# How to convert your inventory into smart inventory

## Make-to-Consumption: A new inbound solution for the Retail industry

The profit of any supply chain is maximised when all tiers focus on the behaviour of the consumer at the end of the supply chain. This article describes a fundamental choice at the root of the supply chain; the deal between retailer and manufacturer. This deal has major consequences reaching all the way down to the stores and other distribution channels.
The customer is king and in an era where there is more supply than demand, he will increasingly behave according to this mantra. The power of the manufacturer decreases, while in retail more and more distribution channels and assortment formats are introduced to please or tempt the customer. How should the retailer and manufacturer deal with this increase in differentiation?

## Make-to-Order or Make-to-Stock?

Many manufacturers and retailers face this question when they try to determine how to live up to their customers' expectations. The choice they make is crucial, because the success of the supply chain as a whole will depend on it.
In recent years, manufacturers have been confronted with a whole range of different retail distribution models. In spite of all these models the manufacturer continues to prefer Make-to-Order (MTO). The purchasing process is clear-cut and it is evident when the invoice can be send. An additional advantage for the manufacturer is that, in principle, he will not have any inventory.
The alternative for Make-to-Order (MTO) is Make-to-Stock (MTS). In the case of MTS the manufacturer is forced to keep inventory, under the pressure of the retailer. Since the production lead time is no longer part of the replenishment time, there is a substantial decrease in replenishment lead time, while the risk now lies at the manufacturer. The crucial question is: "What is the right level of finished goods inventory at the factory?"

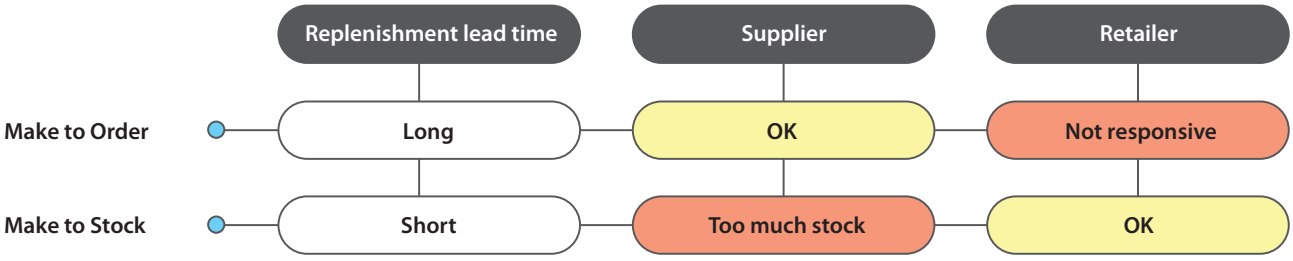



*Table 1. Difference MTO-MTS*

When the level is too low, out-of-stock situations will appear both in the supply chain and in the stores. On the other hand, an inventory level that is too high will result in a less responsive supply chain. It will be increasingly difficult to react to disappointing demand or changes in the specifications of the final product. Not to mention the working capital requirements.

## Make-to-Consumption!

As distribution experts we are in favour of a variation to Make-to-Stock: **Make-to-Consumption**. An approach that replenishes based on the actual consumption of the customer in the store. Why is Make-to-Consumption better than Make-to-Stock? Simply because nine times out of ten purchase orders, received by the manufacturer, turn out to be forecasts. MTS is based on an estimation of the future demand in the store.

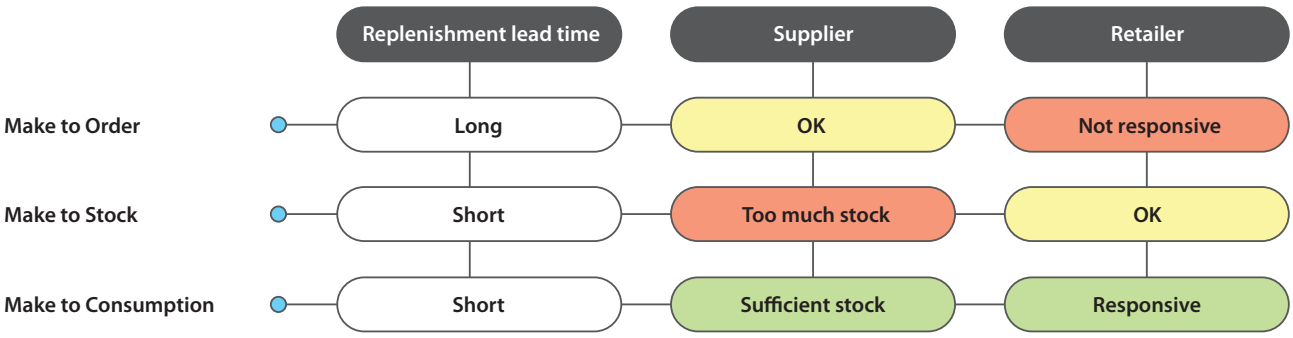



*Table 2. Difference MTO-MTS-MTC*

The motive for Make-to-Consumption (MTC) stems from the answers to the following questions:

- Why is the traditional MTS approach often considered less desirable?
- Why is the MTO approach often preferred over MTS?
- Why is the buying department placing so many MTO urgent orders?
- What changes have to be made in the way goods are being replenished to end up with Make-to-Consumption?

