

MODULE 8: SALES ORDER INTERFACE AND ORDER PLANNING

Module Overview

When a company becomes aware of new demand for its products, it must do the following:

- Make sure that it obtains the necessary supply of raw material and component subassemblies to meet the demand.
- Notify production personnel.

Microsoft Dynamics® NAV lets you achieve both goals by using one or more of the following three methods:

- Create a production order directly from a sales order. In the program, this is known as *sales order planning*, and is described in the “Sales Order Planning” lesson.
- Use the order planning functionality to create production orders directly for different types of demand, such as sales, production, service, and so on. This planning occurs for one level of the bill of materials (BOM) at a time, and has many other limitations. Order planning is described in the “Order Planning” lesson.
- Use the planning worksheet to calculate a full regenerative or net change plan by using all demand and supply information that is available to the planning system. The planning worksheet is described in “Planning” and “Additional Planning Topics” in this training material.

“Sales Order Interface and Order Planning” focuses on the sales order planning and order planning functionalities. To follow the demonstrations and labs in this module, 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 and demonstrate all aspects of sales order planning.
- Explain and demonstrate all aspects of order planning.

Sales Order Planning

Typically, a make-to-order (MTO) manufacturing company does not carry finished goods inventory. It produces finished goods only in response to sales orders. This model is common for products that frequently require customization.

The sales order planning functionality supports this model by letting you create a production order directly from a sales order. It also supports reservations of production output on behalf of sales orders, and order tracking functionality that lets you view the connections between sales, production, and inventory.



Note: *Manufacturing is not the only way to meet customer requests for customization. If a request requires only light assembly, you can fulfill it by using the program's Assembly Management functionality. For more information, refer to the Trade in Microsoft Dynamics NAV 2013 course.*

Sales Order Planning Page

The **Sales Order Planning** page lets you create the following two types of production orders:

- **Item Order** – Create one production order for each line of a sales order.
- **Project Order** – Create one multiline production order for all the lines of the sales order regardless of the manufacturing policy for the sales line items. Use this type of order for large projects with long manufacturing lead times.



Note: *You cannot create a project production order for multiple lines of the same item. For example, a sales order can have the same item on different lines with different ship dates. For these types of sales orders, you must create a separate production order for each sales line. This is because the program treats all lines of the same item on a production order as one line for output posting purposes.*

To open the **Sales Order Planning** page, follow these steps.

1. In the **Search** box, type "sales orders", and then select the related link.
2. On the **Sales Orders** list page, double-click sales order number 109001 for customer 49633663.
3. On the **Actions** tab of the sales order card, click **Planning**.
4. On the **Sales Order Planning** page, use the **Choose Columns** function to add all available fields and arrange them as shown in the "Sales Order Planning Page" image. You must reopen the page for the changes to take effect.

Module 8: Sales Order Interface and Order Planning

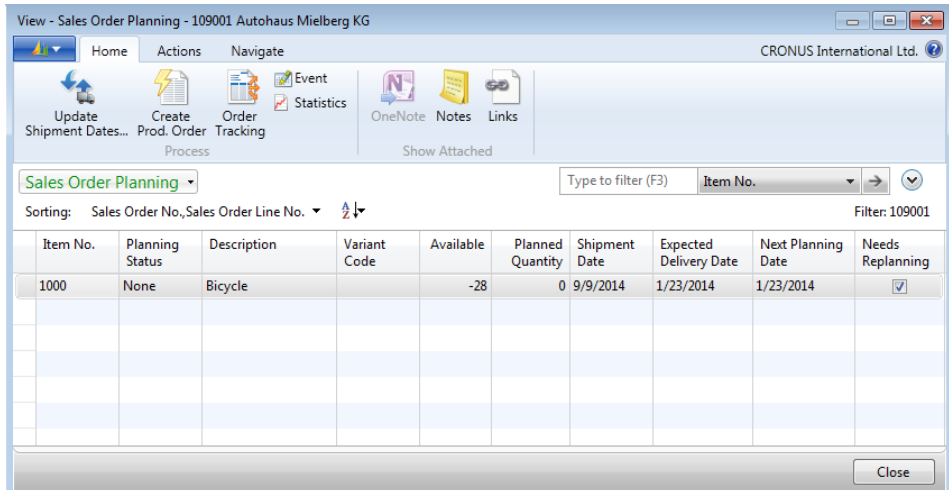



FIGURE 8.1: SALES ORDER PLANNING PAGE

The following table describes the fields on the **Sales Order Planning** page.

Field	Description
Item No.	Item number on the sales order line.
Planning Status	Planning status of the production order that is tracked to the sales order, if any. The options are None, Simulated, Planned, Released, and Inventory.
Description	Description of the item on the sales order line.
Variant Code	Variant code of the item on the sales order line.
Available	Available quantity of the item. This is total net availability (all supply less all demand).
Planned Quantity	Quantity on the production order that is tracked to the sales order line, if any.
Shipment Date	Shipment date for the sales order line.

Field	Description
<p>Expected Delivery Date</p>	<p>Before you create a production order for the sales order line, this field shows a theoretical delivery date based on the formula: <i>next planning date + lead time calculation on the item card + safety lead time on the item card</i>. If a safety lead time is not specified on the item card, the formula uses the default safety lead time that is specified in the manufacturing setup.</p> <p>The program includes all calendar days in the calculation. For example, if the next planning date is February 01, 2014, the lead time calculation is two days, and the safety lead time is seven days, the expected delivery date is February 10, 2014.</p> <p>After you create a production order for the sales order line, the program sets the expected delivery date to equal the due date of the production order.</p>
<p>Next Planning Date</p>	<p>Next date that the item is scheduled for planning. The next planning date is determined by the work date and the reorder cycle that is defined on the item card.</p> <p>For example, if the work date is February 01, 2014, and the reorder cycle is one week, then the next planning date is February 08, 2014.</p>
<p>Needs Replanning</p>	<p>Specifies whether you must reschedule this line.</p>

 **Note:** *In an MTO environment, the expected delivery date is not meaningful until you generate a production order because the production orders and purchases that are required to fulfill the order are not yet planned.*

For make-to-stock (MTS) items, the expected delivery date shows when an item can be produced. The expected delivery date for an MTS order is therefore more meaningful than the expected delivery date for an MTO order, as long as the following is true:

Module 8: Sales Order Interface and Order Planning

- Reorder cycles are defined correctly.
- Accurate lead time calculation and safety lead time values are entered on the item card for production items.

If these conditions are met, the expected delivery date can help the order processor do the following:

- Promise a delivery date to a customer (similar to the available-to-promise functionality).
- Use the **Update Shipment Dates** function to change the shipment date on the sales order line(s) to equal the expected delivery date.

Demonstration: Create a Production Order from a Sales Order

Scenario: Susan, the order processor at CRONUS International Ltd., receives an order for eight units of item 1000, Bicycle. The order is from customer 20000, Selangorian Ltd, and is due on February 12, 2014. Susan enters the sales order into Microsoft Dynamics NAV. As part of an agreement with Eduardo, the production planner at CRONUS, she then uses the sales order planning functionality to immediately create a production order to fulfill the new sales order.

Demonstration Steps


1. Create the sales order for eight units of item 1000, Bicycle.
 - a. Close all open pages.
 - b. In the **Search** box, type "sales orders", and then select the related link.
 - c. On the **Home** tab of the **Sales Orders** list page, click **New**, and then press **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 12, 2014.
 - f. On the **Lines** FastTab, in the **Type** field, select Item.
 - g. In the **No.** field, type "1000".
 - h. In **Quantity** field, type "8".

Module 8: Sales Order Interface and Order Planning

Item No.	Planning Status	Description	Variant Code	Available	Planned Quantity	Shipment Date	Expected Delivery Date	Next Planning Date	Needs Replanning
1000	Firm Plann...	Bicycle		-28	8	2/12/2014	2/12/2014		<input type="checkbox"/>

FIGURE 8.3:SALES ORDER PLANNING LINE WITH LINKED PRODUCTION ORDER

h. Leave the **Sales Order Planning** page open.

