



QAD Enterprise Applications
Enterprise Edition

Training Guide Quick Start

70-3227-2012.1EE
QAD 2012.1 Enterprise Edition
Workspace: 10USA > 10USACO
September 2012

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Change Summary

The following table summarizes significant differences between this document and the last published version.

Date/Version	Description	Reference
Sept. 2012/2012.1 EE	Added additional information the user interface; added additional information on Enterprise Financials; added overview sections for the components of each QAD Enterprise Applications product suite; added mastery test	--
March 2012/2012 EE	Rebranded for QAD 2012 EE, edited for clarity and consistency, minor content updates	--
Sept 2011/2011.1 EE	Rebranded for QAD 2011.1 EE	--

About This Course

This section introduced the content and requirements of the Quick Start Training.

Course Description

Additional Resources

Course Description

This course provides quick start training on QAD Enterprise Edition (QAD EE) by offering a very high-level overview of most of the core features of the QAD system. The quick start is for those who want to “hit the ground running” with the application software. This accelerated course provides a focused introduction to the fundamentals of the system and demonstrates how features apply to critical business processes.

The focus on basic operational tasks lays a foundation for further training in more advanced functions. In this sense, you might think of the course as very broad but somewhat shallow. Training guides for the individual modules provide much deeper training within a narrower scope.

Course Objectives

The overall objective of the course is to provide a basic background in setup concepts and the processing of core business functions in QAD EE, such as:

- Basic Setup
- Purchasing
- Sales Orders
- Manufacturing
- Planning

Each chapter includes a list of learning objectives for the topics covered in that chapter.

This course is not intended to take the place of implementation training or consulting. The complete body of knowledge needed to make the business decisions required for system setup and implementation are beyond the scope of this course.

The format for this course is designed for the classroom with each student completing their own hands-on activities that simulate how to use QAD Enterprise Edition to run a business.

Course Benefits

The learner will obtain an overview of core QAD Enterprise Edition functionality.

Audience

This course is intended for first-time users.

Prerequisites

An understanding of basic manufacturing principles is beneficial.

Course Credit

This course is valid for 30 credit hours and is typically taught in 4 days.

Organization of Training Guide

Training Guide Sections

User Interface and System Foundation

Chapter 1, “QAD EE User Interface,” on page 5 introduces the application and shows how to navigate the programs and get additional help. It also introduces the system modules, program types, and types of data.

Chapter 2, “System Foundation,” on page 57 describes the basic building blocks of the system.

Chapter 3, “Enterprise Financials,” on page 85 reviews the components of the Enterprise Financials suite and introduces some basic financial concepts.

Manufacturing Setup

Chapter 4, “Manufacturing Overview,” on page 117 reviews the components of the Manufacturing suite.

Chapter 5, “Product Definition,” on page 131 describes setting up items and the how item attributes are used in the manufacturing process.

Chapter 6, “Manufacturing Setup,” on page 165 shows how to set up some of the key components of a manufacturing environment, including shop calendars, work centers, and routings.

Chapter 7, “Cost Calculation,” on page 185 describes item costing and the cost rollup process.

Processing System Transactions

Chapter 8, “Purchasing,” on page 211 provides an overview of the Supply Chain suite and a focused description of the purchasing process.

Chapter 9, “Manufacturing Execution,” on page 261 provides an overview of types of manufacturing and a focused description of discrete work orders.

Chapter 10, “Sales Orders/Invoices,” on page 303 provides an overview of the Customer Management suite and a focused description of the sales order process.

Planning

Chapter 11, “Manufacturing Planning,” on page 347 follows a step-by-step flow from entering a forecast to building and shipping the forecasted product.

Chapter Topics

Each chapter in these sections is divided into these subsections:

- Overview and learning objectives
- Key concepts
- Example
- Review
- Exercise

Key concepts are discussed at the beginning of each chapter to familiarize you with processes, work flows, and terminology. For example, the chapter on Manufacturing Environment Setup discusses concepts related to work centers and routings.

Note Throughout this course, various screen images may not display the exact data that is mentioned in the text. The content of the transaction detail will be correct. In the exercises, always follow the printed text.

Virtual Environment Information

The hands-on exercises in this book should be used with the latest Enterprise Edition learning environment in the 10USA > 10USACO workspace. When prompted to log in, specify *demo* for user ID and *qad* for password.

