



# *Enrichmentors Business Review*

**Improving On Time Deliveries for better sales**  
Insights about On Time Deliveries as a growth strategy

December 2013

## What is in this Issue From The Editor's Desk

Arun Singhal is the Founder and Principal Mentor & Managing Partner of Enrichmentors India. He founded Enrichmentors in 2007 to help Small & Medium Enterprises in India improve their business through consultation, coaching and counseling. He has done his Post Graduate Diploma in Management in Marketing and Finance from Indian Institute of Management (IIM), Bangalore, India. Arun worked for Dumex, Johnson & Johnson and Unilever in India and Asia Pacific based in Delhi, Mumbai and Singapore in a variety of management roles spanning over sales, marketing, operations and general management for 26 years. His mission now is to share his knowledge and experiences of these 26 years with Small & Medium Enterprises and help them improve their business. Some of the companies he has worked as a consultant are Ayushakti, Mind Technologies, Hia Designs, Bayer, Cello, Makarizo, Kris & Volkswagen. He operates out of his offices in Mumbai & Udaipur and can be contacted at arunsinghal@hotmail.com.



Dear Reader,

Hope you enjoyed the last issue where I had shared with you when and how can you improve the quality of your products and services to get better sales.

Another commonly occurring obstacle in getting higher sales is the timely deliveries to the customers of the orders taken. In almost all of my working experience and consulting assignments, I have found these to account for about 10% of the delayed or lost sales in addition to unhappy customers! The solution has always been in improving the what was earlier called as production planning and control system (PPC) or more recently known as Manufacturing Resource Planning (MRP II).

In fact MRP II was a major initiative taken at Johnson & Johnson which also faced the issue of timely deliveries to its distributors. This initiative implementation led to not only improvement in timely deliveries to its customer but also reduction in inventories! Of course it took a couple of years to fully implement this MRP II systems at all its manufacturing facilities and Contract Manufacturers.

PPC does exist in one form or the other in most Small and Medium Enterprise, I have come across. The issue is in getting the desired results out of it! I would like to dedicate this issue of Enrichmentors Business Review in looking at the most identified gaps in the implementation of the PPC or MRP II systems in the SMEs so that you can get a couple of them to help you improve your timely deliveries to your customers and get immediate better sales which were being lost or delayed. It will also lead to make your customers happier which ultimately should help you get a better share of his business!

So, take a look at how to identify if your PPC system is becoming a real bottle neck in building a sustainable profitable business and what you need to do to address your PPC systems! As always, do let me know if what is said makes any sense or not!! Happy to help.

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# Improving On Time Deliveries for better sales

## Insights about On Time Deliveries improvements as growth strategy

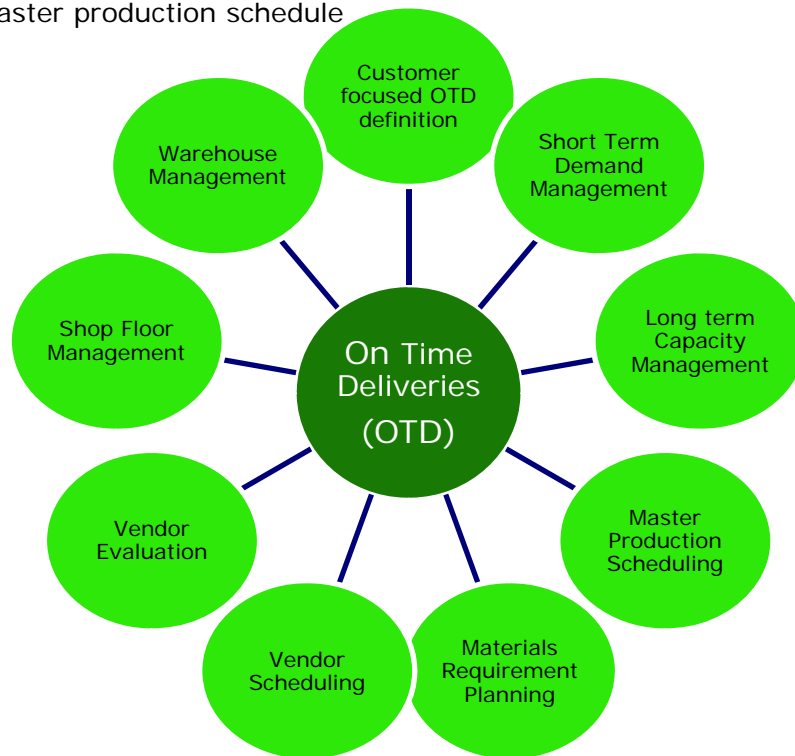
*This strategy development paper attempts to answer following questions in learning how to improve On Time Deliveries for better sales growth.*

- *What are the various factors affecting On Time Deliveries?*
- *How can you identify the factors you need to focus?*
- *How can you improve on each of these factors?*

**What factors affect the On Time deliveries?**

Making On Time deliveries to your customers is a task requiring the planning and coordination with almost all the manufacturing operations including Production Planning and Control (PPC), Purchasing, Production and warehouse.

