Module 5: The Manufacturing Simulation

In the Manufacturing Introduction simulation, participants operate a make-to-stock manufacturing company, selling muesli breakfast cereals to the German market. They are responsible for all decisions in the business cycle including planning, procurement, production, sales and marketing processes.

Most routine functions required to operate the company (but not decisions) such as receiving goods, sending payments to vendors, invoicing, and receipt of customer payments, are automated by the simulator. This allows teams to focus on the more strategic aspects of operating their companies.

In Manufacturing Introduction, companies start with 100,000 units of each of the 6 finished goods, (Nut, Original, Strawberry, Blueberry, Mixed and Raisins) as well as raw materials sufficient to produce an additional 100,000 units of each product.

In Manufacturing Short, companies start up with 96,000 units of 4 finished goods, (Nut, Strawberry, Blueberry and Raisins) as well as enough raw materials to produce an additional 96,000 units of each product.

In Round one, companies sell their initial stock by adjusting their selling price and marketing strategies.

In Round two, companies learn how to produce new finished goods from raw materials (converting existing planned orders to production orders).

In Round three, companies learn how to replenish raw materials to their requirement levels, and optionally, to adjust requirements.

There are no extra warehousing costs in the manufacturing scenario.

In the Manufacturing Extended Scenario, companies have access to all decisions and transactions. Companies begin with no inventory, plan their future sales through forecast, replenish raw materials, produce their finished goods, manage their prices and invest in marketing. They can also manage cash flow, change the BOM of finished goods, and invest in equipment and production efficiencies.

Please review Topic 10 for more indications of what to do just before starting the simulation.

Round 1 – Sales, Marketing and Finance

 When you are ready to begin the simulation, select the Continue button.

 Day 5: Around this time, most team will have made some sales. Pause the simulation to introduce some of the reports:

o Profit Trend, Leaderboard

o Sales trend, Sales Analysis, Inventory Trend

o Marketing and Revenue

o Cash Balance, Net Profit/Lost

o Price Market Report

Emphasize that reports need to be updated manually to refresh results to current day.

 Day 10-20: You can pause the simulation and introduce the Geospatial report (2nd row of tiles.) Demonstrate some of the filters that can be applied to the report:

o Legend: Choose Revenue

o Chart Type: Circle

o Group By: Area (North, West, South)

o Material: Choose a single product to assess geographical sales history

briefly show the leaderboard and who is winning currently every few days.

very few minutes, inspect Product Information Reports/Inventory in the Admin view of the console. If all teams are out of stock for 3-4 products, at your discretion, you can decide to pause the game and explain MRP even before the end of round 1.

 Day 20 or 30: At the end of Day 20 or 30, depending on the version of Manufacturing you are playing (the end of round 1), the simulation will automatically pause.

 Show the result view in the console and order the columns by “Rank”. See Appendix 6 for a detailed explanation of the result view. Day 20: At the end of Day 20 or 30 (depending on the game you are playing), the simulation will pause automatically (end of round).

o Show the results view in the console and order the columns by “Rank”. See Appendix 6 for a detailed explanation of the result view.

o Compare the cumulative net income and the total sales.

o Look at the Marketing/Sales ratio.

 If your schedule allows it, give participants a short break before starting the explanation for round 2

Round 2 – The production process

 Before Day 1: Introduce production process.

o Briefly define Production orders. Remind the teams that they started the simulation with enough raw materials to produce the same quantity of finished goods they had initially.

o By default, the production orders are converted in the order they are presented on the screen. If a team wants to change this order, they should select only the Production Order(s) they want to convert. Orders will be converted in the order in which they are released.

o The delivery of finished goods can be tracked in the Production Schedule tile.

o Stress the importance of NOT RUNNING MRP until instructed to do so. Running MRP before being instructed to do so is not only “against the rules” but raises risk of erasing some or all existing production orders. MRP deletes and recreates Purchase Orders and Purchase Requisitions every time it is run, based on current inventory, the forecast ad requirements.

