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FORECAST CONSUMPTION VS. AVAILABLE-TO-PROMISE

For high capacity productivity and high customer service, two of the most powerful tools for any company are forecast consumption and Available-To- Promise. Both are embedded in the Master Production Schedule and are frequently confused.

The two tools are different: **forecast consumption compares forecasted demand with actual demand**. Available-to-Promise or **ATP compares inventory and future production with actual demand**. Forecast consumption shows how much the forecast is over- or undersold in a period. ATP shows when a new customer order can be delivered based on capacity and orders already promised.

In the MPS example below, the first two lines show the forecast of direct sales from the factory to customers and the current order book which consumes the forecast:

MPS WITH AVAILABLE-TO-PROMISE FUNCTION

Part No : 1420 –

Lead time : 1 week- Lot size: 300

Safety Stock : 40

		WEEK									
		1	2	3	4	5	6	7	8	25	26
Forecast		65	75	80	80	80	80	80	80	80	80
Customer Orders		15	5								
Affiliation or Customer Purchase Program		20		40		10		40			20
Projected Available Balance	220	120	40	220	140	50	270	150	70	100	300
Master Prod. Schedule End Date				300			300				300
Master Prod. Schedule Start Date			300			300			300	300	
Reservations + Cust. Purchase Prog		35	5	40		10		40			20
Available to promise	180			250			260				280
Cumulative	180	180	180	430	430	430	690	690	690		

An incoming customer order of 30 pieces for delivery in Week 3 will consume or reduce the forecast. The “forecast” line will diminish by 30 and the “customer order” line will increase by 30.

In the above example, the ATP is shown underneath the MPS. ATP answers the question, “Can we deliver this order on the requested date?” For a customer order of 200 in Week 2, the answer is “No” because the cumulative ATP in Week 2 is only 180 (A customer order for 200 is probably special anyway, meaning not included in the forecast, and shouldn’t consume the forecast or reduce ATP).

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It's obligatory to have a Master Production Schedule. Some think that planning production beyond firm customer orders creates inventory. That's not completely true. Basically, the MPS is just information, not inventory. Its explosion CAN cause orders to be released at lower levels in the bill of material. The more Lean is used to shorten lead times, the more information is substituted for inventory.

Forecast consumption helps the Demand Planner and the Master Scheduler to manage separate demand flows for maximum customer service. Often products made for domestic consumption are "stolen" by export… or vice versa! Forecast consumption shows which demand flow is over- or under-consuming the forecast…and also implies that a forecast *must* be made. You can't just come in with a big un-forecasted order and expect products to be on hand. In a supply chain, the downstream nodes like affiliates and wholesalers and large customers are *suppliers of information* to the upstream nodes like factories and vendors.

One company I worked with went to extremes, however. Affiliates ordering more than their forecast were penalized for "forecast violation", an official company performance measurement! Measuring forecast error is necessary, but after all, selling more means satisfying more customers. Forecast consumption would just show an over-consumed forecast, the latter to be updated at the next forecasting interval, usually the month.

ATP answers the question : can a new customer order be delivered in the requested period? ATP has almost nothing to do with forecast consumption and everything to do with measuring how much inventory and capacity is available to satisfy a new order, whatever part of the demand forecast has been consumed or not.

ATP is great for rewarding customers and affiliates and wholesalers and other factories who furnish purchase programs (see our Newsletters Nos. 19 and 48). This is because quantities appearing in a customer purchase program are considered by ATP to be a customer order and future production is reserved. This is not the traditional use of the idea of a "firm" customer order; however, the customer DID express demand himself although the future order is not yet in the PDP's firm time period.

Capacity *should* be reserved for it through ATP. If not, what motivation would a customer have for supplying the producer with a statement of his future demand? Also, if the producer doesn't reserve capacity, what excuse can he give the customer for not delivering, particularly after having received a customer purchase program?

In fact, ATP does overlap a little with forecast consumption because *the same production capacity can be used, if the Master Scheduler and the Demand Planner desire, to serve a demand stream which has over-consumed the forecast*. (Notice the human intervention required here.) Doing this avoids rigid allocation of capacity to only one demand stream and also maximizes the use of precious finite capacity. The same capacity can be used to serve a demand stream which has over-consumed the forecast instead of being wasted on a demand stream which has under-consumed.

Both forecast consumption and Available-To-Promise are needed for maximum productivity, high capacity utilization and excellent customer relations, whatever demand stream the customer belongs to. In turn, the Master Production Schedule is needed to have correctly functioning forecast consumption and ATP. With Lean, the MPS doesn't need to be at the item level; it can be at the family level, as can forecast consumption and ATP. But that's the subject of a future Newsletter!

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