**Microsoft Dynamics AX**

Microsoft Dynamics is a line of integrated, adaptable business management solutions that enables you and your people to make business decisions with greater confidence. Microsoft Dynamics works like and with familiar Microsoft software, automating and streamlining financial, customer relationship and supply chain processes in a way that helps you drive business success.

U.S. and Canada Toll Free 1-888-477-7989
Worldwide +1-701-281-6500

www.microsoft.com/dynamics
This document supports a preliminary release of a software product that may be changed substantially prior to final commercial release.

This document is provided “as-is”. Information and views expressed in this document, including URL and other Internet Web site references, may change without notice. You bear the risk of using it.

Some examples depicted herein are provided for illustration only and are fictitious. No real association or connection is intended or should be inferred.

This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal, reference purposes.

Copyright © 2011 Microsoft. All rights reserved.

Microsoft, Microsoft Dynamics, Active Directory, Excel, MSDN, SharePoint, SQL Server, Visual Studio, Windows, Windows PowerShell, Windows Server, and Windows Vista are trademarks of the Microsoft group of companies. All other trademarks are property of their respective owners.
Table of Contents

Introduction........................................................................................................................................... 5

Process Manufacturing Production and Logistics upgrade.................................................. 5

Product information management........................................................................................................ 5
Products and product variants.................................................................................................................. 5
Released products ................................................................................................................................. 6
New product type .................................................................................................................................. 6
New production type ............................................................................................................................... 6
Apply product template.......................................................................................................................... 6
Containerized packaging ...................................................................................................................... 7
Catch weight products ............................................................................................................................ 7
Commodity pricing ............................................................................................................................... 8
Co-products and by-products.................................................................................................................. 8
  Improved price calculations ................................................................................................................. 9
Viewing co-products for planned orders .............................................................................................. 9
Total cost allocation methodology ...................................................................................................... 9
Cost allocation and burden................................................................................................................... 10
Formulas .................................................................................................................................................. 10

Inventory and warehouse management............................................................................................... 11
Product dimension group split............................................................................................................... 11
  Product, storage, and tracking dimensions ....................................................................................... 11
  Assigning dimension groups to individual products ....................................................................... 11
Default order type ................................................................................................................................ 12
Global units of measure ....................................................................................................................... 12
Planned orders ........................................................................................................................................ 12
Batch attributes ..................................................................................................................................... 12
Shelf life ................................................................................................................................................ 13
Warehouse management ..................................................................................................................... 13
Quality management ............................................................................................................................ 14

Procurement and sourcing .................................................................................................................. 14
Purchase agreements replace blanket purchase orders ................................................................. 14
Delivery schedules ............................................................................................................................. 14
Purchase orders and change management ....................................................................................... 15
Extending change management ......................................................................................................... 15
Approved vendor lists ....................................................................................................................... 15

Sales and marketing ............................................................................................................................. 16
Sales agreements replace blanket sales orders ........................................................................... 16
  Same batch selection ....................................................................................................................... 16
  Auto batch reservation .................................................................................................................... 16
  Excluding items from rebates .......................................................................................................... 16
Delivery schedules ............................................................................................................................. 16
Customer rebates ........................................................................................................... 17
Customized period for cumulating rebates ................................................................. 17
New ways to create and manage rebates .................................................................. 17
Improved rebate maintenance .................................................................................. 18
Researching customer rebate payments ................................................................... 18

Production control .................................................................................................... 18
Multisite functionality automatically enabled ......................................................... 18
Batch orders ............................................................................................................. 18
Manufacturing execution split into two modules ..................................................... 18
  Time and attendance module .............................................................................. 19
  Manufacturing execution module ....................................................................... 19
Warehouse management ............................................................................................ 20

Reporting .................................................................................................................. 20
Conversion to SQL Server Reporting Services (SSRS) reports .................................. 20
  SSRS reports ....................................................................................................... 20
  Customized standard reports .............................................................................. 21
  Custom reports .................................................................................................. 21
Introduction

The following information provides descriptions about many of the features that will be available in the upgrade of Process industries for Microsoft Dynamics® AX 2009 to Microsoft Dynamics® AX 2012 Process Manufacturing Production and Logistics.

Disclaimer: This document provides a high-level summary of the features that have been implemented in Microsoft Dynamics® AX 2012 Process Manufacturing Production and Logistics. It is intended for internal employees, partners, and select customers. Familiarity with Microsoft Dynamics AX or other business management software is assumed. This is an early snapshot of the feature set and is subject to change without notice.

Refer here for module and feature information for Process Manufacturing Production and Logistics:

Process Manufacturing Production and Logistics upgrade
Product information management
Inventory and warehouse management
Procurement and sourcing
Sales and marketing
Production control
Reporting

Process Manufacturing Production and Logistics upgrade

Process Manufacturing Production and Logistics incorporates new and enhanced functionality that improves various manufacturing and distribution processes in Product information management, Inventory and warehouse management, Quality management, Production control, Reporting, and other areas of business.

This release also accommodates the upgrade to the new user interface and includes features and enhancements implemented in Microsoft Dynamics AX 2012.

Product information management

Products and product variants

Products and product variants (previously called items and item dimensions) now originate at the enterprise level and are then released to the company level, where they can be further maintained. If you choose to create a product at the company level, the system creates the product in the enterprise level and then immediately releases that product to the company where it originated.

Product variants, on the other hand, can only be created at the enterprise level. Storage and tracking dimensions (previously part of the item dimension group) can be maintained at the enterprise level and then released to the companies for enterprise-wide consistency, or they can be maintained uniquely at the company level.

