11.	Connecticut	7,525
12.	Oregon	7,114
13.	Colorado	6,955
14.	North Carolina	6,670
15.	Wisconsin	6,248
16.	Washington	6,169
17.	New Jersey	5,828
18.	Florida	4,882
19.	Arizona	4,653
20.	Tennessee	4,344
21.	New Hampshire	3,714
22.	Virginia	3,616
23.	Rhode Island	2,688
24.	Maryland	2,622
25.	Missouri	2,550
26.	Georgia	2,084
27.	Kentucky	1,948
28.	Nevada	1,852
29.	Arkansas	1,761
30.	Nebraska	1,702
31.	Oklahoma	1,574
32.	Kansas	1,526
33.	Puerto Rico	1,416
34.	Iowa	1,410
35.	Louisiana	1,221
36.	South Carolina	1,211
37.	Alabama	1,199
38.	Delaware	1,164
39.	West Virginia	1,057
40.	Utah	881
41.	Vermont	828
42.	New Mexico	690
43.	Maine	570
44.	Mississippi	411
45.	Idaho	205
46.	Montana	165
47.	Wyoming	91
48.	North Dakota	18

### ELECTROMEDICAL EQUIPMENT MFG. BY 1998 EMPLOYMENT

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	57,916
1.	California	10,509
2.	Minnesota	6,754
3.	Florida	4,970
4.	Washington	4,829
5.	Massachusetts	3,786
6.	New York	3,737
7.	Texas	2,661
8.	Wisconsin	1,718
9.	Puerto Rico	1,439
10.	Connecticut	1,398
11.	Illinois	1,357
12.	Colorado	1,314
13.	New Jersey	1,304
14.	Utah	847
15.	Ohio	801
16.	Tennessee	470
17.	Arizona	398
18.	Indiana	135
19.	Michigan	95
20.	Vermont	88
21.	Alabama	44
22.	Oklahoma	34
23.	Virginia	13
24.	District of Columbia	6
25.	Montana	5

State totals do not equal the U.S. total due to undisclosed data at the state level.  
States not shown in the above tables either have no employees in this specific high-tech segment or the data are not disclosed.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

**PHOTONICS MANUFACTURING  
BY 1998 EMPLOYMENT**

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	104,787
1.	New York	49,245
2.	California	11,694
3.	Massachusetts	8,914
4.	Connecticut	3,522
5.	New Jersey	3,072
6.	Pennsylvania	2,609
7.	Minnesota	2,035
8.	Illinois	2,014
9.	Florida	2,013
10.	North Carolina	1,577
11.	Oregon	951
12.	Arizona	891
13.	Indiana	810
14.	Georgia	697
15.	Colorado	622
16.	New Hampshire	535
17.	Texas	498
18.	Ohio	379
19.	Oklahoma	377
20.	Michigan	356
21.	Washington	273
22.	Vermont	250
23.	Kansas	231
24.	Utah	229
25.	West Virginia	211
26.	Wisconsin	192
27.	Missouri	191
28.	Maryland	173
29.	Tennessee	122
30.	Nevada	112
31.	New Mexico	33
32.	Iowa	23
33.	Idaho	11
34.	District of Columbia	7

**TOTAL HIGH-TECH MANUFACTURING  
BY 1998 EMPLOYMENT**

<u>Rank</u>	<u>State</u>	<u>Employment</u>
	United States	2,008,469
1.	California	452,780
2.	Texas	174,859
3.	New York	153,548
4.	Massachusetts	112,810
5.	Illinois	97,287
6.	Florida	73,804
7.	Minnesota	72,818
8.	Pennsylvania	67,945
9.	North Carolina	58,806
10.	Arizona	55,029
11.	Oregon	49,411
12.	Colorado	48,868
13.	Ohio	45,686
14.	New Jersey	42,984
15.	Washington	35,069
16.	Indiana	34,521
17.	Connecticut	33,182
18.	New Hampshire	30,082
19.	Virginia	28,176
20.	Wisconsin	26,518
21.	Maryland	24,260
22.	Michigan	24,131
23.	Georgia	20,487
24.	Idaho	19,189
25.	Alabama	18,749
26.	Puerto Rico	14,655
27.	Tennessee	14,443
28.	Utah	14,338
29.	Missouri	14,137
30.	New Mexico	11,877
31.	Kentucky	11,699
32.	South Dakota	11,666
33.	South Carolina	10,595
34.	Oklahoma	9,716
35.	Vermont	9,715
36.	Nebraska	9,482
37.	Kansas	6,520
38.	Maine	5,964
39.	Rhode Island	5,794
40.	Arkansas	4,834
41.	Mississippi	4,630
42.	Nevada	3,777
43.	Iowa	3,722
44.	Louisiana	1,953
45.	West Virginia	1,598
46.	District of Columbia	1,287
47.	Delaware	1,227
48.	North Dakota	571
49.	Montana	417
50.	Wyoming	366

