High Technology

Overview

Utah's technology sector posted a gain of 3,636 workers in 2005, bringing total average employment in the sector to 60,590. By the end of 2005, employment in the technology sector accounted for 5.3% of nonagricultural employment in Utah. During the first six months of 2006, average employment increased by an additional 1,770 workers--a gain of almost 3%. In 2005, 14 of Utah's 20 technology industries posted job gains. The largest gains occurred in the computer systems design and aerospace industries with 1,933 new jobs. Six industries posted job losses in 2005. The semiconductor industry suffered the largest drop with a decline of 160 jobs.

Utah's technology sector is comprised of 3,951 companies, an increase of 288 firms over the average reported in 2004. Most of these technology companies are small, employing fewer than 25 people.

Despite impressive growth of the technology sector in 2005, employment is still about 2,600 workers below the average employment reported in 2000 due largely to declines in computer and peripheral equipment and semiconductor manufacturers.

2005 Summary

Utah's technology sector posted a gain of 3,636 workers in 2005, bringing total average employment in the sector to 60,590, or about 5.3% of Utah's nonagricultural employment. An industry-by-industry analysis shows that 14 technology industries posted year-over increases--eight of which reported employment gains of more than 100 workers. The largest increases occurred in computer systems design and aerospace. Together, these two industries added 1,933 jobs to the economy in 2005. Large gains were also reported by engineering service companies (421) and internet service providers (401).

In contrast, six technology industries posted job losses in 2005. The largest decline occurred in the semiconductor industry which accounted for over half of the 307 jobs lost that year.

Jobs in Utah's technology sector tend to be high-paying jobs. The average wage received by a technology worker in 2005 was $57,780, approximately 76% percent more than the average wage of $32,832 for all nonagricultural workers. Further, wages in the technology sector are increasing slightly faster than the wages of all nonagricultural workers. The average annual wage of a technology worker in 2005 grew by 3.9% compared to an increase of 3.6% in the average wage for nonagricultural workers as a whole.

Despite robust growth over the past year, Utah's technology sector has not completely recovered from sharp declines in the computer and peripheral equipment industry. Since 2000, two manufacturing facilities in this industry have closed their Utah facilities: Gateway Computers manufacturing plant and Palm Pilot plant. Continued job losses at Evans & Sutherland have also contributed to job losses in this particular segment of Utah's technology sector.

Utah's technology sector is concentrated in four industry segments: computer systems design, medical equipment and supplies, aerospace, and engineering services. Employment in these four industries accounted for more than half of all technology employment in 2005.

Selected Industry Analysis

Computer Systems Design. By all measures, computer systems design was the largest industry segment in Utah's technology sector. In 2005, a total of 1,636 companies in this industry employed 12,197 workers. The average annual wage for these workers was $65,288. This industry is composed of companies that provide expertise in the field of information technologies. The largest computer and systems design companies include Unisys Corporation, 3M Company, Altiris, and Intel.

Altiris, Inc. could be one of the up and coming firms in this industry. In 2006, Altiris ranked 312 in Deloitte's 2006 Technology Fast 500--a ranking of the 500 fastest-growing technology companies in North America. Altiris currently employs more than 900 workers in Utah.

With a net gain of 1,256 jobs in 2005, this industry led employment growth in the technology sector. These gains, when combined with the modest increase reported in 2004, all but made up for the dramatic loss of jobs in the industry that occurred in 2002.

The rebound in this sector was fueled by an increase in the number of firms, rather than strong employment growth in existing companies. The number of companies in this industry grew each year since 2002, with a net increase of 272 companies since 2001. The vast majority of these companies are very small, many employing fewer than ten people.

Preliminary data for 2006 showed continued growth in both employment and the number of firms in the sector. For the first six months of 2006, employment averaged 13,054 and the number of firms averaged 1,735.

Medical Equipment. This segment of Utah's technology sector has been relatively stable since 2001, posting small but steady employment gains each year. However, the effects of plant closures announced last year took a toll with virtually no employment growth reported in 2005. By year-end 2005, an

average of 7,741 workers were employed by medical equipment manufacturers--an increase of just 25 workers over average employment reported in 2004. Preliminary data for the first six months of 2006 showed a net decline in employment of 279 workers, due in part to the closure of Hospira.