PPC needs to lead the team under the sponsorship of the General Manager or Vice President of the Manufacturing Operation and manage defining the OTD right way, working with the sales team in managing the demand of the products with capacity constraints in the short term, building the required long term capacity to meet the future sales requirements, preparing the monthly master production schedule and determining the materials required for supporting the master production schedule



Purchasing needs to ensure that all the required materials are delivered as per plan using vendor scheduling and Vendor Evaluation.

Shop Floor needs to manage the workers to produce the quality products using the right quality of materials and handover to the warehouse.

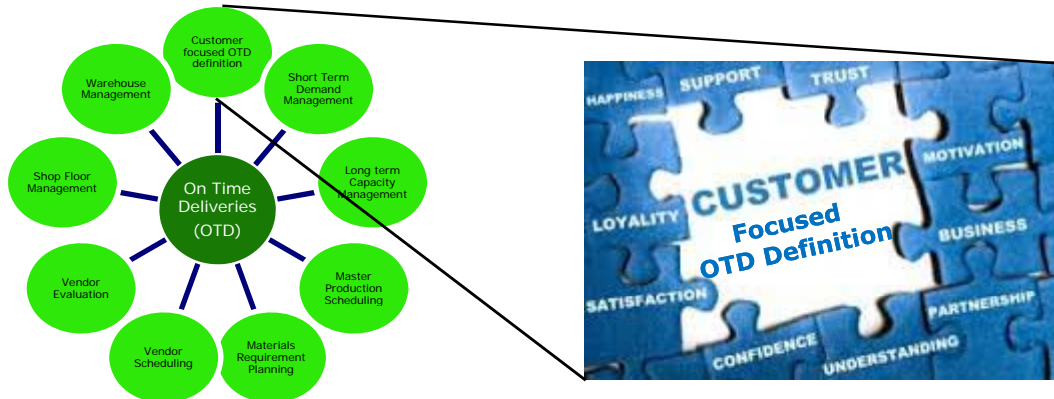
Warehouse needs to receive the incoming materials and issue the accepted materials to the shop floor from time to time and received the Finished Products from the Shop Floor and ship to the customer in time as per their orders.

**So, let us now look at each of the contributing factors to find out if you need to focus on it for improving the overall OTD and how!**

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### Customer Focused OTD Definition

The first thing in using OTD improvement as growth strategy is to look at how you define your OTD to your customers and is it in line with what they want!



I have seen many Small & Medium Enterprises measure OTD and work on improving the OTD. Unfortunately this OTD improvement does not result in sales growth as much as it could. The issues are the way the OTD is defined.

The OTD in most SMEs are defined by the GM or Vice President of Manufacturing Operations in agreement with the Managing Director. Rarely are the Customer and Sales & Marketing Team are involved in how the OTD is defined. Consequently the direct correlation between customer satisfaction which is critical for sales growth and the OTD is often missing. It is no surprise that, then the OTD improvements become only cosmetic. I have seen dissatisfied customers and sales team with 99% OTD!

So when should you look at your OTD definition and check if it is customer focused?

**You should review the OTD definition when you find that your customer are not satisfied with the timely deliveries in spite of your having high level of OTD.**

How can you make your OTD Definition customer focused so that improvement in OTD makes real improvement in customer satisfaction leading to better share of business from the customer? Here are a few things you can try!

**1. Understand how your customer would define the On Time Delivery of your products to them.**

You can best understand how your customer would define the On Time Delivery is by taking some recent deliveries made and checking with customer if they were the On Time Deliveries and the reason for them being On Time Deliveries or Not. This needs to be done with a representative sample of your customers. Of course you need to start by telling them that you would like to define the OTD the right way and that is why you are seeking their input.

**2. Draft an OTD definition including the formula & terms and get Customer's alignment**

Based in the understanding gained from your customers in above step, you need to then define the Deliveries that will be treated as On Time Deliveries and the formulae for the calculation and get the customers input on it being right.

