

berg, a program for digitizing books, is the creation of Michael Hart, professor of electronic text at Illinois Benedictine College in Lisle, Illinois. The Library of Congress is also digitizing its collection, and much is now currently available on the Internet. In addition, many periodicals have online editions.

Electronic resources will continue to enhance the information available to library users. Online mediated searching, CD-ROM, and various databases provide references that were previously unavailable. Online searching is the most common electronic option and was the first electronic reference service to be offered by research librarians in the 1970s.

### FURTHER READING

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## SIC 8243

### DATA PROCESSING SCHOOLS

The data processing schools category encompasses establishments primarily engaged in offering data processing courses or training in computer programming and computer peripheral equipment operation, maintenance, and repair. Schools offering an academic degree in computer sciences are classified in **SIC 8221: Colleges, Universities, and Professional Schools**.

### NAICS CODE(S)

611420 (Computer Training)

611519 (Other Technical and Trade Schools)

### INDUSTRY SNAPSHOT

Data processing schools are profit-making institutions that teach specific skills required for computer-related jobs. The types of schools range from residential vocational training schools to correspondence school programs. The U.S. Census Bureau showed that there were 10 exclusive establishments in the data processing schools industry in 1992. By 1997, 2,785 establishments were listed as offering computer training, but not all were data processing schools exclusively. Most were headquartered in California, Connecticut, Illinois, New Jersey, New York, Pennsylvania, and Wisconsin. Several schools were subsidiaries of larger corporations.

Computer consulting and training is a multi-billion dollar industry. The growth of this industry, however, does not necessarily translate to the data processing schools industry, which is limited by competition from computer-related training in secondary and other post-secondary schools and the availability of self-tutorials. On the other hand, the market for data processing schools could increase as employers demand specialized skills from their workers and other post-secondary education becomes more expensive. Successful marketing of data processing schools as a less expensive and more job-specific alternative to college and university education is essential for growth.

### INDUSTRY LEADERS

The National Education Training Group (NETG), a subsidiary of National Education Corporation, which was acquired by Sylvan Learning Systems in March, 1997, is the global leader in information technology and interactive media-based learning. Its broad area of training ranges from programming to networking. NETG has been successful due to its diversified offerings, including multimedia products to train information technology professionals and end-user clients. NETG courses also include training to prepare professionals for vendor certification exams. NETG students may choose to combine media-based courses with classroom instruction. In February, 1997, NETG was selected by Microsoft Corporation to provide computer-based training to its employees.

### WORKFORCE

Most instructional staff members of data processing schools hold bachelor's degrees and have worked in the data processing field prior to becoming instructors. According to U.S. Census Bureau information released in 1999, employment in the industry in 1997 was listed as 28,848 people—from 8,200 in 1987. Industry payroll

increased as well, from \$165.3 million in 1987 to \$970.2 million in 1997.

### AMERICA AND THE WORLD

The U.S. data processing network is among the world's largest, and much of the industry's growth potential exists in foreign markets. *U.S. Industrial Outlook* estimates that more than 28 percent of computer education and consulting revenues will come from foreign countries.

Data processing schools must continue to work closely with the computer industry to train workers adequately. Computer hardware and software change frequently, and the schools must strive to utilize state-of-the-art equipment to prepare students for employment in an increasingly computer-reliant business world.

### FURTHER READING

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## SIC 8244

## BUSINESS AND SECRETARIAL SCHOOLS

This category includes establishments offering courses in business machine operation, office procedures, and secretarial and stenographic skills. Schools offering academic degrees are classified in Industry Groups 821 and 822.

### NAICS CODE(S)

611410 (Business and Secretarial Schools)

### INDUSTRY SNAPSHOT

Independent business and secretarial schools, once widespread, have steadily decreased in number since the 1950s as business education has migrated to colleges and universities and secretarial training has undergone a transformation. Where secretaries were once responsible for typing, filing, and taking dictation, their tasks have grown to encompass computerized business systems. Secretarial training is typically part of vocational training offered at technical and community colleges, which have

the financial resources to purchase business equipment for students. The term "secretarial school" itself has become antiquated in the United States; today most business and secretarial schools leave the word "secretarial" out of their name.

In the mid 1990s, there were 581 business and secretarial schools operating in the United States, employing 10,900 people and earning \$554 million in revenues.

### BACKGROUND AND DEVELOPMENT

For centuries the profession of secretary was dominated by educated, economically lower-class males. Because there was no specialized equipment, a liberal arts education was considered adequate for a secretary's schooling. When the English gunsmith firm E. Remington and Sons began to produce typewriters in 1873, they employed young women to demonstrate the machines. As a result, the secretarial profession became associated with females. Remington and other companies established schools that offered typing instruction. These schools later evolved into secretarial schools. The Katharine Gibbs School—founded in 1911 in Providence, Rhode Island—became one of the most noteworthy names in the industry, branching into 11 separate locations by 1985. In the 1990s, Gibbs offered a one-year program, a two-year program, an Entre program for college graduates, and an Options program for those who were returning to work and wanted to improve particular skills.

Because some American executives believed that British secretaries were a status symbol, firms such as England's Brook Street Bureau of Mayfair, Ltd. trained secretaries and placed them in U.S. companies. Changes in immigration laws in the 1960s restricted such placement, and Brook Street established its own secretarial schools in the United States. The 1960s also saw the return of men into the American secretarial work force. Men trained in secretarial schools were often hired by female executives who were eager to reverse conventional gender roles.

Secretarial training became a common facet of community college systems as these institutions grew in number and stature during the 1960s and 1970s. Government funding for community colleges provided all members of the community the opportunity to acquire valuable skills. As Charles Myers wrote in 1970 of a secretarial training program at the Southern Nevada Vocational Technical Center, "The secretarial student who completes her course at the Las Vegas Vocational Center is entering the business world better equipped to handle today's modern business equipment than were any of her predecessors. . . . Thus, the community which has invested in her training gets its return at a higher interest rate than ever before."