

MODULE 9: FORECASTING AND PLANNING

Module Overview

To successfully manage their business, many companies forecast future demand and plan their activities accordingly. In some cases, where the lead time for a product exceeds the delivery expectations of customers, an accurate forecast is the only way to successfully plan for the future.

However, forecasting is not without risk. An optimistic forecast can lead to excess inventory. Too pessimistic a forecast can lead to late deliveries and even lost sales, and reduce customer satisfaction.

For manufacturing companies, it is important not only to forecast demand, but also to plan how to fulfill that demand. For companies that operate in fast-changing markets, it is equally important to do the following:

- Reconcile forecasts to actual demand.
- Adjust forecasts automatically, if it is necessary.
- Quickly adjust production plans to changed forecasts.

In Microsoft Dynamics® NAV, the production forecast functionality provides powerful forecasting capabilities for all types of demand forecasting. However, this is not just a tool for production planners to think about the future. It directly participates in the program's planning system. This means that you can easily convert forecasts to production plans, reconcile forecasts to actual sales, and apply forecast changes to existing production plans.

"Forecasting and Planning" describes the production forecast functionality and its integration with the planning system. To follow its demonstrations and labs, install a clean database and set your work date to January 23, 2014. Please perform all lessons, demonstrations, and labs in sequence.

Objectives

The objectives are:

- Describe the production forecast functionality.
- Explain the integration between production forecasting and planning.
- Show how actual demand is netted against forecast demand.
- Describe forecasting by location, order tracking as it relates to forecasting, and forecasting setup.
- Review the forecast reports.

Production Forecast

For most companies, the forecasting process starts with a sales budget or sales forecast. To be useful for production planning, a sales forecast must be specified by item, period, and quantity.

However, sales forecasts only include items that are sold directly to customers. This is known as *independent demand*.

When the items that are sold to customers are manufactured or assembled, they generate demand for the components that are used to make the items. This is known as *dependent demand*.

Some items receive both independent and dependent demand. For example, item 1100, Front Wheel, is used as a component to manufacture a bicycle, and it also can be sold separately as a replacement part. This type of item could require two forecast quantities for each forecasting period.

To predict independent demand and dependent demand, a production planner can create a production forecast. This type of forecast lets production planners project quantities by item by period for both independent and dependent demand. It also enables forecasting by location.

Typically, the independent demand in a production forecast starts out as a copy of the sales forecast. However, production planners can change this part of the forecast to comply with operational requirements. For example, if the sales forecast requires a large quantity of item A to be produced in March, 2014 to support a promotion, and the production planners feel that this adversely affects the product mix on the shop floor, they can break this demand into smaller blocks and spread the production over a longer period.

In Microsoft Dynamics NAV, you do not have to forecast dependent demand only to account for it. As described in the "Production Forecasts and Planning" lesson, the program's planning system can easily calculate dependent demand based on independent demand. However, the production planner might want to apply the same type of operational requirements to both dependent demand and independent demand. One way to do this is to surface the dependent demand in a forecast, and then adjust or reorganize it as necessary. When a production planner asserts this level of control, a forecast becomes a rough production schedule.

In some cases, dependent demand is optional. For example, a company can offer a bell as an option on a bicycle. Some customers will buy the bell; other people will not. In this case, the production planner can estimate this demand in a forecast.

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In summary, a production forecast is the production planner's projection of the finished goods items and, optionally, the components that are required to meet the forecasted sales demand. Where it is necessary, the production planner can adjust forecasted quantities and schedules to meet operational requirements.

 **Note:** In assemble-to-order (ATO) or make-to-order (MTO) environments, it could make more sense to forecast demand for the main parts that are used as components in final assembly. This removes some uncertainty that is associated with customer requests, and is good for fast changing markets such as home computers.

Production Forecast Guidelines

You create production forecasts in the **Production Forecast** page. You should be aware of the following guidelines before you do this:

- You identify production forecasts by name.
- Two sets of data potentially exist within any given forecast: data for independent demand, and data for dependent demand. You identify these two sets of data by forecast type.
- You enter independent demand by using the forecast type of Sales Item.
- You enter dependent demand by using the forecast type of Component.
- You can view and enter data by location.
- You can view and enter data by different time periods. This includes day, week, month, quarter, year, and accounting period. However, the program records all entries by date. When you enter a forecast value for a period other than day, the program automatically records the entry on the first day of that period.
- You typically forecast demand for a given span of time, such as one year, and maintain it continuously.
- You can create and work with as many forecasts as you want. Combined with the ability to copy data from one forecast to another and then change it, this feature lets you experiment with different forecast scenarios.

Demonstration: Create a Production Forecast

Scenario: Eduardo, the production planner at CRONUS International Ltd., receives a sales forecast from Kevin, the sales manager, for the first quarter of 2014. The forecast consists of 200 units per month for item 1000, Bicycle, and 300 units per month for item 1001, Touring Bicycle.

Eduardo decides to create a production forecast for this period.

Demonstration Steps

1. Create the forecast name and description.
 - a. In the **Search** box, type “production forecasts”, and then select the related link.
 - b. On the **Home** tab of the **Production Forecasts** list page, click **New**.
 - c. On the **Production Forecast Names** page, in the **Name** field, type “2014Q1”.
 - d. In the **Description** field, type “2014 Q1 Production Forecast”.
 - e. Click **OK** to close the page.
2. Set the forecast header for sales items.
 - a. On the **Production Forecasts** list page, double-click the line for the 2014 Q1 Production Forecast to open the forecast.
 - b. On the **General** FastTab of the **Production Forecast** page, in the **View by** field, select Month.
 - c. In the **View as** field, select Net Change.
 - d. In the **Forecast Type** field, select Sales Item.
3. Populate the forecast matrix for sales items.
 - a. On the **Production Forecast Matrix** FastTab, make sure that the Jan 2014, Feb 2014, and Mar 2014 columns are visible. If they are not visible, use the **Previous Set**, **Previous Column**, **Next Column**, and **Next Set** functions on the **Home** tab to correctly position the date columns.
 - b. Use the vertical scroll bar on the right side of the matrix to make sure that item 1000, Bicycle, and item 1001, Touring Bicycle, and item 1100, Front Wheel, are visible.
 - c. In each of the three columns for item 1000, Bicycle, type “200”.
 - d. In each of the three columns for item 1001, Tourist Bicycle, type “300”.
 - e. Leave the **Production Forecast** page open.

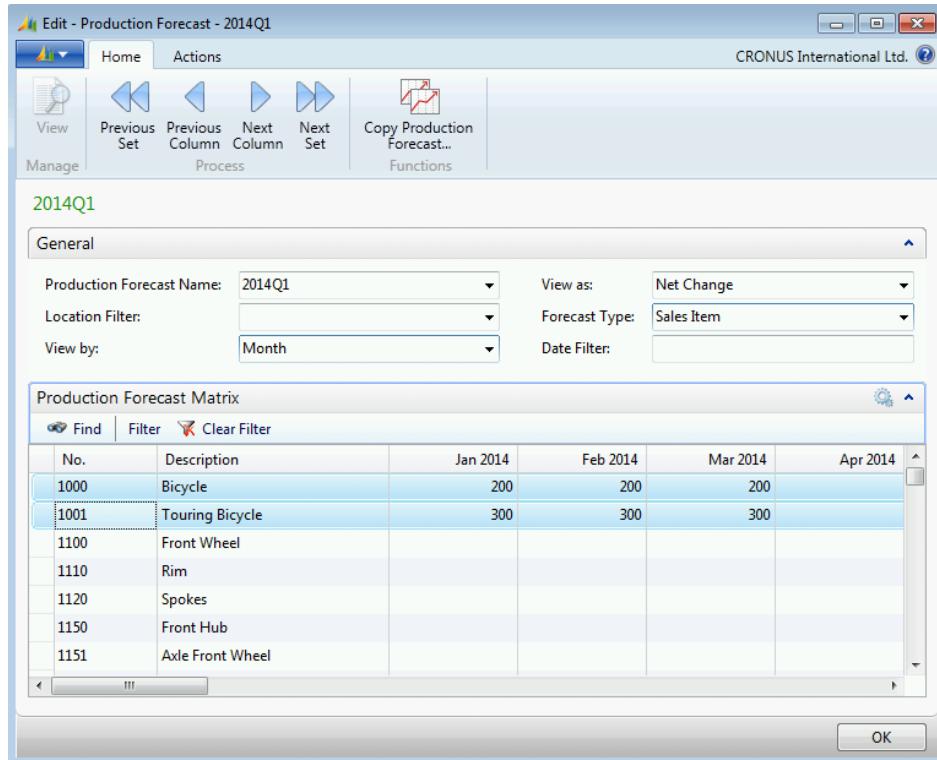


FIGURE 9.1:FORECAST FOR SALES ITEMS ENTERED IN THE PRODUCTION FORECAST PAGE

Production Forecast Page

This is a continuation of the “Create a Production Forecast” demonstration.