## Why is the traditional MTS approach often considered to be less desirable?

The traditional MTS manufacturers adjust their production planning to an estimation of finished product quantity. In the meantime, scientific research shows that it is impossible to accurately forecast on product level, the so-called Stock Keeping Units (SKU's). The traditional MTS approach turns into a Make-to-Forecast approach; a forward cover of 6 weeks in reality turns out to cover 30 weeks or even worse the 6 weeks are gone in 1 week... The negative side effects of the inaccurate forecast will, with a certain delay, also reflect in the stores; congestion in the supply chain of slow movers and a halt brought to the working capital that cannot be spend on fast movers.

2 R. Ballou; Business Logistics/Supply Chain Management 2004

## Why is the MTO approach often preferred over MTS?

Many manufacturers experience the MTO to be desirable, because it minimises the operation costs. This also fits within the framework of many process improvement initiatives, such as LEAN Manufacturing in which a production process should strive for perfection by eliminating the activities that do not add value to the product. A perfect pull system implies a production process that is capable of living up to customer demand in the shortest lead time possible, without a single defect, and with the lowest possible inventory.

MTO is also often preferred, because it reduces inventory, while the dependence on an inaccurate forecast diminishes and the availability of products improves. A pretty significant side effect of this approach is that the risk for the manufacturer is minimal. That the risk of an inaccurate forecast moves to an underlying tier in the supply chain is an issue for later concern; after all the order can be credited in the books.

Would MTO still be experienced as desirable when the purchase order turned out to be false? Does MTO actually diminish the dependence on an inaccurate forecast? These questions take us to the next point of discussion.

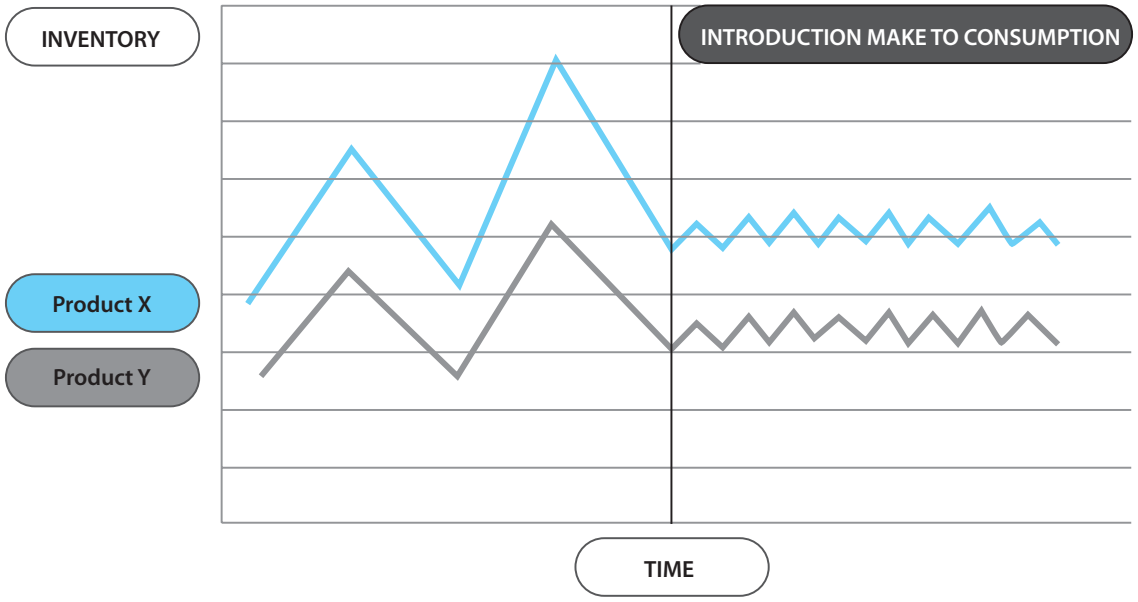
## Why is the buying department placing so many MTO urgent orders?

If always the right products were purchased, then the urgent orders should disappear? That this is not the case and the initially placed orders are no accurate reflection of the actual market demand is proved by the large number of urgent orders and additions made to placed purchase orders (cancellations, postponement or mutation of order lines), which manufacturers encounter on a daily basis.