Additional Resources

If you encounter questions on QAD software that are not addressed in this book, several resources are available. The QAD corporate Web site provides product and company overviews. From the main site, you can access the QAD Learning or Support site and the QAD Document Library. Access to some portions of these sites depends on having a registered account.

<http://www.qad.com/>

QAD Learning Center

To view available training courses, locations, and materials, use the QAD Learning Center. Choose Education under the Services tab to access this resource. In the Learning Center, you can reserve a learning environment if you want to perform self-study and follow a training guide on your own.

QAD Document Library

To access release notes, user guides, training guides, and installation and conversion guides by product and release, visit the QAD Document Library. Choose Document Library under the Support tab. In the QAD Document Library, you can view HTML pages online, print specific pages, or download a PDF of an entire book.

To find a resource, you can use the navigation tree on the left or use a powerful cross-document search, which finds all documents with your search terms and lets you refine the search by book type, product suite or module, and date published.

QAD Support

Support also offers an array of tools depending on your company's maintenance agreement with QAD. These include the Knowledgebase and QAD Forums, where you can post questions and search for topics of interest. To access these, choose Visit Online Support Center under the Support tab.

QAD EE User Interface

This chapter provides information on the features of the QAD Enterprise Application user interface and how to navigate in the system. It also introduces the top-level modules in the system and the types of programs and data you will use.

