

Low-tech US jobs boom?

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Twenty-one million new jobs are expected in the United States by the year 2000, and unemployment is likely to fall to 6 per cent.

THE Bureau of Statistics is projecting 21 million new jobs in the United States before the year 2000, an increase of nearly 20 per cent. The service sector will expand, but agriculture will continue its long-term employment decline; the growth in manufacturing output is expected to be overtaken by productivity gains leading to further employment decline, a reversal of the recent improved employment prospects. Among the goods-producing industries, only construction is showing long-term job growth, with an increase expected of 900,000 jobs almost matching the expected decline of 800,000 jobs in manufacturing. The proportion of jobs in the service sector is expected to rise from 3 in 4 in 1986 to almost 4 out of 5 in the year 2000. When account is taken of the 18 per cent growth in the labour force that the bureau is projecting, the unemployment rate will fall to 6 per cent. This assumes economic growth of about 2.4 per cent a year, slightly less than the 2.5 per cent achieved over the past 14 years; it assumes also that exports will increase their share of GNP, imports will retain a static share and defence and state and local government will have a reduced share although government will

Sectoral change 1986–2000 mid-point estimates (thousands)

Mining	–59
Construction	+890
Manufacturing	–835
Transport & utilities	+475
Wholesale Trade	+1,531
Retail Trade	+4,857
Finance etc	+1,620
Services	+10,014
Government	+1,618
Agriculture	–335
Self employment	+1,630

increase its rate of growth. Alternative scenarios are also presented but the focus here is on the mid-point trends and those of importance to the scientifically and technologically qualified.

Although the manufacturing sector is the traditional employer of scientific and technological manpower, its contraction is not a picture of complete gloom. For example, employment in computer and office equipment manufacture is expected to grow by about 85,000 jobs, or 20 per cent, although this represents a considerable slowdown in historic terms. Another high-technology area is electronics, where

employment is expected to remain static, although with a considerable expansion in companies producing health-related products and those producing satellites, fibre optics, and laser and broadcast equipment for private users, which will counteract the decline in defence demand. The other growth sector in manufacturing is pharmaceuticals, where advances in biomedical research are leading to new drugs and diagnostic tools; the growth in the elderly population, who are high spenders on these products, will further boost demand, employment growing by nearly 8 per cent to reach 224,000 by the year 2000.

It is the service sector, however, that will be the job generator of the future, matching broader trends in the developed world (*Nature* 331, 464; 1988, and 332, 96; 1988). The most rapidly growing service sector will be computer and data-processing services: growth in demand for specialized systems by government and business will continue to boost the demand for systems design and analysis, programming and software development skills. Employment in this sector is expected to double to 1.2 million by the end of the century. With the ageing population boosting demand for health care, employment in health services is expected to expand by over 3 million, a nearly 50 per cent increase. But cost-containment policies are halting, at least temporarily, the growth in demand for hospital facilities and promoting outpatient services, so employment growth is expected to centre on the offices of health practitioners. Other rapidly growing sectors will be business and personal services, including the temporary help phenomenon, and the retail and wholesale trades.

How then do these sectoral trends affect the job prospects for scientists and technologists? For life scientists, job growth will be in line with the national average at 21 per cent, or 30,000 jobs, building on the advances in genetic research in areas such as new medicines, plant and animal developments, and diagnostic techniques for genetic defects. Employment of physical scientists is expected to expand rather more slowly at 13 per cent, with 24,000 jobs being added because of military and private research and development, and with new prospects in advanced areas such as laser research and high-energy physics. Jobs for computer systems

analysts will show far higher rates of growth, with 250,000 more jobs, an increase of 76 per cent. The expansion in the computer industry will account for about half this growth.

In engineering, electrical/electronic engineers lead the jobs boom with a net gain of 192,000 jobs, a 48 per cent growth, building on the expansion in communications, computing and electronics industries as they seek to remain competitive by using these skills to design new products and to improve existing products and production processes. A further 76,000 jobs are expected for mechanical engineers,

High-tech job growth in selected occupations 1986–2000 (thousands)

Computer science	251
Computer programming	335
Electrical engineering	192
Physicians/surgeons	188
Mechanical engineering	76
Life sciences	30
Physical sciences	24

Source: US Bureau of Labor Statistics

not only in manufacturing but also in service companies and the temporary-help sector. The expansion in health care will add 188,000 jobs for physicians and surgeons, up by 38 per cent. Technicians will also gain in all these sectors, with the main increase being for health technicians (663,000 jobs), computer programmers (335,000 jobs) and in engineering and science (285,000 jobs). But college and university are expected to fall by 4 per cent because of a decline in enrolments.

In themselves, these figures give support to a thesis of a high-technology future where job opportunities will go to the highly qualified. But in reality, the real growth in job opportunities will be in low-technology areas such as retail sales where jobs will grow by over one million; there will be 750,000 more jobs for waiters and 600,000 for cleaners and janitors, but few of these jobs will offer chances of promotion and advancement. There will be an increase in the proportion of jobs normally filled by college leavers, but they will still only account for about 1 in 4 jobs at the end of the century and low technology will remain predominant. □

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