**3. Ask customer to measure your OTD monthly or share your measures and get agreement**

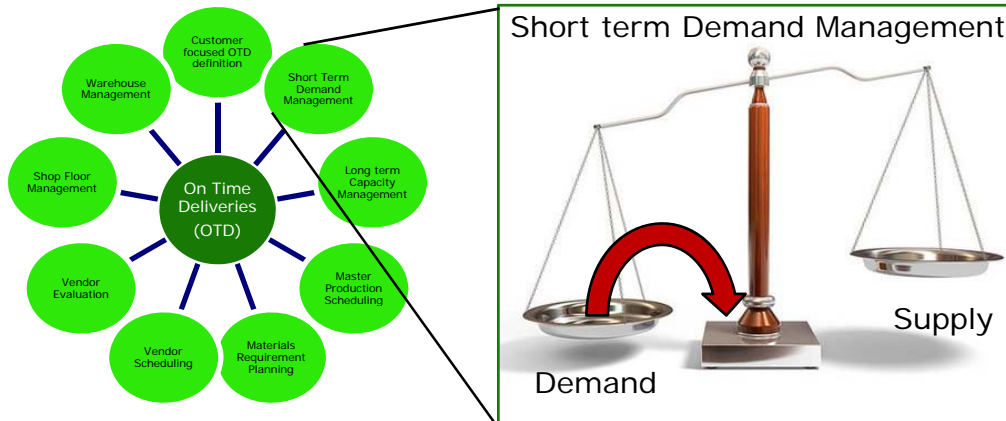
With the terms and formula agreed, you can either get the agreement from the customer to provide you the OTD Measure every month with the details or vice versa.

**The above steps should ensure that your OTD is defined the way your customer sees and you can then get on with the measurement and improvement**

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**Short Term Demand Management**

This involves influencing and prioritizing demand in the short term when faced with less than matching capacity to supply to restore the demand supply balance



I have not seen any systematic application of this process in the SMEs. Most of SMEs either allow the imbalance to remain the short term leading to dissatisfied customer and loss of sales and profits. So when should you look at using Short Term Demand Management Process for improving OTD?

**Naturally, this process will help when you face the situation where the demand is more that the supply in the short term.** Now, what can you do to manage the demand in the short term that can help you improve OTD in way that will lead to increase in customer satisfaction and sales? Here are a few things for you to try!

**1. Determine the Short Term over which the demand will need to be managed.**

You need to get the sales and manufacturing to agree on the time period in months that will be treated as the Short Term during which the Sales Team will manage the demand while manufacturing addresses the increase in capacity so that unconstrained demand can be met by the supply in the Long Term. This period by definition will be the period that Manufacturing will need to increase the capacity. This may need to be determined by the products if the lead times for capacity expansion are different for different products. To keep this period shortest, the manufacturing should include the option of capacity increase through outsourcing.

**2. Determine the timing and quantum of demand more that supply by product**

PPC need to determine the months and quantum of demand more that best possible supply during the Short term. This is done by PPC asking sales team for a month wise unconstrained demand by products to begin with. Based on this demand forecast, the PPC prepares the best possible Master Product Schedule over the entire planning horizon including the short term and long term. The unconstrained demand is now compared with this best case supply to find out the timing and quantity of the supply gaps in the short term.

**3. Explore the options of diverting demand from short supply products to full supply products**

PPC needs to explore the options with the sales team on actions they can take to shift the demand from short supply products to full supply products. The possible actions could involve reducing the sale and marketing effort on short supply products in the short term and increasing them on fully supply produces

**4. Prioritize customer orders**

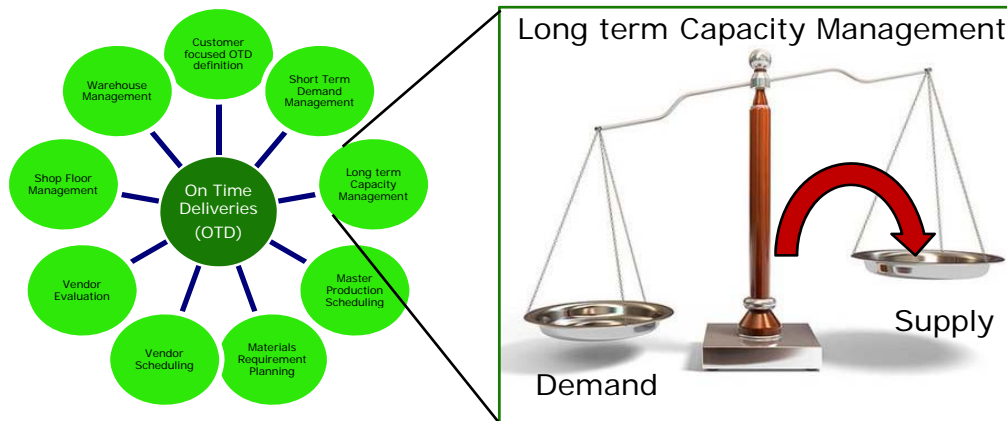
If the demand still remains higher than the supply in the short term, the next step would be to prioritize the scheduling of the order supply and communicating back to the customers so that customer can take appropriate action

**These steps will most certainly help you minimize the adverse impact of short supply in the short term**

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**Long Term Capacity Management**

All the business must build adequate capacity to meet the future demand in the long term.