Overview of QAD Enterprise Applications

User Interface Overview

Understanding the User Interface

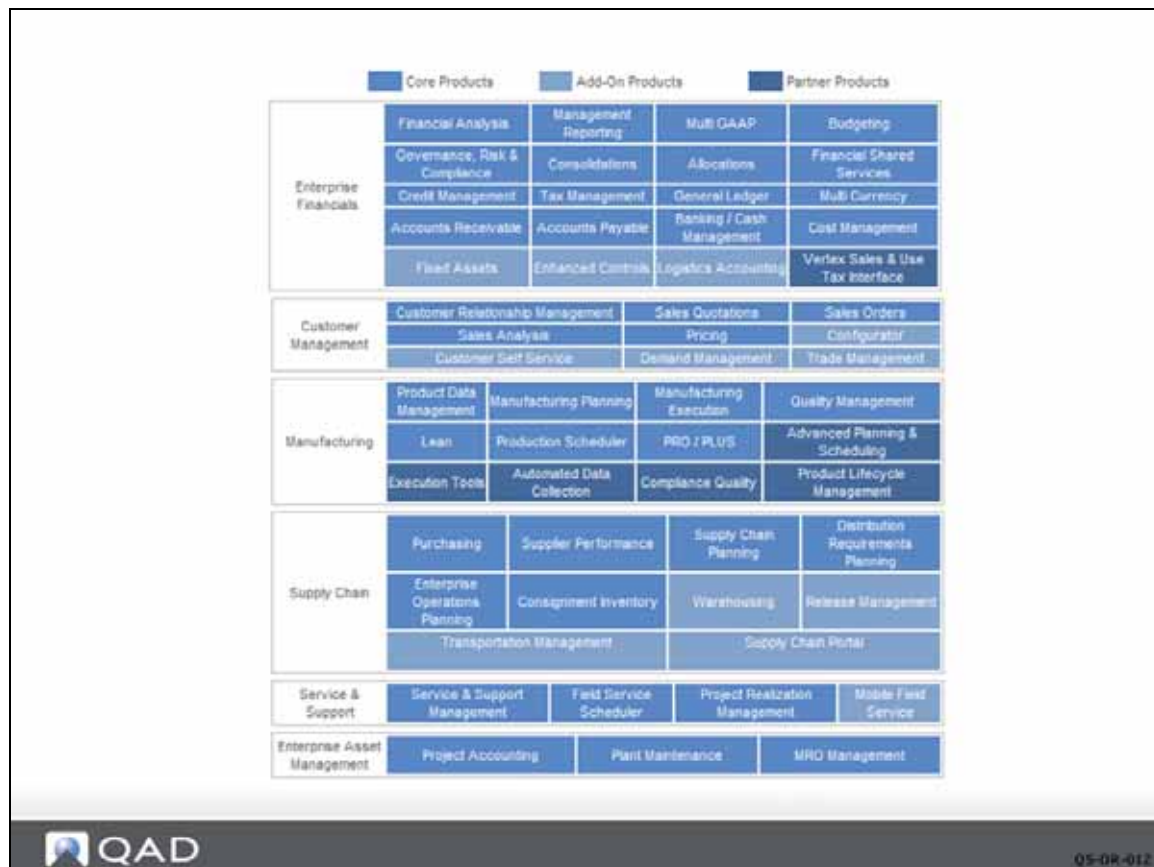
QAD EE Modules

Types of Programs and Data in QAD EE

Getting Help in the .NET UI

Special UI Features

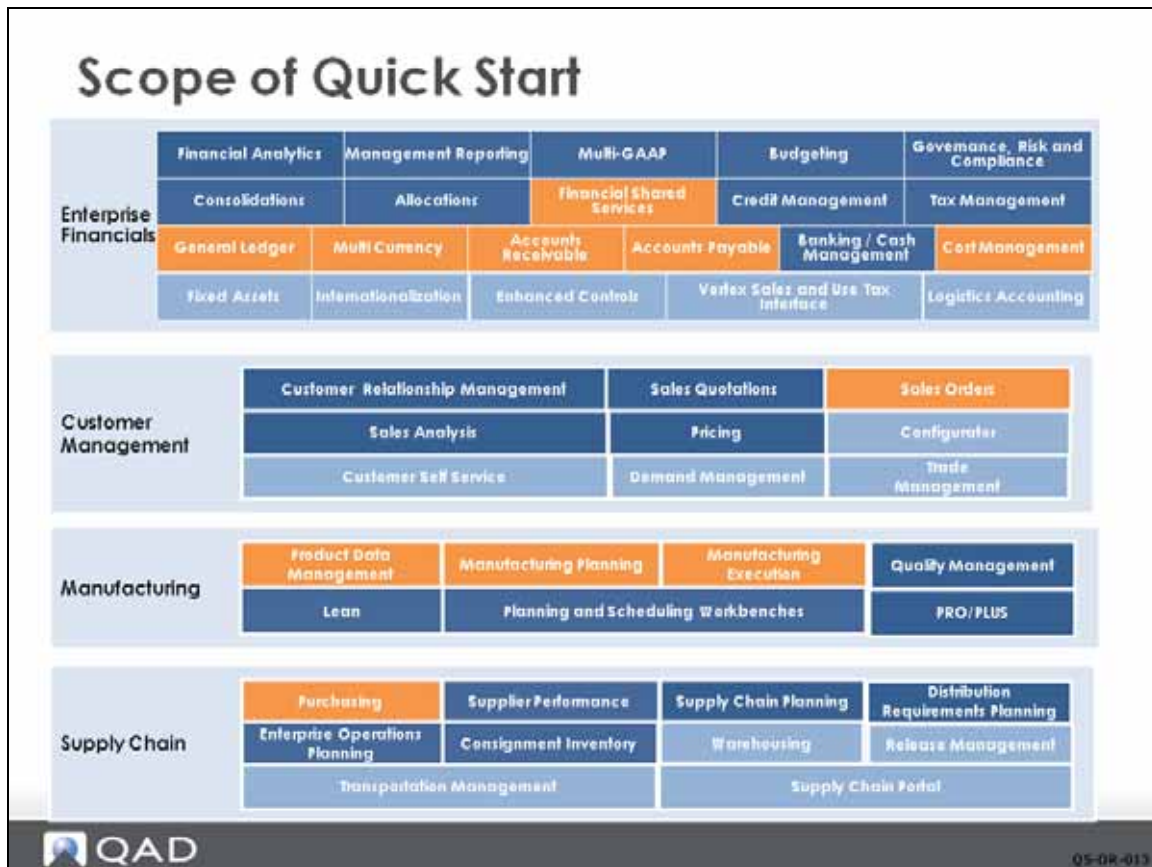
Overview of QAD Enterprise Applications



QAD Enterprise Applications is a complete suite of software designed to support all of the key processes of global manufacturers.

