

### **Animation 3.4**

Researchers at Warwick University adopted the Hayes & Wheelwright frame, but this time looked at Customer Processing Operations. They looked at a large number of operations and categorised them by their variety of product offering and the volume of output.

They called the first type of process where there was very high variety and very low volume a Professional Service. This is typical of architects, doctors and dentists where they manage their time and costs closely by offering appointments rather than being available at all hours.

A service shop process is one with slightly more volume but again with high variety. Car repair workshops are good examples of this type of operation. The highest volume customer processors were called Mass Services where little interaction occurs between the operation and each individual customer. Examples of this are supermarkets, airports and railway terminals.

These job types were aligned on a diagonal from left to right on the diagram where high variety was aligned with low volume and vice versa to produce the lowest cost operation.

However modern businesses now need to offer a higher variety with a high volume to satisfy customers' needs and this has meant a shift to other process types which can offer this flexibility whilst keeping costs down.

These methods of customer processing have become increasingly important in recent years and we have modified the original graph take account of this. They are in what we term the strategic management area and we discuss each in different sections of the book.