

**I**nformation is a sector that employs a wide spectrum of talents, ranging from the arts and sciences to advertising sales. Occupations in this field generally demand higher levels of education and technical expertise than those required in other sectors. As a result, they also command higher than average wages.

In Alaska, a fairly young, predominantly resident work force staffs this sector. Non-resident workers are, however, an important component in some occupations that require high levels of education and expertise. Occupations in technical and management fields rank highest in terms of pay, while occupations such as arts, media and office support positions rank lowest. As in most other sectors, management and financial occupations tend to have a higher percentage of older workers.

In order to use the most recent data available for this analysis, the years of the data used varied. Estimated employment is based on 2002 data, residency and ages are based on 2003 data and wages are based on 2004 data.

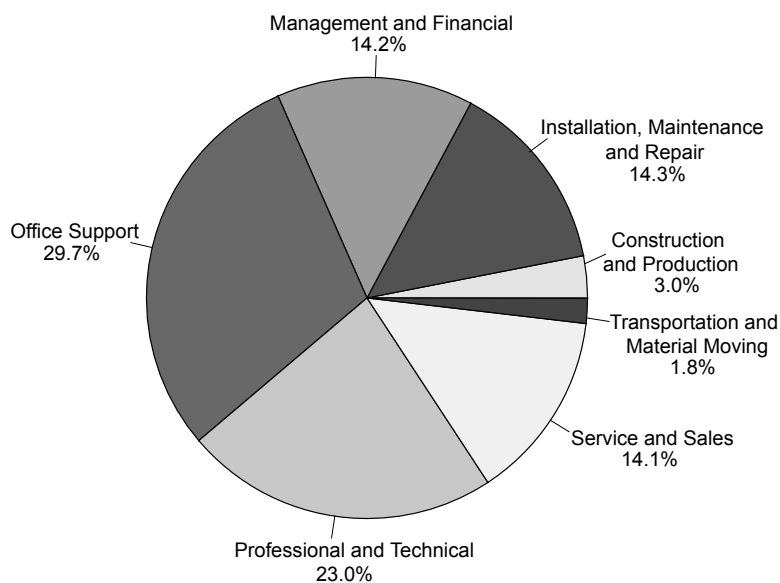
## Information's occupation mix

In 2002, Alaska had 6,900 people working in the 99 occupations of the information sector that had more than 10 employees. This meant that no occupation had very many employees. Two occupations, customer service representatives and telecom equipment installers and repairers, stand out as having the most employees of all the occupations in the information sector. They had 702 and 484 employees respectively. Together, they accounted for 17 percent of the information sector employment.

Seventeen occupations in the information sector had at least 100 employees. The average employment was 201. These 17 represent a total employment of 3,600, or 52 percent of the information sector's employment. Overall, those 3,600 were younger and earned less than those in the information sector's other occupations.

Of the seven major occupational groups (see Exhibit 1), office support accounts for the largest share at 29.7 percent. Professional and technical occupations followed at 23 percent. These two groups represent 53 percent of the sector's employment.

## 1 The Staffing Pattern Alaska's information sector 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

## Education levels

Of the 99 occupations, 36 typically require a bachelor's degree or above. (See Exhibit 2.) Another 30 occupations require medium or long-term training or experience. There are interesting differences between these two groups: Those occupations requiring a bachelor's degree or above had more workers age 50 or older (27.7 percent). They also had average wages that were significantly higher than those occupations requiring medium or long-term training or experience. In fact, the occupations requiring a bachelor's degree or above were paid more than all the other groups categorized by required education, training or experience.

The occupation education level that had the lowest percentage of older workers and the lowest average wage was, predictably, short-term training or experience. The average wage across all employment sectors was \$13.16<sup>1</sup>, less than half the average in the bachelor's degree or higher level category. On the other hand, occupations requiring work experience in a related occupation, which includes mostly first-line supervisors or other lower managers, had the second-highest wage level (\$24.48) and had the second-highest percentage of older workers (26.6 percent). Occupations requiring an associate degree or significant post-secondary vocational training, such as those in the electronics, broadcast, computer support and desktop publishing fields, had the third-highest average wage (\$23.81) and the same percentage of older workers (26.6 percent).