- **Enterprise Financials:** Addresses complex regulatory requirements, strict segregation of duties, and the controls required by larger, more complex enterprises; includes sophisticated budget modeling capabilities, advanced reporting, multiple reporting layers that simplify complex multi-GAAP (generally accepted accounting principles) reporting requirements, and enhanced audit capabilities.
- **Customer Management:** Provides improved responsiveness through collaboration and management of customers and demand.
- **Manufacturing:** Enables companies to reduce costs and increase throughput using the latest manufacturing scheduling techniques, including the capability to support lean principles.
- **Supply Chain:** Helps companies improve management of supply and suppliers through real-time collaboration.
- **Service and Support:** Provides the capability for after-sale service and support. Manages warranty tracking, services calls, and returns and repairs.
- **Enterprise Asset Management:** Supports plant maintenance activities, including preventive maintenance, predictive management, work orders, and service requests to ensure equipment is reliable, and to ensure compliance with regulatory mandates for product safety and cleanliness.

Scope of Quick Start

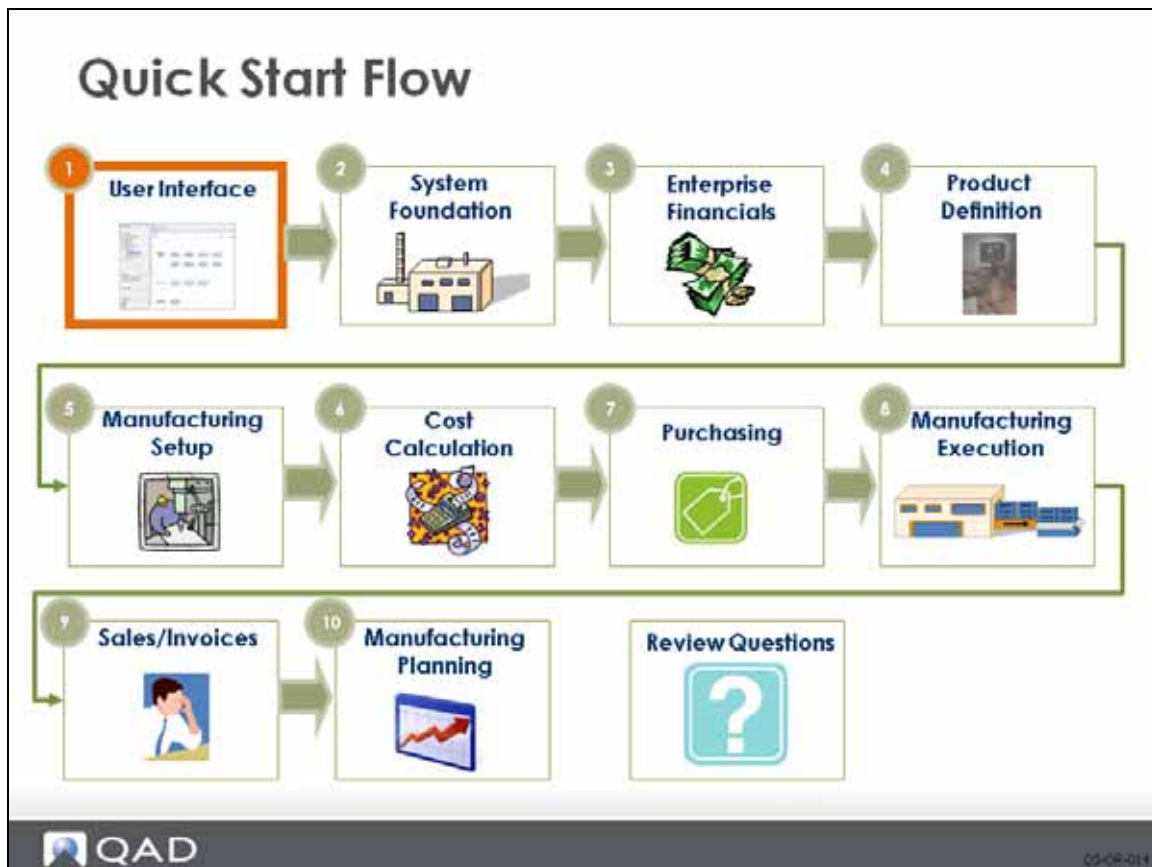


This slide highlights the areas of the product that are the focus of the quick start training. As you can see, QAD's offerings cover a wide-range of corporate activities. This class touches on the following basic core features:

- Financial setup, accounts receivables from sales, accounts payable from purchasing, and product costing
- Sales order management
- Product definition and manufacturing planning and execution
- Purchasing

A brief overview of each product area is provided before the focused activities in the various product chapters so you have a better idea of the full context of the QAD product suites.

