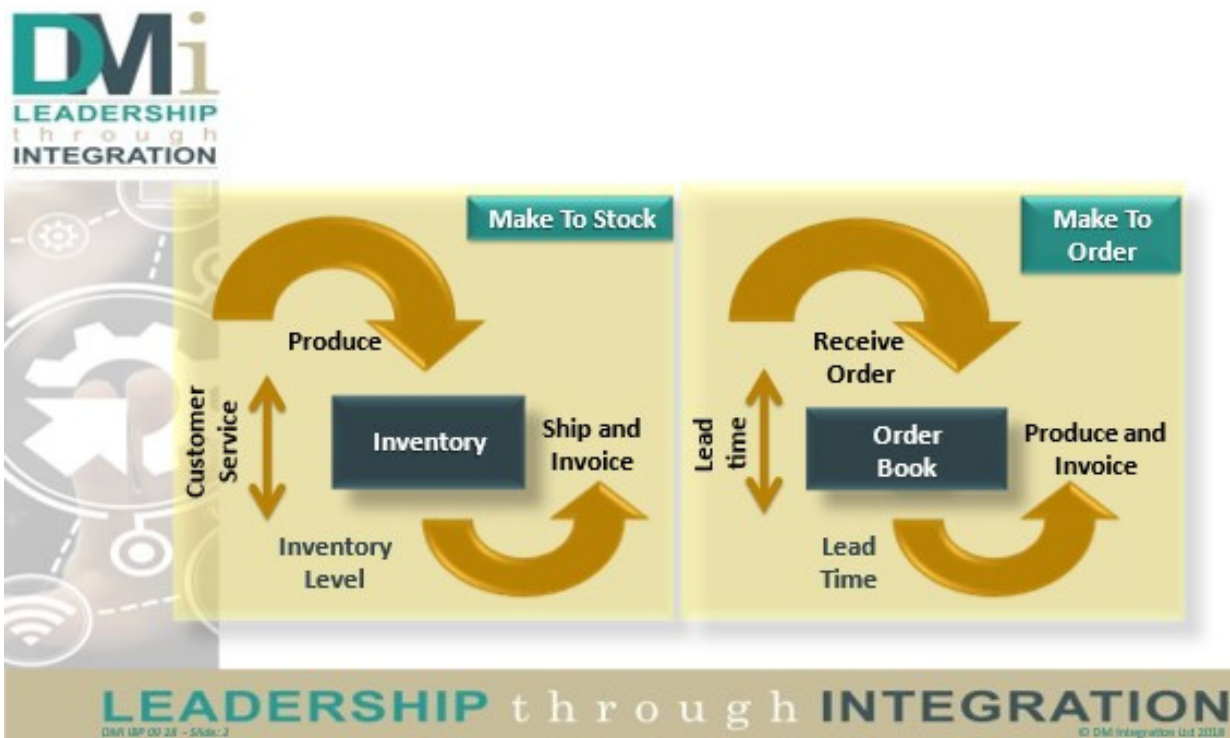




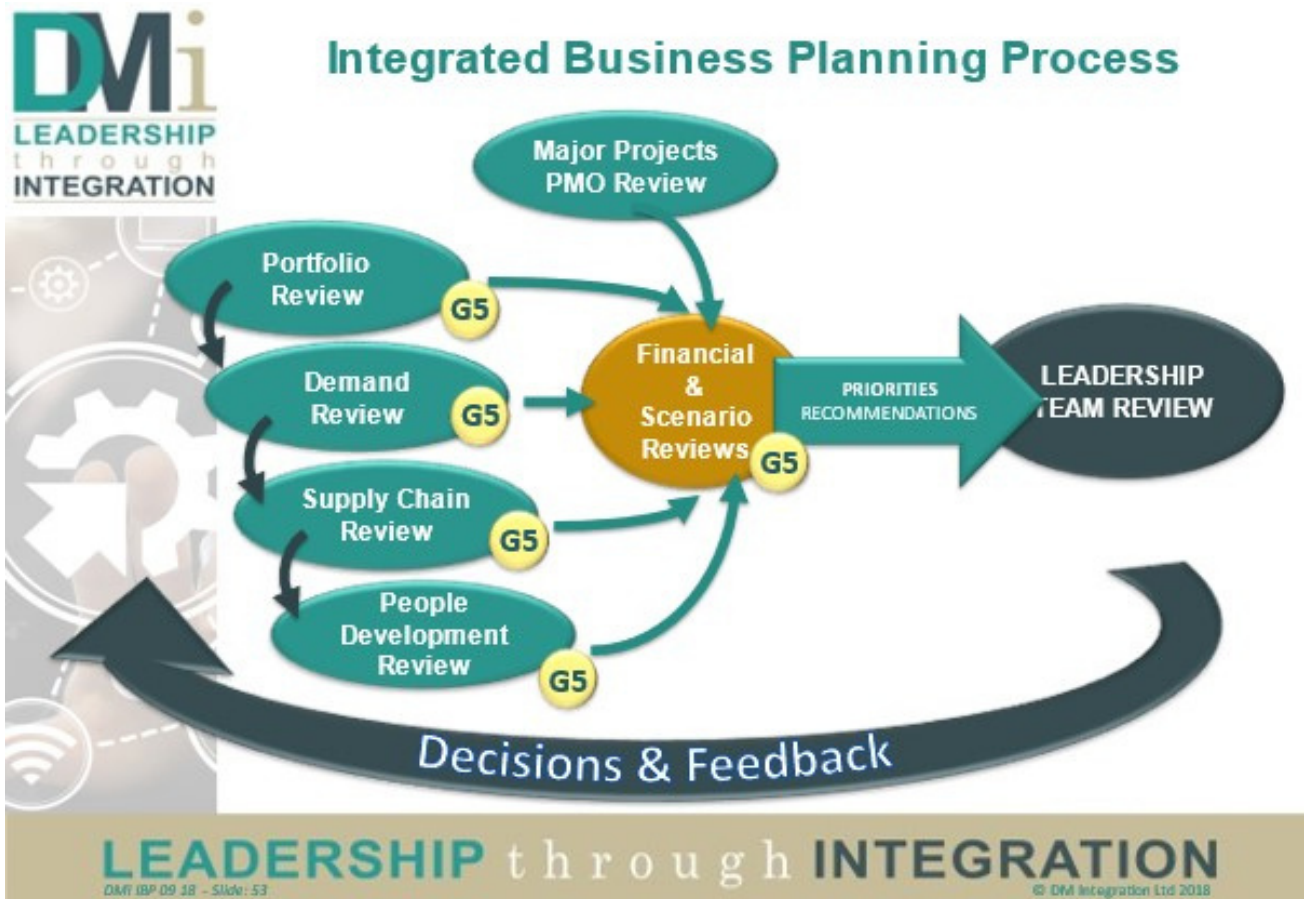
CAN INVENTORY BE MANAGED OR IS IT A CONSEQUENCE?