## Older workers

The baby boom generation is middle-aged now, and that much closer to retirement, so statistics involving older workers are a greater issue today than they were a decade ago. Twenty-four percent of the workers in the information sector occupations in 2003 were 50 or older.<sup>1</sup>

There are 20 occupations with a 30-percent or higher portion of their workers who are 50-plus. Five occupations – industrial engineers, librarians, broadcast technicians, chief executives and engineering managers – have 40 percent or more who are 50 or older. The first two, industrial engineers and librarians, have over 50 percent. What's more, when the age criteria is dropped to 45, not only do all those 20 occupations exceed 40 percent, so do an additional 21 occupations. Nine occupations then exceed 50 percent, two exceed 60 percent – chief executives and librarians – and two even exceed 70 percent – industrial engineers and broadcast technicians. Replacements in these occupations will be critical as those workers retire.

Some positions, such as chief executives and editors, tend to naturally be filled by advancing employees. Others, such as the writers and authors occupation, are niche jobs. Still others, such as industrial engineers, librarians and budget analysts, need more education and training than the average employee in the information sector or in Alaska.

The 20 occupations with a 30-percent or higher portion of their workers who are 50-plus tend to have small numbers of employees – only two have more than 100 employees – but they are key occupations, both to their organizations and to the economy. It is also interesting that the average wage of those occupations is considerably higher than average for the information sector and this group has a somewhat higher level of non-resident workers.

## Non-resident workers

The overall occupational average of non-resident workers in the information sector in 2003 was 11.3 percent, though some occupations were much higher. Six occupations have particularly high rates of non-residents: first-line supervisors/managers of production and operating workers (28.7 percent), industrial engineers (28.6 percent), art and design workers and others (24.4 percent), management analysts (22.4 percent), computer hardware engineers (21.3 percent) and budget analysts (19.3 percent).<sup>1</sup> All these positions require substantial education, training or experience. These are also occupations, with the exception of computer hardware engineers, with higher levels of older workers.

## Wages

Again, data collected on wages in each occupation are not industry-specific. Rather, they are cultivated from all industries and are therefore economy-wide rates. Even so, it is interesting to look at the occupations in the information sector to get an impression of possible wages.

About 60 percent of the occupations in the information sector had average wages equal or above the state average. Management occupations dominated the top spots with seven of the top 15. Two occupations, chief executives and engineering managers, stand out. Their average wage was \$54.49 and \$47.03 an hour, respectively. The rest of the top spots were filled with engineering, computer, business and financial, and science occupations. Not surprisingly, these are all occupations that typically require higher levels of education or experience or both. They also tend to have higher percentages of older workers.

Computer, engineering, management, electronic and analytical occupations dominated the group with high entry-level wages. Those with the lowest entry-level wages tended to be in office support, retail trade, janitorial, photography, media or printing occupations. Many of these have the lowest overall wages as well.

## The future

As a group, these occupations are not expected to grow much in the next few years, as the industry stands now. The result is that occupational opportunities in the information sector will frequently be in the form of replacement openings as the baby boom generation retires.

<sup>1</sup> These data are collected across all industries, thus are not industry-specific.

