

## MARKET REPORT: Cleanrooms

**Annual average growth of just 8.5 per cent is forecast for the cleanroom industry between 1995 and 2000, well below the double digit annual growth experienced by the industry since the 1960s.**

According to *World Cleanroom Markets 1999 addendum* just published by the McIlvaine Company, the slower growth rate reflects the slowdown in Asia and its impact on the semiconductor industry. Orders for cleanrooms for all industries will increase to US\$2.3 billion in 2000, up from US\$1.5 billion in 1995. Growth in the pharmaceutical, automotive, medical device and other segments will more than offset the reduction in the semiconductor sector, where orders are expected to fall from US\$595 million in 1995 to US\$571 million in 2000.

Cleanroom markets in Japan, Korea, Indonesia and Russia will experience negative growth over the five year period. The US and Taiwan are experiencing healthy growth rates, while many European countries have shown good growth due to a balance between the semiconductor and pharmaceutical segments. After a slow start, Germany is experiencing good growth in the biotechnology segment.

According to McIlvaine, suppliers of cleanrooms have traditionally specialised either in electronics or bioclean applications. The electronics applications demand skills in reducing static and small particulate. This group includes semiconductors, disk drives, and flat panel displays. The bioclean group includes biotechnology, pharmaceuticals, hospitals, and animal research and microorganisms are their main concern. Because of this specialisation,

some suppliers have experienced higher growth in sales and earnings. However, companies focusing primarily on electronics applications have been forced to drastically reduce expenses to avoid losses.

Suppliers of disposables such as garments and wipes have also experienced slower growth than in the 1990 to 1995 period. But the reduction in the semiconductor sector has not been as pronounced. McIlvaine forecasts that the semiconductor segment for disposables will shrink from 45 per cent to 32 per cent of the total over the 1995-2000 period while the semiconductor segment for hardware will fall from 38 per cent to just 24 per cent of the total over the same time frame.

Despite the volatility of the semiconductor industry, huge expenditures are forecast between 2000 and 2005. As demand for chips expands beyond the personal computer market, chip manufacturers will not only have to contend with higher production requirements but also with the obsolescence of their 200 mm wafer plants. The year 2000 will usher in the decade of the 300 mm wafer and McIlvaine predicts that massive cleanroom expenditures will accompany this change in wafer size. Anticipating the exact timing of these capacity increases will be difficult.

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## ECONOMIC REVIEW

**According to Cambridge Econometrics, the UK economy will narrowly avoid recession in 1999. The latest edition of *Industry and the British Economy* finds that GDP growth slowed sharply during 1998, led by a slowdown in household spending. GDP growth of about 0.5 per cent is expected for 1999, accelerating to 1 per cent in 2000.**

UK household incomes growth looks set to slow further in 1999, reflecting the sharp slowdown in the economy that began towards the end of last year. This weakening in income growth, combined with a more subdued housing market, is forecast to restrict growth in household spending to just 1 per cent in 1999. However, a recovery is expected in 2000. Investment in the UK economy is set to fall in 1999 as output prospects weaken and profitability declines.

According to *Industry and the British Economy* following the economy-wide downturn in 1998, most manufacturing industries are expected to see output fall in 1999. During 1997, manufacturing saw modest growth, in spite of the strength of sterling, thanks to strong domestic demand.

This situation began to change during 1998 and domestic demand is now very weak. However, the recent cuts in interest rates should offer support to boost domestic demand and investment and help the exchange rate to return to a more sustainable level, improving exporters' prospects of reclaiming market share in both the domestic and world markets. As a result, most areas of UK manufacturing should return to positive growth in 2000.

In terms of specific industries, mining output is forecast

to decline from the beginning of the next decade. Oil production is expected to plateau first and then go into decline. In manufacturing, growth is expected to be strongest in export-oriented globalised industries such as pharmaceuticals and electronics.

### EXCHANGE RATES AGAINST THE US DOLLAR

**Date: 9 April 1999**

COUNTRY	RATE
Australia	A\$1.59
Austria	Sch12.77
Belgium	BFr37.43
Canada	C\$1.50
China	Yn8.28
Denmark	DKr6.90
Finland	FM5.52
France	FFr6.09
Germany	DM1.81
India	Rs42.67
Italy	L1796.75
Japan	¥121.10
Malaysia	Rt3.80
Netherlands	F12.05
Norway	NKr7.79
Philippines	Peso38.53
Singapore	S\$1.73
South Africa	R6.19
South Korea	Won1223.10
Spain	Pta154.40
Sweden	SKr8.28
Switzerland	SFr1.49
Taiwan	T\$33.10
Thailand	Bt37.95
UK	£0.62
USA	US\$1.00
Euro	€0.93