 **Note:** The program's ability to generate a production order from a sales order is ideal for MTO companies that let sales personnel create released production orders. However, there could be situations where a company does not want to let sales personnel create released orders.

In Microsoft Dynamics NAV, you can use the security functionality to restrict access to the **Sales Order Planning** page. Or, you can change the page to prevent creating released production orders.

Reservations

In the context of sales order planning, a reservation is a firm commitment to use the output of a specific production order line to fulfill the demand of a specific sales order line. This prevents the use of that specific output for some other reason.

When you generate a production order from a sales order by using sales order planning functionality, the program automatically creates a reservation between the production order line and the sales order line that you used to generate it. The program creates this reservation regardless of the settings in the **Reserve** field of the item card and the customer card for the item and customer that are specified on the sales order line.

Reservation Entries Page

This is a continuation of the “Create a Production Order from a Sales Order” demonstration.

To view the reservation entry that the program automatically created in that demonstration, follow these steps.

1. On the **Sales Order Planning** page, drill down into the value of eight in the **Planned Quantity** field. This opens the **Reservation Entries** page.
2. Expand the **Reservation Entries** page so that it is displayed as shown in the “Reservation Entries Page” image.

Reservation Status	Item No.	Location Code	Quantity (Base)	Reserved For	Reserved From	Entry No.	Transferred from Entry No.
Reservation	1000		-8	Sales Order 1001	Prod. Order Line Firm Planned 101001	2	0

FIGURE 8.4:RESERVATION ENTRIES PAGE

The reservation line on the page is self-explanatory. The **Item No.** field identifies which item is reserved, and the **Quantity** field identifies the quantity of the item that is reserved. The value in the **Reserved From** field indicates the status and number of the production order that is reserved, and the **Reserved For** field identifies the sales order that represents the demand for the reservation.

To view the specific sales order line for the reservation, drill down into the value in the **Reserved For** field to open the **Sales Lines** page.

Module 8: Sales Order Interface and Order Planning

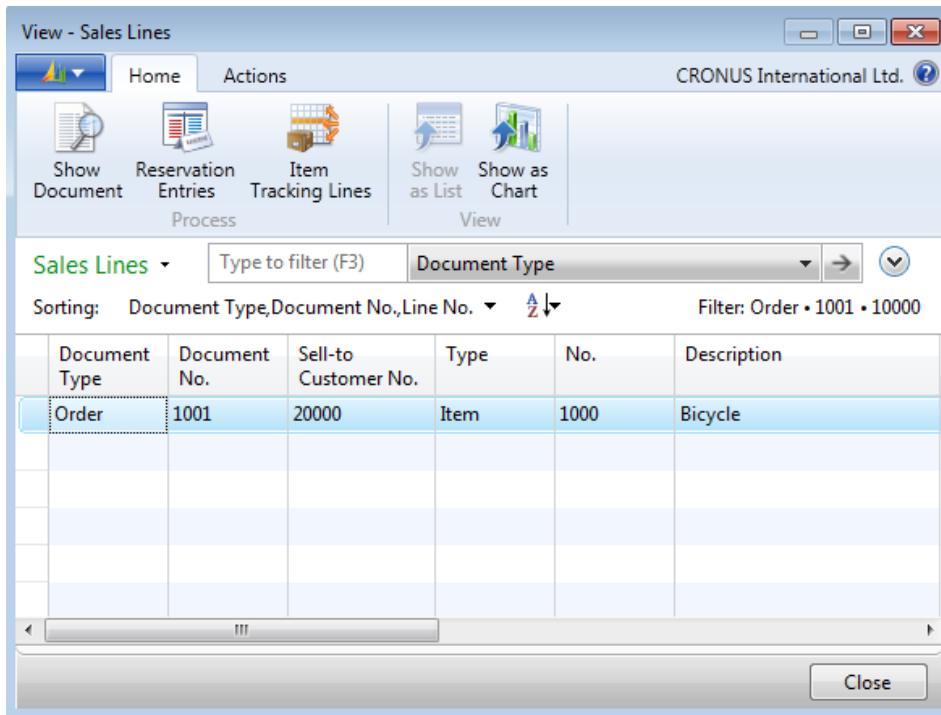


FIGURE 8.5: SALES LINES PAGE FOR RESERVATION

To view the specific production order line for the reservation, close the **Sales Lines** page. After you return to the **Reservation Entries** page, drill down into the value in the **Reserved From** field. This opens the **Prod. Order Line List** page.

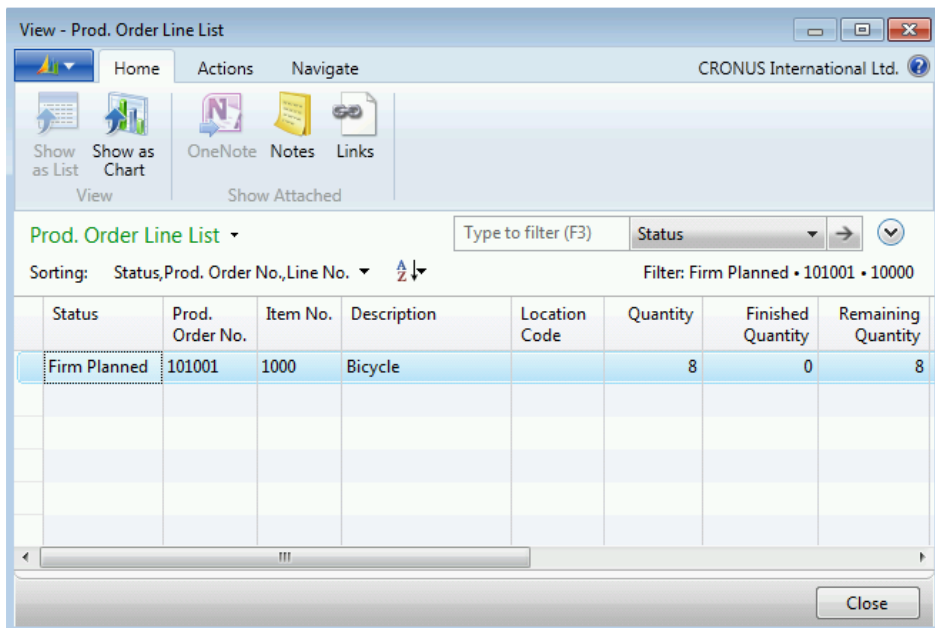


FIGURE 8.6: PROD. ORDER LINE LIST PAGE FOR RESERVATION

You can also view reservation entries from the **Lines** FastTab of the sales order card and the production order card.

Press **Esc** two times to return to the **Sales Order Planning** page.

Order Tracking

Order tracking is a feature that traces the connection of a supply to its corresponding demand. In the context of sales order planning, you can use this feature to find the original sales order that was used to create a specific production order, or to find the production order that supplies a particular sales order.

For the tracked item, if the value in the **Order Tracking Policy** field on the **Planning FastTab** of the item card is set to Tracking & Action Msg., and the tracked supply falls out of balance with the tracked sales order, the planning system can use order tracking to automatically issue action messages to restore the balance. Specific supply and demand can fall out of supply for many reasons. This includes changes to the sales order, changes to the production order, or both.

When you create a production order from a sales order by using sales order planning, the program automatically invokes order tracking when it creates a reservation. After that, the reservation and order tracking are permanently linked. If you delete the reservation, the program deletes the order tracking entry from the **Order Tracking** page, although it does retain a record of it internally. In other situations, reservations and order tracking are independent of one another.

Order Tracking Page

This is a continuation of the "Create a Production Order from a Sales Order" demonstration.

To review the order tracking entry that was created in that demonstration, follow these steps.