To accommodate these changes, the size, color, and configuration dimensions in the Item dimension group definition have moved to the enterprise level and are now called Product dimension group.
Released products

Specific functions are included in the new Released products list page and Released product details form for Process Manufacturing Production and Logistics.

New product type

Product type (previously called Item type) is no longer used to configure a product as being either manufactured or purchased. It is now used to identify whether a product is a physical item that can be stocked, or a service item.

Because product type no longer determines how an item is acquired, a new default order type is introduced for products at the company level. This default order type is used to determine replenishment needs when it cannot be determined by other means, such as through item coverage settings. For more information about the default order type, see the Inventory and warehouse management section.

In conjunction with the product type changes, prior limitations pertaining to purchased products are removed. Products may have formulas, BOMs, and routes even if the products are not normally produced. It is also no longer necessary to delete a formula version if a product that is usually produced is changed to purchased.

New production type

Production type replaces Product type to accommodate the change in how product type is used in Process Manufacturing Production and Logistics. Production type works functionally the same as product type in prior releases. The new production types are described below:

- Co-product — Activates the Planning formula field (previously called Planning item) for selecting the formula or planning item to use to initiate a planned order for the co-product when a replenishment order is needed.
- By-product — Identifies the product as a by-product item, which can contribute burden to the cost of production.
- Planning item — Identifies the group of co-products and/or by-products that will be grouped together for planning and costing purposes.
- BOM and Formula items — Indicates the type of production that will produce these types of items. In prior releases, these two settings were included in the Item type option, which is now called Product type.
- None — Indicates that the product is none of the above. This setting remains the default setting.

Apply product template

A product definition no longer needs to be created for each product to be released to a company. You can now release multiple products, including product variants, to multiple companies.

Once a product is released to the legal entity, you can use the Apply template feature to copy the data values in the template to a new product or to multiple products. For Process Manufacturing Production and Logistics, certain values will not copy to the new product, but must be added to the product based on the actual setup criteria. These values are catch weight item, restricted material, regulated material, and reportable material.

If values applied to a product change the original Production type for the product, then any existing versions of that product are removed and the Planning formula field is cleared.

In this release, you can create templates using the Create personal template and Create shared template buttons in the Templates action pane located in the ribbon area of the Released products list page.
Containerized packaging

Containerized packaging has been enhanced in Process Manufacturing Production and Logistics. This feature allows batch orders for a packed product to be consolidated with similar packed products and a parent bulk product. Consolidated order forms have been updated to reflect UI changes. Other changes are described in the table below.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated on-hand</td>
<td>This form replaces the Bulk/Pack On-hand form from AX 2009. The new Bulk product tab contains a dimensions display that includes configuration, size, and color. This tab does not contain storage and tracking dimensions, as those dimensions apply only to packed products. The Packed product tab contains site, warehouse, location, pallet ID, configuration, size, color, batch number, and serial number.</td>
</tr>
<tr>
<td>Bulk product conversion</td>
<td>Bulk item conversion is renamed Bulk product conversion in this release. The Bulk product conversion setup form and details form are available only for items of Production type Formula. The form is updated with new unit conversion methodology.</td>
</tr>
<tr>
<td>Consolidated orders list page</td>
<td>From the Consolidated orders list page, you can create new consolidated orders. You can also double-click an existing consolidated order to go directly to the Consolidated order details form, where you can then add batch orders to it.</td>
</tr>
<tr>
<td>Consolidated order details</td>
<td>When you double-click a batch order in this form, the Batch order details form opens for you to maintain the batch order.</td>
</tr>
<tr>
<td>Firm consolidated orders</td>
<td>The Firm consolidated orders form is updated to reflect the new UI changes. Other changes include the following:</td>
</tr>
<tr>
<td></td>
<td>• The Make Qty field is now titled Adjusted quantity.</td>
</tr>
<tr>
<td></td>
<td>• Adjusted quantity has been added to the Bulk orders grid.</td>
</tr>
<tr>
<td></td>
<td>• The required (Req) quantity field is updated based on changes to Adjusted quantity only after the consolidated order is selected and firmed. Once firmed, the Adjusted quantity is available to use as the Batch order quantity.</td>
</tr>
</tbody>
</table>

Catch weight products

In Process Manufacturing Production and Logistics, catch weight products originate at the enterprise level like all other new products. However, the specific setup variables for a new catch weight product are configured at the company level. Once the product is released to the company, the catch weight nominal weight, units of measure, and other variables are defined and maintained for the product. The following changes have been made to catch weight functionality for this release:

- A catch weight product check box has been added to the Released product details form and the Create product form. You select this check box to indicate that a new product is a catch-weight product. Once a catch weight product is released to companies, you cannot clear the check box setting unless all companies using the catch weight product have deleted it. Conversion to the catch weight unit of measure is calculated at the enterprise level.
- Various catch weight fields are available on the Manage inventory fast tab in the Released product details form. If the catch weight item check box is selected, the catch weight unit and minimum and maximum quantities are enterable. Once a catch weight unit is entered, it can be modified, but not removed from the product. If either the inventory unit of measure or
catch weight unit of measure is modified, a new conversion is necessary prior to making the change.

- The Split function in the Registration and Pick forms is disabled for catch weight products.