Offsetting some of Hospira's loss was the expansion of Fresenius and Merit Medical. Fresenius, the world's largest maker of dialysis equipment, will invest $83 million to expand production at its Utah plant. By March 2007, the company plans to add about 270 new jobs and increase its assembly and storage space at the Ogden plant by 300,000 square feet.

Merit Medical opened new facilities in South Jordan in November 2005, marking the completion of a two-year construction project that expanded the company's capacity in Utah by 180,000 square feet and increased the company's workforce by 134 people. Merit Medical employs more than 1,000 people in Utah.

Other large medical equipment manufacturers in Utah include Becton Dickinson Infusion Therapy and ICU Medical Utah.

The competitive nature of this industry is underscored by the low wages paid to workers relative to many other industries in the technology sector. In 2005, the average annual wage for workers in the medical equipment industry was $42,120--significantly higher than the average for all nonagricultural workers of $32,832, but substantially less than the $57,780 average annual wage of all workers in the technology sector.

The medical equipment industry is competitive and faces mounting challenges in the future. In addition to national and international market forces driving prices downward, Utah companies face an additional challenge. Utah's low unemployment rate is making it difficult for some medical equipment companies to attract and retain talented workers at wage rates that will allow the company to remain competitive.

Aerospace Products. The aerospace industry was once the largest segment of Utah's technology sector; however, it has gone through a decade of mergers, consolidations, and downsizing. In 2005, average employment in this industry was 7,170--an increase of 677 workers over 2004, but approximately half the number of workers reported in the mid-1990s. With an average annual wage of $61,920, wages in the aerospace industry are among the highest in the technology sector.

Approximately 47 firms produce aerospace products in Utah. The largest is ATK Launch Systems (formerly ATK Thiokol), a division of Alliant Techsystems based in Minnesota. Employing more than 4,000 workers, ATK accounts for over half of all employment in the aerospace industry. Mid-sized employers include Moog, Inc., Boeing, and Williams International.

The outlook for Utah's aerospace industry is bright. During the first two quarters of 2006, employment grew by 433 workers--an increase of 6%. Much of this growth was fueled by ATK. Through its parent company, ATK Launch Systems will complete work for General Electric, Orbital Sciences Corp., and NASA. In 2006, Alliant was awarded a contract from General Electric to make components for the new GEnx jet engines in Boeing's 747-8 aircraft. Some of these components, notably the GEnx containment cases, will be produced at ATK's facilities in Clearfield. The company was also recently awarded a $90 million contract to provide solid rocket motors to Orbital Sciences Corp. ATK will provide motors for use in a variety of launch platforms, including the Ground-based Million Defense (GMD). Production will run through February 2009.

Semiconductor and Electric Components. Utah's semiconductor industry is small, and suffers from the same competitive forces that have affected this industry nationally. In 2005, an average of 2,983 workers were employed at semiconductor and electronic component manufactures in Utah, down 160 workers from 2004.

In spite of this recent trend, the creation of IM Flash, a joint venture between Intel and Micron Technology, Inc., may turn this industry around.

IM Flash will produce NAND flash memory chips for digital devices like portable music players and digital cameras in the former Micron facility in Lehi, Utah. The company expects to hire 1,850 people in Utah over the next two years with an average base salary of about $50,000. To some degree, the ramp up of IM Flash offsets the disappointing performance of Micron Technology which built a manufacturing plant in Lehi in 1995. Although the company initially expected to employ 3,500 people, the downturn in the chip market thwarted Micron's plans. By mid-2000, Micron employed about 500 workers who were involved in testing.

Outlook

With ten consecutive quarters of positive employment growth, Utah's technology sector may be on the rebound. Preliminary data covering the first two quarters of 2006 show a net employment increase of almost 1,800 new jobs--an increase of almost 3%. Industries posting the largest increases were computer systems design (857), engineering services (545) and aerospace (433).

With the strong growth reported in 2005 and 2006, employment in Utah's technology sector is just 4% less than it was in

2000. At these rates of increase, technology employment should exceed the 2000 level by 2007.

Over the long term, Utah's technology sector could get a further boost by a state-funded Utah Science, Technology and Research Initiative. The USTAR model will work with state universities, initially the University of Utah and Utah State University, to build facilities and recruit researchers whose technologies have strong commercialization potential. The anticipated result of moving these technologies into the market will be the basis of new companies who will create thousands of technology-based jobs in the future.