State totals do not equal the U.S. total due to undisclosed data at the state level.  
States not shown in the above tables either have no employees in this specific high-tech segment or the data are not disclosed.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

## COMMUNICATIONS SERVICES BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	1,230,378
1.	California	138,631
2.	Texas	113,788
3.	New York	86,941
4.	Florida	69,706
5.	New Jersey	63,821
6.	Georgia	61,724
7.	Illinois	52,010
8.	Pennsylvania	45,961
9.	Colorado	45,066
10.	Virginia	42,370
11.	Ohio	38,719
12.	Missouri	36,150
13.	North Carolina	30,243
14.	Maryland	27,179
15.	Massachusetts	26,919
16.	Michigan	26,053
17.	Washington	25,141
18.	Arizona	19,242
19.	Kansas	17,739
20.	Alabama	17,333
21.	Tennessee	16,716
22.	Connecticut	16,681
23.	Minnesota	16,542
24.	Indiana	16,388
25.	Oklahoma	15,703
26.	Louisiana	14,348
27.	Wisconsin	13,133
28.	South Carolina	12,143
29.	Iowa	11,289
30.	Kentucky	9,823
31.	Oregon	9,725
32.	Mississippi	9,050
33.	Utah	8,238
34.	Arkansas	7,770
35.	Nevada	7,675
36.	Nebraska	6,802
37.	West Virginia	6,293
38.	New Mexico	5,502
39.	Hawaii	5,497
40.	Puerto Rico	4,246
41.	District of Columbia	4,098
42.	Idaho	3,578
43.	New Hampshire	3,489
44.	Maine	3,483
45.	Alaska	3,313
46.	Rhode Island	2,656
47.	Montana	2,621
48.	South Dakota	2,617
49.	Delaware	2,214
50.	Vermont	1,808
51.	North Dakota	1,781
52.	Wyoming	1,390

## SOFTWARE SERVICES BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	799,316
1.	California	149,388
2.	Virginia	55,222
3.	Texas	50,769
4.	Massachusetts	46,539
5.	Maryland	35,406
6.	New York	34,074
7.	Washington	33,968
8.	Colorado	32,312
9.	Georgia	30,395
10.	Florida	29,675
11.	Illinois	29,206
12.	New Jersey	28,046
13.	Ohio	27,255
14.	Pennsylvania	21,722
15.	Minnesota	16,381
16.	North Carolina	15,407
17.	Michigan	14,582
18.	Missouri	13,114
19.	Wisconsin	12,446
20.	Utah	10,764
21.	Oregon	10,502
22.	Alabama	9,527
23.	Connecticut	8,548
24.	Arizona	7,983
25.	Tennessee	5,662
26.	Indiana	5,440
27.	New Hampshire	4,913
28.	Nebraska	4,267
29.	Iowa	4,203
30.	Kansas	3,835
31.	District of Columbia	3,471
32.	South Carolina	3,136
33.	Oklahoma	2,548
34.	Kentucky	2,033
35.	Rhode Island	1,948
36.	Nevada	1,813
37.	Louisiana	1,774
38.	Arkansas	1,565
39.	Vermont	1,414
40.	New Mexico	1,060
41.	Mississippi	1,056
42.	Idaho	1,050
43.	Maine	967
44.	Hawaii	950
45.	Delaware	877
46.	Montana	831
47.	West Virginia	734
48.	South Dakota	501
49.	Puerto Rico	356
50.	Alaska	224
51.	North Dakota	205
52.	Wyoming	134

State totals do not equal the U.S. total due to undisclosed data at the state level.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