- All forecast types now support catch weight functionality, including demand forecasts (previously called sales forecasts), supply forecasts (previously called purchase forecasts), and inventory forecasts. The forecast forms have been updated to include catch weight quantity, catch weight unit, and catch weight accumulated fields. The behavior of this functionality is to match the behavior in the Inventory movement journal form.

- The Supply overview inquiry is extended to include the following catch weight fields: Catch weight physical quantity, Catch weight physical reserved, and Catch weight available physical. A new Orders tab, Alternative tab, and Quarantine and transport tab have been added to the inquiry form. This added functionality gives users a complete view of the catch weight item supply in the event order changes are needed to fulfill the order.

- Pegging information for catch weight products has been added to the following forms: Planned order details, Net requirements, Item coverage, Explosion, Maximum report as finished, Purchase agreement, Sales agreement, Purchase delivery schedule, and Sales delivery schedule.

- Shipments of catch weight products in intercompany transfer transactions will be received at the shipped weight only. Over and under deliveries of shipped quantities are not allowed. The Intercompany goods in transit report and Intercompany goods in transit totals report have been updated to include catch weight information.

**Commodity pricing**

Commodity pricing functionality is enhanced to allow pricing information to be coordinated more closely with trade agreements. Changes in this release primarily affect the Quantity and margin template form and the Price margin update-lines form.

In the Quantity and margin template form, the Quantity field is relabeled From quantity and a new To quantity field has been added. These values represent the range for which a price is valid and are subject to the same validations as currently implemented in Trade agreements to determine allowable values. Once validated, To and From values are passed directly to the trade agreements.

The Quantity and margin template form is also enhanced to include a new Order quantity. This quantity is used to calculate the overall costs, which can be based on the size that would normally be produced. The default Order quantity value is the greater of the standard order quantity, minimum order quantity, or formula size.

The Price margin update-lines form is also updated to include the From quantity, To quantity, and Order quantity fields.

Once commodity prices are updated, the update creates a Price adjustment journal posting, inserting lines from the Price margin update-lines form. These lines are processed within the standard trade agreement posting to allow for any “smart rounding” needed prior to posting the journal lines. The updated prices must be posted manually in the trade agreement journals.

Historical data is now retained for pricing runs.

**Co-products and by-products**

Several enhancements have been made for co-products and by-products in the new release. These enhancements are described in this section.
**Improved price calculations**
The Complete formula calculation form has been updated to improve access to information for price calculations that involve co-products. All co-products from the formula version appear after the main item (formula item or planning item).

A new option has been added to the form that enables direct access to the Item price form. From this form, you can review price calculations for co-products and activate prices as needed. You can also run a price calculation for a co-product that references a planning formula.

**Viewing co-products for planned orders**
You can now view co-products for a formula item or a planning item from the Planned order details form and Planned order list page using a new co/by product option. This option is also available in the Production order details form and Production order list page. The Order details button group in the Production order list page now includes a formula option and a co/by products option that are enabled for formula items and planning items.

The Derived co/by products form, which is accessed from either the Planned order details form or list page, provide similar functionality that currently exists for co/by products from the Production/Batch orders and Derived requirements forms.

The Planning formula field in the Planned orders form is now limited to listing only the formula versions for which the co-product is the output.

**Total cost allocation methodology**
Total cost allocation (TCA) methodology is new for co-products in this release. A new TCA check box has been added to the Formula version form. If you select this check box on the formula version, then the formula calculation is performed based on the new TCA methodology. This methodology allows the cost allocation calculation to be dynamic based on the quantity reported as finished using dollarized weighting. This eliminates the need for the user to review cost allocations for every batch order. If TCA is not selected, then the formula calculation uses existing functionality.

Some of the other highlights of TCA changes for co-products include the following:

- If you select the check box for a formula version, co-products must have a cost price type of greater than zero that can be retrieved from the active cost version for the same site or first site for a non-site specific formula. This feature is validated when the formula is approved.
- If you select the TCA check box after you add the co-products and used a different cost allocation method for them, then the cost allocation method defaults to TCA and the cost allocation percentage is unchanged.
- If you clear the TCA check box after co-products are added and the cost allocation percentage is greater than zero, then the cost allocation method is changed to Manual and the cost allocation percentage is unchanged.
- You must estimate cost allocation percentages either manually or using the new Estimate TCA option in the Co/by products form before you can successfully perform a formula calculation.
- When a batch order is created manually or through firming of a planned batch order, the TCA check box on the formula version is copied to the batch order. However, you can change the check box setting on the batch order. If the check box is not selected on the formula version and you select it on the batch order, the cost allocation method for each line that was set to ProRata or Manual is changed to TCA. The cost allocation of None is unchanged. If the check box is selected for the formula version and you clear it on the batch order, then the cost allocation method for each co-product of the type Production is changed to Manual and any estimated cost allocation percentage remains unchanged.
• The Estimate TCA option is enabled only when the TCA flag is set on the formula version. This option allows you to view the expected allocation if batch orders reported as finished quantities match those that appear on the formula.

• A new Cost allocation form, which can be accessed from the Batch order form, is used to display the calculated cost allocation percent. This information is useful when the products reported and their quantities vary from the scheduled or started quantities on the batch order. When cost is complete, these new percentage allocations from TCA can be viewed in the Cost allocation form.

Cost allocation and burden
Cost allocation cannot be set up for an item that is defined as a by-product on a formula. If you change the Production type for the order line from By-product to Co-product, then Cost allocation and Cost allocation percent fields are enterable.

ProRata as a cost allocation method for co-product and by-product lines is not enabled for products with a Production type of Formula. However, ProRata is available for products with a Production type of Planning item.