1. Make sure that the **Sales Order Planning** page is still open.
2. On the **Home** tab, click **Order Tracking**.

Module 8: Sales Order Interface and Order Planning

Name	Demanded by	Starting Date	Ending Date	Quantity	Item No.
Prod. Order Line Firm Planned 101001	CURRENT LINE	2/12/2014	2/12/2014	-8	1000

FIGURE 8.7:ORDER TRACKING PAGE

Similar to the reservation entry, the order tracking line is mostly self-explanatory. In summary, it indicates that eight units of item 1000 from firm planned production order 101001 are tracked against the current line. In this case, the current line is the sales order line.

You can also view order tracking entries from the **Lines** FastTab of the sales order card or the production order card.

Update Shipment Dates

Before you create a linked production order to supply the demand of a sales order line, the **Expected Delivery Date** field on the **Sales Order Planning** page shows the expected delivery date for a new production order of the item in question. This is based on the formula: *next planning date + lead time calculation on the item card + safety lead time on the item card*. If a safety lead time is not specified on the item card, the formula uses the default safety lead time that is specified in the manufacturing setup.

If you click **Update Shipment Dates** at this point, the **Shipment Date** field on the sales order line and the **Shipment Date** field on the **Sales Order Planning** page both change to match the value in the **Expected Delivery Date** field.

If you then use the **Create Prod. Order** function, the program backward schedules the new production order from the new shipment date.

This whole process is the same as saying, "I want to create a new production order to satisfy the sales order demand for an item. However, I already know the expected delivery date for that item. Therefore, I want to backward schedule the new production order from this expected date. I also want to reschedule the shipment date of the sales order to match."

However, after you create a production order to meet the demand of the sales order, you cannot access the original expected delivery date for the item from the **Sales Order Planning** page. Instead, it is replaced by the actual due date of the linked production order. Therefore, the **Update Shipments Date** function no longer has the same effect.

To restore the original situation, you must delete the production order that you created and start the sales order planning process over again.

Demonstration: Update a Shipment Date

Scenario: Eduardo, the production planner at CRONUS, sets the lead time calculation for item 1001, Touring Bicycle, to one week.

Susan, the order processor at CRONUS, receives an order for eight units of item 1001. The order is from customer 10000, The Cannon Group PLC, with a requested delivery date of January 26, 2014. Susan enters the sales order into Microsoft Dynamics NAV. As part of an agreement with Eduardo, she then uses the sales order planning functionality to create a production order to fulfill the new sales order. However, before she does this, she uses the **Update Shipments Date** function to make sure that both the sales order and linked production order are scheduled based on realistic dates.

Demonstration Steps

1. Change the lead time calculation for item 1001, Touring Bicycle, to one week.
 - a. Close all open pages.
 - b. In the **Search** box, type "items", and then select the related link.
 - c. On the **Items** list page, double-click the line for item 1001, Touring Bicycle.
 - d. On the item card, expand the **Replenishment** FastTab.
 - e. In the **Lead Time Calculation** field, type "1W", representing one week.
 - f. Click **OK** to close the item card.
2. Create the sales order for eight units of item 1001.
 - a. In the **Search** box, type "sales orders", and then select the related link.
 - b. On the **Home** tab of the **Sales Orders** list page, click **New**, and then press **Enter**.
 - c. On the **General** FastTab of the sales order card, in the **Sell-to Customer No.** field, type "10000".
 - d. Set the **Requested Delivery Date** field to January 26, 2014.
 - e. On the **Lines** FastTab, in the **Type** field, select Item.

Module 8: Sales Order Interface and Order Planning

- f. In the **No.** field, type "1001".
 - g. In **Quantity** field, type "8". Accept any messages.
 - h. Notice that the value in the sales order line's **Shipment Date** field is set to January 25, 2014. This is one day before the customer's requested delivery date.
 3. Open the **Sales Order Planning** page and use the **Update Shipment Dates** function.
 - a. On the **Actions** tab, click **Planning**.
 - b. On the **Sales Order Planning** page, select the line for item 1001. Notice that the **Expected Delivery Date** equals January 30, 2014. This is the value of January 23, 2014 in the **Next Planning Date** field, plus the one week lead time that you assigned to item 1001 in step 1. Also notice that the **Shipment Date** field is set to January 25, 2014 to match the shipment date on the sales order line.
 - c. On the **Home** tab, click **Update Shipment Dates**.
 - d. On the request message, select the Each line own Shipment Date option, and then click **OK**. Notice that the **Shipment Date** field changes to match the **Expected Delivery Date** field value of January 30, 2014.
 4. Create the new production order.
 - a. On the **Home** tab, click **Create Prod. Order**.
 - b. On the request message, accept the default values of Firm Planned for the **Prod. Order Status** field and Item Order for the **Order Type** field, and then click **Yes**.
 - c. Click **OK** to close the confirmation message.
 - d. Click **Close** to close the **Sales Order Planning** page to return to the sales order card.
 5. Review the sales order shipment date and production order due date.
 - a. On the **Lines** FastTab of the sales order card, notice that the **Shipment Date** field for the sales order line is set to January 30, 2014. This is the realistic shipment date, given the lead time calculation of seven days, even though the value in the **Requested Delivery Date** field on the **General** FastTab remains set at January 26, 2014.
 - b. Click **Functions**, and then click **Order Tracking**. On the **Order Tracking** page, notice that the value in the **Ending Date** field for the tracked production order is set to January 30, 2014. This is the date that the production order must be finished to meet the shipment date for the sales order line.

- c. Press **Esc** two times to close all open pages and return to the **Sales Orders** list page.

Changes to Sales Orders and Production Orders

After you create a production order by using the **Create Prod. Order** function on the **Sales Order Planning** page, and the production order and the sales order are linked by reservation and tracking entries, the program responds to changes to the quantities and due dates of either order as described in the following table.

Change	Actions Taken
Production order due date or sales order shipment date changed. The production order due date now is before the sales order shipment date.	No actions.
Production order due date or sales order shipment date changed. The production order due date now is after the sales order shipment date.	The Sales Order Planning page indicates that replanning is required. If you try to access the order tracking entries from either the sales order line or the production order line, the program displays the following message: "The tracking entries for this line have a date conflict."
Sales order quantity changed to less than the original quantity.	No actions.
Sales order quantity changed to greater than the original quantity.	The Sales Order Planning page indicates that replanning is required.

This is a limited response by the program to imbalances in linked supply and demand. For a more comprehensive response, you must use more advanced planning tools and features.

Order Planning

Order planning is a manual supply planning tool that shows all unfulfilled item demand along with item availability information and suggestions for supply. You can use this tool to periodically assess unplanned item demand from sales, service, job, production, and assembly orders, and to directly create supply orders to meet this demand. The tool enables you to perform planning on an order-by-order basis. Suggested supply orders can include purchase, production, assembly, and transfer orders.

Although order planning uses the program's MRP logic, it is a simplified alternative to the automated supply functionality in the planning worksheet. You should not combine these two approaches because the planning worksheet can change or delete the supply orders that are created by order planning. Also, the planning worksheet treats any unprocessed order planning lines on an order-to-order basis. This can result in overstock.

Order Planning Process

The following describes the typical approach to order planning:

- Use the **Calculate Plan** function on the **Order Planning** page to generate an updated list of all unfulfilled demand, together with suggested actions to meet that demand.
- Use the information and supporting functions on the **Order Planning** page to understand the demand and supply situation for each demand line. Based on this information, either accept or change the suggested supply that is required by the demand line. As you fulfill the requirements of a demand line, it disappears from the **Order Planning** page.
- Some supply that you create, such as a production order, can create more unfulfilled demand. To plan for this additional demand, run the **Calculate Plan** function again. This iterative approach is typical of order planning.



Note: *The order planning tool assists you in creating required supply orders. It does not determine a plan on its own. Generally, you should validate its suggestions before converting them to supply orders. If you want more automation, use the planning worksheet instead.*

Order Planning Page

To view the **Order Planning** page and calculate a new order plan, follow these steps.

