B Business Management – Operations Management
5.5 Production Planning – Capacity Utilisation Summary Notes

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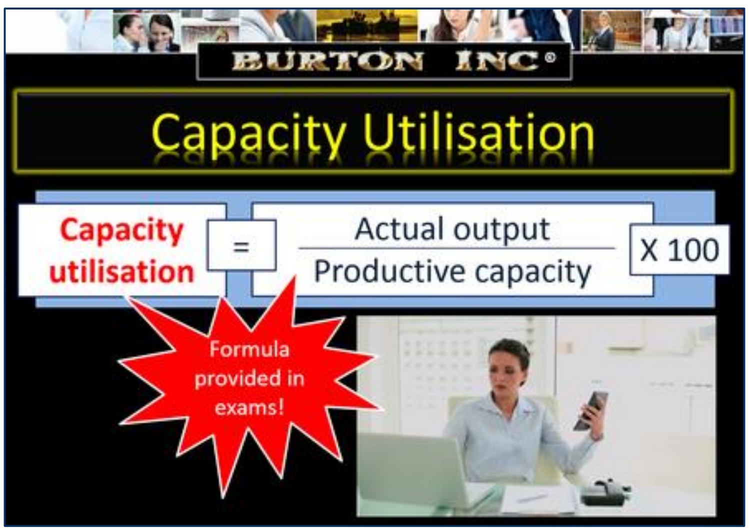
CAPACITY UTILISATION



Calculating Capacity Utilisation

Capacity utilisation: the proportion of maximum output capacity currently being achieved.

The capacity utilisation rate provides with the value of production capacity which is actually being used over a specified period, and by providing the output in percentages, it can provide you a clearer idea of the total utilisation of resources and how better the production company can fare in case total output is increased and without it effecting the overall cost of production to the company.

Although capacity utilisation rate is important for several business decisions, it is still not enough to provide with the actual feedback necessary for economic and market conditions at a given particular time. A decrease in the capacity utilisation rate percentage denotes a slowdown in a firm's production, an increase shows expansion.

The capacity utilisation rate cannot exceed beyond 100% as no machine or human can be expected to work to a full capacity of 100%, the maximum capacity utilisation rate that can be expected is around 90% as there can be many problems that can arise both with the staff and machinery. You can have several issues relating to working of machinery that would not allow you to have optimum output, for example scheduled maintenance. Similarly, a worker cannot always perform to his maximum every day, sooner or later they will fall ill or take a holiday. Thus, the capital utilisation rate provides us with a rate that can help the firm's management with establishing the general output that can be generated by the firm.

Operating at a relatively high capacity utilisation is important for firms that have:

- **Low profit margins.** A firm that produces products that have a low profit margin needs to produce and sell in large volumes to be profitable. This is more applicable to mass and flow production methods of production (make links to Topic 5.2) such as computer chip manufacturing, where very little profit is made on each chip, but hundreds of millions are made and sold.
- **High fixed costs.** Fixed costs do not increase or decrease with the quantity of product produced (rent, loan repayments, manager's salaries, etc.). **The higher the capacity utilisation, the lower the average fixed costs of the firm will be**. Average fixed costs are calculated by dividing the total fixed costs by the quantity produced.
- **A high break-even level of output.** A firm that needs to produce and sell a lot of product before they are able to break-even, will look to have a high capacity utilisation rate. The higher the capacity utilisation, the sooner break-even is achieved and profits follow (make links to Topic 3.3).

There are potential drawbacks to operating at a very high capacity utilisation for a long period of time:

- Staff may feel under pressure due to the workload and this could raise stress levels. Operations managers cannot afford to make any production scheduling mistakes, as there is no slack time to make up for lost output.
- Regular customers who wish to increase their orders will have to be turned away or kept waiting for long periods. This could encourage them to use other suppliers with the danger that they might be lost as long-term clients.
- Machinery will be working flat out and there may be insufficient time for maintenance and preventative repairs and this could lead to increased unreliability in the future.

So many firms attempt to maintain a very high level of capacity utilisation, but to keep some spare capacity for unforeseen eventualities. However, **high capacity utilisation is not a substitute for growth**. Most organisations seek growth and increasing demand for the products they are marketing. Taking on extra orders for products will require a firm to raise its productive capacity – expand its scale of production.