In that demonstration, you entered forecast values by month. As mentioned, the program actually stores those values on the first day of the period that you use for data entry. To verify this, on the **Production Forecast Matrix** FastTab, on the line for item 1001, Touring Bicycle, click the assist button in the cell for Jan 2014. This opens up the **Production Forecast Entries** page.

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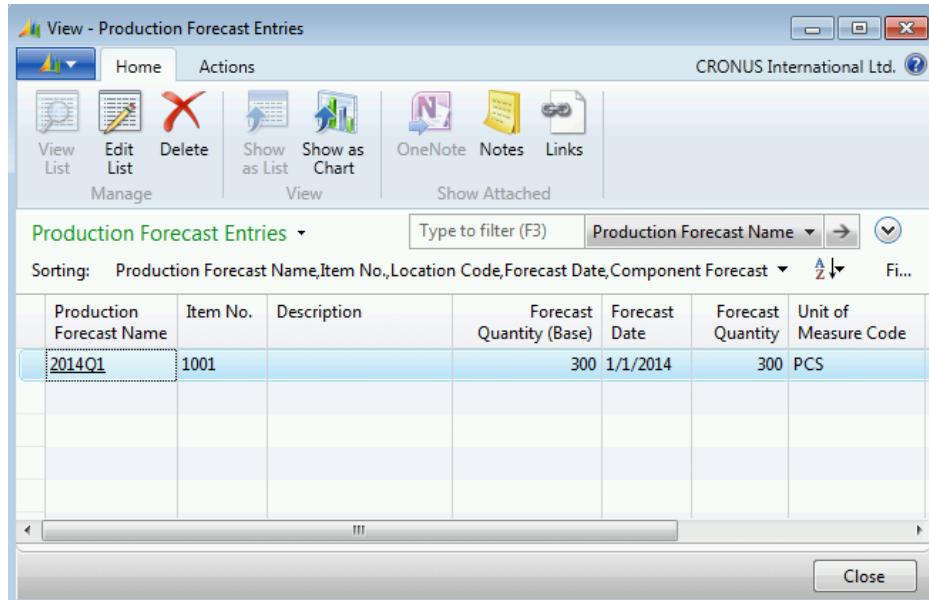


FIGURE 9.2:PRODUCTION FORECAST ENTRIES PAGE

If you examine the **Forecast Date** field, you can see that the program records the forecast entry on the first day of the forecast period, in this case, January 01, 2014. By storing forecast values at the day level, the program can roll up values to other time periods, such as week, quarter, and so on.

 **Note:** *Forecasts values that are entered on a date other than the first date of a period still roll up correctly. The definition of forecast periods states that a forecast period on a given starting date is valid until the next forecast period starts.*

Close the **Production Forecast Entries** page.

The following table provides full descriptions of all fields on the **Production Forecast** page.

Field	Description
Production Forecast Name	Name of the forecast. When you select a name in this field, the program filters all production forecast entries to show only the entries that are associated with the selected name.

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Field	Description
Location Filter	Specifies a location code if you want to create or view a forecast entry for a specific location. For more information, refer to the "Forecast by Location" topic in the "Additional Forecasting Topics" lesson.
View by	Specifies a time period for which you want to create or view a forecast entry. Entries for a period larger than a day are stored on the first date for that period. When you view a period that is larger than a day, the program rolls up the day entries to provide a summary total for the larger period.
View as	Specifies whether to show forecast data that is based on the forecast for each specific period, or to show a cumulative total over the course of the forecast instead. The options are Net Change or Balance at Date. When you entered the data in the "Create a Sales Forecast", this field was set to Net Change. This showed 200 units of item 1000, Bicycle, for each month of the forecast. If you change this field to Balance at Date, the values in the three columns change to the following: <ul style="list-style-type: none"> • January 2014 – 200 • February 2014 – 400 • March 2014 – 600
Forecast Type	Specifies either Sales Item or Component for entering or viewing production forecast data. Sales item entries forecast sales of finished goods items to customers. Component entries forecast dependent demand for component items. You can also specify Both to view the combined totals of sales items and components. However, you cannot enter data in this combined view.

Field	Description
Date Filter	Specifies the date interval for the forecast entries.
No.	Specifies the item number for a line in the forecast matrix.
Description	Specifies the item description for the item.
Date Columns	The program generates the date columns that are based on the value that is specified in the View by field on the General FastTab. If you select Week, the date columns show forecast data by week. If you select Month, the date columns show forecast data by month, and so on.

Copy a Production Forecast

You can copy forecast data from one forecast to another forecast, or from one section of a forecast to another section in the same forecast. This is helpful if you want to extend the current forecast by copying from one year to the next, or if you want to copy forecast data to a new forecast and then make changes to test various planning scenarios.

To copy data from one forecast to another, follow these steps.

1. Open the **Production Forecast** page. In this case, it should still be open.
2. On the **Home** tab, click **Copy Production Forecast**.
3. On the **Options** FastTab of the **Copy Production Forecast** request page, in the **Production Forecast Name** field, select the production forecast to which you want to copy entries.
4. In the other fields of the **Options** FastTab, specify other information that you want to change in the entries when they are copied.
5. In the **Production Forecast Entry** FastTab, specify filter criteria to identify the source of the forecast entries that you want to copy.
6. To start the copy process, you would normally click **OK**. Do not do this at this time.

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In the "Copy Production Forecast Request Page" image, the copy criteria specify to copy the forecast entries from 2014Q1 to a production forecast name TEST.

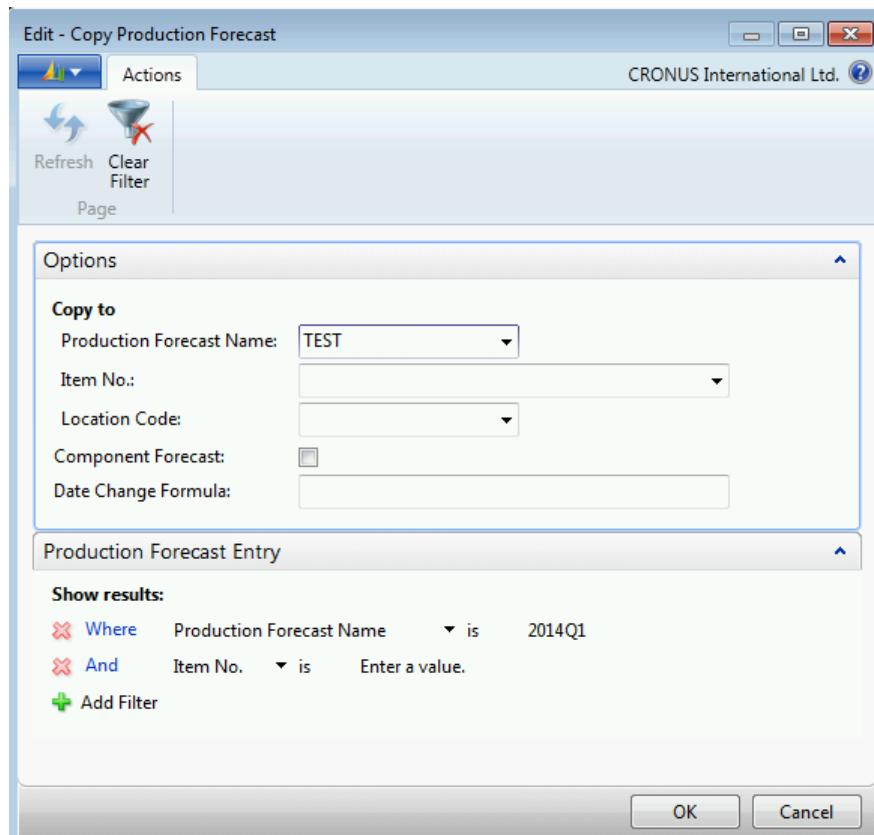


FIGURE 9.3: COPY PRODUCTION FORECAST REQUEST PAGE

If the TEST forecast is blank before the copy process, its forecast data will exactly match that of forecast 2014Q1 after the copy process. However, if TEST already contains entries, the program adds the entries from 2014Q1 to these existing TEST entries. For example, if TEST had a forecast entry of 100 total units of item 1001 for January, 2014, and you copy to TEST the 2014Q1 forecast of 300 units of item 1001 for January, 2014, then TEST will show a forecast of 400 units of item 1001 for January, 2014.

For more information about copying production forecasts, refer to "Copy Production Forecast Batch Job" in Help.

Production Forecasts and Planning

In this lesson and throughout the rest of "Forecasting and Planning," the word "planning" and the phrase "planning system" both refer to the planning worksheet and its associated functions. This planning functionality is described in full in "Planning" and "Additional Planning Topics" in this training material.

The brief description provided in this lesson is for context only.

The Planning System in Brief

The term "running the planning worksheet" refers to the calculation of the master production schedule (MPS) and/or material requirements planning (MRP), based on actual and forecasted demand.