### DATA PROCESSING AND INFORMATION SERVICES BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	378,023
1.	California	39,497
2.	Texas	36,097
3.	New York	28,435
4.	New Jersey	24,389
5.	Florida	21,303
6.	Virginia	19,424
7.	Georgia	16,587
8.	Pennsylvania	15,015
9.	Ohio	14,227
10.	Illinois	13,916
11.	North Carolina	10,962
12.	Massachusetts	10,880
13.	Minnesota	10,619
14.	Iowa	7,837
15.	Kentucky	6,899
16.	Colorado	6,454
17.	Utah	6,040
18.	Maryland	5,643
19.	Michigan	5,531
20.	Missouri	5,266
21.	Wisconsin	4,312
22.	Connecticut	3,734
23.	Arizona	3,387
24.	Indiana	3,320
25.	Oklahoma	3,294
26.	Tennessee	3,271
27.	Oregon	3,159
28.	Washington	3,132
29.	Alabama	2,731
30.	Delaware	2,355
31.	Kansas	2,185
32.	Nevada	2,173
33.	Louisiana	1,918
34.	District of Columbia	1,913
35.	North Dakota	1,342
36.	Puerto Rico	1,064
37.	West Virginia	890
38.	New Hampshire	878
39.	Nebraska	843
40.	New Mexico	771
41.	Arkansas	701
42.	Vermont	664
43.	Mississippi	625
44.	Maine	530
45.	Hawaii	457
46.	Alaska	347
47.	Montana	293
48.	Wyoming	139
49.	Idaho	126
50.	South Dakota	115
51.	South Carolina	81

### RENTAL, MAINTENANCE, AND OTHER COMPUTER-RELATED SERVICES BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	424,296
1.	California	54,412
2.	Texas	35,442
3.	New York	25,784
4.	Illinois	25,198
5.	New Jersey	25,137
6.	Virginia	24,462
7.	Pennsylvania	19,541
8.	Massachusetts	19,506
9.	Florida	15,402
10.	Minnesota	14,766
11.	Ohio	13,630
12.	Colorado	12,954
13.	Georgia	11,659
14.	Maryland	11,285
15.	Connecticut	10,436
16.	North Carolina	10,158
17.	Michigan	9,584
18.	Washington	8,771
19.	Indiana	7,125
20.	Arizona	6,735
21.	Missouri	5,922
22.	Oregon	4,196
23.	Wisconsin	4,121
24.	Tennessee	3,745
25.	Kansas	3,710
26.	Oklahoma	3,455
27.	New Mexico	3,245
28.	Alabama	3,211
29.	Kentucky	2,974
30.	South Carolina	2,610
31.	District of Columbia	2,570
32.	Utah	2,484
33.	New Hampshire	2,320
34.	Louisiana	2,073
35.	Rhode Island	1,952
36.	Nebraska	1,920
37.	Iowa	1,763
38.	Delaware	1,229
39.	Nevada	1,058
40.	Maine	910
41.	Idaho	836
42.	Mississippi	743
43.	Puerto Rico	725
44.	West Virginia	714
45.	Arkansas	690
46.	Hawaii	575
47.	Vermont	567
48.	Montana	542
49.	Alaska	366
50.	South Dakota	349
51.	Wyoming	62

State totals do not equal the U.S. total due to undisclosed data at the state level.  
States not shown in the above tables either have no employees in this specific high-tech segment or the data are not disclosed.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

### SOFTWARE AND COMPUTER-RELATED SERVICES BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	1,601,630
1.	California	243,298
2.	Texas	122,308
3.	Virginia	99,107
4.	New York	88,293
5.	New Jersey	77,572
6.	Massachusetts	76,925
7.	Illinois	68,320
8.	Florida	66,380
9.	Georgia	60,437
10.	Pennsylvania	56,278
11.	Ohio	55,112
12.	Maryland	52,334
13.	Colorado	51,721
14.	Michigan	50,767
15.	Washington	45,870
16.	Minnesota	41,767
17.	North Carolina	36,527
18.	Missouri	24,303
19.	Connecticut	24,026
20.	Wisconsin	20,880
21.	Utah	19,320
22.	Arizona	18,104
23.	Oregon	17,859
24.	Nebraska	16,606
25.	Indiana	15,885
26.	Alabama	15,469
27.	Iowa	13,862
28.	Kentucky	13,032
29.	Tennessee	12,931
30.	Kansas	10,392
31.	Oklahoma	9,297
32.	District of Columbia	9,157
33.	South Carolina	8,918
34.	New Hampshire	8,111
35.	Arkansas	7,108
36.	Rhode Island	5,903
37.	Louisiana	5,836
38.	New Mexico	5,076
39.	Nevada	5,043
40.	Delaware	4,461
41.	North Dakota	4,073
42.	Vermont	2,710
43.	Maine	2,598
44.	West Virginia	2,425
45.	Mississippi	2,423
46.	Puerto Rico	2,384
47.	Hawaii	2,260
48.	Idaho	2,040
49.	Montana	1,678
50.	Alaska	994
51.	South Dakota	966
52.	Wyoming	554