**Most companies have the process to identify the future demand requirements and build the required capacity but still most have the problem of either too much capacity or too less. The solution lies in managing capacity for long term every month. How can you manage this process?**

PPC needs to be assigned the task of identifying the long term capacity requirements over the long term and the General Management of Manufacturing then needs to own the task of building the agreed capacity. If the right requirements are identified and the capacity build up is done as per the plan, the issues of demand supply mismatch can be minimized. Let us now look at how can you do each of these

**Identifying right capacity build up requirements.**

1. PPC first needs determine the planning horizon over which the capacity and demand will be reviewed. The planning horizon should be the number of months taken to build the capacity. Usually it ranges from 12-24 months depending on whether the capacity is being build in house or outsourced.
2. PPC then should get every month a monthly unconstrained demand forecast from the sales team at product level and compare it with the maximum demonstrated production the manufacturing team can produce each month over this planning horizon. This will help the PPC to identify the potential gaps in unconstrained demand vs. the demonstrated manufacturing capacity.
3. These gaps in meeting potential unconstrained demand should then be reviewed with the GM Manufacturing to determine the action plans to close the gaps well in time.
4. Since the demand forecast over such a long period will go wrong substantially, it is prudent to plan first to meet the gap through the outsourcing. Own capacity addition should be taken as the action plan only after the gap is proven between the unconstrained demand and the in-house capacity.
5. The unconstrained demand will vary from month to month and hence this process needs to be followed very month and action plans modified based on the latest situation.

**Building the right capacity required**

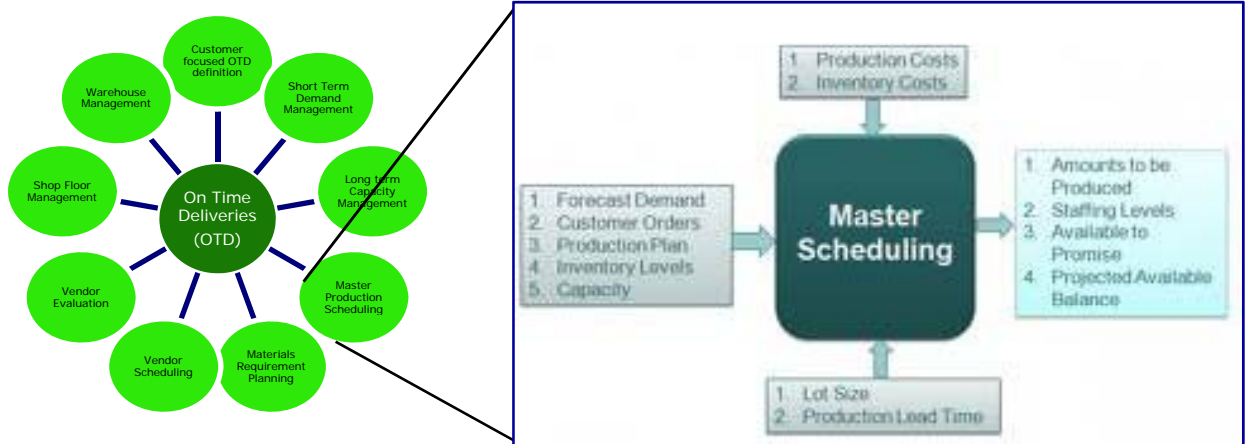
The GM Manufacturing then needs to put up a project in place with the right resources under a capable project manager who will ensure that the project of building the additional capacity is defined, planned and monitored. Most of the delays in such project implementation happens either due to not using these steps or not having the right project resources including Men, Money, Materials and Methods. I have found using a systematic approach like Kepner Tregoe Project Management results in the on time project execution improving substantially.

**I believe if you can do the above two key tasks, you will have the right long term capacity without having the too much or too little**

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**Master Production Scheduling**

PPC now needs to schedule production by SKUs by weeks for a shorter time period which would be used by shop floor and purchasing for production and arranging materials.



**Many companies have this process in place in some form. The issue in their process is that either the plans being too rigid for the discomfort of the sales team or too flexible to the annoyance of shop floor team. How can you make both of them happy including the external customers?**