 Give the participants a few minutes to strategize Round 2 and assign new roles. Participants should convert production orders before round 2 starts so they start receiving finished goods as early as possible.

 Start round 2 (Continue)

 Day 3: Check the production schedule in the console to make sure all teams have released production.

 Day 10: If you wish, you can pause the simulation and introduce the Competitive Analytics tile. This tile allows participants to play with a view of all the teams’ data. One way to introduce this tile is to show the different filters and views of the report and encourage the participants to play with the report to find insights.

 End of Round 2 (Day 20 or Day 30): Debriefing of Round 2

o Announce the winning team of the round and compare the results of all teams from the Result view in the console. See Appendix 6 for a detailed explanation of the result view.

o The debriefing of Round 2 is similar to the debriefing of Round1. To find more debriefing tips, read Topic 15 on debriefing or Appendix 8.

o After the debriefing, you can give participants a short break if your schedule permits it.

Round 3 – MRP and replenishment

 Introducing replenishment of Raw Materials.

o Explain how MRP works. The best way to introduce MRP is to use a real-life situation, like a normal shopping routine and meal “production” for your home.

In this example you have all the elements of the replenishment and production processes: having a replenishment level, taking inventory of existing supplies, making a shopping list, actually shopping, receiving the goods when you return home, and finally, when all “raw materials” are “in stock”, preparing your food.

MRP is a difficult concept to understand for many participants, so don’t hesitate to spend significant time introducing this concept. In order to play and understand the simulation, participants must understand MRP.

o Demonstrate changing and saving requirements. Run MRP.

o Explain the Manage Purchase Requisitions tile. Demonstrate conversion of Purchase Requisitions to Purchase Order. Mention that no parameters (such as vendor) should be changed. Changing parameters could cause unexpected results.

o Show the Purchase Orders tracking report. Mention that the Purchase Order will appear on the report the next virtual day. The delay to receive the products is 3-5 virtual days.

o Explain that participants will receive a confirmation message with the Purchase Order number after the PO has been submitted. This confirms that the PO is in the system and will be delivered in 3-5 days.

 If you are using DAS during your simulation, your participants can always right-click on any tiles or open the contextual FAQ in a specific tile to review how proceed with a transaction.

 Give the participants a few minutes to strategize Round 3.

 Start Round 3. During this round, unless you have a specific point you need to address, it is probable that you will not need to pause the simulation. At this point, most participants should have a good understanding of the game.

 At the end of round 3, you will be given the option to get a “final Report” in the console. This report is used to close financial periods. This report is not needed in the Distribution Scenario.

 Announce the round winner and the game winner.

 Move to the debriefing portion of the simulation. To learn more about debriefing, refer to Topic 15 or Appendix 8.

Common Errors

Production Order fails to convert (turns red). There are 2 main reasons for this:

- There is not enough raw material in stock to start the production (often raw materials have not yet been received).

- The Production Order has already been converted and the red status is letting you know that you can’t convert twice. To fix this issue, refresh the page and the already converted Production Orders will disappear.

Not receiving raw materials: In almost all cases, this is caused by failure to convert purchase requisitions to purchase orders.

Expert Tips

At the conclusion of the game, after participants have left, it is a very good idea to do a review of the game from your perspective. Could any of your explanations have been more clear or concise? Do you need to review how you explained MRP and procurement? If you were going to run the game again right now, what would you do differently?

When things go wrong

Most, but not all errors, are user errors. These can often be corrected by asking the participant to review their steps and re-do the transaction.

If you notice significant anomalies across multiple teams or in the console, pause the game, troubleshoot as best you can, and if you are still having issues, call Baton Simulations support. Server errors are rare, and most can be corrected quickly.

• For urgent assistance: +1 438 399 0780

• For non-urgent assistance: support@batonsimulations.com

Additional Documentation

Appendix 3: The different states of the console

Appendix 5: The Fiori Launchpad tiles

Appendix 6: The end of rounds statistics (Result view)

Topic 18: How to tell what is wrong with MRP