User Interface Overview



This slide illustrates the basic flow of topics followed during this training. You will see this slide at the beginning of each chapter to help you track your progress. The focus of the current chapter will be highlighted with the bold orange border.

Chapter Topics

This chapter covers the following topics:

- Introduction to the .NET UI
 - Workspaces
 - Navigation
- Introduction to QAD EE Modules
- Types of Programs and Data in QAD EE
- Getting Help
- Special UI Features

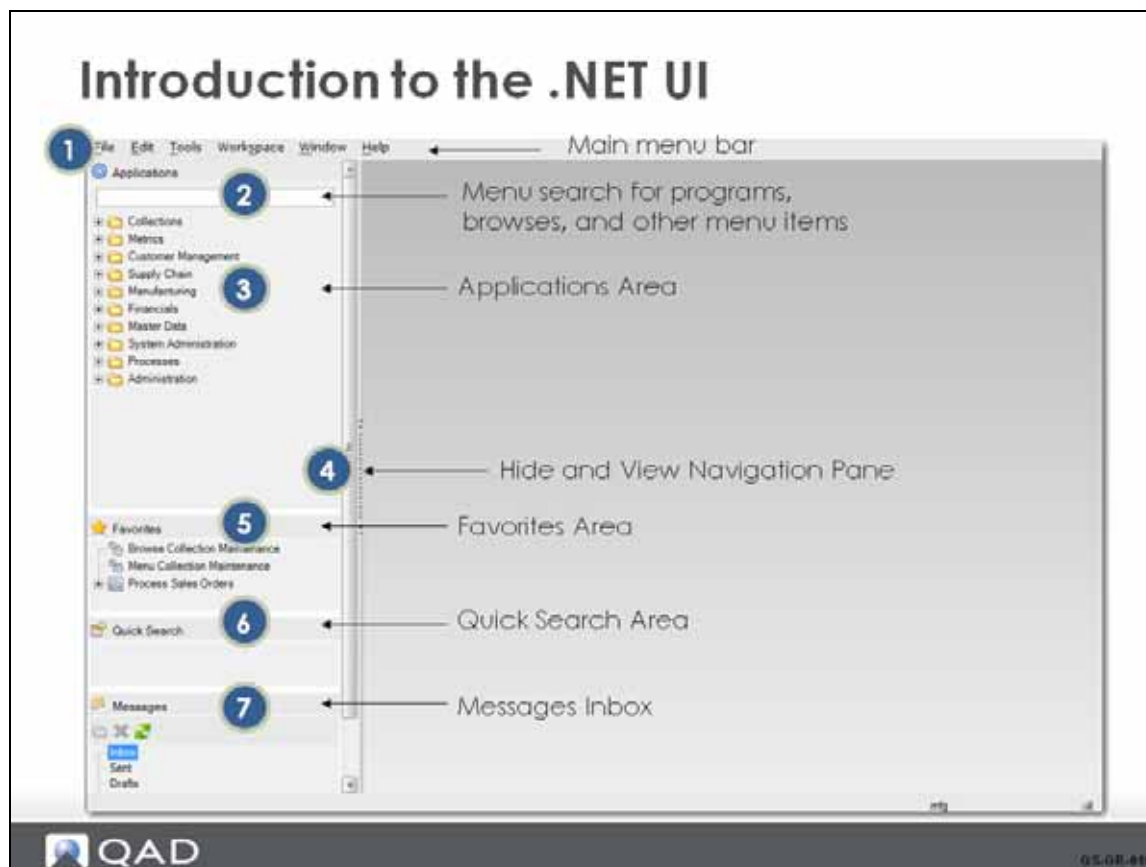
Exercise are found after most major topics.

Learning Objectives

This chapter introduces the .NET User Interface (UI) of the QAD EE system. When you finish this chapter, you should be able to:

- Understand the purpose of a workspace.
- Be familiar with the ways you can navigate in the .NET UI.
- Know how to find technical information about the program you are using.
- Understand how programs are organized into modules.
- Distinguish between types of programs in the .NET UI.
- Understand how to use basic browse filters and operators.
- Know how to find help and support.
- Understand special UI features useful for streamlining tasks.