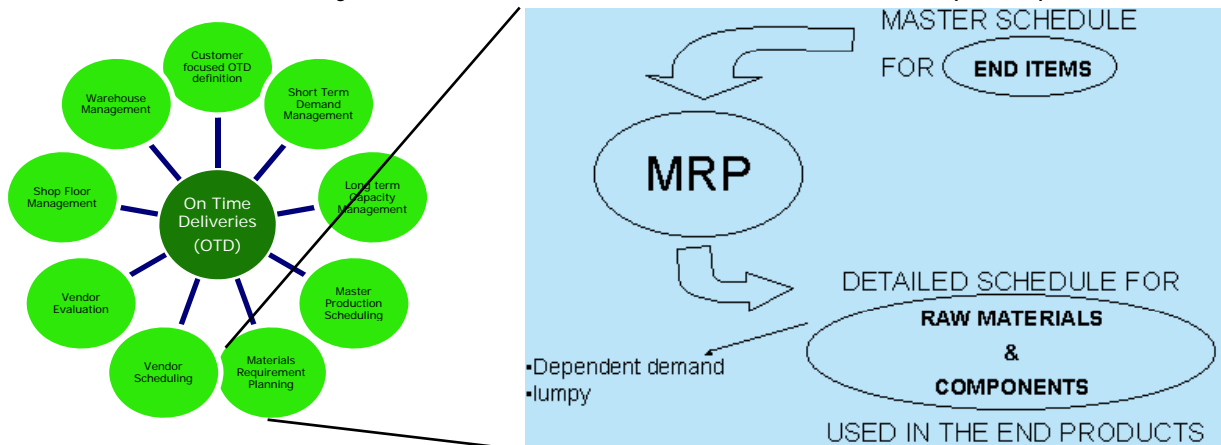
PPC needs to discuss with the sales team & customer to determine a firm time zone within which the weekly production plans would remain firm mostly. The production plans after the firm time zone would change every week as the PPC reviews and updates the Master Production Schedule. So what can you do for such a Master Production scheduling which can lead to satisfaction within the sales and shop floor team and external customers?

1. As mentioned above the PPC needs to agree with the sales team about the Firm Time Zone over which the production plans will remain firm in general. This time period is determined by the highest of lead times for machines changeover or for arrange additional labor or materials for a higher production requirement. Shop floor and Purchasing Managers needs to provide this information and PPC needs to get agreement between them and sales team for the Firm Time Zone. PPC also needs to agree on the remaining period over which SKU wise weekly production schedule, though flexible, will be agreed. This period will be determined by the materials requirement visibility required by the material suppliers
2. Having agreed on the Firm Time Zone and remaining period for Master Production Scheduling, PPC then needs to meet with the sales team, shop floor and purchase managers to schedule SKU wise production for the new weeks in the upcoming Firm Time Zone. The emphasis of the meeting is to schedule a realistic but ambitious production schedule based on the materials, machine and labor availability and sales requirements.
3. The PPC then needs to work out the production schedule for the period after the Firm Time Zone based on the Demand forecast and the overall machine capacities.
4. The Production schedule within the time frame is communicated to the Shop Floor and warehouse of arranging materials from the warehouse and actual production on the shop floor.
5. PPC needs to provide the warehouse and sales team the availability information based on the production schedule within the Firm Time Zone and beyond. While this enables the sales team to commit delivery dates to the customers, it also helps warehouse to gear up its resources to shipment of the finished products on time to the customer

**I believe if this Master Production Scheduling process is run by PPC systematically every week between the Shop Floor, Purchas, Warehouse and sales, the OTD and customer satisfaction will definitely improve in the short term**

**Materials Requirement Planning (MRP)**

Materials Requirement Planning for the Manufacturing Team is a critical process that determines the availability of all the materials in time to enable the required production.



**All the SMEs do the Material Requirement Planning in some way but they still fail to have all the required materials in time. While having all the required materials in time is a function of MRP, Supplier scheduling and Supplier performance, there are many ways you can improve your MRP. Here are some!**

1. The first thing to fix right in the Materials Requirement Planning is the MRP Horizon. How far ahead in future should you determine your Material Requirements? The MRP Horizon should be equal to the longest lead time of procuring the materials right from the know the requirements to getting is accepted and ready for use in the plant.
2. Next in list will be to have the right quantity of materials required for unit production of each of the finished goods including the wastages. This is know as Bill of Materials ( BOM). The BOM accuracy is a critical factor in know the right material requirement in future especially when the materials used in the product change and the wastages vary. I have seen many SMEs not being able to know the Materials Requirements right because of not having accurate BOMs. The Since the Data for BOM is maintained by the production team, the GM Manufacturing needs to make them accountable so that the BOMs are right for PPC to use.
3. Another thing often missed is the accuracy of Inventory records in the books used for planning vs. the actual physical stocks of finished goods and materials. This is huge opportunity for improvement in SMEs with no systematic efforts to ensure Accuracy of Inventory Records (IRA). This requires the attention of the MD of the business because it involves the finance and Manufacturing to work together. It requires that at least every month the Book stocks are compared with the physical stocks, reconciled and book stocks corrected.
4. Last thing to set right is the safety stocks to be kept for the materials. I am not sure how appropriately do the SMEs set the safety stocks. My guess is that it is mostly based on an overall directive which will lead to stock out for the materials with low supplier reliability and high demand variation. What needs to be done is to use some scientific basis which links the safety stocks to these two factors.