The Burden field in the Co/By products form is now an enumerator field that uses four values:

• None: Valid for co-products and by-products. Replaces current functionality where the Burden check box is not selected.

• Percent: Valid for by-products. Replaces current functionality where the Burden check box is not selected, the Cost allocation method is Manual, and a non-zero value is the Cost allocation percent.

• Per series: Valid for by-products. Applies the burden amount to the costs of the batch order regardless of the quantity report. Replaces the current functionality where the Burden check box is selected.

• Per quantity: Valid for by-products. Applies the burden amount to the costs of the batch order based on the quantity reported as finished.

Formulas
Formula forms have been updated in Process Manufacturing Production and Logistics to reflect the new global product concept and changes in the UI.

Other enhancements are described below:

• The Formula form can be accessed directly from either the Inventory and warehouse management module or the Released products list page in the Production information management module. Both Formula forms have been synchronized for clarification and to eliminate inconsistencies.

• You must set up at least one formula version record before you can create formula lines and co/by product lines. This requirement ensures that there is a Per series quantity for catch weight and non-catch weight items before formula lines are entered.

• The yield for an existing item on a formula version is no longer overwritten if a different item that uses the same formula version is selected and that item’s default yield is different from the yield that currently exists on the formula version. Because the yield affects the quantity of the ingredients, this change was implemented in this release.

• The Consumption is field in the Formula line form indicates that the component issue quantity may change when the batch size of the formula changes. If consumption is variable, then the quantity changes with the batch order size. If it is constant, then the quantity is fixed regardless of the batch order size.

• The Scalable feature has also been enhanced in this release. If all formula ingredient lines are set to standard variable consumption, changes made to any ingredient where the scalable
check box is selected will change both the quantity of the other ingredients that are also selected and the size of the formula. Likewise, any change to the formula size will also change the quantity of all ingredients that are scalable. This feature is specifically for formula creation and maintenance and does not indicate whether the ingredient quantity will scale up or down on a batch order. That function is handled by variable consumption setup. The Scalable feature is not available, however, if any ingredient is set up for Step consumption.

- A new Step consumption feature has been added to the Setup tab in the Formula line form. To activate this feature, you must change the Formula setting under the Consumption calculation group from Standard to Step for the applicable ingredient. Step consumption eliminates the need for entering a quantity on the Formula line tab for the ingredient. Instead, the Step consumption is configured with a From series and a Quantity. Based on the batch order quantity, the information from the Step consumption per series record that satisfies that quantity will be selected. This is useful in situations where the consumption rate is not linear with the batch order size and only increases the requirement when a certain quantity threshold is met.

- A Block removal of approval check box has been added to the Production parameters form. If selected, the removal of a formula approval is not permitted. Changes made to an approved formula or formula version also no longer automatically change the approval status from approved to unapproved. Both approval and removal of approval are manual functions.

- If the Block editing check box is selected in the Production parameters form, any changes to a formula or formula version are not permitted until block editing is removed.

- The Co-products form now contains a new Copy button. When you click this button, the Formula copying form is displayed with existing formula versions appearing in the Copy from portion of the form. You can select a version from which to copy the co/by details to an existing record in the Co/By products form.

### Inventory and warehouse management

**Product dimension group split**

**Product, storage, and tracking dimensions**

Product dimensions (previously called inventory dimensions) are now split into three distinct groups to support product definitions at the enterprise level. The three groups are:

- Product dimension group (color, size, and configuration)
- Storage dimension group (site, warehouse, location, and pallet)
- Tracking dimension group (batch and serial number)

**Assigning dimension groups to individual products**

Product dimensions get assigned to individual products at the enterprise level. Once assigned and the product is released to the company level, the product dimension group cannot be changed.

Unique storage and tracking dimensions can be set up for individual companies. These dimensions can be specified at the enterprise level, or they can be specified for released products at the company level. If assigned at the enterprise level, they cannot be changed at the company level.
**Default order type**

The default order type now indicates whether a product is produced, purchased, or a kanban. It identifies the type of order to generate to replenish inventory when it cannot be determined by other means, such as through item coverage settings.

Batch orders will be generated for products with a default order type of Production and a Production type of either Planning item or Formula. You define the default order type at the company level in the Released products list page or the Released product details form.

**Global units of measure**

The unit of measure definition moved from the company level to the enterprise level. Enhancements include grouping units by class and introducing base units for easier set up of unit conversions.

**Planned orders**

Multiple formula versions can be approved and active for a product where the From and To dates have no overlap, or where the From quantity values prevent an overlap from a quantity-based perspective. Group and split functionality available in the Planned order details form validates that the correct route and formula versions are selected based on the From qty for the route and the From formula quantity or From CW formula quantity for the newly combined or split quantity. This functionality is also extended to catch weight items.

If new planned orders are created manually for a planning item or formula item, the formula and route versions are blank until the entry of the required (Req) quantity. Then the formula version and route version are automatically selected based on the required quantity and the From formula size and From date of the formula versions, and the From quantity and From date of the route versions. Changes to the required quantity will automatically update the formula version or route version as needed.

Changes made to the formula number or route number after the required quantity is entered are verified against what the system selected provided the alert is selected in the Production control parameters form to notify the user upon non-standard version usage.