1. In the **Search** box, type "order planning", and then select the related link.
2. On the **Order Planning** page, use the **Choose Columns** function to add the **Demand Quantity** and **Demand Qty. Available** fields to the page. You will have to close the page and reopen it for these changes to take effect.
3. On the **Order Planning** page, in the **Show Demand as** field, select All Demand.
4. On the **Home** tab, click **Calculate Plan**.
5. On the **Home** tab, click **Expand All**.
6. Scroll down until you see a mix of values in the **Demand Type** field.
7. Resize the field columns as shown in the "Order Planning Page" image.

Demand Date	Status	Demand Type	Order No.	Item No.	Description	Needed Quantity	Replenishment System	Supply From	Reserve	Qty. to Order	Order Date	Due Date
1/24/2014	Open	Sales	101020		Lovina Contractors				<input type="checkbox"/>			
1/24/2014				1992-W	ALBERTVILLE Whiteboard, gr...	4	Assembly		<input type="checkbox"/>	4	1/23/2014	1/24/2014
1/24/2014	Released	Sales	6004		Autohaus Mielberg KG				<input type="checkbox"/>			
1/24/2014				1996-S	ATLANTA Whiteboard, base	5	Purchase	30000	<input type="checkbox"/>	5	1/21/2014	1/24/2014
1/28/2014	Firm Plan...	Production	101002		Touring Bicycle				<input type="checkbox"/>			
1/28/2014				1100	Front Wheel	8	Prod. Order		<input type="checkbox"/>	8	1/28/2014	1/28/2014
1/28/2014				1200	Back Wheel	8	Prod. Order		<input type="checkbox"/>	8	1/27/2014	1/28/2014
1/28/2014				1300	Chain Assy	8	Prod. Order		<input type="checkbox"/>	8	1/27/2014	1/28/2014
1/28/2014				1400	Mudguard front	8	Prod. Order		<input type="checkbox"/>	8	1/27/2014	1/28/2014

FIGURE 8.8:ORDER PLANNING PAGE

The **Order Planning** page sorts the demand lines by the earliest demand date. The lines consist of one order header line and one or more indented demand lines for each order. You can expand or collapse these order groups as required.

Module 8: Sales Order Interface and Order Planning

The **Calculate Plan** function calculates the quantity that is required to satisfy each demand line item based on the total availability of the item as of the demand date. The program performs this calculation order-by-order. It starts with the order that includes the demand line with the earliest demand date. It also calculates the other demand lines in that order, if any, regardless of their individual demand dates. Therefore, all planning lines under one order header line have the same demand date. The required quantity calculates based on known supply and demand quantities only. Order planning does not consider forecasts, blanket orders, or the planning parameters that are defined on the **Planning** FastTab on the item card of the item that is specified on the demand line.

The fields on the **Order Planning** page are described in the following table.

Field	Description
Demand Date	Demand date for the demand line. The date is either the shipment date of a sales order line or the due date of a production order component line. All demand lines on the same order are assigned the earliest date that is found on the order lines.
Status	Status of the demand order. This field populates only for order header lines. Sales orders show a status of Open or Released. Production orders show a status of Firm Planned or Released.
Demand Type	The type of demand that is represented by the demand order. Can be Sales, Production, Service, Job, or Assembly. This field populates only for order header lines.
Order No.	The sales, production, service, job, or assembly order number. This field populates only for order header lines.
Item No.	Item number from the order line. This field populates only for demand lines.

Field	Description
Description	The customer name on sales, service, and job header lines. The item description on production and assembly header lines, and also on all demand lines.
Needed Quantity	The quantity that is required to meet the unfulfilled needs of the demand line. This is determined by the formula: <i>Needed Quantity = Demand Quantity – Demand Qty. Available</i> . Planning parameters on the item card are not considered. This field populates only for demand lines.
Replenishment System	Specifies the type of order to use to create replenishment orders and order proposals. Valid types include Purchase, Prod. Order, Transfer, and Assembly. This field automatically populates with the contents of the Replenishment System field on the item card for the item that is specified on all demand lines. However, you can change it. This field populates only for demand lines.
Supply From	Valid only for demand lines that use a replenishment system of purchase order or transfer order. If the replenishment system is Purchase, you can select from the item vendor catalog. If it is Transfer, you can select from the location list. This field populates only for demand lines, and must be populated for demand lines with a replenishment system of Purchase or Transfer before you can create a new supply order for the line.

Module 8: Sales Order Interface and Order Planning

Field	Description
Reserve	Specifies whether to reserve the needed quantity against the supply order that is created from the planning line. To do this, the Reserve field on the item card must be set to either Optional or Always . This field always contains a check mark if the item on the planning line has a setting of Always in the Reserve field on its item card. This field applies only to demand lines.
Qty. to Order	The quantity to use when you create a supply order. This field first is set to equal the value in the Needed Quantity field. However, you can change it as required. This field applies only to demand lines.
Order Date	The order date to use when you create a supply order. This field first is set to make sure that the demand date is met. However, you can change it. This field applies only to demand lines.
Due Date	The date that you can expect to receive the items. This date first is calculated based on the value in the Order Date field, if it is present. However, you can change it. This field applies only to demand lines.
Location Code	Specifies the location code of the suggested supply. You must use the Choose Columns function to add this field to the Order Planning page. This field applies only to demand lines.

Field	Description
Demand Quantity	<p>The original quantity for the demand line. You must use the Choose Columns function to add this field to the Order Planning page.</p> <p>If the demand is a sales line, this field is set to equal the value in the Quantity field of that sales line. If the demand is a component line on a production order, then this field is set to equal the value in the Expected Quantity field of that component line. The value in this field is used to determine the value in the Needed Quantity field based on the following formula: <i>Demand Quantity – Demand Qty. Available. = Needed Quantity</i>. This field applies only to demand lines.</p>
Demand Quantity Available	<p>The quantity of the demand line item that is available as of the demand date. You must use the Choose Columns function to add this field to the Order Planning page.</p> <p>The program uses the value in this field to determine the value in the Needed Quantity field based on the following formula: <i>Demand Quantity – Demand Qty. Available. = Needed Quantity</i>. This field applies only to demand lines.</p>

The fields at the bottom of the **Order Planning** page display important information for the selected demand line. The following table describes these fields.

Field	Description
Available For Transfer	<p>If a location is specified on the selected demand line, drill down in this field to view the Get Alternative Supply page. If you select an alternative location from this page, the program changes the value in the Replenishment System field for the demand line to Transfer, and populates the Supply From field with the location code for the location that you selected.</p>

Module 8: Sales Order Interface and Order Planning

Field	Description
Substitutes Exist	If this is set to Yes, drill down to the item substitution list where you can select a substitute item for the selected demand line. This is available only for components. You must do sales line substitutions from the sales order.
Quantity Available	This field shows the total available quantity of the item on the selected demand line, regardless of the quantities that are calculated for the demand line itself. You can also view this field by clicking the Item Availability by function on the Home tab, and then viewing one of the item availability pages.
Earliest Date Available	The arrival date of an inbound supply order that can cover the needed quantity on a date later than the demand date. If the inbound order covers only part of the needed quantity, it is not considered available and the field does not contain a date.

Finally, you can access several functions on the **Home** tab of the **Order Planning** page. These functions are described and demonstrated in the topics and demonstrations throughout this lesson.

Calculate Plan Function

This is a continuation of the "Order Planning Page" topic.

To successfully use order planning, you must understand how the **Calculate Plan** function works. To examine this, follow these steps.

1. Scroll to the bottom of the **Order Planning** page.
2. Make sure that the demand line groups are expanded for sales order numbers 109003 and 109005. Both orders include item 1000, Bicycle. Notice that the value in the **Demand Date** field is September 22, 2014 for order number 109003, and September 24, 2014 for order number 109005. Also notice that the value in the **Needed Quantity** field of the demand line for item 1000 is 12 for order number 109003, and 16 for order number 1009005.

3. Scroll to the far right. Notice that the value in the **Demand Quantity** field for both sales order lines is 16. However, the value in the **Demand Qty. Available** field is four for order number 109003, and zero for order number 109005.