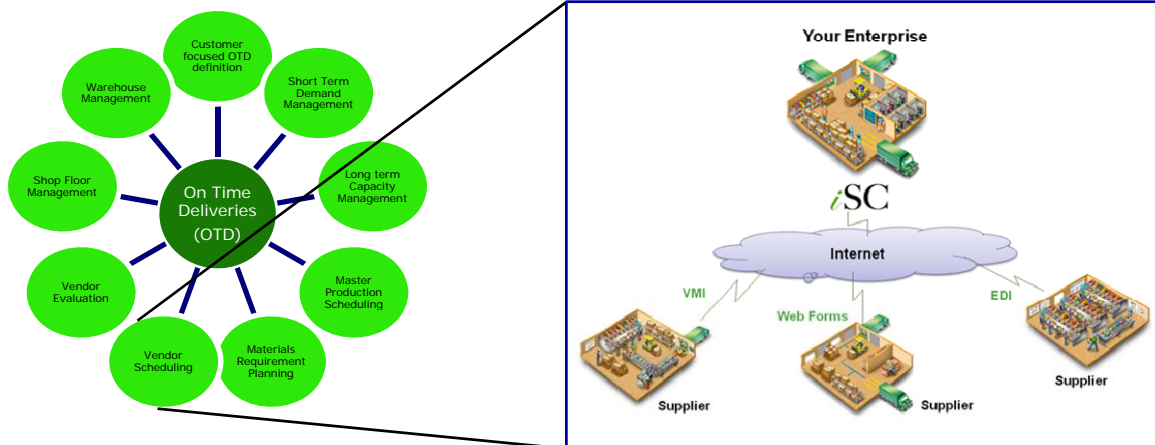
Once you have the above key things are set right, the calculation of the materials required to support the MPS whether done on an excel sheet or through SAP, will result in a good MRP.

**But as mentioned, MRP is the first step of knowing your material requirement to arrange all the required materials for production. The next two steps of Vendor Scheduling and Vendor (Performance ) Evaluation are as critical if not more!**



**Vendor Scheduling**

It is the process that provides visibility of key materials over an adequate planning horizon so that they can plan their capacity and materials to meet your requirements.



**The process is very often missing and has a big potential to improve the OTD via providing the required materials on time for agreed production plan! Here is what you can do!**

1. Your purchase managers need to replace the month to month purchase order placement with a long term agreement with quality suppliers accounting for 80% of the purchases that agrees to all the commercial terms other than the delivery schedules.
2. Purchase manager issues weekly delivery schedule for the agreed planning horizon to these suppliers containing the materials requirements in three zones of Firm Commitment, Material Commitment and Capacity Commitments. The delivery schedules outside the Firm Commitment zone are allowed to change from week to week as required.
3. With agreement with your purchase manager, the Supplier delivers materials as communicated in the Firm Commitment Zone to your plant. Supplier may produce in advance these materials as their delivery is committed by definition. This ensures that the supplier delivery performance and availability at your plant improves
4. The supplier procures his materials required for taking up the production of your requirements in the Materials Commitment Zone as he is assured of their delivery some time in future. This agreement removes his material availability constraints improving the medium term availability in your plant.
5. The supplier also builds additional capacity as required with specific approval from you based on the Delivery schedules given in the Capacity Commitment Zone. This enables him to plan his capacity and deliver material to your plant in the longer term.
6. The purchasing and the shop floor team meets weekly to review the vendor schedule to be communicated based on the MRP requirements.
7. The vendor schedule can be communicated through a variety of means from faxes to VMI approaches.

**The key thing in vendor scheduling is to share the future material requirements with your vendor with different levels of commitment!**

**This vendor schedule is the second leg of the three legged stool of material availability. Last being the desired vendor performance through vendor evaluation and feedback.**

**Vendor Evaluation**

This process measures the performance of all the suppliers on the key supply parameters that can affect the material availability and OTD consequently.



Scorecard Category	Scorecard Category	Metrics
Supplier Scorecard	Quality	<ul style="list-style-type: none"> <li>• \$5 cost recovered last qtr</li> <li>• % of SCARs</li> <li>• Avg. SCAR Response Time</li> <li>• Avg. SCAR Resolution Time</li> <li>• First due SCARs</li> <li>• On-time AOs/ROs</li> </ul>
	Delivery	<ul style="list-style-type: none"> <li>• % On-time Delivery</li> <li>• # of Late Deliveries</li> <li>• # of Early Deliveries</li> <li>• % of line items not shipped on time</li> <li>• # of line items not shipped on time</li> <li>• Actual vs. quoted lead time</li> </ul>
	Cost	<ul style="list-style-type: none"> <li>• % Total cost reduction year-over-year</li> <li>• Total cost reduction year-over-year</li> </ul>
	Responsiveness	<ul style="list-style-type: none"> <li>• Emergency requests for part change</li> <li>• Emergency orders requested vs. shipped</li> <li>• Compliance to payment terms</li> <li>• Overall communications</li> </ul>
	Innovation	<ul style="list-style-type: none"> <li>• Tech. &amp; Process Improvements</li> <li>• Best Practice Sharing</li> <li>• KPI Savings</li> <li>• Revenue Enhancement</li> </ul>
	Risk	<ul style="list-style-type: none"> <li>• Root Cause and Nonconformance Incidents</li> <li>• Political events</li> <li>• Product availability</li> <li>• Distance from source</li> <li>• Industry capacity</li> <li>• Technology change</li> <li>• Financial Instability</li> </ul>
	CSR	<ul style="list-style-type: none"> <li>• Total reparable incidents</li> <li>• Days away from work cases</li> <li>• Fatality and work safety initiatives</li> <li>• Green Initiatives</li> </ul>
	Customer Complaints	<ul style="list-style-type: none"> <li>• Identify and track Cost of Poor Quality (COPQ) associated with product returns</li> </ul>