When you group multiple planned orders for an item, the formula and route versions of the last selected planned order become the formula version and route version for the grouped planned order. When you split a planned order for an item, the formula and route versions of the selected planned order becomes the formula version and route version for each of the split planned batch orders. In either case, if the formula and route versions are different from the formula or route versions that would be automatically selected based on the grouped or split quantity, a message is displayed to indicate that the version selection should be reviewed for correctness.

**Batch attributes**

Several enhancements have been made to batch attributes, which are characteristics of raw materials or finished products that make up a batch of inventory. Enhancements include the following:

- You can now assign a target value to a batch attribute. This value is the optimal value for the batch attribute and is in addition to the existing minimum and maximum range. You can set targets for all attribute types.

- The integration between batch attributes and test groups is improved to reduce the potential for error. For integer and fraction tests, the minimum, maximum, and target values for batch attributes automatically default to minimum, maximum, and standard fields in the test group line. For option tests, a new Type field in the Test groups form allows you to select a batch attribute data type that matches the test attribute data type.

- A new "where used" inquiry function allows you to determine where specific batch attributes are used in Process Manufacturing Production and Logistics. The results of this inquiry identify which attribute groups, attributes by item, and attributes by item and customer use a specific
batch attribute. You can access this feature from the Where used option in the Batch attributes form and Batch attributes group form.

- The tolerance action applies only to batch attributes set at the batch attributes by item and batch attribute group levels. Tolerance action and Increment fields are not applicable to the Batch attributes by item and customer form.

- New validations in Process Manufacturing Production and Logistics prevent batch attributes from being deleted or changed when currently used by items and batch attribute groups.

- A new Dimensions display option is added to the Batch reservation form that allows you to manage which storage and tracking dimensions to display in the form.

- Batch attribute search is no longer limited to values within the batch attribute range. You now have broader search capability.

**Shelf life**

Improvements have been made in shelf life functionality in the new release. These changes are described below.

- You can now view shelf life fields for the selected batch in the On-hand form.

- The Shelf life form has been updated to include Physical non-nettable, Physical expired, Adjusted total, and catch weight quantity equivalent fields. These fields have also been added to the Best before and Shelf advice forms.

- Using the new product template functionality, you can set up a shelf life product template with the appropriate shelf life days to be applied to existing items.

- Batch date has been replaced by the standard Dynamics AX field called Manufacturing date.

- Validation that prompts the user to recalculate the shelf advice date when a change is made to the best before date or expiry date has been removed. Updated messages reflect the appropriate action when changes are made to the expiry date, best before date, or manufacturing date.

- FEFO messaging pertaining to date changes in sales order lines for products using FEFO reservation functionality has been improved.

**Warehouse management**

Process Manufacturing Production and Logistics is now fully integrated with Warehouse Management System II (WMSII). WMSII functionality can be used with all processed products, including catch weight. The benefits from this integration provide support for customers who require advanced warehouse management processes, such as delivery based on shelf life, same batch reservation, and customer/batch attributes.

WMSII also optimizes picking functionality by providing the ability to pick by full pallets first, closest location first, least full batch, and so forth. To fully utilize WMSII features for products in Process Manufacturing Production and Logistics, the batch tracking dimension, and pallet and location storage dimensions, must be active.

When inventory is reserved against batches in sales transactions, WMSII considers certain features that may be applicable to the item, as well as reservation rules in determining which inventory to reserve for picking. WMSII considers the following:

- Whether same batch selection is active for item

- Batch attributes applicable to the item
• FIFO and FEFO date-controlled principles (if neither is specified for a batch controlled item, batches are reserved in FIFO order)
• Customer sellable days defined for the item
• Pick criteria (expiry date or best before date) specified for the item
• Any inventory blocks against the batch based on disposition codes
• Catch weight quantities if applicable

The primary WMSII processes that are impacted by the integration of Process Manufacturing Production and Logistics are receipt transactions, picking transactions, and shipments.

Quality management

The inventory blocking feature introduced in Microsoft Dynamics AX 2012 is available to Process Manufacturing Production and Logistics. This new feature allows for the automatic blocking of inventory in an inbound quality management process, as well as manual blocking of on-hand inventory. Inventory blocking co-exists with the current disposition code functionality that is specific to Process Manufacturing Production and Logistics.

Quality orders generated manually or automatically create inventory blocking transactions for the quantity specified in the quality order regardless of whether the inventory batch is enabled or disabled for the item. The quantity blocked in the quality order cannot be issued during inspection and is available only after the quality order is validated. Any remaining inventory in excess of the quality order quantity follows batch disposition code rules unless full blocking is selected in the Item sampling form. If selected, full blocking takes precedence over batch disposition codes. Inventory blocking functionality is also applicable to catch weight items.

Procurement and sourcing

Purchase agreements replace blanket purchase orders

Blanket purchase orders are replaced by a broader set of functionality that has been renamed purchase agreements. Purchase agreements can be set up for specific vendors who have established relationships. The agreements may have special pricing and delivery terms. They can also be defined for intercompany trading relationships, and they can be referenced and used in intercompany purchase order chains.

For Process Manufacturing Production and Logistics products, the new purchase agreements contain required quantity and pricing information, including minimum and maximum release amounts. For catch weight products, the minimum and maximum release amounts should be rounded to accommodate for any variances in the conversion calculation.

• The release minimum amount should be rounded up to the next whole catch weight quantity.
• The release maximum amount should be rounded down to the next whole catch weight quantity.

Delivery schedules

This feature allows you to create a purchase order for an overall quantity that may qualify for a discounted price based on a trade agreement where portions of that quantity are delivered to the customer on a scheduled or as-needed basis.