Remember that the **Calculate Plan** function sorts demand lines by demand date from earliest to latest, and then it works through the lines order by order. This results in the following sequence of events:

1. As of September 22, 2014, four units of item 1000 are available.
2. On September 22, 2014, order number 109003 requires 16 units of item 1000. The **Calculate Plan** function assumes that it can use the four units of available inventory to partially fulfill order number 109003, and it therefore suggests a replenishment production order for the remaining 12 units.
3. On September 24, 2014, order number 109005 requires 16 units of item 1000. Because all available inventory of item 1000 was used to partially fulfill the demand for order 109003, the **Calculate Plan** function suggests replenishment for the full demand of 16 units from order 109005.

To verify this sequence of events, follow these steps.

1. Select the demand line immediately following the order header line for order number 109003.
2. On the **Home** tab, click **Item Availability by**, and then click **Event**.
3. On the **Item Availability by Event** page, position the **Action Message**, **Action Message Qty.**, and **Suggested Projected Inventory** fields immediately after the **Projected Inventory** field. You will have to close and reopen the page for these changes to take effect. Click **Cancel** to close the page, not **OK**.
4. On **Home** tab of the **Item Availability by Event** page, click **Expand All**.
5. Scroll down to the bottom until the period start dates of September 19, 2014, September 22, 2014, and September 24, 2014 are all visible at the bottom.
6. Resize the column widths and column header height to match the "Item Availability by Event Page" image. Also, you might have to increase the size of the page vertically to see all of the data.


Module 8: Sales Order Interface and Order Planning

Period Start	Description	Type	Source	Document No.	Gross Requirement	Scheduled Receipt	Projected Inventory	Action Message	Action Message Qty.	Suggested Projected Inventory	Forecast	Forecast Projected Inventory
09/13/14	Saturday				-27		24			24		
09/13/14	Designstudio Gmunden	Sale	Sales Order	109002	-27		24			24		
09/19/14	Friday				-20		4			4		
09/19/14	Designstudio Gmunden	Sale	Sales Order	109004	-20		4			4		
09/22/14	Monday				-16		-12		12	0		
09/22/14	Bicycle	Plan	Prod. Order New	101011			4 New		12	16		
09/22/14	MEMA Ljubljana d.o.o.	Sale	Sales Order	109003	-16		-12			0		
09/24/14	Wednesday				-16		-28		16	0		
09/24/14	Bicycle	Plan	Prod. Order New	101012			-12 New		16	16		
09/24/14	MEMA Ljubljana d.o.o.	Sale	Sales Order	109005	-16		-28			0		

FIGURE 8.9:ITEM AVAILABILITY BY EVENT PAGE

Now the exact sequence of events and actions that are proposed by the **Calculate Plan** function become clear. These events are as follows:

1. Before September 19, 2014, on the line for September 13, 2014, the projected inventory level for item 1000 is 24 units.
2. On September 19, 2014, sales order number 109004, for 20 units of item 1000, reduces the projected inventory level to four units.
3. On September 22, 2014, sales order number 109003 creates demand for 16 units. This drops the projected inventory level to minus 12. In response, the **Calculate Plan** function suggests a new production order for 12 units that is due on September 22, 2014. This drops the value in the **Suggested Projected Inventory** field to zero at the end of September 22, 2014.
4. On September 24, 2014, sales order number 109005 creates demand for 16 units.
5. In response, the **Calculate Plan** function suggests a new production order for 16 units due on September 24, 2014. This again leaves the value in the **Suggested Projected Inventory** field at zero at the end of that day.

 **Note:** If an item is blocked, the **Calculate Plan** function does not process orders that contain the blocked item. Instead, the batch job stops, sends an error message, and does not finish. To continue, remove the demand orders that include the blocked items before calculating the plan.

Demonstration: Add a New Sales Order and Plan the Sales Demand

Scenario: Eduardo, the production planner at CRONUS, learns that a new sales order for 400 units of item 1000, Bicycle, was entered into the program with a requested delivery date of January 27, 2014. To plan for this new order, he must first plan for the sales demand.

Demonstration Steps

1. Create the new sales order for 400 units of item 1000, Bicycle, due January 27, 2014.
 - a. Close all open pages.
 - b. In the **Search** box, type "sales orders", and then select the related link.
 - c. On the **Home** tab of the **Sales Orders** list page, click **New**, and then press **Enter**.
 - d. On the **General** FastTab of the sales order card, in the **Sell-to Customer No.** field, type "30000". Accept any messages.
 - e. Set the **Requested Delivery Date** field to January 27, 2014.
 - f. On the **Lines** FastTab, in the **Type** field, select Item.
 - g. In the **No.** field, type "1000".
 - h. In **Quantity** field, type "400". Accept any messages.
 - i. Click **OK** to close the sales order card.

2. Open the **Order Planning** page and calculate a new plan.
 - a. In the **Search** box, type "order planning", and then select the related link.
 - b. On the **Order Planning** page, in the **Show Demand as** field, select Sales Demand.
 - c. On the **Home** tab, click **Calculate Plan**.
 - d. Scroll down to the demand line with the demand date of January 27, 2014. Click the + button in the **Demand Date** field to view the details for that line. Notice that the **Calculate Plan** function suggests a new production order of 368 units with a due date of January 27, 2014, and an order date of November 27, 2013. For the output of this production order to meet the sales demand for the sales order that you created in step 1, this production order must be finished by January 27, 2014. In order to meet this due date, it must be started on November 27, 2013.
 - e. Use the techniques that are described in the "Calculate Plan Function" topic to determine why the planning system recommends 368 units of new supply for item 1000 on this date instead of 400 units.

Module 8: Sales Order Interface and Order Planning



Note: Sales demand includes sales lines for return orders where a replacement is required.

3. Review the unfulfilled demand lines for sales order numbers 109003 and 109005.
 - a. Scroll down to the bottom of the **Order Planning** page until the demand lines for sales order numbers 109003 and 109005 become visible. Expand the detail lines for these two orders. Notice that the value in the **Demand Qty. Available** field is now zero for the demand lines of both sales orders, and that the suggested quantity of new supply is now 16 for both orders. This is because the new sales demand for 400 units of item 1000, required earlier in the year, used all projected available inventory. This in turn affected any downstream orders for the same item.



Note: This demonstration masks one of the weaknesses of the order planning functionality. Because sales order numbers 109003 and 109005 remained unplanned throughout the “Calculate Plan Function” topic and this demonstration, it appears as though the **Calculate Plan** function adjusts its plan to account for the introduction of a new order.

However, the **Calculate Plan** function deals only with unfulfilled demand. It does not try to plan for fulfilled demand, that is, to reconcile all known supply and demand to achieve the optimal supply plan. For example, consider a scenario in which there are 100 units of item 1001, Touring Bicycle, in inventory as of December 31, 2013. On January 01, 2014, you receive a sales order for 100 units of item 1001, due on March 31, 2014. You decide to reserve all existing inventory on behalf of this sales order. Then on February 01, 2014, you receive a new sales order for 100 units of item 1001, due February 12, 2014.

If you run the **Calculate Plan** function at this point, it suggests meeting the new, unfulfilled demand by creating a new production order for 100 units of item 1001. But with such a tight schedule, you might be unable to make 100 units of item 1001 in time.

A much more logical approach is to reallocate the existing inventory to the sales order due on February 10, 2014, and to create a new production order for the sales order due March 31, 2014. However, this is outside the mandate of the order planning process. It only deals with the unfulfilled demand lines and the available units of projected inventory.

If you want the planning system to rebalance all supply and demand, you must use the planning worksheet instead.

This is why order planning is better suited for smaller manufacturers who sell primarily make-to-order or assemble-to-order products.