**This is another process which is formally missing in most SMEs and consequently these SMEs suffer from the material availability issues ultimately affecting OTD! Here is what you can do to establish this process critical for material availability.**

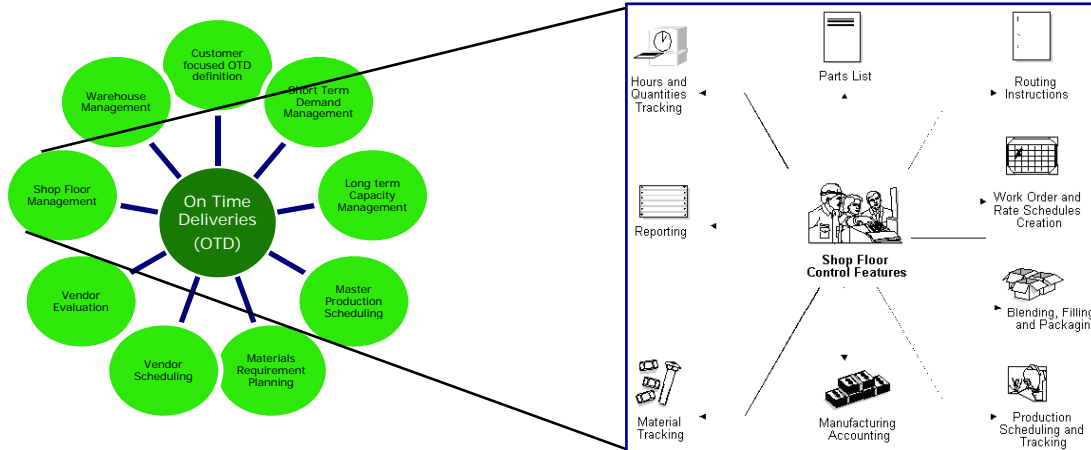
- Determine the parameters important for your business from the materials availability for the production. It should include parameters like timely delivery, quality, cost and responsiveness at the least.
- Each of these vendor evaluation parameters need to be clearly defined and communicated to the suppliers. You could use following definitions for a start.
  - Supplier Delivery Performance =  $\frac{100 \times \text{Number of On Time Deliveries}}{\text{Total Deliveries Scheduled in the month}}$
  - Supplier Quality Performance =  $\frac{100 \times \text{Number of Acceptable Deliveries}}{\text{Total Deliveries Scheduled in the month}}$
  - Supplier Cost Performance =  $\frac{100 \times \text{Last Year's Total Delivered Cost per unit}}{\text{This year's cum Total Delivered Cost per unit}}$
  - Supplier Response. Performance =  $\frac{100 \times \text{Last Year's Average Lead time and Lot size}}{\text{This year's cum Average Lead Time and Lot size}}$
- All the suppliers performance on these parameters and overall needs to be evaluated every month and communicated to them in a manner visible to all suppliers.
- Best performing suppliers needs to be rewarded and recognized on quarterly basis publicly
- The Worst performing suppliers need to be asked for the Corrective and Preventive Action Plans for the poor performance and followed up for implementation

**I have personally seen dramatic improvement in materials availability leading to the classical state of High OTD and Low Inventory using this process**

**The last but one step in OTD is to actually produce in time in the shop floor after the purchasing team has arrange all the materials!**

**Shop Floor Management**

That is where the “Rubber Hits the Road” i.e. final place where the production of the product company sells takes place.



**Needless to say that all the companies have this process! So when and where can you make the improvements here? The challenge here is to get the best out of your machines and people. And that is not a small challenge. Here are a few things you can do to get the desired results in terms of planned quality production every day.**

1. The Shop Floor Manager needs to ensure that there is a maintenance schedule based on the Mean Time Between Failures of each of the machines including the utilities. And the maintenance of each of them is being done as per the schedule. That will generally ensure that your machines and utilities are available every day along with the materials required for the production for the day.
2. Next thing is to schedule daily production for each shift based on the overall week production plan, shipping priorities, material and labor availability
3. Communicate the next days production in advance to the worker as well as the warehouse so that material is delivered by the warehouse to the shop floor well before the shift starts
4. Brief the Shift team on the plan for the shift and gear them up for the planned production
5. Oversee and support the workers during the shift production
6. Get a report on the production of the shift and appropriately reward and recognize the good work of the shift or discuss the action plans to prevent the poor performance
7. Report the production, materials, labor hours used etc for accounting
8. Handover the goods produced to the warehouse.