### TOTAL HIGH-TECH SERVICES BY 1998 EMPLOYMENT

Rank	State	Employment
	United States	2,832,008
1.	California	381,929
2.	Texas	236,096
3.	New York	175,234
4.	Virginia	141,477
5.	New Jersey	141,393
6.	Florida	136,086
7.	Georgia	122,161
8.	Illinois	120,330
9.	Massachusetts	103,844
10.	Pennsylvania	102,239
11.	Colorado	96,787
12.	Ohio	93,831
13.	Maryland	79,513
14.	Michigan	76,820
15.	Washington	71,011
16.	North Carolina	66,770
17.	Missouri	60,453
18.	Minnesota	58,309
19.	Connecticut	40,707
20.	Arizona	37,346
21.	Wisconsin	34,013
22.	Alabama	32,802
23.	Indiana	32,273
24.	Tennessee	29,647
25.	Kansas	28,131
26.	Oregon	27,584
27.	Utah	27,558
28.	Iowa	25,151
29.	Oklahoma	25,000
30.	Nebraska	23,408
31.	Kentucky	22,855
32.	South Carolina	21,061
33.	Louisiana	20,184
34.	Arkansas	14,878
35.	District of Columbia	13,255
36.	Nevada	12,718
37.	New Hampshire	11,600
38.	Mississippi	11,473
39.	New Mexico	10,578
40.	West Virginia	8,718
41.	Rhode Island	8,559
42.	Hawaii	7,757
43.	Delaware	6,675
44.	Puerto Rico	6,630
45.	Maine	6,081
46.	North Dakota	5,854
47.	Idaho	5,618
48.	Vermont	4,518
49.	Alaska	4,307
50.	Montana	4,299
51.	South Dakota	3,583
52.	Wyoming	1,944

Software and Computer-Related Services is the summation of Software Services, Data Processing and Information Services, and Rental, Maintenance, and Other Computer-Related Services. Total High-Tech Services is the summation of Software and Computer-Related Services and Communications Services.

State totals do not equal the U.S. total due to undisclosed data at the state level.

Source: U.S. Bureau of Labor Statistics, Covered Employment and Wages, ES-202

# AEA'S DEFINITION OF THE HIGH-TECH INDUSTRY

In preparing the original *Cyberstates* report, AEA carefully examined numerous definitions of the high-technology industry used by government agencies, private companies, and other trade associations based on U.S. government industry codes from the *Standard Industrial Classification Manual 1987*. Because all statistics in this report are generated from the definition, AEA devoted considerable time to devising a clear definition of what constitutes today's high-tech industry in the United States.

What we found is that there is no consensus on the definition of the high-tech industry. As one report notes, "high technology appears to be a lot like quality; people know it when they see it, but it is not easy to define." This means the definition of the high-tech industry varies greatly depending on what combination of products and services are selected from the Standard Industrial Classification (SIC) codes to define the industry. Collecting sound statistical data on the industry is further complicated by the fact that many of the new industries in the high-tech area are not fully captured by current U.S. government statistics.

## AEA'S HIGH-TECH INDUSTRY DEFINITION

What follows is a discussion of how AEA arrived at its definition. We believe it is a solid, yet conservative, representation of the core components of today's high-tech industry. AEA's definition does not include many "related" industries, such as biotechnology, engineering services, and research and testing services.

AEA uses 45 SIC codes to define the high-technology industry. They fall into three broad categories — high-tech manufacturing, communications services, and software and computer-related services. We recognize that these 45 SIC codes do not comprehensively cover the entire high-tech industry, as the structure of the SIC system is limited. In an effort to produce solid statistics, AEA does not include broad categories if the high-tech portion does not represent a clear majority.

Other industry groups not covered in AEA's definition of the high-tech industry include wholesale and retail trade of high-tech goods. The biotechnology industry also is not included because current U.S. government statistics do not allow us clearly to identify which portion is "bio" and which is "tech." The matter is further complicated because there is no clear consensus on the definition of the biotechnology industry.