- MPS is the calculation of a master production schedule that is based on the actual demand and the production forecast. The MPS calculation is used for end items that have a forecast or sales order line.
- MRP is the calculation of material requirements that are based on actual demand for components and the demand for components that are required by MPS planning lines. MRP is calculated only for items that are not MPS items.

You can run MPS or MRP separately, or you can run them together. If you run them together, remember that MPS runs first, followed by MRP.

If you specify a forecast for a planning run, and that forecast is the only source of demand for MPS items, the planning system bases MRP on an explosion of the components that are required by the MPS planning lines. If any actual demand for components exists on production orders, it is included in the planning calculations regardless of whether the component is classified as an MPS or MRP item.

The planning system uses the same algorithms for both MPS and MRP. In summary, the system examines what item quantities are required and will be required (demand), and what item quantities are on-hand or expected to be on-hand (supply). Then it nets demand against supply and determines whether new supply is required or if existing supply must be changed or canceled. To communicate these findings, the system generates action messages and populates these messages into the planning worksheet, where they are also known as *planning lines*. *Action messages* are suggestions to create new supply, or to change or cancel existing supply. Sources of supply include production, assembly, purchase, and transfer orders.

When production planners encounter action messages in the planning worksheet, they can accept the messages, modify the messages before accepting them, or reject the messages.

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The goal of the planning system is ultimately to do the following:

- Satisfy demand.
 - Keep inventory at optimal levels, as defined by planning parameters.
- Planning parameters are described in detail in "Planning" in this training material.

The Role of Forecasts in Planning Calculations

A production forecast for sales items represents expected independent demand for a specific period. Sales orders represent actual demand. The planning system treats both types of demand as gross requirements. The main difference is that actual demand consumes forecasted demand.

For example, suppose that you enter a production forecast of 200 units for sales item A in period 1 without sales orders and no other source of demand for item A in period 1. The planning system then calculates a total demand of 200 units for the period, with the forecast as the sole source of the demand.

If you then enter a sales order for 50 units of item A in period 1, the planning system reduces the forecast quantity by 50 units for that period. This leaves only 150 units forecast for period 1, plus the 50 units for the actual sales order. The total demand remains at 200. For more information about how actual sales consume forecast, refer to the "Net Actual Demand Against the Forecast" lesson.

The planning system responds in a similar manner regardless of whether the demand is forecasted or actual. If there is insufficient supply to meet demand, the planning system suggests new supply.

The remaining demonstrations in this lesson show the effect of production forecast entries for sales items on the planning process. Production forecast entries for components are described in the "Net Actual Demand Against the Forecast" lesson.

Demonstration: Calculate MPS Based on a Sales Item Forecast

This is a continuation of the "Create a Production Forecast" demonstration.

Scenario: Eduardo, the production planner at CRONUS, decides to run the planning worksheet by using the 2014 Q1 Production Forecast as the planning forecast. Because Eduardo is new to the planning worksheet, he decides to examine the effect of the production forecast on planning calculations by experimenting with different planning worksheet options and different forecast entries.



Note: The demonstrations in this lesson do not try to explain the planning worksheet functions. Focus instead on the effect that forecast entries have on the planning calculations, as indicated by the resulting action messages. The planning worksheet is described in detail in "Planning" in this training material.

Demonstration Steps

1. Delete the outstanding sales order line for item 1100, Front Wheel.
 - a. Close all open pages.
 - b. In the **Search** box, type "sales orders", and then select the related link.
 - c. On the **Sales Orders** list page, double-click the line for sales order 109005.
 - d. On the **Lines** FastTab of the sales order card, right-click the sales line for item 1100, Front Wheel, and then click **Delete Line**.
 - e. On the request message, click **Yes** to confirm the deletion.
 - f. Click **OK** to close the sales order card.



Note: The reason to delete the outstanding sales line for item 1100 is that you want the planning engine to perceive item 1100 strictly as an MRP component at this point, not as an MPS sales item.

2. Run the planning worksheet for MPS only. Use the 2014 Q1 Production Forecast as the planning forecast.
 - a. In the **Search** box, type "planning worksheets", and then select the link for Planning Worksheets – Departments/Manufacturing/Planning.
 - b. If any planning lines currently exist in the planning worksheet, click the cell in the upper-left corner of the table section of the worksheet. This selects all planning lines. Then, on the **Home** tab, click **Delete**. On the request message, click **Yes** to confirm the deletion. All the planning lines disappear. This leaves the planning worksheet empty.
 - c. On the **Home** tab, click **Calculate Regenerative Plan**.
 - d. On the **Options** FastTab of the **Calculate Plan – Plan. Wksh.** request page, select the check box for the **MPS** field, and clear the check box for the **MRP** field.
 - e. Set the **Starting Date** field to December 01, 2013.
 - f. Set the **Ending Date** field to March 31, 2014.

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- g. In the **Use Forecast** field, select 2014Q1.
- h. On the **Item** FastTab, in the **No.** filter field, type "1001|1100". This limits the planning calculations item 1001, Touring Bicycle, and item 1100, Front Wheel. These are the two items of interest.
- i. Clear all other filter fields (you may have to scroll down to see them).

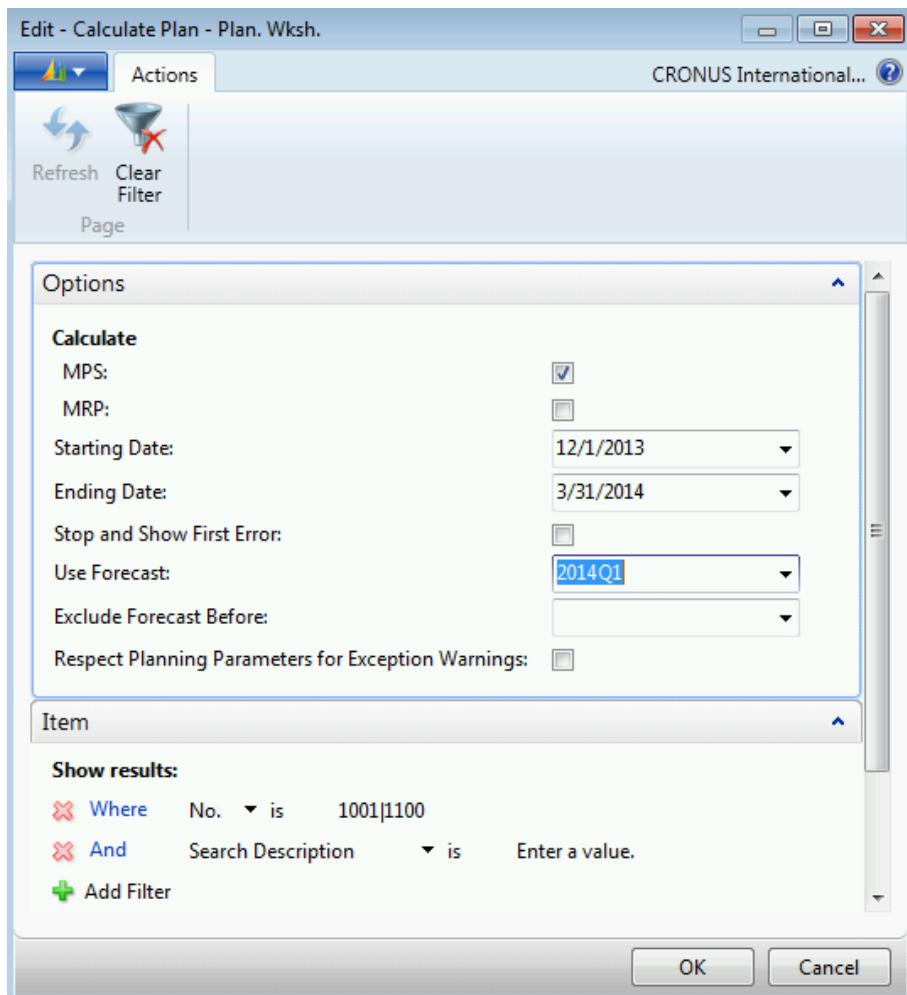


FIGURE 9.4:CALCULATE PLAN – PLAN. WKSH. REQUEST PAGE

- j. Click **OK** to run the batch job. You receive a brief status message, and then the program populates three action messages into the planning worksheet. Notice that all three lines are suggestions to create new production orders for 300 units of item 1001, and that the **MPS Order** field is checked for all three orders. Notice the values in the **Due Date** field for each order. At first, it seems that the planning system created these three orders specifically to fulfill the expected demand that you entered in the production forecast. The question is why did the planning system only address the forecast demand?