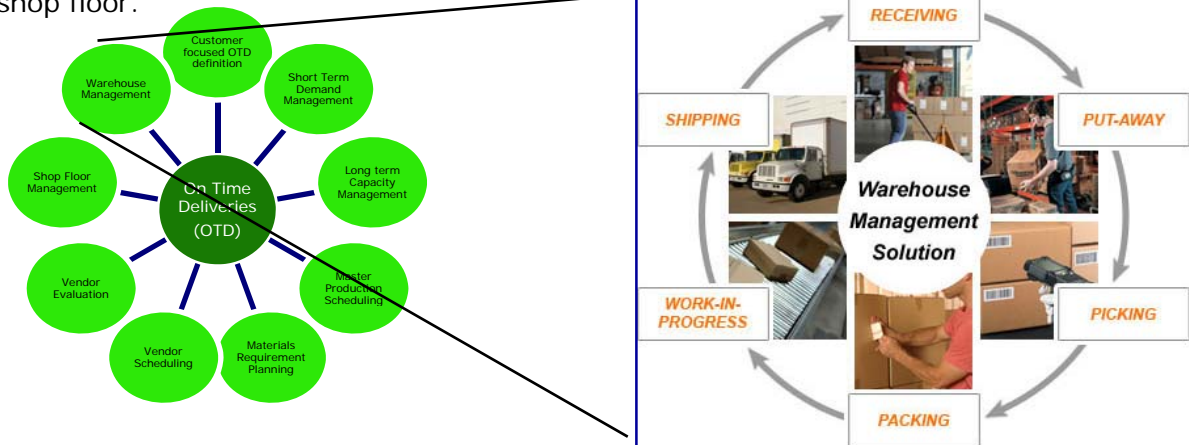
**While some of this may sound very elementary but they can make or break the attainment of these production schedules. You can manage machines being in good shape with relative ease. The challenge will always to be keep your workmen in top shape with respect to their skills and motivation. Regular short refresher training programs on Production Standard Operating Procedures helps their skills updated. Keeping them highly motivated is determined how you treat them every minute of the shift operation!**

**The product is now ready for shipping, but there are many slips between cup and the lip!**

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**Warehouse Management**

Warehouse management is the process that finally processes the customer orders and ships in time to customer as well as receives the materials from suppliers and issues to shop floor.



**Warehousing management may appear so simple to prompt you to ask what can go wrong with it that can affect the OTD to customers. Let us take a look at each of steps in Warehousing Management and see what can go wrong and how can you prevent it!**

**Receiving** The warehouse needs to correctly receive the materials from suppliers and finished goods from the shop floor and account in the information system for use by everyone in the Manufacturing Team. To avoid the errors in system information and physical it needs to physically count the materials received from the suppliers and finished goods received from shop floor. Any lapse here can cost real money loss to you in addition to the planning process being completely derailed. It will be a good practices for your finance team to randomly cross check the materials received from the suppliers and finished good from shop floor vs. the warehouse reporting.

**Put-Away** The next source of error from warehousing can be from disorganized storage of materials and finished goods in the warehouse. Rejected materials and goods can get mixed up with the accepted materials and finished good and get issued to shop floor and shipped to customer, if they are not segregated. Warehouse team needs to mark separate areas for Materials and Finished goods awaiting acceptance, rejected and accepted either physically or virtually. You need to have procedures that can prevent these as well as ensure that these procedures are being followed. Proper storage norms needs to be followed that can prevent damage to the materials and goods in storage due to improper stacking heights, warehouse cleanliness etc.

**Picking** Right materials in right sequence needs to be picked up for issuing to shop floor as well as finished goods to customer. Wrong product picking will naturally create an issue with the shop floor and customer. Picking wrong batches of materials for finished products will also create issues later. Use of picking slips that will confirm the materials and finished goods picked up for issue or shipping will avoid these issues. The picking slips needs to be issued to the workmen based on First Manufactured First Out (FMFO) or First In First Out (FIFO) basis as decided. Good storage practices will help in right picking.

**Shipping** The last step that finally contributes to better OTD is right shipping from the warehouse to the customer. The shipping schedule should be drawn in advance to ensure that customer order is delivered to them in time based on proven transit times. Customer needs to be notified when the shipment is being made along with expected delivery dates. The Shipping Manager needs to monitor the delivery of the shipment, which is often missed, leading to shipment being in No Man’s Land.

**The whole process of OTD requires ongoing coordination between many functions and people and PPC needs to own that. While it may appear a complex process and it may be, it can be made easier by splitting the relevant tasks between the functions involved under the PPC control and you can deliver High OTDs!**

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