

past. New hydraulic, pneumatic, micro-electronic and laser technology has given renewed impetus to mechanical engineering, thereby fostering innovations in production.

Moreover, today there is a beneficial trend to combine machines and processes within increasingly bigger systems. The term mechanical engineering is now being viewed as out-of-date in describing today's machine manufacturing industry.

Broadly speaking, machine firms have extensive expertise in adapting to the specific needs of their clients. For this reason, a number of machines with special capabilities have been developed. Small-scale and single-piece manufacturing is of top concern and large-scale manufacturing is the exception.

Structure of the Industry

The EC's mechanical engineering industry mainly comprises small and medium-sized businesses. The average size of firms is 110 employees, similar to the mechanical engineering industry in the U.S. and Japan. The industry's extensive production diversity and its high degree of specialization in single-piece and small-scale series production give it a competitive advantage. No changes have been observed in recent years, and all indications are that the situation will continue, even after the completion of the Single Market. However, a growing trend has been noticed on the part of non-EC firms to buy a stake in EC firms in order to gain a foothold in post-1992 Europe. To date, no major merger has taken place. According to a survey conducted in Germany's mechanical engineering sector, only 5 per cent of businesses planned to strengthen their situation through takeovers with a view to consolidating their position in the Single Market. On the other hand, 21 per cent of the firms surveyed expressed the desire to set up co-operation agreements in preparation for the Single Market. This latter strategy would

probably best suit the EC's small and medium-sized businesses.

Environmental Protection

Generally speaking, mechanized production does not seriously threaten the environment. Noise has traditionally been considered the most worrisome problem. Today, thanks to steady improvements in production techniques and processes, noise has been sharply reduced. However, certain processes, such as hardening and galvanizing, can cause serious harm to the environment. In the trend toward lesser vertical integration of production, these processes are increasingly carried out by experts outside the machine production category. In general, costs arising from environmental protection in this area are relatively low.

Moreover, there is a strong demand for new capital goods for environmental protection, a trend that offers new possibilities for innovation and boosting of yield.

c) The 1992 Single Market

The 1992 Single Market will offer many attractive opportunities, and businesses hope to secure more outlets for their products; however, they can also expect stiffer competition. These two considerations should prompt them to invest more in new technologies. Preparations for the Single Market have already revived investment in recent years.

Spending on R&D in machine production has also been given greater priority in the run-up to 1992. The resulting production innovations are crucial for achieving greater competitiveness in this area. Microelectronics and automation have radically altered a great many production methods. The machine production industry both supplies and acquires new production technologies that help to step up productivity and strengthen competitiveness. In addition, supplementary investment in new technologies has a beneficial impact on