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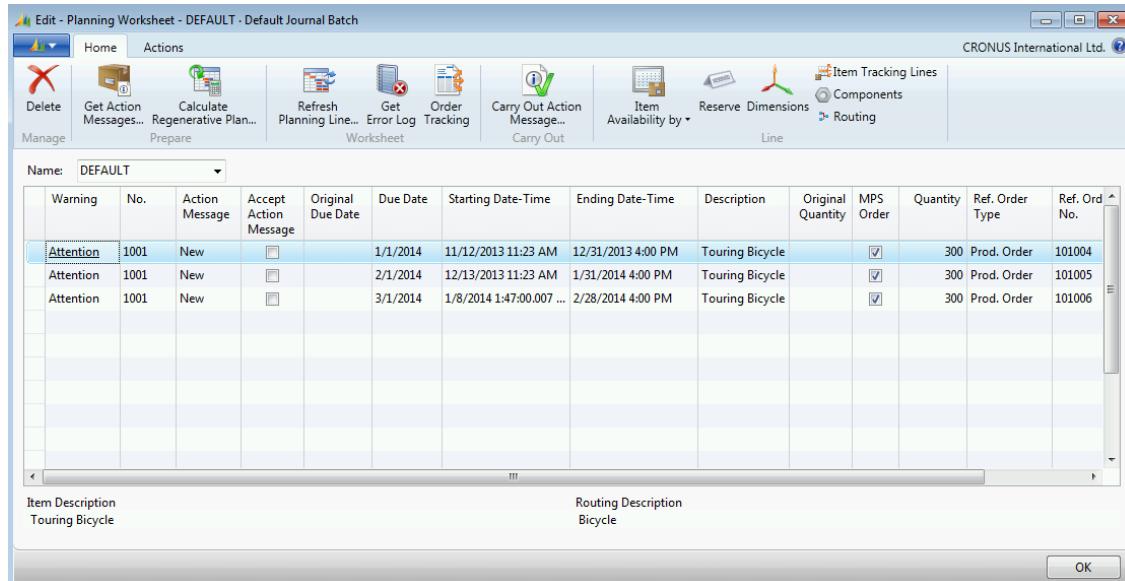


FIGURE 9.5:PLANNING WORKSHEET WITH MPS ACTION MESSAGES

- k. Select one of the lines. On the **Home** tab, click **Item Availability by**, and then click **Event**.
- l. On the **Home** tab of the **Item Availability by Event** page, click **Expand All**. Examine the list of events. The only demand events for item 1001 until March 31, 2014 (the end of the date range that you specified for the planning run) are from the 2014 Q1 Production Forecast. There is one additional sales order for three units of item 1001 that are due on September 24, 2014. However, this is outside the planning range. Therefore, the planning system suggests supply only to fulfill the expected demand in the forecast.
- m. Click **OK** to close the **Item Availability by Event** page. On the planning worksheet, notice that there is no suggested supply for item 1100, even though item 1100, Front Wheel, is a component for item 1001, Touring Bicycle. Therefore, at least 900 front wheels are required to build the 900 units of item 1001 from January to March inclusive. The reason for this exclusion of components is that you selected only MPS when you calculated the plan, and item 1100 is an MRP item.
- n. Leave the planning worksheet open.



Note: When you work with the planning worksheet and forecasts, the planning system does not account for any forecast quantity before the date that you specify in the **Starting Date** field on the **Calculate Plan – Plan. Wksh.** request page. The planning calculation routine does not suggest supply for this part of the forecast because it is in the past, and therefore viewed as no longer required.



Note: When you run the planning worksheet, the system bases the calculations on the sales unit of measure. If you do not specify a sales unit of measure on the item card, the system uses the base unit of measure.

Demonstration: Calculate MRP Based on a Sales Item Forecast

This is a continuation of the "Calculate MPS Based on a Sales Item Forecast" Demonstration.

Scenario: Satisfied with the output of the MPS calculation, Eduardo, the production planner at CRONUS, decides to run MRP.

Demonstration Steps

1. Run the planning worksheet for MRP only. Use the 2014 Q1 Production Forecast as the planning forecast.
 - a. Delete all existing planning lines from the worksheet.
 - b. On the **Home** tab, click **Calculate Regenerative Plan**.
 - c. On the **Options** FastTab of the **Calculate Plan – Plan. Wksh.** request page, select the check box for the **MRP** field, and clear the check box for the **MPS** field.
 - d. In the **Use Forecast** field, select 2014Q1.
 - e. Click **OK** to calculate the plan.

Notice that the planning worksheet remains empty. This is because you are trying to calculate MRP requirements for component item 1100, Front Wheel, before you calculate MPS requirements for item 1001, Touring Bicycle. Until the planning system generates MPS planning lines to fulfill the forecast quantities for item 1001, the forecast quantities themselves are nonspecific. They have to be converted into MPS planning lines that act, in many ways, like temporary production orders, with specific quantities and specific starting and ending date-times. When these values are determined, the planning system can calculate MRP quantities and due dates for the required components.



Note: If you did not delete the MPS planning lines that you generated in the "Calculate MPS Based on a Sales Item Forecast" demonstration, you could have successfully run MRP on its own. In that case, the planning system uses the existing MPS lines as the basis for calculating MRP

Running MPS only, changing the MPS planning lines, and then running MRP is another way for the production planner to adjust for operational requirements and to influence how forecast quantities are planned.

As shown in the "Calculate MPS and MRP Based on a Sales Item Forecast" demonstration, you can also run MPS and MRP together at the same time.

Demonstration: Calculate MPS and MRP Based on a Sales Item Forecast

This is a continuation of the "Calculate MRP Based on a Sales Item Forecast" demonstration.

Scenario: Eduardo, the production planner at CRONUS, realizes his error in trying to run MRP without MPS when the only source of demand is a production forecast for sales items. He then decides to run MPS and MRP together.

Demonstration Steps

1. Run MPS & MRP together.
 - a. On the **Home** tab of the planning worksheet, click **Calculate Regenerative Plan**.
 - b. On the **Calculate Plan – Plan. Wksh.** request page, select both MPS and MRP.
 - c. In the **Use Forecast** field, select 2014Q1.
 - d. Click **OK** to calculate the plan.

The screenshot shows the 'Edit - Planning Worksheet - DEFAULT - Default Journal Batch' window. The top menu bar includes 'Edit', 'File', 'Actions', 'Manage', 'Prepare', 'Worksheet', 'Carry Out', 'Line', and 'CRONUS International Ltd'. The main area displays a grid of data with columns: Warning, No., Action Message, Accept Action Message, Original Due Date, Due Date, Starting Date-Time, Ending Date-Time, Description, Original Quantity, MPS Order, and Quantity. The data includes various types of messages (Attention, Emergency, Exception) for different items like Touring Bicycle, Front Wheel, and Front Wheel. At the bottom, there are two dropdown menus: 'Item Description' set to 'Front Wheel' and 'Routing Description' set to 'Front Wheel'. An 'OK' button is visible at the bottom right.

Warning	No.	Action Message	Accept Action Message	Original Due Date	Due Date	Starting Date-Time	Ending Date-Time	Description	Original Quantity	MPS Order	Quantity
Attention	1001	New	<input type="checkbox"/>	1/1/2014	11/12/2013 11:23 AM	12/31/2013 4:00 PM		Touring Bicycle	<input type="checkbox"/>		300
Attention	1001	New	<input type="checkbox"/>	2/1/2014	12/13/2013 11:23 AM	1/31/2014 4:00 PM		Touring Bicycle	<input type="checkbox"/>		300
Attention	1001	New	<input type="checkbox"/>	3/1/2014	1/8/2014 2:32:00.007 PM	2/28/2014 4:00 PM		Touring Bicycle	<input type="checkbox"/>		300
Emergency	1100	New	<input type="checkbox"/>	11/30/2013	11/19/2013 10:40 AM	11/29/2013 4:00 PM		Front Wheel	<input type="checkbox"/>		148
Attention	1100	New	<input type="checkbox"/>	12/21/2013	12/4/2013 2:00 PM	12/20/2013 9:20 AM		Front Wheel	<input type="checkbox"/>		200
Exception	1100	New	<input type="checkbox"/>	12/13/2013	11/19/2013 2:00 PM	12/12/2013 4:00 PM		Front Wheel	<input type="checkbox"/>		300
Exception	1100	New	<input type="checkbox"/>	1/8/2014	12/30/2013 2:40 PM	1/7/2014 4:00 PM		Front Wheel	<input type="checkbox"/>		100
Attention	1100	New	<input type="checkbox"/>		2/1/2014	1/15/2014 2:00 PM	1/31/2014 9:20 AM	Front Wheel	<input type="checkbox"/>		200
Exception	1100	New	<input type="checkbox"/>		1/27/2014	1/23/2014 1:40 PM	1/24/2014 4:00 PM	Front Wheel	<input type="checkbox"/>		16
Exception	1100	New	<input type="checkbox"/>		1/29/2014	1/27/2014 2:50 PM	1/28/2014 4:00 PM	Front Wheel	<input type="checkbox"/>		10

FIGURE 9.6:PLANNING WORKSHEET PAGE WITH BOTH MPS AND MRP ACTION MESSAGES

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Notice this time that the planning system creates planning lines for both item 1001, Touring Bicycle, and item 1100, Front Wheel. The planning system ran MPS first and created the planning lines for item 1001. Based on these planning lines complete with quantities and starting and ending dates, the planning system then created MRP planning lines to meet the resulting dependent demand for component item 1100.