Table 95
Technology Employment by Detailed Industry: Annual Averages

	Average Annual Employment					
Sector	2001	2002	2003	2004	2005	2004-2005 Net Change
In-Vitro Diagnostic Substances	22	23	23	34	33	-1
Optical Instrument and Lens Manufacturing	169	158	154	140	178	39
Computer and Peripheral Equipment	3,036	1,540	1,260	736	688	-48
Communication Equipment	2,392	2,370	2,432	2,641	2,819	178
Semiconductor and Electronic Components	4,161	3,315	2,888	3,143	2,983	-160
Navigational, Measuring and Electromedical Products	3,231	3,109	3,182	3,109	3,191	82
Carbon and Graphite Product Manufacturing	368	341	324	423	443	21
Aerospace Products and Parts Manufacturing	7,164	6,634	6,314	6,493	7,170	677
Medical Equipment and Supplies	7,490	7,575	7,593	7,716	7,741	25
Software	5,304	4,845	4,751	4,733	5,098	365
Motion Picture and Video Production	2,618	2,478	2,346	1,929	2,142	214
Post Production Services	42	49	28	24	60	36
Wireless Telecommunications Carriers	1,177	879	701	726	686	-40
Satellite Telecommunications	96	90	79	85	127	42
Other Telecommunications	99	119	82	81	71	-10
Internet Service Providers	3,224	3,016	2,974	3,148	3,550	401
Engineering Services	5,748	5,579	5,849	6,079	6,500	421
Testing Laboratories	1,206	1,152	1,173	1,179	1,131	-48
Computer Systems Design	12,319	10,521	10,796	10,941	12,197	1,256
Scientific Research	3,377	3,815	3,639	3,595	3,780	185
Total	63,243	57,609	56,588	56,954	60,590	3,636

Source: Department of Workforce Services

Table 96
Technology Employment by Detailed Industry: Comparison of 2005 and Six Month Average of 2006

Sector	Average Employment 2005	2006	2005-2006 Net Change
In-Vitro Diagnostic Substances	33	22	-11
Optical Instrument and Lens Manufacturing	178	153	-25
Computer and Peripheral Equipment	688	589	-99
Communication Equipment	2,819	2,954	135
Semiconductor and Electronic Components	2,983	2,953	-30
Navigational, Measuring and Electromedical Products	3,191	3,261	69
Carbon and Graphite Product Manufacturing	443	469	26
Aerospace Products and Parts Manufacturing	7,170	7,603	433
Medical Equipment and Supplies	7,741	7,462	-279
Software	5,098	5,347	249
Motion Picture and Video Production	2,142	1,788	-354
Post Production Services	60	58	-2
Wireless Telecommunications Carriers	686	669	-17
Satellite Telecommunications	127	152	25
Other Telecommunications	71	72	1
Internet Service Providers	3,550	3,520	-30
Engineering Services	6,500	7,045	545
Testing Laboratories	1,131	1,209	77
Computer Systems Design	12,197	13,054	857
Scientific Research	3,780	3,980	200
Total	60,590	62,360	1,770

Source: Department of Workforce Services

Table 97
Technology Employment by Detailed Industry: Second Quarter, Selected Years

Sector	Average Employment 2000	2002	2004	2006	2000-2006 Net Change
In-Vitro Diagnostic Substances	16	24	29	24	7
Optical Instrument and Lens Manufacturing	175	157	139	153	-21
Computer and Peripheral Equipment	3,469	1,557	721	602	-2,867
Communication Equipment	2,218	2,378	2,667	2,983	765
Semiconductor and Electronic Components	3,861	3,395	3,120	2,951	-910
Navigational, Measuring and Electromedical Products	3,214	3,117	3,083	3,271	57
Carbon and Graphite Product Manufacturing	404	339	440	475	71
Aerospace Products and Parts Manufacturing	7,519	6,792	6,456	7,706	186
Medical Equipment and Supplies	7,560	7,603	7,819	7,443	-117
Software	5,862	4,850	4,675	5,378	-484
Motion Picture and Video Production	2,444	2,307	1,779	2,054	-389
Post Production Services	43	123	25	69	26
Wireless Telecommunications Carriers	1,492	860	709	672	-820
Satellite Telecommunications	106	96	89	135	29
Other Telecommunications	4	120	87	77	73
Internet Service Providers	3,428	3,105	3,155	3,412	-16
Engineering Services	5,471	5,543	6,156	7,218	1,747
Testing Laboratories	1,174	1,149	1,190	1,253	79
Computer Systems Design	12,853	10,569	10,880	13,300	447
Scientific Research	2,763	3,801	3,594	4,024	1,261
Total	64,074	57,884	56,813	63,199	-875