4. Create the suggested production order.
 - a. Scroll up the **Order Planning** page and select the demand line for 368 units of item 1000, due on January 27, 2014.
 - b. On the **Home** tab, click **Make Orders**.
 - c. On the **Order Planning** FastTab of the **Make Supply Orders** page, in the **Make Orders for** field, select The Active Line. In this case, because there is only one demand line for the order, it is not important whether you select The Active Line or The Active Order. The other option is All Lines.
 - d. On the **Options** FastTab, set the **Create Production Order** field to Firm Planned. Notice that you can set this to Planned. However, you cannot make a released production order.

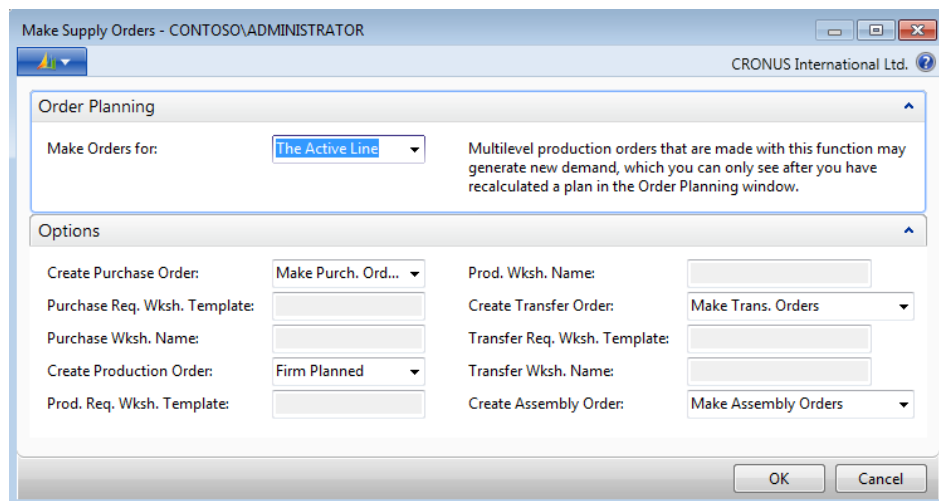


FIGURE 8.10:MAKE SUPPLY ORDERS PAGE

- e. Click **OK**. When the program returns you to the **Order Planning** page, notice that the demand line for 368 units of item 1000 on January 27, 2014 disappears.
- f. Click **OK** to close the **Order Planning** page.

Production Demand

Unlike sales demand, a production order can potentially create demand at every level of its BOM.

Order planning only creates supply suggestions one level at a time. If the supply at one level introduces new demand, you must run the **Calculate Plan** function again to address that second-level demand, and so on.

Module 8: Sales Order Interface and Order Planning

For example, if there are two levels in a manufactured item's BOM, the sequence of events can be as follows:

1. **First planning calculation** – The sales order creates sales demand. You create a production order to meet this demand.
2. **Second planning calculation** – The production order that you created in step 1 creates demand for level one BOM components. You create production orders to meet this demand.
3. **Third planning calculation** – At least one of the production orders that you created in step 2 creates demand for BOM level two components. You create production orders to meet this demand.



Note: Because the **Calculate Plan** function only considers one level of the production BOM at a time, items that have Make-to-Order in the **Manufacturing Policy** field do not plan correctly if they create production demand for underlying sub-assemblies. To plan these orders correctly, you must carry the planning process through until it is finished.

Demonstration: Plan Production Demand for the First BOM Level

This is a continuation of the “Add a New Sales Order and Plan the Sales Demand” demonstration.

Scenario: Eduardo, the production planner at CRONUS, used order planning to create a new production order of 368 units of item 1000, Bicycle. Now he must run the **Calculate Plan** function again to verify that the new production order results in new production demand for the components on the first level of item 1000's production BOM.

Demonstration Steps

1. Verify the production order number for the new firm planned production order for 368 units of item 1000, due on January 27, 2014.
 - a. In the **Search** box, type “firm planned prod. orders”, and then select the related link.
 - b. On the **Firm Planned Prod. Orders** list page, locate the production order for 368 units of item 1000, due on January 27, 2014, and write down the production order number.

Manufacturing in Microsoft Dynamics® NAV 2013

2. Open the **Order Planning** page and run the **Calculate Plan** function for production demand only.
 - a. In the **Search** box, type “order planning”, and then select the related link.
 - b. On the **Order Planning** page, in the **Show Demand as** field, select Production Demand.
 - c. On the **Home** tab, click **Calculate Plan**.
3. Create supply orders for the first level of the production BOM for the parent production order.
 - a. Scroll down to the order header line for the production order number that you verified in step 1. It should have a demand date of November 27, 2013.
 - b. Click the + button in the **Demand Date** field to view the demand line details for this production order.

Demand Date	Status	Demand Type	Order No.	Item No.	Description	Needed Quantity	Replenishment System	Supply From	Reserve	Qty. to Order	Order Date	Due Date
11/27/2013	Firm Plan...	Production	101003		Bicycle							
11/27/2013				1100	Front Wheel	216	Prod. Order			216	11/11/2013	11/27/2013
11/27/2013				1200	Back Wheel	216	Prod. Order			216	11/8/2013	11/27/2013
11/27/2013				1300	Chain Assy	216	Prod. Order			216	11/26/2013	11/27/2013
11/27/2013				1400	Mudguard front	216	Purchase	32456123		216	11/26/2013	11/27/2013
11/27/2013				1450	Mudguard back	216	Purchase	32456123		216	11/26/2013	11/27/2013
11/27/2013				1500	Lamp	216	Purchase	45774477		216	11/26/2013	11/27/2013
11/27/2013				1600	Bell	216	Purchase	32456123		216	11/26/2013	11/27/2013
11/27/2013				1700	Brake	216	Prod. Order			216	11/26/2013	11/27/2013
11/27/2013				1800	Handlebars	216	Purchase	01587796		216	11/26/2013	11/27/2013
11/27/2013				1850	Saddle	216	Purchase	01587796		216	11/26/2013	11/27/2013

FIGURE 8.11:ORDER PLANNING PAGE SHOWING PRODUCTION DEMAND

- c. If you are familiar with the production BOM for item 1000, you will recognize the items on these demand lines as components for the first level of that BOM. Notice that the replenishment system varies for the demand lines. Some components are replenished by production order; other components are replenished by purchase. For the items that are purchased, notice that the **Supply From** field contains the number of the default vendor for each item. Finally, notice that all components are due November 27, 2014. This is the start date for the parent production order.
- d. Select the demand line for 216 units of item 1100, Front Wheel. Notice that the suggested order date for this item is November 11, 2013. Also notice that this item is replenished by production order. On the **Home** tab, click **Components**.

Module 8: Sales Order Interface and Order Planning

- e. On the **Planning Components** page, notice that item 1100 consists of five components. One of these components is item 1150, Front Hub.
- f. Click **OK** to close the **Planning Components** page and return to the **Order Planning** page.
- g. With the demand line for 216 units of item 1100 still selected, click **Make Orders** on the **Home** tab.
- h. On the **Order Planning** FastTab of the **Make Supply Orders** page, in the **Make Orders for** field, select The Active Line.
- i. Click **OK** to make the production order for item 1100. When the program returns you to the **Order Planning** page, notice that the demand line for 216 units of item 1100 disappears. The unfulfilled demand for this particular use of item 1100 is now satisfied.
- j. Leave the **Order Planning** page open.

Demonstration: Plan Production Demand for the Second BOM Level

This is a continuation of the “Plan Production Demand for the First BOM Level” demonstration.

Scenario: Eduardo, the production planner at CRONUS, used order planning to create a new production order for 216 units of item 1100, Front Wheel. Now he must run the **Calculate Plan** function again to verify that the new production order results in new production demand for item 1100's components.

Demonstration Steps

1. On the **Order Planning** page, run the **Calculate Plan** function for production demand only.
 - a. On the **Order Planning** page, in the **Show Demand as** field, select Production Demand.
 - b. On the **Home** tab, click **Calculate Plan**.
2. Create supply orders for the components on the first level of the production BOM for item 1100, Front Wheel.
 - a. Scroll down to the order header line for the production order number for item 1100, Front Wheel, with a demand date of November 11, 2013.
 - b. Click the + button in the **Demand Date** field to view the demand line details for this production order.