The negative effects mentioned above are remarkably similar to the complications of a traditional MTS environment. Therefore, many MTO partner models conclude with a dispute on the oversized forward cover – exactly like with the traditional MTS collaborations. Obviously, the difference is that with the MTO approach the inventory is not owned by the manufacturer, while in a traditional MTS environment the pain of a slow mover is, in fact, felt by the manufacturer. In both cases too much of the wrong and not enough of the right inventory has been produced. This can only happen when the orders from retail buyers are not an actual reflection of what they need, but a forecast: their best estimation.

## What changes have to be made in the way in which goods are being replenished to end up with Make-to-Consumption?

Is it possible to change to a variation to the MTS model that both reduces the costs of the manufacturer and removes many of the negative effects in the next tier of the supply chain? Yes: by no longer continuing to let estimations of customers' orders on finished product level play a leading role in determining the production quantity. Instead the manufacturer will adjust dynamic replenishment buffers between production and consumption. This buffer inventory is being adjusted so that sufficient cover is ensured at any time. Maximum consumption must always be covered between two deliveries to the distribution centre of the retailer.




*Graph 1: Inventory picture in the supply chain*

The preferred location for buffer inventory is at the distribution centre of the retailer. The manufacturer makes sure this buffer is replenished frequently. No orders are placed. Instead the retailer regularly informs the manufacturer of the consumption and other relevant information that can influence future demand. The manufacturer is free to optimise its' own efficiency in the production process, as long as the maximum consumption between two deliveries is secured.

The volume of this MTC buffer inventory is substantially smaller compared to MTS for two reasons:

- Producing and transporting based on the actual consumption drastically reduces the variability of the purchase order. Production is no longer controlled by forecast. The oscillation caused in all intermediary tiers will be eliminated.
- Make-to-Consumption gives the right stimulus for the manufacturer to improve his process. LEAN Manufacturing aims at further reducing lead times in production. Shorter lead times are a necessary precondition to increase the frequency of replenishment runs. If the period between two replenishment deliveries diminishes, less inventory is necessary to cover maximum consumption.

To convince the retailer that their service level will improve without having to place orders, the manufacturer offers a service level agreement based on a guaranteed availability of products. This agreement shows the added value of the offer and prevents competitors to naively make the same promise.

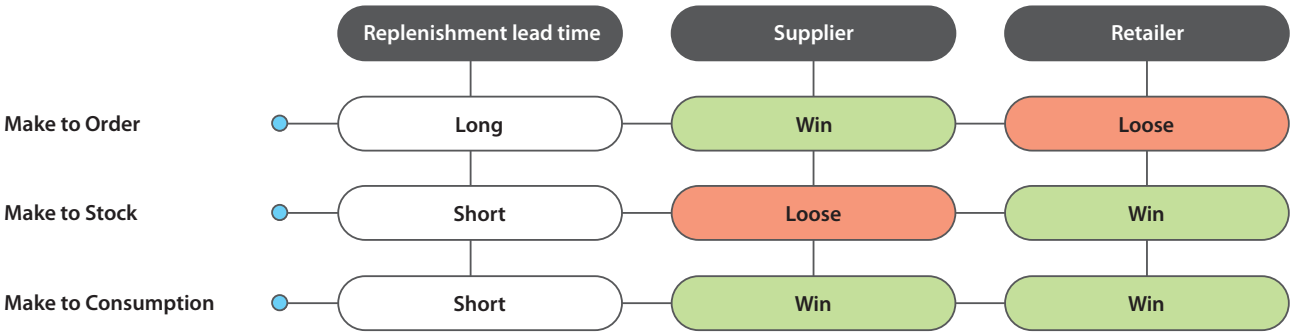



*Table 3. A real win-win supply chain scenario*

## Conclusion

If the product lifecycle is long enough to reorder at the manufacturer, Make-to-Consumption offers the best starting point for a maximum availability against a high turnover rate, for the retailer as well as for the manufacturer. When using MTO the output of a poor forecast will put pressure on the working capital of the retailer, while in MTS the pain is mainly felt by the manufacturer. In both cases the supply chain as a whole misses out on potential.
MTC is independent of forecasts on finished product level, but offers a replenishment level based on Flow&Event© Concept. Flow&Event© is developed by MTC-Logic and opens the way to an actual win-win supply chain co-operation. Only with a win-win relationship as a foundation can a supply chain support the increased differentiation in retail in a profitable way.

*This article is written by Jos van Straten (jos.van.straten@mtc-logic.com).*
*Jos is founder of MTC-Logic and End to End Supply Chain Expert.*
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