The U.S. government's SIC codes do not capture temporary high-tech workers, as the SIC codes place all temporary employees together under SIC 7363, help supply services. A study by the National Association of Temporary

## THE HIGH-TECH DEFINITION BY STANDARD INDUSTRIAL CLASSIFICATION CODES

### HIGH-TECH MANUFACTURING

#### COMPUTERS AND OFFICE EQUIPMENT

- 3571 Electronic Computers
- 3572 Computer Storage Devices
- 3575 Computer Terminals
- 3577 Computer Peripherals
- 3578 Calculating and Accounting Machines
- 3579 Office Machines

#### CONSUMER ELECTRONICS

- 3651 Household Audio and Video Equipment
- 3652 Phonographic Records and  
Prerecorded Tapes and Disks

#### COMMUNICATIONS EQUIPMENT

- 3661 Telephone and Telegraph Apparatus
- 3663 Radio and TV Broadcast and  
Communications Equipment
- 3669 Other Communications Equipment

#### ELECTRONIC COMPONENTS AND ACCESSORIES

- 3671 Electron Tubes
- 3672 Printed Circuit Boards
- 3675 Electronic Capacitors
- 3676 Electronic Resistors
- 3677 Electronic Coils, Transformers, and  
Inductors
- 3678 Electronic Connectors
- 3679 Other Electronic Components

#### SEMICONDUCTORS

- 3674 Semiconductors and Related Devices

#### INDUSTRIAL ELECTRONICS

- 3821 Laboratory Apparatus
- 3822 Environmental Controls
- 3823 Process Control Instruments
- 3824 Fluid Meters and Counting Devices
- 3825 Instruments To Measure Electricity
- 3826 Laboratory Analytical Instruments
- 3829 Other Measuring and Controlling Devices

#### PHOTONICS

- 3827 Optical Instruments and Lenses
- 3861 Photographic Equipment and Lenses

#### DEFENSE ELECTRONICS

- 3812 Search and Navigation Systems,  
Instruments, and Equipment

## **AEA'S DEFINITION OF THE HIGH-TECH INDUSTRY**

and Staffing Services found that on any given day in 1998 there were nearly 2.8 million people working as temporary employees. The study found that technical workers, which include computer programmers and computer systems analysts, comprised nearly 11 percent of the temporary help industry payroll in 1998. However, this category also includes other temporary workers, such as designers, editors, and illustrators. Present data allow us to assume only that there are tens of thousands of high-tech temporary workers nationally, but they are not included in our statistical analysis.

### **BACKGROUND ON THE STANDARD INDUSTRIAL CLASSIFICATION SYSTEM**

The development of good data on the high-tech industry is limited by the deficiencies in the official tools the government uses to define the U.S. economy. The U.S. government uses the SIC codes to classify businesses by industry and to calculate the economic activity of these industries within the U.S. economy. For example, the production of computers and office equipment is classified under SIC code 357 and communications equipment under SIC code 366. However, the SIC codes (originally published in 1941 and most recently refined in 1987) do not capture many new growth industries, particularly in the technology sector. This is largely because many of these industries did not exist when the SIC codes were revised. The present SIC codes used by the government describe the industrial and agricultural economy of the 1940s, but do not capture fully the dynamic U.S. economy as it enters the 21st century. For example, the 1987 SIC codes do not isolate the nascent information technology industry, particularly the burgeoning Internet industry, a major source of new jobs in the United States.

The U.S. government has begun to implement a more flexible classification system. The new system, known as the North American Industrial Classification System (NAICS), addresses some of the above-mentioned problems. For example, it includes a new "information" sector that will cover the software publishing industry and online services, which under the current SIC codes fall under the broad categories of software and computer-related services (737) or communications services (48). Unfortunately, the new NAICS does not address the issue of temporary workers, who all will remain lumped under one category. The new NAICS harmonizes the U.S. system with Canada and Mexico. This will allow analysts to better measure market size and flow of goods among the North American Free Trade Agreement countries. When the new system is fully in place, AEA will re-evaluate its present definition.