The delivery schedule consists of an order line with multiple deliveries with additional scheduled delivery lines. The order line and delivery lines share the same attributes, with the order line serving as a template for the delivery lines. This means that values are copied from the order line when individual delivery lines are created. After a delivery line is created, most of the attributes can be
edited in the same manner as a normal order line. The quantity of the order line and the sum of quantities from the delivery lines should always be in sync.

If a trade agreement with a defined total order discount exists, the delivery schedule will still be eligible for the total order discount, even if the order is split into several deliveries.

Delivery schedules are available for purchase order types of Purchase order and Journal. Other purchase order types do not use delivery schedules.

**Purchase orders and change management**

Change management allows you to request changes to purchase orders. It includes Workflow integration, which must be set up to manage the approval process for change requests. When the Workflow has been configured, it determines the route of the purchase order, the tasks to be completed, by whom, under what circumstances, and whether tasks require user interaction or will take place automatically.

When a change is requested, the purchase order is set to a draft state until approved. Only then can it be confirmed. Whether or not change management is enabled, confirmation of purchase orders is mandatory, which prevents receiving and invoicing until the purchase order has been confirmed.

If change management is enabled, it is not possible to delete purchase orders. Instead, they become obsolete and replaced by the most recent purchase order for which a change request has been approved. Previously approved purchase orders are stored in a separate form.

Even if change management is enabled on an enterprise level, it is still possible to inactivate change management for individual vendors and purchase orders, for example, if ordering from a particular vendor does not require approval.

**Extending change management**

Change management is available for use in Process Manufacturing Production and Logistics. If Workflow integration is enabled, all Process Manufacturing Production and Logistics related fields, including catch weight, appear in Purchase order, Purchase order history, and Version change forms. If you use change management, these guidelines apply:

- Only one change order can be effective for a purchase order at any given time.
- You can edit a change order that is in Draft status before submitting it for approval. However, once submitted, no additional edits are allowed until the change order is either accepted or rejected.
- Using a new Vendor batch details option in the Purchase order form, you can update vendor batch details without affecting the status of the purchase order. These details are then linked to the inventory batch record.

**Approved vendor lists**

General messaging for approved vendor list (AVL) functionality has been updated to improve user experience. AVL functions are available from the new Released products list page, Released product details form, Vendor list page, Vendor details form, and Purchase order details form. Purchase agreements for approved vendors are validated against the AVL record for the product and the vendor.
Sales and marketing

Sales agreements replace blanket sales orders

Blanket sales orders are replaced by a broader set of functionality that has been renamed sales agreements.

Sales agreements can be set up for specific customers who have established relationships. The agreements may have special pricing and delivery terms, as well as specific inclusion or exclusion from rebates. Sales agreements can also be defined for intercompany trading relationships, and they can be referenced and used in intercompany sales order chains.

For Process Manufacturing Production and Logistics products, the new sales agreements contain required quantity and pricing information, including minimum and maximum release amounts. For catch weight products, the minimum and maximum release amounts should be rounded to accommodate for any variances in the conversion calculation.

- The release minimum amount should be rounded up to the next whole catch weight quantity.
- The release maximum amount should be rounded down to the next whole catch weight quantity.

Same batch selection and auto batch reservation features are applicable to items in sales agreement lines where those features have been set up for the item.

Same batch selection

If the Same batch selection check box in the Sales agreement lines pane is selected for an item, then each delivery line will have the same batch selection set based on the order line. Every attempt will be made to fill the order from a single batch of inventory based on the configuration of the item. If inventory is not sufficient to fill the order from a single batch, a message is displayed to the user.

Auto batch reservation

Although auto batch reservation is not maintained in the sales agreement, sales orders that are released from a sales agreement automatically update the Reservation field based on accounts receivable parameters.

Excluding items from rebates

A new Exclude from rebate field is added to sales agreements and sales orders that allows for excluding an item on the sales order line in any rebate calculation for the customer. This feature is available whether the rebate is based on a single invoice or multiple invoices over a period of time.

Delivery schedules

This feature allows you to create a sales quotation or sales order for an overall quantity that may qualify for a discounted price based on a trade agreement with portions of that quantity being shipped on a scheduled or as-needed basis.

The delivery schedule consists of an order line with multiple deliveries with additional scheduled delivery lines. The order line and delivery lines share the same attributes, with the order line serving as a template for the delivery lines. This means that values are copied from the order line when individual delivery lines are created. After a delivery line is created, most of the attributes can be edited in the same manner as a normal order line. The quantity of the order line and the sum of quantities from the delivery lines should always be in sync.

Catch weight quantity fields have been added to the Sales quotation delivery schedule and the Sales order delivery schedule for catch weight products. After delivery lines are submitted, the related sales order is automatically updated with the catch weight quantities.
If a trade agreement with a defined total order discount exists, the delivery schedule will still be eligible for the total order discount, even if the order is split into several deliveries. Delivery schedules are available for sales order types of Sales order and Journal. Other sales order types do not use delivery schedules.

**Customer rebates**

Several enhancements that support customer rebate functionality are available in the new release.

**Customized period for cumulating rebates**

The rebate feature in Process Manufacturing Production and Logistics now allows customers to cumulate rebates on a periodic basis. Customers who choose this option can configure this period to their specific business needs. The new option, Customized period, is in addition to the current options of Invoice, Week, Month, and Year.