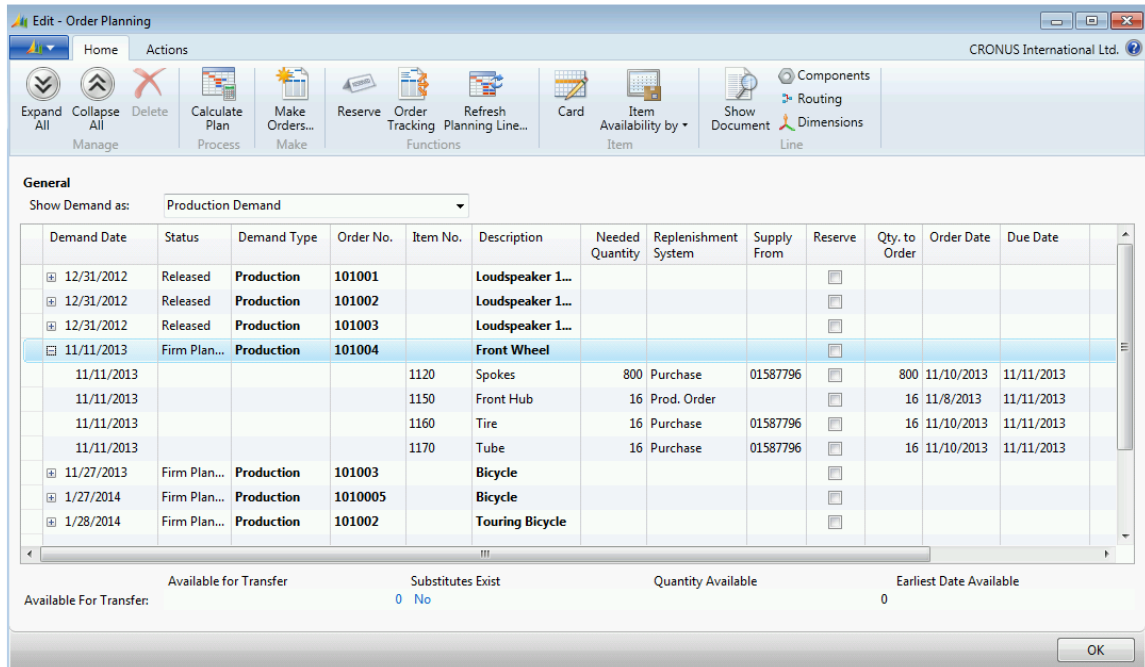


FIGURE 8.12:ORDER PLANNING PAGE THAT DISPLAYS PRODUCTION DEMAND FOR ITEM 1100, FRONT WHEEL

- c. Notice that item 1110, Rim, is missing from the demand lines. This means that there is sufficient available inventory to fulfill the production demand for this item.
- d. Select the demand line for item 1150, Front Hub. Notice that the unfulfilled demand for this item is 16 units, not 216.
- e. On the **Home** tab, click **Item Availability by**, and then click **Period**.
- f. On the **Item Availability by Periods** page, in the **View By** field, select Day.
- g. Scroll up to November 10, 2013. Notice that the value in the **Projected Available Balance** field shows 200 on November 10, 2013. The demand for 216 units of item 1150, Front Hub, then occurs on November 11, 2013. This pushes the projected available balance to minus 16, and this becomes the unfulfilled demand that is calculated by the **Calculate Plan** function.
- h. Click **Cancel** to close the **Item Availability by Periods** page and return to the **Order Planning** page.
- i. With the demand line for 16 units of item 1150 still selected, click **Make Orders** on the **Home** tab.
- j. On the **Order Planning** FastTab of the **Make Supply Orders** page, in the **Make Orders for** field, select The Active Line.

Module 8: Sales Order Interface and Order Planning

- k. Click **OK** to make the production order for item 1150. When the program returns you to the **Order Planning** page, notice that the demand line for 16 units of item 1150 disappears. The unfulfilled demand for this particular use of item 1150 is now satisfied.
- l. Leave the **Order Planning** page open.



Note: Starting with the sales order for 400 units of item 1000, Bicycle, you now have created the following:

- A production order for 368 units of item 1000 to meet the unfulfilled demand from the sales order.
- A production order for 216 units of item 1100, Front Wheel, to meet the unfulfilled demand that is created by the production order of 368 units of item 1000. This is because item 1100 is located on the first level of the production BOM for item 1000.
- A production order for 16 units of item 1150, Front Hub, to meet the unfulfilled demand that is created by the production order for 216 units of item 1100. This is because item 1150 is located on the first level of the production BOM for item 1100. It is also on the second level of the production BOM for item 1000. However, this has no effect on the behavior of the **Calculate Plan** function because this function operates on only one BOM level at a time.

This is a clear example of the order-by-order approach that is used in order planning.

Demonstration: Make Changes to Planning Suggestions

This is a continuation of the “Plan Production Demand for the Second BOM Level” demonstration.

The order planning functionality takes the simple approach of creating new supply to meet unfulfilled demand. It does not try to organize the supply in any other manner. This sometimes leads to inefficient or otherwise unwanted supply orders. Therefore, it is important for the production planner to recognize these situations and to correct them.

Scenario: When he uses the order planning functionality to create new supply to meet unfulfilled sales demand, Eduardo, the production planner at CRONUS, notices that the **Calculate Plan** function suggests two production orders to meet the unfulfilled sales demand for sales orders 109003 and 109005. Because these production orders are only two days apart, he decides to combine both planning suggestions into one production order.

Demonstration Steps

1. Calculate a new plan for sales demand.
 - a. Make sure that the **Order Planning** page is still open.
 - b. On the **Order Planning** page, change the **Show Demand as** field to Sales Demand.
 - c. On the **Home** tab, click **Calculate Plan**.

2. Combine the supply suggestions for item 1000 for sales orders 109003 and 109005 into one suggestion, and then convert this combined suggestion into a production order.
 - a. Scroll to the bottom of the **Order Planning** page and expand the order header lines for sales order numbers 109003 and 109005. Notice that both require 16 units of item 1000, Bicycle.
 - b. On the demand line for item 1000 under sales order 109003, change the **Qty. to Order** field from 16 units to 32 units. Click **OK** to accept the message about the due date. This message occurs when you increase the quantity for the suggested production order. The program calculates that the increased quantity will take longer to manufacture. This, in turn, pushes the suggested order's due date forward so that it is later than the demand that caused the suggestion. Usually, you can fix this by adjusting the date. However, the program will not let you fix this because these dates are outside the license range for the demonstration database. This means that if you convert this suggestion into a production order, the combined supply satisfies the demand for sales order 109005, but not for sales order 109003, because the supply will arrive one day late. To correct this for this demonstration, explicitly reserve the 16 units of item 1000 from the combined supply order on behalf of sales order 109003.
 - c. On the demand line for item 1000 under sales order 109003, select the **Reserve** check box.
 - d. On the **Home** tab, click **Make Orders**.
 - e. On the **Order Planning** FastTab of the **Make Supply Orders** page, set the **Make Orders for** field to The Active Line.
 - f. Click **OK** to make the order and return to the **Order Planning** page.
 - g. On the **Home** tab, click **Calculate Plan**.

Module 8: Sales Order Interface and Order Planning

- h. Scroll to the bottom of the **Order Planning** page. Notice that the demand for sales order number 109003 is removed.
- i. Expand the order header lines for sales order number 109005. Notice that the demand for item 1000, Bicycle, is removed, as well. Your combined order of 32 units of item 1000 now satisfies the demand requirement for item 1000 for both sales orders.
- j. Click **OK** to close the **Order Planning** page.