If you total the quantities on the planning lines for item 1100, they approximately equal 900 units. This is the quantity that is required to supply the component demand of the 900 touring bicycles that are specified in the production forecast. The total of the quantities on the planning lines for item 1100 is not exactly 900, because there are other planning factors at work. But the bulk of the demand originates from the production forecast.

Demonstration: Recalculate MPS for Spare Parts

This is a continuation of the "Calculate MPS and MRP Based on a Forecasted Sales Item" demonstration.

As mentioned, some items have both independent and dependent demand. For example, item 1100, Front Wheel, is a component in item 1001, Touring Bicycle, and it can be sold also as a replacement part. To forecast quantities for a replacement part, you must enter the forecast as a sales item in the same manner that you entered your forecast for items 1000 and 1001.

When you view a sales item forecast entry for an item that is both a component and a spare part, remember that the total demand for the item can be much larger than the sales item forecast indicates. For example, because item 1100, Front Wheel, is a component of both item 1000 and 1001, and one front wheel is required for every unit of either of those bicycles, this means that the total component demand for item 1100 is 500 units a month (200 units a month that are required by item 1000, and 300 units a month that are required by item 1001). Spare part sales are likely to be only a fraction of this.

Scenario: Eduardo, the production planner at CRONUS, decides to add a sales item forecast for spare parts of item 1100, Front Wheel, to see how this affects MPS calculations. Based on information that is provided by the Sales Department, Eduardo expects a spare part demand of 10 units per month.

Demonstration Steps

1. Add a forecast of 10 units of item 1100 each month for spare parts into the 2014 Q1 Production Forecast.
 - a. Close the planning worksheet.
 - b. In the **Search** box, type "production forecasts", and then select the related link.

- c. On the **Production Forecasts** list page, double-click the line for the 2014 Q1 Production Forecast to open the forecast.
 - d. On the **General** FastTab, in the **View by** field, select Month.
 - e. In the **Forecast Type** field, select Sales Item.
 - f. On the **Production Forecast Matrix** FastTab, make sure that the columns for Jan 2014, Feb 2014, and Mar 2014 are visible.
 - g. In the three columns for item 1100, type "10".
 - h. Click **OK** to close the **Production Forecast** page.
2. Rerun the planning worksheet for MPS only.
 - a. In the **Search** box, type "planning worksheets", and then select the link for Planning Worksheets – Departments/Manufacturing/Planning.
 - b. Delete all existing planning lines from the worksheet.
 - c. On the **Home** tab, click **Calculate Regenerative Plan**.
 - d. On the **Options** FastTab of the **Calculate Plan – Plan. Wksh.** request page, select the check box for the **MPS** field, and clear the check box for the **MRP** field.
 - e. In the **Use Forecast** field, select 2014Q1.
 - f. Click **OK** to run the batch job.

Notice that planning lines for both item 1001 and item 1100 now appear, and that all planning lines are now MPS lines. Also notice that the quantities are changed only for one planning line compared to the lines that are generated by the successful combined MPS & MRP planning run. This is because the spare part forecast quantities are so low.

How has item 1100, Front Wheel, suddenly become an MPS item not only for its expected spare parts demand, but also for its dependent demand as a component?

Remember that MPS calculates supply for end items that have a forecast or sales order line, and that MRP calculates supply only for items that are not MPS items. Remember that MPS and MRP both use the same planning algorithms.

Because you made sales item forecast entries for item 1100 as a spare part, the planning run moves the item from the MRP list to the MPS list. Because the planning system applies the same planning algorithms in either case, it calculates the same planning lines. That is, even though the system now views item 1100 as an MPS item, the planning system still calculates the dependent component demand for the item that comes from the planning lines for item 1001.

Net Actual Demand Against the Forecast

As described in the "The Role of Forecasts in Planning Calculations" topic, actual demand consumes forecasted demand. This is shown in the "Netting of Forecasted and Actual Demand" diagram.

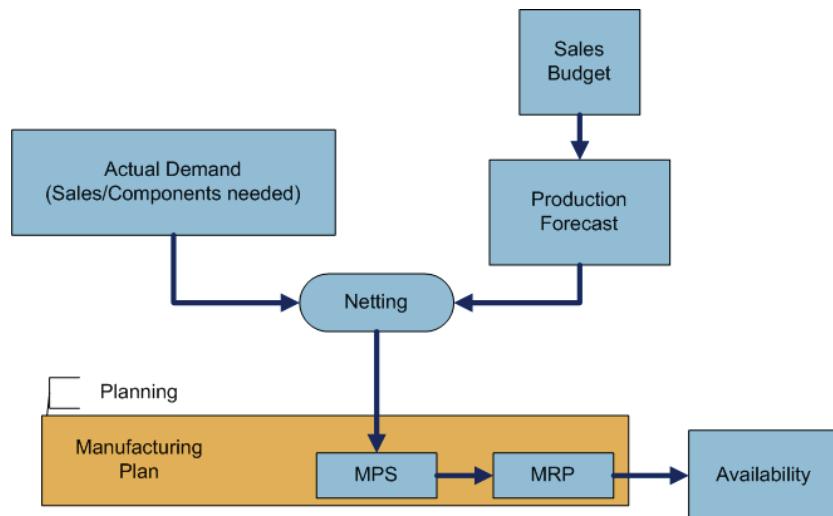


FIGURE 9.7:NETTING OF FORECASTED AND ACTUAL DEMAND

The netting of forecasted demand and actual demand for sales items is fairly straightforward. If you enter a sale item forecast of 200 units for item A in period 1, and then enter a sales order for 50 units of item A in period 1, this reduces the forecasted demand for item A in period 1 to 150 units. Added to the 50 units on the sales order, the total demand for the period remains at 200.

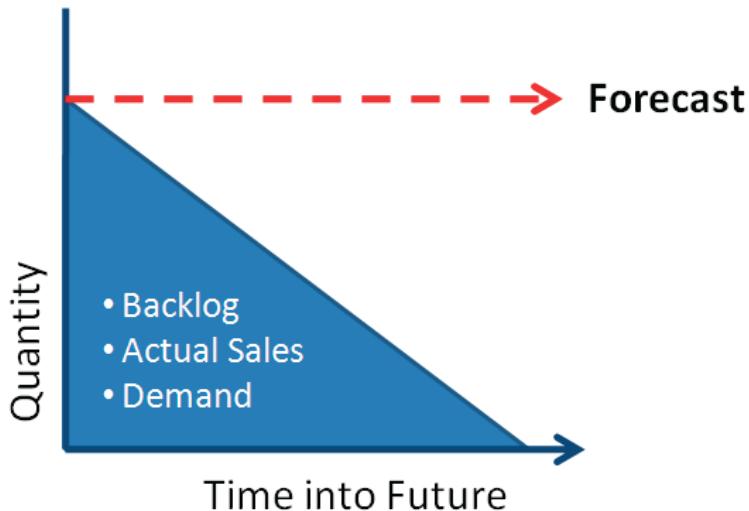


FIGURE 9.8:FORECAST CONSUMPTION

If actual demand exceeds the forecasted demand in a forecast period, this reduces the forecasted demand to zero, and the total demand then equals the actual demand.

Blanket sales orders do not consume sales item forecasts. The planning system views blanket orders as additional, customer-specific sources of demand. Therefore, if you add a blanket sales order that includes an expected delivery of 25 units of item A in period 1 to a production forecast of 200 units and an actual sales order of 50 units, the planning system now perceives the following 225 units of total demand for item A in period 1:

- 150 units from production forecast
- 50 units from actual sales orders
- 25 units from the blanket sales order

As shown in the "Calculate a Plan Based on a Component Forecast" demonstration, you use a forecast type of Component to enter component forecasts.

Actual component demand (this includes component demand on planning lines) consumes component forecast. For example, consider a situation where you forecast 200 units of sales item A, and to manufacture each unit of item A requires two units of component item B. If you enter a component forecast for 400 units of item B in period 1, and then run the planning worksheet only for item B, the planning system suggests a supply of 400 units to meet the forecasted component demand. This assumes no other planning factors occur. But if you run the planning worksheet for both item A and item B, the following happens:

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- The planning system creates a planning line to suggest a supply of 200 units of item A.
- Because a planning line exists for item A, the planning system detects the dependent component demand for item B. It also considers the component forecast of 400 units of item B. But because this forecast is completely consumed by the component demand from the planning line for item A, this reduces the remaining component forecast to zero. Therefore, the planning system creates a planning line to suggest a supply of 400 units of item B.