#### **ELECTROMEDICAL EQUIPMENT**

- 3844 X-Ray Apparatus and Tubes and Related Irradiation Apparatus
- 3845 Electromedical and Electrotherapeutic Apparatus

#### **COMMUNICATIONS SERVICES**

- 4812 Radiotelephone Communications
- 4813 Telephone Communications
- 4822 Telegraph and Other Message Communications
- 4841 Cable and Other Pay Television Services
- 4899 Other Communications Services

#### **SOFTWARE AND COMPUTER-RELATED SERVICES**

##### **SOFTWARE SERVICES**

- 7371 Computer Programming Services
- 7372 Prepackaged Software
- 7373 Computer Integrated Systems Design

##### **DATA PROCESSING AND INFORMATION SERVICES**

- 7374 Computer Processing and Data Preparation
- 7375 Information Retrieval Services
- 7376 Computer Facilities Management Services

##### **RENTAL, MAINTENANCE, AND OTHER COMPUTER-RELATED SERVICES**

- 7377 Computer Rental and Leasing
- 7378 Computer Maintenance and Repair
- 7379 Other Computer-Related Services

## **METHODOLOGY**

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The statistics in *Cyberstates 4.0* are based primarily on U.S. government data. Below is a description of the sources used for each measure.

One of the major problems in analyzing U.S. government employment and wage data is that the government withholds data for industry segments that have fewer than three establishments, where a single establishment represents 80 percent or more of the industry's employment, or when specifically requested by a state to protect a company's identity. However, broader industry level statistics (3-digit SIC codes vs. 4-digit SIC codes) include some totals for nondisclosed data. *Cyberstates 4.0* utilizes both 3- and 4-digit SIC codes.

The 1993 to 1998 data use 3- and 4-digit SIC codes for the following indicators: employment, annual average wages, establishments, and payroll.

AEA uses preliminary 1998 data for the state of New Jersey. Final data vetted by the U.S. Bureau of Labor Statistics (BLS) were not available from New Jersey at the time of publication.

### **JOBS, WAGES, AND PAYROLL**

Statistics on jobs, wages, and payroll were collected from *Employment and Wages, Annual Averages*, an annual report from the BLS. This publication reports on annual average employment, total wages, and annual and average weekly wages per employee at the state and national level. These statistics are compiled for the *Covered Employment and Wages*, or *ES-202*, program. We found this series to be the best and most comprehensive source of reliable data for statistical analysis at the state level. The data are derived from the quarterly tax reports submitted to state employment security agencies by employers subject to state unemployment laws and from federal agencies subject to the Unemployment Compensation for Federal Employees program.

There are some shortfalls with the BLS data. The ES-202 series is generated in November of each year, so there is almost a year's lag in the report of the data. And while we have made some significant modifications to account for the disclosure restrictions, some data still are suppressed to protect the identity of the cooperating employers. The ES-202 program does not include self-employed sole proprietorships. Thus, there is a lack of data on start-ups, which are an important component of today's high-tech industry. Finally, the U.S. government's SIC codes do not allow for the collection of statistics for high-tech temporary employees, another significant segment of the high-tech industry.

# METHODOLOGY

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## **JOBS**

The ES-202 monthly employment data represent the number of workers who worked during, or received pay for, the pay period that included the twelfth day of the month. The employment numbers, with few exceptions, cover all full-time and part-time employees. These include most corporate officials, executives, supervisory personnel, professionals, clerical workers, wage earners, and piece workers. Excluded are proprietors, the self-employed, unpaid family members, and certain farm and domestic workers.

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## **ESTABLISHMENTS**

An establishment is an economic unit, such as a mine, factory, or store, that produces goods or provides services. Usually, it is a single physical location and engaged in one, or predominately one, type of economic activity for which a single industrial classification may be employed.

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## **PAYROLL**

Payroll, or total wages, includes total compensation paid during the calendar quarter. These wages include bonuses, tips, and other gratuities, and the value of meals and lodging, where supplied. In some states, employer contributions to certain deferred compensation plans, such as 401(k) plans, are included in total wages. However, total wages do not cover employer contributions to old-age, survivors, and disability insurance, health insurance, unemployment insurance, workers' compensation, and private pension and welfare funds.

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## **ANNUAL AVERAGE WAGES**

The high-tech annual average wage for each state is calculated by dividing the total annual wages (payroll) by annual average employment. Similarly, the private sector average wage also is calculated by dividing total private sector payroll for the state by total private sector workers.