# 2 Occupations in the Information Sector

Occupation	Employment Total -- Information Industry (2002) <sup>1</sup>	Employment Total -- All Industries (2002) <sup>2</sup>	Average Hourly Wage <sup>3</sup>	2003 Percentage Nonresident Workers <sup>2</sup>	2003 Workers Age 50+ <sup>2</sup>	2003 Workers Age 45+ <sup>2</sup>
<b>BACHELOR'S OR ABOVE</b>						
News Analysts, Reporters and Correspondents	236	263	*	10.3	22.2	32.0
General and Operations Managers	215	7,391	33.45	10.9	31.0	48.3
Electronics Engineers, Except Computer	97	150	33.75	11.6	27.6	39.6
Editors	89	154	21.39	4.7	30.7	44.8
Engineering Managers	70	469	47.03	17.9	40.4	59.2
Network Systems and Data Communications Analysts	69	171	26.92	7.8	15.0	33.3
Accountants and Auditors	65	1,795	26.53	6.0	26.2	43.4
Network and Computer Systems Administrators	64	408	28.39	6.9	17.4	29.2
Management Analysts	53	651	31.40	22.4	33.6	50.4
Marketing Managers	51	299	33.10	10.1	28.4	44.7
Chief Executives	50	1,133	54.49	7.9	45.5	65.7
Financial Managers	50	1,424	34.40	6.6	27.8	47.8
Computer Programmers	47	547	28.64	7.6	24.7	46.5
Administrative Services Managers	46	1,204	25.91	6.2	33.6	53.0
Sales Managers	44	605	34.20	6.9	23.5	41.5
Computer Software Engineers, Applications	44	149	32.25	7.5	20.1	37.6
Computer Systems Analysts	41	786	34.99	7.7	25.7	44.1
Art and Design Workers, All Other	41	341	29.03	24.4	25.2	50.4
Advertising and Promotions Managers	39	233	25.63	6.7	25.0	37.5
Graphic Designers	37	255	17.64	10.9	11.3	22.0
Producers and Directors	36	130	18.60	9.1	23.2	40.2
Computer Hardware Engineers	35	36	*	21.3	15.0	30.0
Computer and Information Systems Managers	33	410	36.83	4.6	25.0	45.3
Financial Analysts	31	198	36.69	12.6	16.3	40.5
Database Administrators	30	129	29.42	4.3	25.9	41.1
Market Research Analysts	28	62	34.73	17.5	20.0	37.1
Budget Analysts	28	261	27.98	19.3	32.5	55.6
Business Operations Specialists, All Other	19	2,474	29.73	8.5	34.1	53.1
Human Resources Managers	18	398	*	3.1	29.9	52.8
Training and Development Specialists	18	372	22.50	4.3	27.1	42.1
Librarians	17	445	23.63	3.3	52.2	69.4
Writers and Authors	17	160	23.32	8.8	33.8	49.2
Industrial Engineers	13	84	38.20	28.6	52.9	70.6
Technical Writers	12	48	23.58	9.9	24.3	45.9
Compensation, Benefits, and Job Analysis Specialists	10	146	24.24	3.2	30.4	48.9
Computer Software Engineers, Systems Software	10	64	34.37	9.8	13.8	26.4
<b>ASSOCIATE OR SIGNIFICANT POSTSECONDARY VOCATIONAL TRAINING</b>						
Computer Support Specialists	127	886	21.92	7.1	13.5	25.7
Electrical and Electronic Engineering Technicians	97	414	30.39	16.3	34.3	53.4
Electrical and Electronics Repairers, Commercial and Industrial Equipment	52	272	27.37	18.3	30.7	48.2
Broadcast Technicians	45	48	16.97	2.5	51.9	73.8
Desktop Publishers	22	37	18.62	5.6	11.8	17.6
Electrical and Electronics Drafters	17	72	27.61	5.7	17.6	32.4
<b>WORK EXPERIENCE IN A RELATED OCCUPATION</b>						
First-Line Supervisors/Managers of Office and Administrative	181	3,066	22.82	7.1	27.5	45.9
First-Line Supervisors/Managers of Mechanics, Installers, Repairers	106	1,162	32.31	9.5	35.7	55.8
Managers, All Other	92	4,231	31.45	10.2	28.9	48.2
First-Line Supervisors/Managers of Non-Retail Sales Workers	38	540	28.69	5.3	16.4	32.3
First-Line Supervisors/Managers of Production and Operating Workers	27	851	26.15	28.7	30.5	49.3
Purchasing Agents, Except Wholesale, Retail, and Farm Products	24	531	25.50	5.0	32.1	49.5
Food Service Managers	17	847	17.00	10.8	22.6	39.4
First-Line Supervisors/Managers of Retail Sales Workers	16	3,401	18.00	8.9	18.6	31.4
First-Line Supervisors/Managers of Personal Service Workers	10	379	18.42	11.5	27.5	40.1

# Occupations in the Information Sector 2

(continued)