If you change the component forecast for item B to 500 units, then the planning system suggests a supply of 500. This consists of 400 units of dependent demand from item A, plus 100 units of unconsumed forecast. If, on the other hand, you reduce the component forecast for item B to 300 units, the planning system still suggests a supply of 400 units of item B. This consists of 400 units of dependent demand from item A, plus zero units of remaining component forecast.

The rest of this lesson demonstrates these netting principles.

 **Note:** *The netting procedure never deletes the production forecast. It only reduces the effect of the forecast. The production forecast itself is unchanged and has the same effect the next time that you run the planning worksheet.*

 **Note:** *A good rule to remember about netting is that independent demand consumes sales item forecast, and dependent demand consumes component forecast.*

Demonstration: Consume a Sales Item Forecast with a Sales Order

This is a continuation of the "Recalculate MPS for Spare Parts" demonstration.

Scenario: Eduardo, the production planner at CRONUS, wants to verify how sales orders consume a production forecast. Therefore, he creates a sales order for 200 units of item 1001, Touring Bicycle, and schedules the sales order for delivery on February 20, 2014. He then re-runs the planning worksheet to see the effect.

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Demonstration Steps

1. Create a sales order for 200 units of item 1001, Touring Bicycle, due on February 20, 2014.
 - a. Close the planning worksheet.
 - b. In the **Search** box, type "sales orders", and then select the related link.
 - c. On the **Home** tab of the sales orders list, click **New**, and then click **Enter**.
 - d. On the **General** FastTab of the sales order card, in the **Sell-to Customer No.** field, type "20000". Accept any messages.
 - e. Set the **Requested Delivery Date** field to February 20, 2014.
 - f. On the **Lines** FastTab, in the **Type** field, select Item.
 - g. In the **No.** field, type "1001".
 - h. In the **Quantity** field, type "200". Accept any messages.
 - i. Click **OK** to close the sales order card.
2. Run the planning worksheet.
 - a. In the **Search** box, type "planning worksheets", and then select the link for Planning Worksheets – Departments/Manufacturing/Planning.
 - b. On the **Home** tab of the planning worksheet, click **Calculate Regenerative Plan**.
 - c. In the **Use Forecast** field, select 2014Q1.
 - d. Click **OK** to run the batch job.

The screenshot shows the Microsoft Dynamics NAV Planning Worksheet interface. The window title is "Edit - Planning Worksheet - DEFAULT - Default Journal Batch". The ribbon tabs are "Home" and "Actions". The "Actions" tab is selected, showing icons for Delete, Get Action Messages..., Calculate, Refresh, Planning Line..., Get Error Log, Order Tracking, Carry Out Action Message..., Item Availability by, Reserve, Dimensions, Components, and Routing. The "Worksheet" tab is selected under "Prepare". The main area displays a grid of data with the following columns: Warning, No., Action Message, Accept Action Message, Original Due Date, Due Date, Starting Date-Time, Ending Date-Time, Description, Original Quantity, MPS Order, and Quantity. The data rows include various types of messages (Attention, Emergency, Exception) and items (Touring Bicycle, Front Wheel). At the bottom of the grid, there are two status bars: "Item Description: Touring Bicycle" and "Routing Description: Bicycle". A "OK" button is at the bottom right of the grid.

Warning	No.	Action Message	Accept Action Message	Original Due Date	Due Date	Starting Date-Time	Ending Date-Time	Description	Original Quantity	MPS Order	Quantity
Attention	1001	New	<input checked="" type="checkbox"/>		2/20/2014	1/15/2014 12:36:00.007 PM	2/19/2014 4:00 PM	Touring Bicycle	<input type="checkbox"/>	200	
Attention	1001	New	<input type="checkbox"/>		1/1/2014	11/12/2013 11:23 AM	12/31/2013 4:00 PM	Touring Bicycle	<input type="checkbox"/>	300	
Attention	1001	New	<input type="checkbox"/>		2/1/2014	1/14/2014 12:57:00.013 PM	1/31/2014 4:00 PM	Touring Bicycle	<input type="checkbox"/>	100	
Attention	1001	New	<input type="checkbox"/>		3/1/2014	12/25/2013 11:02:00.007 AM	2/28/2014 4:00 PM	Touring Bicycle	<input type="checkbox"/>	300	
Emergency	1100	New	<input type="checkbox"/>		11/30/2013	11/19/2013 10:40 AM	11/29/2013 4:00 PM	Front Wheel	<input type="checkbox"/>	148	
Attention	1100	New	<input type="checkbox"/>		12/21/2013	12/4/2013 2:00 PM	12/20/2013 9:20 AM	Front Wheel	<input type="checkbox"/>	200	
Exception	1100	New	<input type="checkbox"/>		12/25/2013	12/16/2013 2:40 PM	12/24/2013 4:00 PM	Front Wheel	<input type="checkbox"/>	100	
Attention	1100	New	<input type="checkbox"/>		1/18/2014	1/1/2014 2:00 PM	1/17/2014 9:20 AM	Front Wheel	<input type="checkbox"/>	200	
Exception	1100	New	<input type="checkbox"/>		1/14/2014	1/3/2014 2:40 PM	1/13/2014 4:00 PM	Front Wheel	<input type="checkbox"/>	100	
Exception	1100	New	<input type="checkbox"/>		1/15/2014	12/30/2013 12:40 PM	1/14/2014 4:00 PM	Front Wheel	<input type="checkbox"/>	200	

FIGURE 9.9:PLANNING WORKSHEET WITH FORECASTED DEMAND CONSUMED BY ACTUAL DEMAND

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Notice that there are now four planning lines for item 1001, Touring Bicycle, instead of three. The lines with the due dates of January 01, 2014, and March 01, 2014, are unchanged from previous planning runs. The planning system continues to suggest these lines because the production forecast for item 1001 continues to be the only source of demand in January and March, 2014, and the date that is assigned to the forecast quantity is the first day of the forecast period.

However, the planning system adds a new planning line for 200 units of item 1001, due on February 20, 2014, to meet the sales order that you created for 200 units of item 1001, also due on February 20, 2014. Because this actual sales demand of 200 units occurs in February, 2014, it reduces the forecasted sales item demand for February, 2014 by the same quantity. Therefore, the planning system reduces its suggested quantity for the planning line for February 01, 2014, from 300 units to 100 units. The total demand for item 1001 in February, 2014 remains 300. Now it is generated from two sources: 200 units of actual demand, due February 20, 2014, and 100 units of remaining expected demand, due February 01, 2014.

Also notice that the planning system does not change the total suggested quantity for item 1100, front wheel. Because the total demand for item 1001 is unchanged, the dependent demand for item 1100 as a component also is unchanged.

Demonstration: Calculate a Plan Based on a Component Forecast

This is a continuation of the "Consume a Sales Item Forecast with a Sales Order" demonstration.

Scenario: As part of his ongoing test of planning worksheet functionality, Eduardo, the production planner at CRONUS, decides to add a component forecast for item 1100, Front Wheel, and then check the effect of this change on the planning worksheet.

Demonstration Steps

1. Remove the spare parts entries from the 2014 Q1 Production Forecast, and add a component forecast for item 1100, Front Wheel.
 - a. Close the planning worksheet.
 - b. In the **Search** box, type "production forecasts", and then select the related link.
 - c. On the **Production Forecasts** list page, double-click the line for the 2014Q1.
 - d. On the **General** FastTab of the **Production Forecast** page, in the **View by** field, select Month.
 - e. In the **Forecast Type** field, select Sales Item.

- f. On the **Production Forecast Matrix** FastTab, make sure that the columns for Jan 2014, Feb 2014, and Mar 2014 are visible.
 - g. Delete the entries in these three columns for item 1100, Front Wheel. This removes the forecasted demand for item 1100 as a spare part.
 - h. On the **General** FastTab, set the **Forecast Type** field to Component.
 - i. On the **Production Forecast Matrix** FastTab, on the line for item 1100, in the Jan 2014 column, type "300".
 - j. Click **OK** to close the **Production Forecast** page.
-



Note: If you enter forecast entries for an item both as a sales item (typically as a spare part) and a component, you can view the combined total for both entries by selecting a forecast type of Both on the **General** FastTab of the **Production Forecast** page. However, you cannot edit the entries for this forecast type. You can only view them.

2. Run the planning worksheet.
 - a. In the **Search** box, type "planning worksheets", and then select the link for Planning Worksheets – Departments/Manufacturing/Planning.
 - b. Delete all existing planning lines from the worksheet.
 - c. On the **Home** tab, click **Calculate Regenerative Plan**.
 - d. In the **Use Forecast** field, select 2014Q1.
 - e. Click **OK** to run the batch job.

Notice that other than the removal of small quantities that are related to the now-deleted spare parts forecasts, the planning lines for item 1100, Front Wheel, are unchanged. This is because the component forecast for 300 units of item 1100 in January, 2014, is consumed by the actual component demand for item 1100 in the same period. All this demand comes from the planning lines for item 1001.

