

Critical Planning Issues In MTO Environment

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Manufacturing Companies Differ

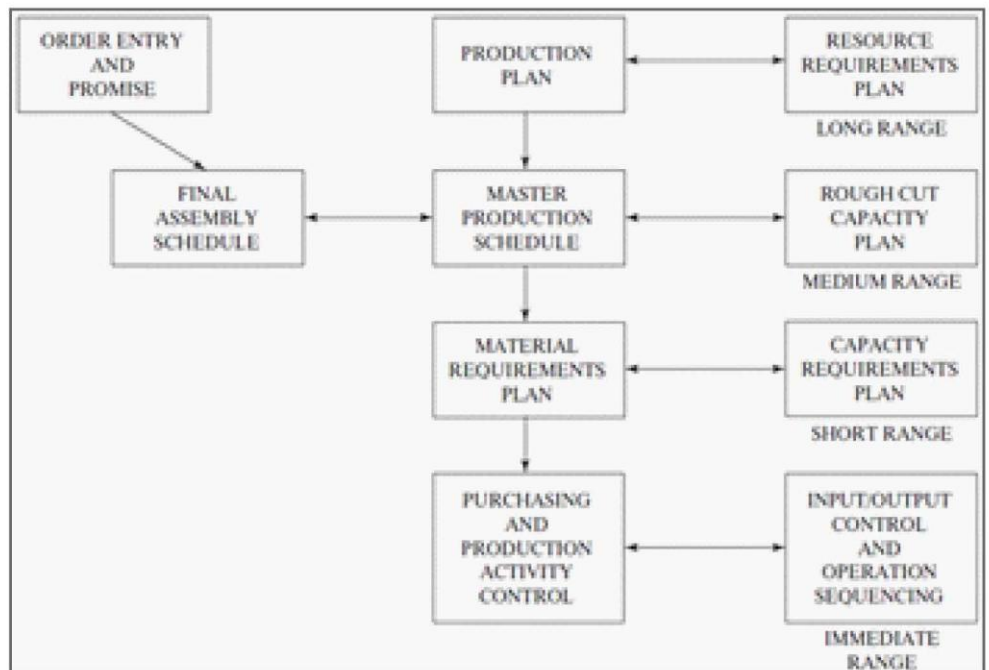
in the way they meet their demand. Some deliver products to their customers from finished goods inventories as their production anticipates customers' orders; others, however, manufacture only in response to customers' orders.

A make-to-order (MTO) manufacturing environment has to supply a wide variety of products, usually in small quantities, ranging from standard products to all orders requiring a customized product. MTO companies primarily compete on delivery time and reliability in meeting due dates and flexibility to adapt (to product mix and volume). Likewise, MTO companies, like all companies, are subject to competition on price. In recent years it has however become increasingly normal to produce a wide range of products (some more or less customized) entirely to order.



A vital part of the ability to compete in this environment is the MTO manufacturer's order management approach. However, to a large extent this still depends on the MTO manufacturer's ability to allocate resources and materials prior to actually receiving customer orders.

Demand planning impacts all areas of operations. The further up-stream the internal supply chain the Customer Order Decoupling Point is placed, the more demand-driven are operations, the more sensitive and complicated the demand planning process becomes to fluctuations in demand both aggregate and disaggregate volume and mix of products.





Demand planning is in general integrated both vertically and horizontally in planning and operations. Vertically the challenges in MTO environment is to pre-allocate the right capacity and the right materials. This is primarily addressed at the S&OP level and MPS level. If capacity and materials are not allocated pre-ante to actual customer demand, the manufacturer will incur increased costs of operations to achieve a short delivery time due to, e.g. rush orders from suppliers and use of overtime. The desired delivery time to customers is typically shorter than the actual lead time (purchasing lead time + manufacturing lead time). A consequence of shorter lead time than desired delivery time is the need to forecast demand to make allocations and to plan.

Horizontally the challenge is to integrate the order management process with the planning process on the MPS level. MPS planning periods the timing of orders is likely to be influenced by:

- Customers' own inventory policies, giving cyclic ordering patterns,
- Credit conditions from the manufacturer encourage ordering certain products or quantities at certain times, and
- Transportation rationalities, minimizing transportation cost, encourage ordering a full load or quantities at certain times.

Collaboration includes supply chain

planning and supply chain integration that by their very nature of sharing information integration and collaboration with customers on demand planning gives superior results. Supply chain integration measures have frequently shown to give the best performance of the demand planning process with regards to cost and on-time-delivery, but it is not a viable option for all MTO manufacturers.

Demand management will

Customers' own inventory policies, giving cyclic ordering patterns

likewise be problematic to implement for most MTO manufacturers due to the typical size of the product portfolio. These MTO manufacturers must instead cope with the given situation of a market/ production process/ product - combination. Coping with the givens includes using advanced planning and scheduling systems like DDMRP to ensure efficient utilization of resources, decreasing lead times through decoupling initiatives and other measures to improve responsiveness.

The fact is that most of the costs of operations are allocated prior to knowing demand. The quality and type of forecasted demand information used for allocation is therefore critical for the demand planning process performance. Getting a higher quality of demand information can only improve the performance of plans.