The idea that inventory can be managed directly is a myth, inventory is a consequence of inputs, outputs and planning modifiers set by ourselves. Some people have argued that material requirements planning (MRP) drives increased inventory which is another myth. The fundamental principle of MRP is to exactly balance demand and supply and drive inventory to zero. It is the planning parameters of batch size, safety stock, order quantity modifiers (minimum, multiple and period order quantity) and lead time that drive inventory into the system.

Trying to manage inventory directly is the equivalent to trying to manage the level of liquid in a tank from within the tank, it is impossible! You have to manage the level based upon the inputs and outputs.



Without the control of the inputs or outputs then we are giving the inventory management process an impossible task. The only person who has responsibility for both supply and demand is the CEO/MD or General Manager and therefore the inventory manager can only be that person. Of course they will not actively manage inventory there has to be an overall process that focuses upon the inputs and outputs and that process is Integrated Business Planning (IBP).



IBP must be the process through which the 'leader' manages the business and empowers the Senior Team and functional leaders.

By inventory we mean finished goods, components, semi finished components, raw materials and work-in-progress, all of which represent working capital. It is therefore a critical key performance measure (KPI) for all business to set targets and measure inventory turns. An inventory turn of 12 turns per annum must be possible in all industry sectors and in some cases this should be significantly greater. This does not mean simply pushing inventory back through the supply chain, it means genuinely reducing inventory (waste) at every node within the end to end supply chain. At the end of the day the customer will pay for all the inventory throughout the supply chain.

LEADERSHIP through **INTEGRATION**

The focus of inventory reduction must therefore focus upon inputs and outputs along with planning parameters. From an input perspective then forecast accuracy, abnormal demand management and opportunities management are key elements to the inventory management input process. Then schedule adherence in Operations (including suppliers) is also a key element of inventory management.

Despite the impact that inputs/outputs could have on inventory levels the key issues of inventory management are the management of the planning parameters and modifiers.

Turning our attention to the parameters which include:-

- Batch sizes (modifiers)
- Supplier (purchase) order quantities
- Safety stock (minimum on hand MOH)

Batch sizes and modifiers are a function of 'economic order quantity (EOQ)'. There are a number of reasons for setting EOQs which include process issues such as heat treatment furnace loading efficiency but are most frequently related to set up or change over times. A strong focus upon set up reduction (SMED) would allow the reduction of batch sizes and hence inventory levels. The objective should be to enable batch sizes to be set as discrete or 'lot for lot' which would enable manufacture to be completely balanced with demand e.g. 'need one make one'!

Supplier order quantities can be improved by a move away from the purchase order mentality to a vendor scheduling process which provides much greater visibility and planning capability for suppliers. If this was combined with a clear commitment to supplier partnership and development that creates a joint commitment to collaborative end to end supply chain cost reduction which would allow a win-win customer/supplier scenario.

Safety stock (MOH) is as 'it says on the tin' set as a strategy to protect against variability.



Closed Loop Safety Stock Management



The source of variability includes:-

- Forecast accuracy - KPI
- Schedule adherence - KPI
- Lead times - Process
- Data accuracy - KPI
- Abnormal Demand - Process Management

The key to forecast accuracy is accountability and measurement, see the DMi article 'The Big Three' on the www.dmintegration.co.uk website. The 'secret' to schedule adherence is a valid, balanced and achievable plan along with time fence management and plan stability. The shorter the lead time (waste elimination) the more effective inventory management will be. Data accuracy is not exciting but is fundamental to all planning.

I once heard the great Bill Shankly, Liverpool Football Club Manager, asked what is the secret to Liverpool's success? To which his answer was "there is no secret to our success, this game is about passing and tackling, the winning comes easy". I believe that the passing and tackling of the game called business is data! Winning the occasional big contract may be possible but winning the league will be impossible without data quality.

In business change is always a factor and it should not be resisted but it must be managed. Abnormal demand is a 'good' thing because it is generally more customer demand, how can that be bad? Abnormal demand is therefore always good news, it may be poor forecasting, but it is good news. The key to abnormal demand is how it is managed not whether it is good or bad. The key is to have a clear process and time fence management.

So in conclusion inventory can only be managed through the inputs/outputs and parameters, not directly.

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