Understanding the User Interface



The QAD .NET User Interface (UI) provides a common framework for multiple QAD applications. This framework, based on Microsoft .NET technology, has excellent performance and provides best-practice usability and deployment features, as well as extensive ways for users to adapt the UI to their preferred work style.

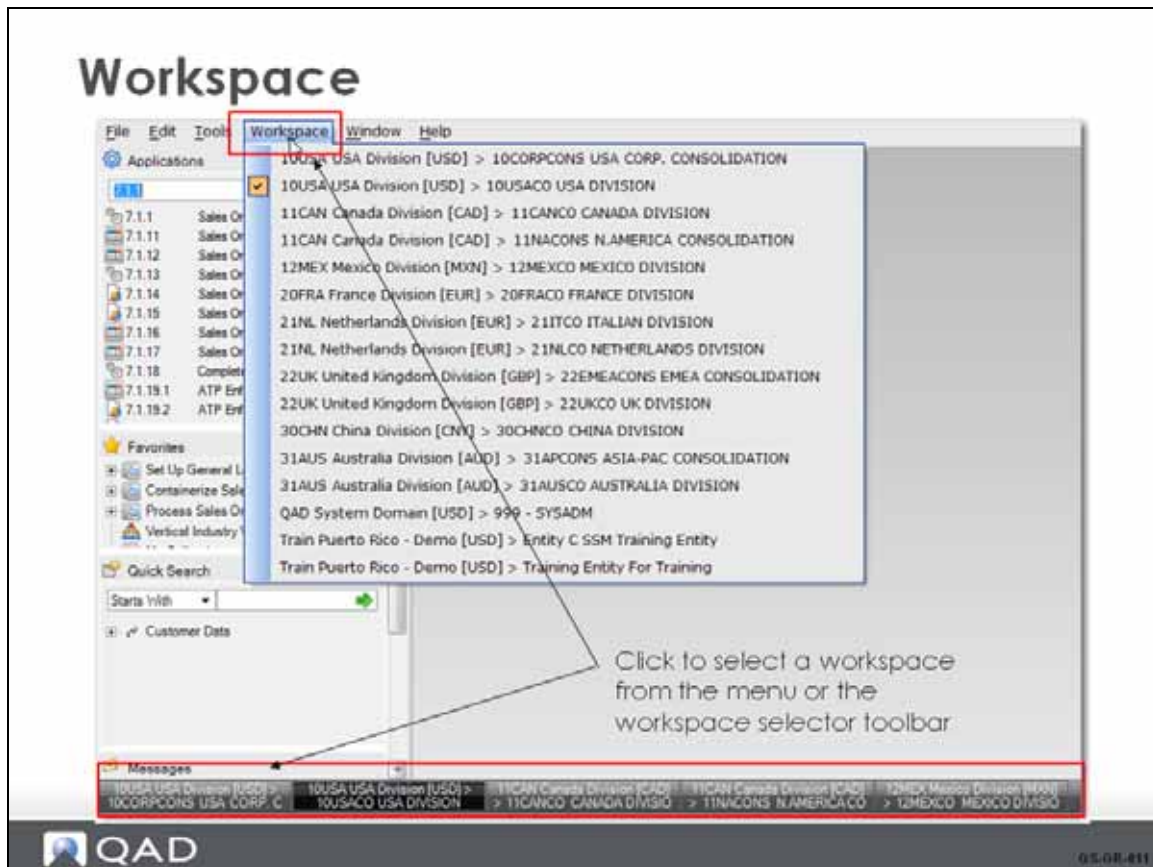
When you first log into the .NET UI, you see a screen like the one above.

- 1 The main menu bar includes selections for File, Edit, Tools, Workspace, Window, and Help.
- 2 The menu search helps you locate programs to run.
- 3 The Application area displays the application programs that can be run in the QAD .NET UI.
- 4 Use the dashed bar to close and open the navigation pane to have more area to work in.
- 5 The Favorites area can be customized by each user to list frequently used programs.
- 6 The Quick Search area lets you search for a value across all of the fields in a browse group, which are definable by each user (see “Quick Search” on page 103 for details).
- 7 The Messages inbox displays messages generated through the QAD internal mail system.

