

# Operations management - just in time and material resource planning



Running Header: JIT & MRP Operations Management - Just in Time and Material Resource Planning Just in Time - Inventory planning and Control

Just in time is a popular production technique that has been for long acknowledged by manufacturing companies for optimizing production through decreased inventories, reduced downtime and optimized work and storage space. JIT as the name suggests is a technique that allowed finished goods to be produced and delivered at time of sale. JIT is a continuous process and firms that practiced JIT technique have realized its contribution to their competitive advantage. Following Just in time system increases production efficiency and gives a competitive advantage while reducing costs and working capital requirements.

Let's look at an example of 2 Motorcycle manufacturers. The end product in this case is the motorcycle while the inventory required could vary from engine, engine components, wheel etc to nuts, bolts and spares.

Manufacturer 1 stocks up inventory for all spares and components because he believes customer service could be better optimized with constant supply of materials. Accordingly, his relative requirement for working capital increases as he needs to invest more in procurement and storage of the components. Not having enough capital to invest, he also borrows capital and ends up paying interest for this purpose increasing his cost. Indeed he would in the this scenario like to pass o the burden to the consumer thereby scaling up the price of his product to cover his cost and still maintain his profit margin.

To the contrary, Manufacturer 2 follows Just in Time inventory management system. He maintains excellent terms with his suppliers that they would as and when required immediately supply him with components required for his <https://assignbuster.com/operations-management-just-in-time-and-material-resource-planning/>

end product. Accordingly, his relative requirement for working capital is almost negligible as he does not have the requirement to block his capital for procurement and storage of the components. The JIT system also ensures that there is least requirement for capital, thereby saving a substantial sum of interest on capital which he would have otherwise paid. This smart manufacturer prevents over production, minimizes costs, optimizes capital employed and decreases product effects, ultimately passing all benefit to the end customer by offering his product at a much lesser and competitive price yet scoring high profit margin.

#### MRP - Material Resource Planning

" Material Resource Planning (MRP)" as the name suggests is a software based inventory management and control system used in production planning of a manufacturing process. MRP ensures that inventory is maintained at lowest possible levels, materials and products are available for production and delivery and plans the entire production activity. MRP is like every other application has an input and an output end. The inputs for the MRP system include Master Production schedule, inventory status records, bill of materials etc. The expected output of an MRP system includes recommended production schedule and recommended purchasing schedule. As MRP is an application integrated to the manufacturing process, any decision impacting or influencing nature of inventory required, quantity of inventory required and the timeframe within which they are required would have a direct impact on the result of the MRP application. The entire process is linked to the strategic planning process and the ultimate goal of the company. For example - Let's assume the case of a motorcycle

manufacturer. Assuming this manufacturer has installed an MRP application  
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for his production. The following may be considered as some of the factors or decisions that would have an impact on the effective and accurate functioning of the MRP system.

1) Sales plan - Every sales plan is an output of the demand supply equation in the economy. A sales plan determines how many quantities need to be sold when. Any change in sales plan (increase or decrease) would have a direct impact the input variables for the MRP.

2) Production Plan - A production plan is a variant of the sales plan. Decision on how many to sell within what time frame would decide how much to produce.

3) Inventory / Material plan - The inventory plan is a sub-variant of the production plan. Investment in raw materials and inventory for production is directly dependent on how much to produce and when.

As we may note, the above process or plans are inter-related. Any change in one (in most cases the sales plan) would roll down to impact the other plans thereby the results of the MRP system.

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Links

Just in Time

<http://www.businesslink.gov.uk/bdotg/action/layerr.s=sl&topicId=1074404580> (downloaded - 20/September/2006)

Wikipedia, the free encyclopedia. " Just In Time".

<http://en.wikipedia.org/wiki/Just-in-time> (downloaded - 20/September/2006)

Wikipedia, the free encyclopedia. " Material Requirement Planning".

[http://en.wikipedia.org/wiki/Material\\_requirement\\_planning](http://en.wikipedia.org/wiki/Material_requirement_planning) (downloaded - 20/September/2006)