Occupation	Employment Total -- Information Industry (2002) <sup>1</sup>	Employment Total -- All Industries (2002) <sup>2</sup>	Average Hourly Wage <sup>3</sup>	2003 Percentage Nonresident Workers <sup>2</sup>	2003 Workers Age 50+ <sup>2</sup>	2003 Workers Age 45+ <sup>2</sup>
<b>MEDIUM OR LONG-TERM TRAINING OR EXPERIENCE</b>						
Customer Service Representatives	702	1,981	16.27	11.4	13.9	23.6
Telecom Equipment Installers and Repairers, Except Line Installers	484	681	27.01	7.8	25.5	44.1
Telecommunications Line Installers and Repairers	240	335	26.22	15.1	20.3	36.3
Advertising Sales Agents	237	286	22.81	11.5	21.6	35.7
Bookkeeping, Accounting, and Auditing Clerks	150	5,312	16.90	6.6	23.8	37.8
Announcers	126	218	*	10.2	17.3	29.1
Executive Secretaries and Administrative Assistants	114	3,251	18.47	7.3	23.2	37.2
Sales Reps, Wholesale and Manufacturing, Except Technical/Scientific Products	102	1,780	22.41	5.6	19.1	35.5
Sales and Related Workers, All Other	83	1,156	15.15	14.1	15.1	23.1
Dispatchers, Except Police, Fire, and Ambulance	79	653	18.07	9.3	22.7	40.1
Sales Reps, Wholesale and Manufacturing, Technical and Scientific Products	72	263	25.92	8.1	17.5	32.4
Maintenance and Repair Workers, General	67	3,514	19.28	13.1	28.1	45.3
Photographers	48	135	17.46	15.3	5.9	13.1
Printing Machine Operators	46	190	19.26	9.5	18.5	36.5
Paper Goods Machine Setters, Operators, and Tenders	41	41	*	0.0	0.0	25.0
Audio and Video Equipment Technicians	40	91	14.21	8.8	9.3	14.4
Media and Communication Workers, All Other	38	258	17.30	15.5	22.7	34.8
Computer Operators	38	244	18.81	9.5	19.8	36.6
Camera Operators, Television, Video, and Motion Picture	37	49	12.30	5.3	2.6	7.9
Secretaries, Except Legal, Medical, and Executive	31	3,886	14.89	6.8	25.2	40.6
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	31	165	*	*	*	*
Prepress Technicians and Workers	30	77	16.71	3.1	19.0	33.3
Material Moving Workers, All Other	25	768	17.56	13.0	21.8	38.6
Interpreters and Translators	22	68	23.72	17.0	35.3	45.1
Job Printers	21	53	16.19	17.9	30.4	43.5
Payroll and Timekeeping Clerks	16	651	18.16	6.4	21.1	38.6
Photographic Process Workers	16	64	9.24	19.2	7.0	18.6
Media and Communication Equipment Workers, All Other	15	78	26.47	8.1	17.1	22.9
Billing and Posting Clerks and Machine Operators	14	1,217	15.79	5.9	17.9	29.5
Data Entry Keyers	13	324	14.23	16.1	12.8	21.5
<b>SHORT-TERM TRAINING OR EXPERIENCE</b>						
Office Clerks, General	204	7,324	14.23	10.8	20.4	32.2
Telephone Operators	142	150	*	5.3	26.4	39.2
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	123	1,072	8.50	12.3	10.1	18.5
Order Clerks	112	383	15.07	6.9	15.5	27.2
Ushers, Lobby Attendants, and Ticket Takers	81	95	8.03	19.1	4.8	5.9
Cashiers	61	6,721	10.50	14.8	12.0	19.2
Receptionists and Information Clerks	61	3,237	12.46	12.4	16.7	25.7
Production, Planning, and Expediting Clerks	61	435	20.81	8.4	20.1	33.0
Machine Feeders and Offbearers	50	146	9.28	13.0	20.2	25.0
Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	46	239	9.33	14.7	17.4	32.1
Motion Picture Projectionists	39	39	10.50	0.0	0.0	0.0
Bill and Account Collectors	38	587	17.34	11.2	18.2	28.2
Retail Salespersons	36	8,476	12.78	15.4	15.1	23.4
Office and Administrative Support Workers, All Other	33	1,600	15.91	8.4	19.4	30.4
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	27	5,751	12.24	11.4	26.1	39.6
Couriers and Messengers	27	234	13.84	9.7	17.2	29.4
Driver/Sales Workers	23	896	13.51	14.7	15.6	25.1
Shipping, Receiving, and Traffic Clerks	11	1,289	15.61	9.7	15.6	27.8

**Notes:**

<sup>1</sup> Occupations with employment less than 10 workers not included.

<sup>2</sup> Data across all industries.

<sup>3</sup> May 2004 wages - Occupational Employment Statistics (OES) Program

\* Data not available.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section