However, the January, 2014 component demand for item 1100 does *not* come from the suggested planning line for 300 units of item 1001 due January 01, 2014. Look closely at the due dates for the planning lines for item 1100. When the planning system calculates planning lines for item 1001, it backward schedules the suggested production orders to calculate their starting date. For example, for the planning line for item 1001 that is due on January 01, 2014, the starting date is November 12, 2013 (see the value in the **Starting Date-Time** field for the planning line).

If you check the other planning lines for item 1001, you see that they are similarly backward scheduled.

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In the simplest flushing model, the demand for a component occurs on the starting date of the production order that requires it. Therefore, the component demand for item 1100 for the planning lines for item 1001 that are scheduled in January, February, and March, all occur in November and December of 2013, and in January, 2014.

If you look closely at the due dates of the planning lines for item 1100, you see that 500 units of item 1100 are scheduled in January, 2014 because of the backward scheduling of the planning lines for item 1001. Because these 500 units exceed the component forecast of 300 units of item 1100 for January, 2014, no additional supply is suggested. However, notice that there is no component demand for item 1100 in either February or March of 2014. This is the basis for the next step in this demonstration.

3. Add a component forecast for item 1100, Front Wheel, for February, 2014.
 - a. Close the planning worksheet.
 - b. In the **Search** box, type "production forecasts", and then select the related link.
 - c. On the **Production Forecasts** list page, double-click the line for the 2014Q1.
 - d. On the **General** FastTab of the **Production Forecast** page, in the **View by** field, select Month.
 - e. In the **Forecast Type** field, select Component.
 - f. On the **Production Forecast Matrix** FastTab, make sure that the columns for Jan 2014, Feb 2014, and Mar 2014 are visible.
 - g. On the **Production Forecast Matrix** FastTab, in the Feb 2014 column, type "300".
 - h. Click **OK** to close the **Production Forecast** page.
4. Rerun the planning worksheet.
 - a. In the **Search** box, type "planning worksheets", and then select the link for Planning Worksheets – Departments/Manufacturing/Planning.
 - b. On the **Home** tab of the planning worksheet, click **Calculate Regenerative Plan**.
 - c. In the **Use Forecast** field, select 2014Q1.
 - d. Click **OK** to run the batch job.
 - e. When the batch job is finished, scroll to the last entries in the planning worksheet.

Notice that there are additional planning lines for item 1100, Front Wheel, that have due dates in February, 2014. They are suggested in direct response to the expected component demand that you added to the production forecast for February, 2014 because no actual component demand exists in that month to consume the forecast.

Differences Between Actual and Forecasted Demand

This lesson has dealt with the processes of netting actual demand against the forecast.

Other issues that companies must address when actual demand differs from forecasted demand include the following.

- If the actual demand is less than forecasted demand because of timing, such as a delay in orders, you must decide whether to move the remaining forecast to the next period.
- If the actual demand is less than forecasted demand because the forecast is too optimistic, do not move the remaining forecast to the next period.
- If you have already built to a forecast that is too optimistic, and therefore have excess inventory, make sure that inventory is included in the calculation of net requirement if the item(s) in question use a lot-for-lot reordering policy. Otherwise, the surplus inventory is not considered in planning calculations. The **Include Inventory** field is on the **Planning** FastTab of the item card.
- If actual demand is greater than the forecast, and you cannot adjust your plans in time, orders will be late. In this scenario, be aware of the following:
 - Because the system does not push customer orders, it has to propose orders to fulfill the demand even though the orders cannot be finished in time.
 - If you change the shipment dates of those customer orders to reflect reality, the orders could consume forecast from the next period.

Whether a forecast proves to be too optimistic or too pessimistic, your best defense is to closely monitor actual demand and forecasted demand, and then respond quickly as soon as it becomes clear that the two are not in agreement.

Additional Forecasting Topics

The following additional topics apply to forecasting:

- Forecast by location
- Order tracking
- Forecasting setup

Forecast by Location

You can enter forecasts by location by specifying a location in the **Location Filter** field on the **General** FastTab of the **Production Forecast** page.

To use this information in planning calculations, you must select the **Use Forecast on Locations** check box on the **Planning** FastTab of the **Manufacturing Setup** page. If you do not select this check box, then demand nets against forecast company-wide.

Order Tracking and Forecasting

Order tracking is a feature that traces the connection of a supply to its corresponding demand.

To view this mechanism in action, follow these steps.

1. If the planning worksheet is not open, close all open pages. In the **Search** box, type “planning worksheets”, and then select the link for Planning Worksheets – Departments/Manufacturing/Planning.
2. The entries from the “Calculate a Plan Based on a Component Forecast” demonstration should still be in the worksheet. If they are not, repeat that demonstration to create the entries.
3. On the planning worksheet, select the planning line for item 1001 for 200 units with a due date of February 20, 2014. This is the line that is created by the planning system to supply the sales order that you created for 200 units of item 1001, also due on February 20, 2014.
4. On the **Home** tab, click **Order Tracking**.

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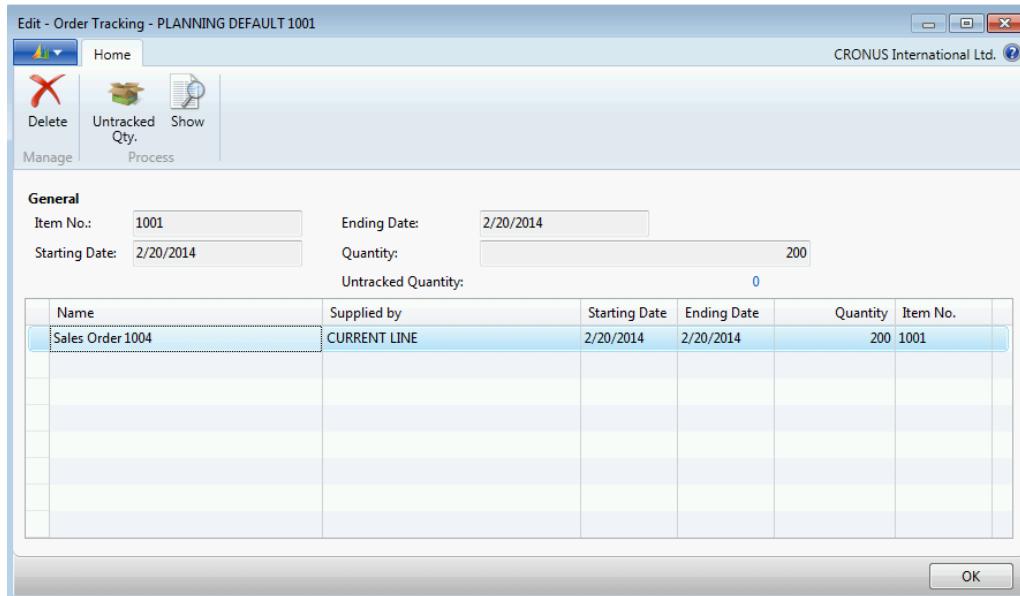


FIGURE 9.10:ORDER TRACKING PAGE

5. As you can see, the link between the planning line and the sales order is explicit.
 6. Click **OK** to close the **Order Tracking** page.
 7. On the planning worksheet, select one of the other planning lines for item 1001. Because there is no other demand in the system other than the production forecast and the one sales order that you entered, these planning lines were created in response to the forecast. To confirm this, on the **Home** tab, click **Order Tracking**.
 8. This time, the program informs you that there are no order tracking entries for the line. Click **OK** to close the message.

Order tracking does not track to the production forecast because of the forecast's design. The forecast quantity is the sum of several entries (correction history and forecast for different locations). The tracking system must track back to a specific demand line, and it cannot do this with a forecast.

Forecasting Setup

To set up forecasting functionality, follow these steps.

1. Close all open pages.
 2. In the **Search** box, type “manufacturing setup”, and then select the setup link.
 3. Expand the **Planning** FastTab.

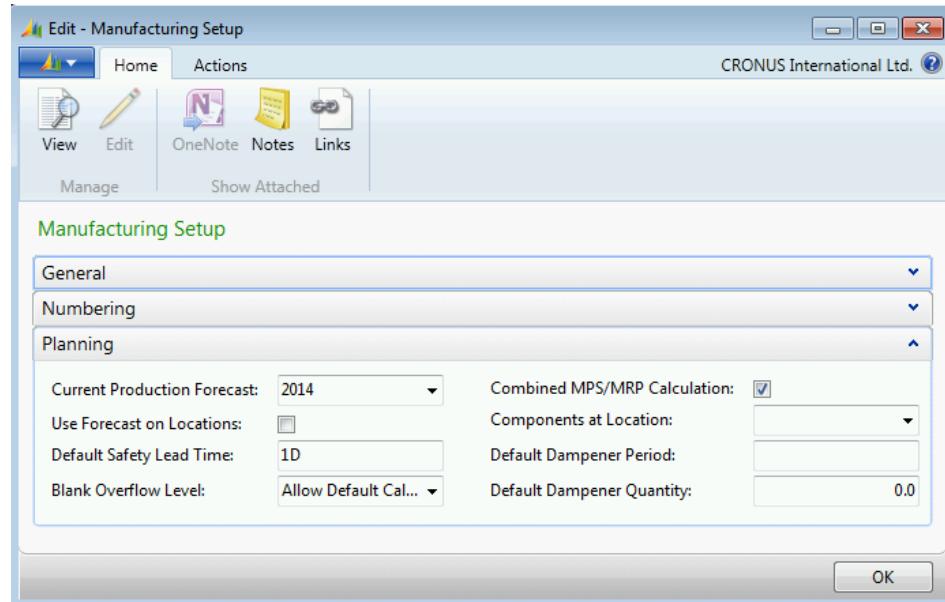


FIGURE 9.11:MANUFACTURING SETUP PAGE

The following table describes fields that are related to forecasting.