Note: *This intervention by the production planner to change supply suggestions is common in order planning. The order planning tool performs many supporting functions. However, the production planner must remain the "brains of the operation."*

Other Order Planning Features

This lesson focuses mostly on the use of order planning to create production orders to meet sales and production demand. Order planning also offers the following additional features and functionality:

- In addition to the demand from sales orders and production orders, order planning can identify unfulfilled demand from service orders, jobs, and assembly orders.
- In addition to creating production orders and purchase orders as new supply, order planning can create assembly orders.
- You can use the link in the **Available for Transfer** field at the bottom of the **Order Planning** page to convert supply suggestions to use the transfer replenishment system.
- You can use the link in the **Substitutes Exist** field at the bottom of the page to substitute one item for another.
- You can use the **Components** and **Routing** functions on the **Home** tab of the **Order Planning** page to view and change the BOM components and routing operations for a suggested production order.
- You can use the Copy to Req. Wksh option in the **Create Purchase Order**, **Create Production Order**, and **Create Transfer Order** fields on the **Make Supply Orders** page to move planning suggestions to the planning worksheet.
- You can use the **Earliest Date Available** field at the bottom of the **Order Planning** page as a basic available-to-promise feature.
- You can open the **Order Planning** page from a production order. When you do this, the page shows production demand only, and the production order in question automatically expands to show its demand lines.

For descriptions of other order planning features, refer to “Order Planning Window” in Help.

The Role of the Production Planner in Order Planning

As mentioned throughout this lesson, order planning imposes a high level of responsibility on the production planner. The **Calculate Plan** function addresses unfulfilled demand only, and calculates suggested supply chronologically on an order-by-order basis. It does not consider forecasts, blanket orders, or planning parameters. It also does not try to rebalance existing demand and supply if the situation changes.

It is the responsibility of the production planner to consider these other factors, and to change supply orders or suggestions accordingly. To correctly fulfill this responsibility, we recommend the following:

- If the **Order Planning** page shows multiple demands on different dates, always start with the demand lines that have the earliest demand date. Then make the necessary supply orders before you move down the list.
- When you plan for manufactured items with multiple levels in their production BOMs, plan all levels in the same workflow before you continue planning lines for other items.
- If you create supply specifically for a sales order, strongly consider reserving the supply for that order. As soon as reservation and tracking entries link a specific supply to a specific demand, the program can warn you if changes occur to one or the other. If this link does not exist, you can have unwanted supply. For example, consider the scenario where you create a production order that specifically meets the requirements of a sales order. However, you do not use reservations. If you then move the sales order to an earlier date, the order planning functionality will suggest that you create a new production order to meet this earlier demand. Nevertheless, it does not suggest the deletion of the original production order. If you do not do this manually, you will have duplicate supply.

If the logistics of using order planning become too burdensome, this can indicate the need for the more advanced planning capabilities of the planning worksheet. Do not try to combine the two planning approaches because the worksheet planning functions can change or delete the supply orders that are created by using order planning.

Lab: Use Order Planning to Create and Reserve Supply

Scenario

You are the production planner at CRONUS. Unknown to you, Susan, the order processor at CRONUS, has just entered a sales order for 100 units of item 1001, Touring Bicycle, due on February 05, 2014. The order is from customer 10000, The Canon Group PLC. You become aware of this demand when you run your weekly **Calculate Plan** function in order planning. You use order planning to create the required production order for the supply. Because you are creating the production order to fulfill the requirements of a specific sales order, you decide to reserve the output of the production order on behalf of the sales order.

High Level Steps

1. Create the new sales order for 100 units of item 1001, Touring Bicycle.
2. Open the **Order Planning** page and calculate a new plan.
3. Create the new production order for 100 units of item 1001, Touring Bicycle, and reserve the output of this production order on behalf of the related sales order.

Detailed Steps

1. Create the new sales order for 100 units of item 1001, Touring Bicycle.
 - a. In the **Search** box, type "sales orders", and then select the related link.
 - b. On the **Home** tab of the **Sales Orders** list page, click **New**, and then press **Enter**.
 - c. On the **General** FastTab of the sales order card, in the **Sell-to Customer No.** field, type "10000".
 - d. Set the **Requested Delivery Date** field to February 05, 2014.
 - e. On the **Lines** FastTab, in the **Type** field, select Item.
 - f. In the **No.** field, type "1001".
 - g. In **Quantity** field, type "100". Accept any messages.
 - h. Click **OK** to close the sales order card.
2. Open the **Order Planning** page and calculate a new plan.
 - a. In the **Search** box, type "Order Planning", and then select the related link.
 - b. On the **Order Planning** page, change the **Show Demand as** field to Sales Demand.
 - c. On the **Home** tab, click **Calculate Plan**.
 - d. Scroll down to the demand line with the demand date of February 04, 2014. Click the + button in the **Demand Date** field to view the details for the demand line. Confirm that it is suggestion for a production order of 100 units of item 1001.

3. Create the new production order for 100 units of item 1001, Touring Bicycle, and reserve the output of this production order on behalf of the related sales order.
 - a. Select the check box in the **Reserve** field on the demand line for the 100 units of item 1001.
 - b. On the **Home** tab, click **Make Orders**.
 - c. On **Order Planning** FastTab of the **Make Supply Orders** page, select The Active Line.
 - d. On the **Options** FastTab, in the **Create Production Order** field, select Firm Planned.
 - e. Click **OK** to create the production order.
 - f. On the **Order Planning** page, confirm that the demand line for the 100 units of item 1001 is removed.
 - g. Click **OK** to close the page.

Module Review

There is no single planning solution for all manufacturing companies. The key to planning success is to correctly match your planning approach and tools to the needs of your company. To do this, you must do the following:

- Understand your company's needs.
- Understand the planning options that are available to you.

This module describes two of the three planning options available in Microsoft Dynamics NAV: sales order planning and order planning. The third planning option in Microsoft Dynamics NAV is the automated planning functionality in the planning worksheet. For information about this planning functionality, refer to "Planning" and "Additional Planning Topics" in this training material.

Sales order planning is a simple planning function that lets you create production orders directly from sales orders. It is suitable for MTO environments where the planning requirements for components are minimal.

Order planning is a slightly more advanced planning tool that lets you meet unfulfilled demand from all possible demand sources in the program, by creating various types of supply. The program calculates the unfulfilled demand on an order-by-order basis. The toolset on the **Order Planning** page is powerful enough to let the production planner combine and adjust the supply plan to account for other planning factors. However, this is still a manually intensive process.

Test Your Knowledge

Test your knowledge with the following questions.

1. Which planning tool do you use to create a production order directly from a sales order?
 - () Order Planning
 - () Planning Worksheet
 - () Requisition Worksheet
 - () Sales Order Planning

Manufacturing in Microsoft Dynamics® NAV 2013

2. How would you describe a make-to-order manufacturing company?

3. What is Order Tracking?

4. What are the five potential sources of unfulfilled demand in order planning?

5. What are the four potential types of supply that order planning can suggest?

6. How many levels of the production BOM does the Calculate Plan function consider?

1

2

3

4

Test Your Knowledge Solutions

Test Your Knowledge

1. Which planning tool do you use to create a production order directly from a sales order?

- Order Planning
- Planning Worksheet
- Requisition Worksheet
- Sales Order Planning

2. How would you describe a make-to-order manufacturing company?

MODEL ANSWER:

A make-to-order (MTO) manufacturing company does not carry finished goods inventory. It produces finished goods only in response to sales orders. This model is common for products that frequently require customization.

3. What is Order Tracking?

MODEL ANSWER:

Order tracking is a feature that traces the connection of a supply to its corresponding demand. In the context of sales order planning, you can use this feature to find the original sales order that was used to create a specific production order, or to find the production order that supplies a particular sales order.

4. What are the five potential sources of unfulfilled demand in order planning?

MODEL ANSWER:

Sales, service, job, production, and assembly orders.

5. What are the four potential types of supply that order planning can suggest?

MODEL ANSWER:

Production, purchase, assembly, and transfer orders.

6. How many levels of the production BOM does the Calculate Plan function consider?

1

2

3

4