If Customized period is used, then the Approval required check box must be selected to indicate that approval to use the option has been obtained. This new option requires the selection of a period type that is compatible with the customized period established through Calendars > Fiscal periods setup in the Organization administration module.

**New ways to create and manage rebates**

Also new to this release is the ability to create and process rebates by different units of measure, currencies, product dimensions, and quantities. Changes have been made in the Rebate agreement form to accommodate this feature by adding these new fields: Validated, Unit option, Customized period type, Currency, and Include generic currency. The validation behind this new functionality is comparable to trade agreement functionality. The following list describes the new rebate functions.

- **From and To**: Use these fields to process rebates by different quantities. In the previous release, only the From (or minimum) quantity was available.

- **Inventory**: Use this button to process rebates by different dimensions for a specific item. When you click this button, the dimensions that may affect the rebate appear. These include Configuration, Size, Color, Site, and Warehouse. The other dimensions are not supported. If the rebate is set up for All items or an Item group, the dimensions are display only.

- **Include generic currency**: Select this check box to process rebates in a generic currency. This option is available only if a generic currency is specified in accounts receivable parameters and a currency is not yet defined on the rebate, or the rebate already uses a defined generic currency. If you include a generic currency, then that currency defaults to all lines in the rebate agreement as display only.

- **Specific currency**: Select a specific currency for the rebate in the Rebate agreement header that is not the generic currency. This currency defaults to the line detail, but you can change it to a different currency provided the Include generic check box is not selected. When you set up a specific currency, that currency is used instead of converting the currency using an exchange rate.

- **Unit of measure rebate option**: This new field supports different units of measure on the rebate. The Convert option uses existing functionality, which means that the unit of measure entered on the rebate is the unit of measure in which the rebate is specified. The Exact match option requires that an exact match exist on both the rebate unit of measure and the sales order unit of measure for the rebate to qualify.
**Improved rebate maintenance**

The ability to maintain current rebate agreements is more flexible in this release. Rebate agreements can now be maintained until transactions are initiated against the rebate. Users also have the added ability to process rebates from the Payment journal.

Negative numbers are no longer allowed in the Minimum quantity and Minimum amount rebate fields. However, current functionality that allows entry of a negative number in the Value field remains available in this release. You cannot enter a negative value with a payment type of Check.

**Researching customer rebate payments**

New research options are now available for use in verifying the status of customer rebates. The options include:

- Expanded search capability to allow you to search by transaction number.
- The addition of two new inquiry forms — Rebate details and Rebate paid by check. You can use these inquiries to determine if rebates have been issued but not yet credited, or whether checks have already been issued for customers who are paid by rebate check. You access the new inquiry forms by selecting the Inquiries function in the Payment journal line form.

**Production control**

**Multisite functionality automatically enabled**

In Microsoft Dynamics AX 2012, multisite functionality is required for new supply chain management features. For this reason, the multisite functionality is enabled by default and cannot be inactivated or subsequently removed.

Customers who upgrade from Microsoft Dynamics AX 2009 to Microsoft Dynamics AX 2012 and who do not have multisite functionality activated must first define their site structure and then activate multisite functionality for Microsoft Dynamics AX 2009. After the multisite functionality activation process has been completed in Microsoft Dynamics AX 2009, the upgrade job to Microsoft Dynamics AX 2012 can begin.

Customers who upgrade from Microsoft Dynamics AX 2009 to Microsoft Dynamics AX 2012 and who have already activated the multisite functionality need only follow the upgrade procedure for Microsoft Dynamics AX 2012. Customers upgrading from Microsoft Dynamics AX 4.0 to Microsoft Dynamics AX 2012 must define their site structure before they run the upgrade to Microsoft Dynamics AX 2012.

Although customers can continue to use single site functionality in Microsoft Dynamics AX 2012 by defining and setting up one site, multisite functionality is still enabled and accessible by default.

**Batch orders**

If new batch orders are created manually for a planning item or formula item, the formula and route versions are automatically selected based on the defaulted quantity of the greater of the formula size, minimum order quantity, or standard order quantity, and the scheduled start date of the order.

The Max report as finished has been extended to batch orders in this release. This report is available for formula items, co-products, catch weight products, and planning items. You can access the report from the Released products list page.

**Manufacturing execution split into two modules**

The Manufacturing execution module (previously called Shop floor control) has been split into two separate modules: Time and attendance and Manufacturing execution. Both modules are now fully integrated with Process Manufacturing Production and Logistics, which allows customers to collect data on Production and perform other activities originating from batch orders for catch weight and non-
catch weight goods as enabled by Time and attendance and Manufacturing execution. It is possible to use the modules separately, but companies using both modules have full functionality of the previous Shop floor control, including improvements and updates for Microsoft Dynamics AX 2012.

**Time and attendance module**
Time and attendance contains all previous functionality related to time and attendance registration, such as clock-in, clock-out, and absence registration. Time and attendance also includes functionality to generate payroll data to be used by a payroll system to calculate the correct pay for employees.

The main purpose of Time and attendance is to calculate employee work hours based on predefined work time profiles, manage work time and absence time, and generate a payroll basis to ensure correct payment to employees. Managers use the approval process to approve employee registrations, allowing approved and transferred registrations to be used as the basis for further payroll processing.

**Manufacturing execution module**
Manufacturing execution is primarily targeted at manufacturing companies. Employees can register time on production jobs or projects using a job list Registration form. All registrations regarding time and item consumption will be transferred to other relevant modules.