Field	Description
Current Production Forecast	Specifies the name of the production forecast to use to calculate a plan. This is the default production forecast that populates in the Use Forecast field on the Options FastTab of the Calculate Plan – Plan. Wksh. request page. The user can select a different production forecast on the request page, if it is required.
Use Forecast on Locations	Specifies whether to filter according to location when calculating a plan. If you leave this field blank, the program nets demand against forecast company-wide.

Field	Description
Combined MPS/MRP Calculation	Specifies whether to calculate MPS and MRP in one step when you run the planning worksheet. If you select this field, then both MPS and MRP fields are selected when you open the Calculate Plan – Plan. Wksh. request page. You then can clear either field or both fields. If you do not select this field, then you can select either the MPS or MRP field in the Calculate Plan – Plan. Wksh. request page. However, you cannot select both.

Production Forecast Reports

The following reports are useful for production forecasting:

- Planning Availability
- Production Forecast

Planning Availability Report

This report shows an overview of all existing requirements and receipts for the items that you select on a specific date. You can use the report for a quick picture of the current demand-supply situation for an item.

The report displays the item number and description plus the actual quantity in inventory. Changes to the projected available inventory are listed chronologically.

To access the report, type “planning availability” in the **Search** box, and then select the related link.

The following table describes the fields in this report.

Field	Description
Date	The due date for the demand or supply.

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Field	Description
Gross Requirement	This is the total demand, independent and dependent, for the particular item. <i>Independent demand</i> comes from sales orders, service orders, transfer orders, and production forecasts. <i>Dependent demand</i> for components comes from planned, firm planned, and released production orders, and from demand for production order proposals in the planning worksheet.
Planned Receipts	These are the items from replenishment order proposals. This includes planned production orders, planning worksheets, and requisition worksheets.
Scheduled Receipts	These are the items from replenishment orders. This includes firm planned production orders, released production orders, purchase orders, and transfer orders.
Projected Balance	This shows the projected available inventory that is based on the formula: <i>current inventory + scheduled receipts + planned receipts – requirements</i> . When calculating a replenishment plan, the program considers a projected negative balance as an additional requirement. Several parameters on the Planning FastTab of the item card also affect the projected balance.
Document Type	This shows the type of document that is the source of the availability.
Document No.	This shows the number of the relevant source document.

Production Forecast Report

This report shows an overview of the production forecast, plus any sales orders, for the selected items. One use of this report is to check the accuracy of a production forecast.

To access the report, type “production forecast” in the **Search** box, and then select the related link.

The following table describes the fields in this report.

Field	Description
Item No.	The item number for the item in the forecast.
Description	The description for the item.
Location Code	The location code that is specified for the forecast entry or sales order, if applicable.
Date	The date for the forecast entry, or the due date for the sales order.
Quantity	The quantity for the forecast entry or the sales order.
Type	Identifies whether the report line is for a forecast entry or a sales order.
No.	The document number for sales orders.

Lab: Create Production Forecast

Scenario

You are the production planner at CRONUS. You have just received a sales forecast for 2014 Q2 for item 1000, Bicycle, and item 1100, Front Wheel. The forecast includes sales item quantities for item 1000, and spare part projections for item 1100.

Because item 1000 offers item 1600, Bell, as an option, you also want to enter a component forecast for item 1600.

High Level Steps

1. Create the forecast name and description.
2. Enter the sales item forecast for item 1000, Bicycle.
3. Enter the sales item forecast for item 1100, Front Wheel, as a spare part.
4. Enter the component forecast for item 1600, Bell.

Detailed Steps

1. Create the forecast name and description.
 - a. Close all open pages.
 - b. In the **Search** box, type "production forecasts", and then select the related link.
 - c. On the **Home** tab of the **Production Forecasts** list page, click **New**.
 - d. On the **Production Forecast Names** page, in the **Name** field, type "2014Q2".
 - e. In the **Description** field, type "2014 Q2 Production Forecast".
 - f. Click **OK** to close the page.
2. Enter the sales item forecast for item 1000, Bicycle.
 - a. On the **Production Forecasts** list page, double-click the line for the 2014 Q2 Production Forecast to open the forecast.
 - b. On the **General** FastTab of the **Production Forecast** page, in the **View by** field, select Month.
 - c. In the **View as** field, select Net Change.
 - d. In the **Forecast Type** field, select Sales Item.
 - e. On the **Production Forecast Matrix** FastTab, make sure that the Apr 2014, May 2014, and Jun 2014 columns are visible. If they are not visible, use the **Previous Set**, **Previous Column**, **Next Column**, and **Next Set** functions on the **Home** tab to correctly position the date columns.

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-
-
-
-
-
- f. Use the vertical scroll bar on the right side of the matrix to make sure that item 1000, Bicycle, is visible.
- g. In each column for item 1000, Bicycle, type "250".
3. Enter the sales item forecast for item 1100, Front Wheel, as a spare part.
 - a. On the **Production Forecast Matrix** FastTab, use the vertical scroll bar on the right side of the matrix to make sure that item 1100, Front Wheel, is visible.
 - b. In the Apr 2014, May 2014, and Jun 2014 columns for item 1100, Front Wheel, type "15".
4. Enter the component forecast for item 1600, Bell.
 - a. On the **General** FastTab, set the **Forecast Type** field to Component.
 - b. On the **Production Forecast Matrix** FastTab, use the vertical scroll bar on the right side of the matrix to make sure that item 1600, Bell, is visible.
 - c. In the Apr 2014, May 2014, and Jun 2014 columns for item 1600, Bell, type "100".
 - d. Click **OK** to close the **Production Forecast** page.

Module Review

Forecasting is an important task in many companies, especially where the lead time for one or more products exceeds the delivery expectations of customers.

Microsoft Dynamics NAV offers a powerful forecasting tool with full integration to its planning system. Used correctly, the tool set enables users to swiftly and accurately respond to changes in both forecasted demand and actual demand.

This module focuses mainly on forecasting functionality. To successfully use the combination of forecasting and planning together, you are strongly encouraged to learn about the program's planning capabilities. For more information, refer to "Planning" and "Additional Planning Topics" in this training material.

Test Your Knowledge

Test your knowledge with the following questions.

1. What is the difference between independent demand and dependent demand?

2. What are the three possible selections in the Forecast Type field of the Production Forecast page?

3. When you enter a forecast for a month period, on what date is the forecast entry recorded?

- () The 15th of the month.
() The last day of the month.
() The first day of the month.
() The same day as the day that you make the entry.

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4. What is the difference between MPS and MRP?

5. What does the planning system do if actual demand exceeds forecasted demand?

- () It sets the total demand to equal the actual demand.
- () It sets a ceiling on the total demand so that it does not exceed the forecasted demand.
- () It automatically increases the forecasted demand to equal the total demand.
- () It pushes the difference between the total demand and the forecasted demand into the next forecast period.

Test Your Knowledge Solutions

Test Your Knowledge

1. What is the difference between independent demand and dependent demand?

MODEL ANSWER:

Independent demand is demand from items sold to customers.

Dependent demand is demand for components that are required to make the items sold to customers.

2. What are the three possible selections in the Forecast Type field of the Production Forecast page?

MODEL ANSWER:

Sales Item, Component, and Both.

3. When you enter a forecast for a month period, on what date is the forecast entry recorded?

() The 15th of the month.

() The last day of the month.

(✓) The first day of the month.

() The same day as the day that you make the entry.

4. What is the difference between MPS and MRP?

MODEL ANSWER:

MPS is the calculation of a master production schedule that is based on the actual demand and the production forecast. The MPS calculation is used for end items that have a forecast or sales order line.

MRP is the calculation of material requirements that are based on actual demand for components and the demand for components that are required by MPS planning lines. MRP is calculated only for items that are not MPS items.

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5. What does the planning system do if actual demand exceeds forecasted demand?
 - () It sets the total demand to equal the actual demand.
 - () It sets a ceiling on the total demand so that it does not exceed the forecasted demand.
 - () It automatically increases the forecasted demand to equal the total demand.
 - () It pushes the difference between the total demand and the forecasted demand into the next forecast period.