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## **NUMBER OF HIGH-TECH WORKERS PER 1,000 PRIVATE SECTOR WORKERS**

This statistic is compiled for each state by calculating the following ratio, where x equals the number of high-tech workers per 1,000 private sector workers:

$$\frac{x}{\text{total \# of high-tech workers}} = \frac{1,000}{\text{total \# of private sector workers}}$$

# METHODOLOGY

## LEADING HIGH-TECH INDUSTRY SEGMENTS

The leading high-tech industry segments show the ranking of jobs by sector within the high-tech industry for each state. They compare the broad categories of software and computer-related services and communications services to the subcategories of high-tech manufacturing, which include: computers and office equipment, consumer electronics, communications equipment, electronic components, semiconductors, industrial electronics, photonics, defense electronics, and electromedical equipment. These employment numbers are based on the ES-202 series.

## UNEMPLOYMENT RATES

The unemployment data for this report are collected from unpublished tables from the U.S. Bureau of Labor Statistics. These tables list employed and experienced unemployed persons by detailed occupation and are compiled from data gathered from the Current Population Survey. The data only cover private sector wage and salary workers.

## EMPLOYMENT PROJECTIONS (INDUSTRY AND OCCUPATION)

The employment projections for both industry and occupation employment are from the November 1999 edition of the *Monthly Labor Review* produced by the U.S. Bureau of Labor Statistics. The industry employment data has been updated to 1999 using data from the Current Employment Survey (CES).

The high-tech industry data were projected to 1999 using both ES-202 data and CES data. The CES data were used to determine the growth rate of a particular industry sector between 1998 and 1999. This growth rate was then multiplied by the 1998 ES-202 data to determine comparable 1999 data.

Occupational employment projections are based on the Occupational Employment Statistics survey. Specific occupational categories were selected from the this survey to represent high-tech occupational employment.

## EXPORTS

In *Cyberstates 4.0*, we used a new more detailed definition of high-technology exports to represent the industry more accurately. Furthermore, this new definition corresponds with the national trade data used in our *Cybernation 2.0* report.

The state export values in this report are from the U.S. Department of Commerce's Bureau of the Census, FT900 report. The nation's trade statistics are reported using the Harmonized Commodity Description and Coding System

## AEA'S HIGH-TECH MERCHANDISE TRADE DEFINITION

### HIGH-TECH GOODS EXPORT SECTORS\*

- Computers and Office Equipment
- Consumer Electronics
- Communications Equipment
- Electronic Components and Accessories
- Semiconductors
- Industrial Electronics
- Electromedical Equipment
- Photonics

\* These eight industry categories correspond to 60 HS codes that comprise AEA's definition for high-tech exports.

## METHODOLOGY

(HS) as the nomenclature for classifying exports. The United States adopted the HS in 1989 and now most countries are using this system. For the first time, state-level high-tech trade statistics in *Cyberstates 4.0* utilize the HS and more fully correspond to our 45 SIC code definition of the electronics and information technology industry. All export data contained within this publication are expressed on a Total Census Basis and the values are in current U.S. dollars. The data are collected by the U.S. Bureau of the Census and are compiled by Global Trade Information Services, Inc.

The Bureau of the Census compiles export data primarily from Shipper's Export Declarations, required to be filed with Customs officials for shipments leaving the United States. Export data are reported as free-along-ship at the U.S. port of export, based on the transaction price, including inland freight, insurance, and other charges incurred in placing merchandise alongside the carrier at the U.S. port of exportation.

### VENTURE CAPITAL

New to this edition of *Cyberstates* are data on venture capital investments by industry and states. The data come from the PricewaterhouseCoopers MoneyTree Survey. AEA applied a conservative definition in analyzing high-tech venture capital investments using seven core high-tech industry sectors: computers and peripherals, electronics instruments, networking and equipment, new media, semiconductor equipment, software, and telecommunications.

### RESEARCH AND DEVELOPMENT

Data on state R&D expenditures represent total R&D industry spending by the federal government, industry, universities, and other research centers. The state level data are from the U.S. National Science Foundation/Science Resources Studies Division, *Research and Development in Industry, Academic Research and Development Expenditures*, and *Federal Funds for Research and Development*.

### AEA'S HIGH-TECH VENTURE CAPITAL DEFINITION

#### HIGH-TECH VENTURE CAPITAL SECTORS

- Computers and Peripherals
- Electronics/Instrumentation
- Networking and Equipment
- New Media
- Semiconductors/Equipment
- Software
- Telecommunications

Source: PricewaterhouseCoopers MoneyTree Survey

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