Source: Department of Workforce Services

Table 98
High Technology Establishments: Annual Averages

Sector	Average Number of Firms 2001	2002	2003	2004	2005	2001-2005 Net Change
In-Vitro Diagnostic Substances	5	5	5	5	5	0
Optical Instrument and Lens Manufacturing	8	7	7	7	8	0
Computer and Peripheral Equipment	24	25	23	23	24	0
Communication Equipment	36	32	28	27	29	-7
Semiconductor and Electronic Components	59	56	52	56	55	-4
Navigational, Measuring and Electromedical Products	57	59	59	61	60	3
Carbon and Graphite Product Manufacturing	4	2	2	2	2	-2
Aerospace Products and Parts Manufacturing	45	41	44	48	48	3
Medical Equipment and Supplies	187	185	182	197	209	23
Software	150	156	157	177	181	31
Motion Picture and Video Production	184	184	185	201	221	37
Post Production Services	19	23	22	24	33	14
Wireless Telecommunications Carriers	82	92	81	73	79	-3
Satellite Telecommunications	11	15	13	12	15	5
Other Telecommunications	6	7	7	7	11	5
Internet Service Providers	265	243	236	235	230	-34
Engineering Services	577	597	626	666	723	146
Testing Laboratories	105	107	104	109	114	9
Computer Systems Design	1,365	1,357	1,354	1,481	1,636	272
Scientific Research	237	250	245	254	269	32
Total	3,422	3,440	3,432	3,663	3,951	528

Source: Department of Workforce Services

Table 99
High Technology Total Wages: January 2001 through December 2005 (Millions of Dollars)

Sector	Total Wages 2001	2002	2003	2004	2005
In-Vitro Diagnostic Substances	1.0	1.0	1.1	1.4	1.4
Optical Instrument and Lens Manufacturing	4.4	4.2	4.5	4.0	3.6
Computer and Peripheral Equipment	184.0	111.6	91.4	47.0	45.4
Communication Equipment	152.8	153.3	158.7	174.1	184.2
Semiconductor and Electronic Components	148.4	124.4	114.1	131.3	126.6
Navigational, Measuring and Electromedical Products	165.6	155.4	172.2	172.5	183.0
Carbon and Graphite Product Manufacturing	18.5	17.7	18.2	22.1	24.7
Aerospace Products and Parts Manufacturing	416.6	399.3	380.3	402.6	444.3
Medical Equipment and Supplies	257.2	273.8	295.5	307.0	326.1
Software	381.4	351.0	346.2	356.5	459.8
Motion Picture and Video Production	66.1	52.7	52.7	47.5	49.8
Post Production Services	1.0	0.4	0.5	0.5	1.0
Wireless Telecommunications Carriers	56.6	52.7	42.6	45.7	48.9
Satellite Telecommunications	3.4	3.2	3.2	3.3	4.1
Other Telecommunications	3.9	4.7	3.3	3.3	3.1
Internet Service Providers	150.1	118.9	118.2	129.7	148.4
Engineering Services	283.9	290.1	302.8	329.8	367.3
Testing Laboratories	43.2	42.1	44.0	46.9	45.7
Computer Systems Design	739.6	647.4	688.3	725.8	796.3
Scientific Research	185.8	198.6	196.4	216.7	236.8
Total High Technology Wages	3,263.4	3,002.4	3,034.2	3,167.6	3,500.6
Utah State Wide Wages	32,059.7	32,337.3	32,885.0	35,022.7	37,696.3
High Technology Wages as Percent of Total	10.2%	9.3%	9.2%	9.0%	9.3%

Source: Department of Workforce Services