

**Addendum 1 to the ACM Report on
Globalization and Offshoring of Software
March 27, 2006**

An error was inadvertently made in a calculation on Table 1-8 entitled IT Employment in the United States (US Bureau of Labor Statistics). In the May 2004 column, the cell representing "Computer Specialists, All Others" was accidentally added into the cell for the row labeled TOTAL as well as the cell for the row labeled TOTAL, including Computer Hardware. When corrected, the TOTAL cell for May 2004 is 2,951,260 (rather than 3,081,680) and the TOTAL, including Computer Hardware is 3,026,020 (rather than 3,156,440). Here is the corrected version of Table 1-8:

Table 1-8: (Corrected) Professional IT Employment in the United States (US Bureau of Labor Statistics — Occupational Employment Statistics)

Occupations	Employment								
	1999	2000	2001	2002	May	Nov.	May	Change, May 2003 to May 2004	
					2003	2003	2004	#	%
Computer and Information Scientists, Research	26,280	25,800	25,620	24,410	23210	23,770	24,720	1,510	6.50%
Computer Programmers	528,600	530,730	501,550	457,320	431640	403,220	412,090	-19,550	-4.50%
Computer Software Engineers, Applications	287,600	374,640	361,690	356,760	392140	410,580	425,890	33,750	8.60%
Computer Software Engineers, Systems Software	209,030	264,610	261,520	255,040	285760	292,520	318,020	32,260	11.30%
Computer Support Specialists	462,840	522,570	493,240	478,560	482990	480,520	488,540	5,550	1.10%
Computer Systems Analysts	428,210	463,300	448,270	467,750	474780	485,720	489,130	14,350	3.00%
Database Administrators	101,460	108,000	104,250	102,090	100890	97,540	96,960	-3,930	-3.90%
Network and Computer Systems Administrators	204,680	234,040	227,840	232,560	237980	244,610	259,320	21,340	9.00%
Network Systems and Data Communications Analysts	98,330	119,220	126,060	133,460	148030	156,270	169,200	21,170	14.30%
Computer and Information Systems Managers	280,820	283,480	267,310	264,790	266020	257,860	267,390	1,370	0.50%
Computer Specialists, All Other							130,420	130,420	
TOTAL (Excluding "Computer Specialists, All Other")	2,627,850	2,926,390	2,817,350	2,772,740	2,843,440	2,852,610	2,951,260	107,820	3.79%
Computer Hardware Engineers	60,420	63,680	67,590	67,180	72,550	70,110	74,760	2,210	3.00%
TOTAL, including Computer Hardware Engineers (Excluding "Computer Specialists, All Other")	2,688,270	2,990,070	2,884,940	2,839,920	2,915,990	2,922,720	3,026,020	110,030	3.77%

One of the main points made in Chapter 1 of the report is based upon the data in Table 1-8—that is, the number of IT jobs in the United States has increased since 1999, a period in which there was a high demand for IT workers due to the dot-com boom, even in the face of increasing offshoring of IT work from the US to other countries. With the corrected statistics in Table 1-8 the point still remains true. In 1999, the Total of IT workers was 2,627,850 and the Total, including Computer Hardware, was 2,688,270. Compare these with the 2004 numbers:

2,951,260 Total and 3,026,020 Total, including Computer Hardware. The 2004 numbers are also slightly higher than the numbers for the year 2000, which might represent the height of the dot-com boom.

The US Bureau of Labor Statistics (BLS) has two sources of occupational employment data that can be used to estimate the number of IT workers in the United States. There is the Occupational Employment Statistics (OES), based on semi-annual surveys of 1.2 million employers. The OES data were used in preparing Table 1-8. The other source of BLS occupational data is the Current Population Survey (CPS), based on surveys of around 50,000 households per month. The two surveys are complementary; each has its strengths and weaknesses. During the period of interest—1999 through 2005—the two programs were in the process of changing their occupational classification systems. The changes made were more likely to shift workers among occupations within the IT sector rather than to move workers in or out of IT occupations; thus the aggregate data are less likely to be affected by the changes in occupational classification schemes than the figures for individual occupations. As an alternative to the OES data, some BLS staff suggested we use also the CPS data beginning in 2000 because the occupational classification data are reasonably consistent over this period. If one uses the CPS data for aggregate time-series analysis of the years 2000 to 2005, the comparative results are the same: there are more IT workers in the US at the end of this period—a period of increasing offshoring—than there was at the height of the dot-com boom in the year 2000. (Here also time-series analysis should not be used for individual job categories.) For more details about the OES and CPS data, see <http://www.bls.gov/oes/home.htm> and <http://www.bls.gov/cps/home.htm>. The two data sets support the point made in Chapter 1, which is that IT employment in the US has recovered by 2005 from the decline of the early 2000s in spite of increasing offshoring.

Professional IT Employment in the United States (US Bureau of Labor Statistics—Current Population Survey)

Occupations	Employment (Numbers in thousands)							
					Percentage Change			
	2000	2001	2002	2003	2004	2005	2000-2005	2000-2004
Computer and Information Systems Managers	228	316	323	347	337	351	53.59%	47.81%
Computer Scientists and Systems Analysts	835	734	682	722	700	745	-10.78%	-16.17%
Computer Programmers	745	689	630	563	564	581	-22.01%	-24.30%
Computer Software Engineers	739	745	715	758	813	832	12.58%	10.01%
Computer Support Specialists	350	355	353	330	325	334	-4.57%	-7.14%
Database Administrators	54	66	84	72	94	89	64.81%	74.07%
Network and Computer Systems Administrators	154	185	179	176	190	200	29.87%	23.38%
Network Systems and Data Communications Analysts	305	353	328	359	312	322	5.57%	2.30%
TOTAL	3,410	3,443	3,294	3,327	3,335	3,454	1.29%	-2.20%
Computer Hardware Engineers	83	100	76	99	96	81	-2.41%	15.66%
TOTAL (Including Computer Hardware Engineers)	3,493	3,543	3,370	3,426	3,431	3,535	1.20%	-1.77%