Each distinct area of the UI can be resized to suit the working style of the individual user.

Note If you are not familiar with the .NET UI, review *Training Guide: .NET User Interface*.

Workspace



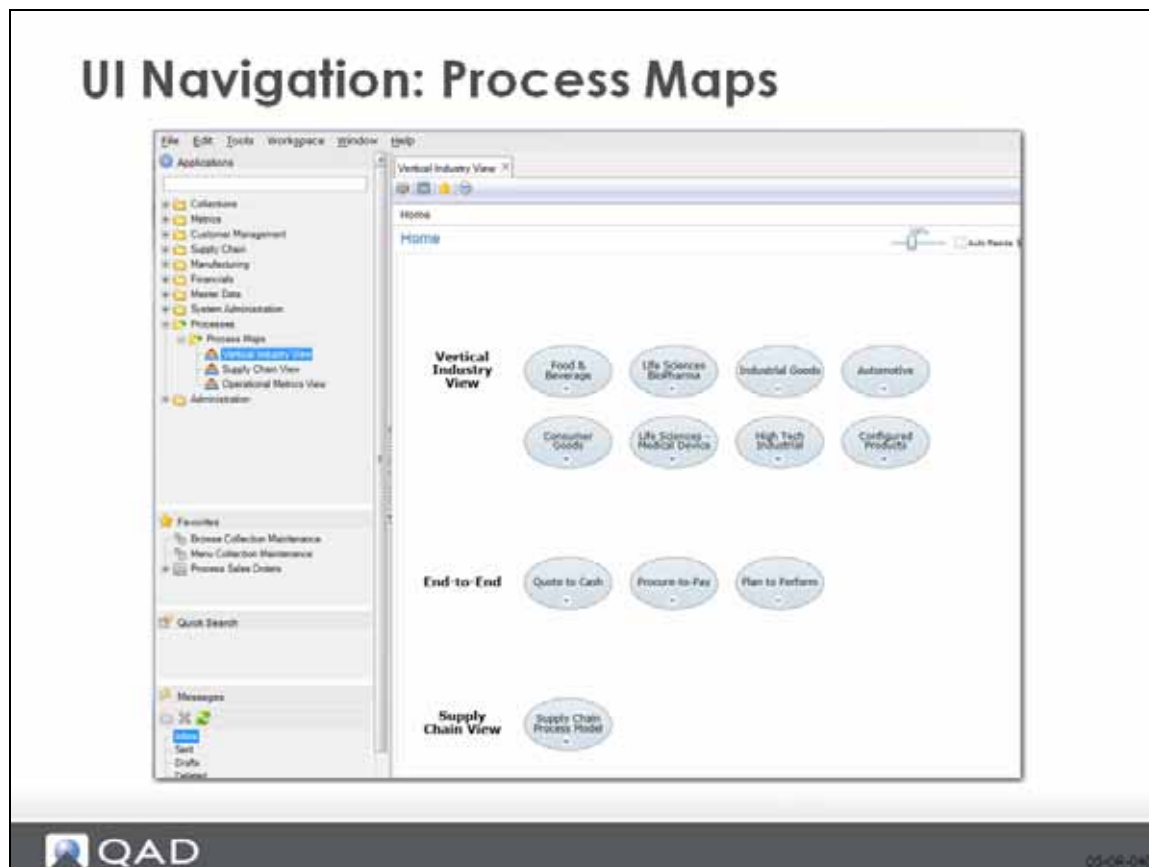
In the .NET UI, your application context is determined by a combination of domain and entity, called a workspace. Workspaces represent the area of your business where you are working. In this class, you are using the 10USA > 10USACO workspace, which represents the 10USA domain and the 10USACO entity.

Most users only use one workspace and once selected, it is always active by default. When you exit the QAD .NET UI, the active workspace is saved and displays when you log in again.

If needed—and you have the necessary access—you can select a different workspace that displays on the Workspace menu. The check mark signifies the workspace that is currently active.

If you need to change workspaces regularly, you can also enable the workspace toolbar, shown above. Clicking a workspace name in the toolbar changes the current domain and entity. The toolbar is enabled using the Show Workspace Selector option on the Tools|Options menu.