New functionality has been developed for the shop supervisor to use for managing various production jobs, for example moving jobs from resource groups to resources or between resources in a resource group, reprioritizing jobs in a job list, and attaching files to jobs.

Various reports and production journals now include catch weight functionality. Some of the updated forms include Route card journals, Job card journals, Route jobs, Quantity reports, Production route, Materials, Job registration, Production journal lines, Job registration, Edit job list, Change feedback, Raw registrations, Posted registrations, and Approve.

This table below describes some of the primary Manufacturing execution forms:

<table>
<thead>
<tr>
<th>Form</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job registration</td>
<td>This form uses the same basic functionality to schedule jobs and operations for batch orders as the previous release. For this release, a new Co/By products button has been added to the form. This button opens the Co/By products form for viewing co-products and by-products to be produced in this batch order. For batch orders, both CW Start Qty and Start Qty fields are available for update.</td>
</tr>
</tbody>
</table>
| Production jobs – New buttons | The Production status list page is renamed Production jobs in this release. The form has been updated to include products associated with a batch order. Two buttons, Formula and Consolidated orders, have been added to the Production job details button group on the Production tab.  
  - Formula button: When you select a batch order and click this button, all formula lines for the batch order are displayed.  
  - Consolidated orders button: When you select a consolidated order and click this button, the Consolidated order form is displayed. |
| Production jobs – Cancel finished report | The Cancel finished report check box in the Production jobs form acts as an ‘undo’ function. When selected, any updates made for a job that is generated from a batch order in the Production control module are undone. For co-products and by-products, updates to Report as finished forms are undone. |
When reporting as finished against a batch order that has multiple outputs, the standard Report as finished form is used to specify good quantity, error quantity, catch weight good quantity, and catch weight error quantity. All multiple outputs are displayed when you click Update > Report as finished. By selecting OK in the Report as finished form, all updates are performed. From the shop floor, you must report multiple outputs as finished using the Report as finished form. Customers cannot accomplish this task through quantity reports. From the shop floor, you must report multiple outputs as finished using the Report as finished form. Customers cannot accomplish this task through quantity reports.

<table>
<thead>
<tr>
<th>Report as finished</th>
<th>Use this new form to re-prioritize jobs created from batch orders. This form has also been updated to include applicable catch weight fields.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change feedback</td>
<td>Use this new form to change feedback on a job created from a batch order.</td>
</tr>
</tbody>
</table>

### Warehouse management

Process Manufacturing Production and Logistics is now fully integrated with Warehouse Management System II (WMSII) for all processed products, including catch weight products. The benefits from this integration provide support for customers who require advanced warehouse management processes, such as delivery based on shelf life, same batch reservation, and customer attributes.

WMSII also optimizes picking methods by providing the ability to pick by full pallets first, closest location first, least full batch, and so forth. To fully utilize WMSII features for products in Process Manufacturing Production and Logistics, the batch tracking dimension, and pallet and location storage dimensions, must be active.

Because batch reservation rules are key to warehouse management functionality, this information is summarized below:

- Process Manufacturing Production and Logistics reservation
- Same batch reservation
- Expiry date (shelf life, best before, customer sellable days)
- FEFO
- Batch disposition codes
- Batch attribute based reservations

The primary WMSII processes that are impacted by the integration of Process Manufacturing Production and Logistics are receipt transactions, picking transactions, and shipments.

### Reporting

**Conversion to SQL Server Reporting Services (SSRS) reports**

Throughout the development of Microsoft Dynamics AX 2012, reports are being converted to Microsoft® SQL Server® Reporting Services reports. This section describes changes to reports for Process Manufacturing Production and Logistics.

**SSRS reports**

For Process Manufacturing Production and Logistics, only a subset of reports will be converted to SSRS in this release. This subset includes:

- Nineteen customized standard reports
- Three new custom reports
Customized standard reports
The following standard reports have been customized for Process Manufacturing Production and Logistics and converted to SSRS:

- Complete formula calculation (BOMCalcTrans)
- Finished items in process (ProdFinishGoodsInProgress)
- Formula line (BOMConsistOf)
- Job list (WrkCtrJobs)
- Picking list (ProdPickList)
- Production/batch overview (ProdOverview)
- Production/batch report (ProdReport)
- Raw materials in process (ProdRawmaterialInProgress)
- Route card (ProdRouteCard)
- Route jobs (ProdRouteJob)
- Return acknowledgement (ReturnAcknowledgment)
- Return order (ReturnDocument)
- Invoice (PurchInvoice)
- Invoice (SalesInvoice)
- Packing slip (PurchPackingSlip)
- Packing slip (SalesPackingSlip)
- Picking list (WMSPickingListOrderPick)
- Request for quote (PurchRFQSend)
- Work in process (ProdResourcesInProgress)

Custom reports
The following custom reports for Process Manufacturing Production and Logistics have been converted to SSRS reports in AX 2012:

<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch cost estimates and costings (PmfCoByProdCalcTrans)</td>
<td>View information about batch orders, including the estimated and actual costs. The report shows total costs by cost group for each batch order and detailed costs for ingredients. You can use selection criteria to view only certain details, such as batch status.</td>
</tr>
<tr>
<td>Catch weight on-hand inventory (PdsCWInventOnhand)</td>
<td>Print the on-hand by quantity in catch weight units. You have the option to select different product dimensions.</td>
</tr>
<tr>
<td>Shelf advice (PdsInventBatchShelfAdvice)</td>
<td>Print the status of all batches for the specified shelf advice date.</td>
</tr>
</tbody>
</table>