UI Navigation: Process Maps



The .NET UI provides many ways to navigate and find programs you are interested in. You can select programs from the menu on the left or enter a program name or number the search field. These methods are shown in following slides.

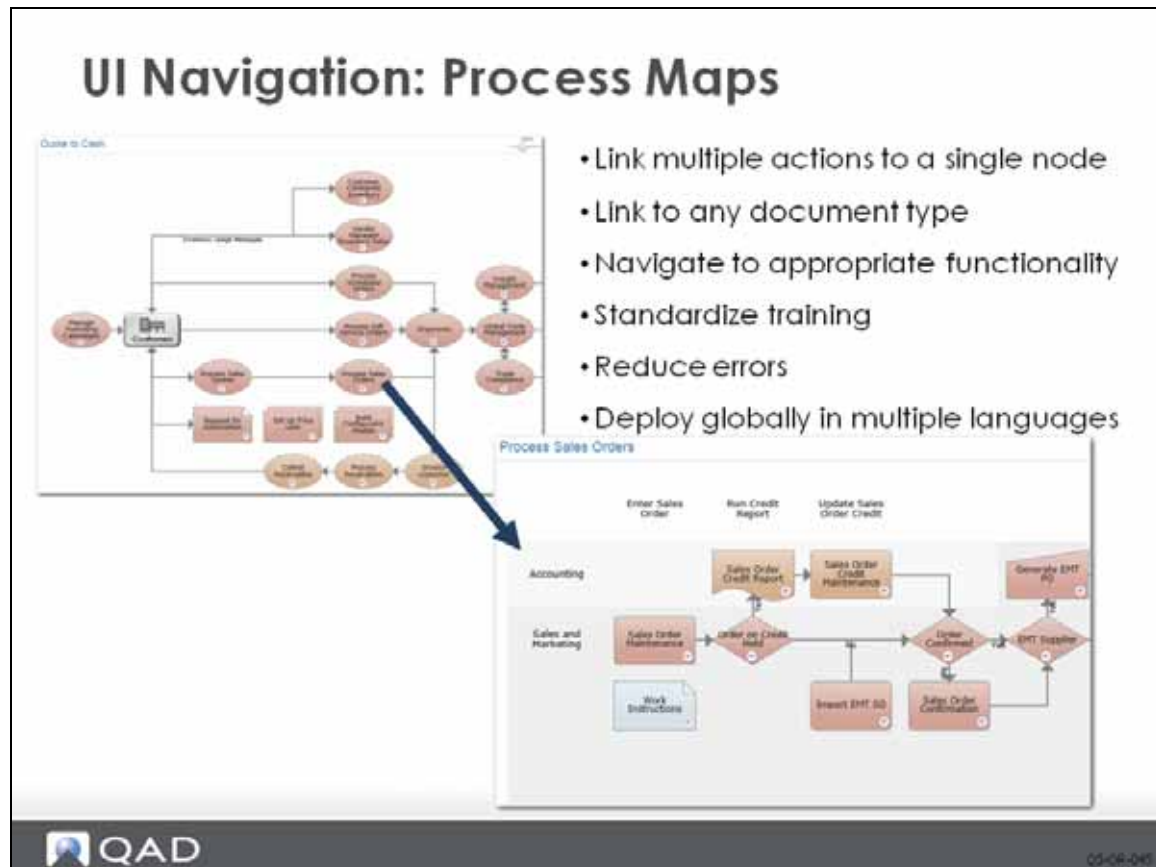
This slide shows a top-level view of the process maps supplied with the .NET UI. These maps are graphic representations of workflows that can include links to programs, browses, documentation, URLs, or other maps. The .NET UI includes a Process Editor so that each installation can create their own maps that accommodate their unique company standards. Users can edit process maps for any segment of the organization, or model unique environments in as much detail as appropriate.

The set of process maps supplied with the product has been carefully designed to incorporate best practice workflows tailored for various vertical industries:

- Food and Beverage
- Consumer Goods
- Life Science Medical Devices and Life Sciences BioPharm
- Industrial Goods and High-Tech Industrial
- Automotive
- Configured Products

Also included is an end-to-end basic process for quote to cash, procure to pay, and plan to perform, as well as a supply chain process model.

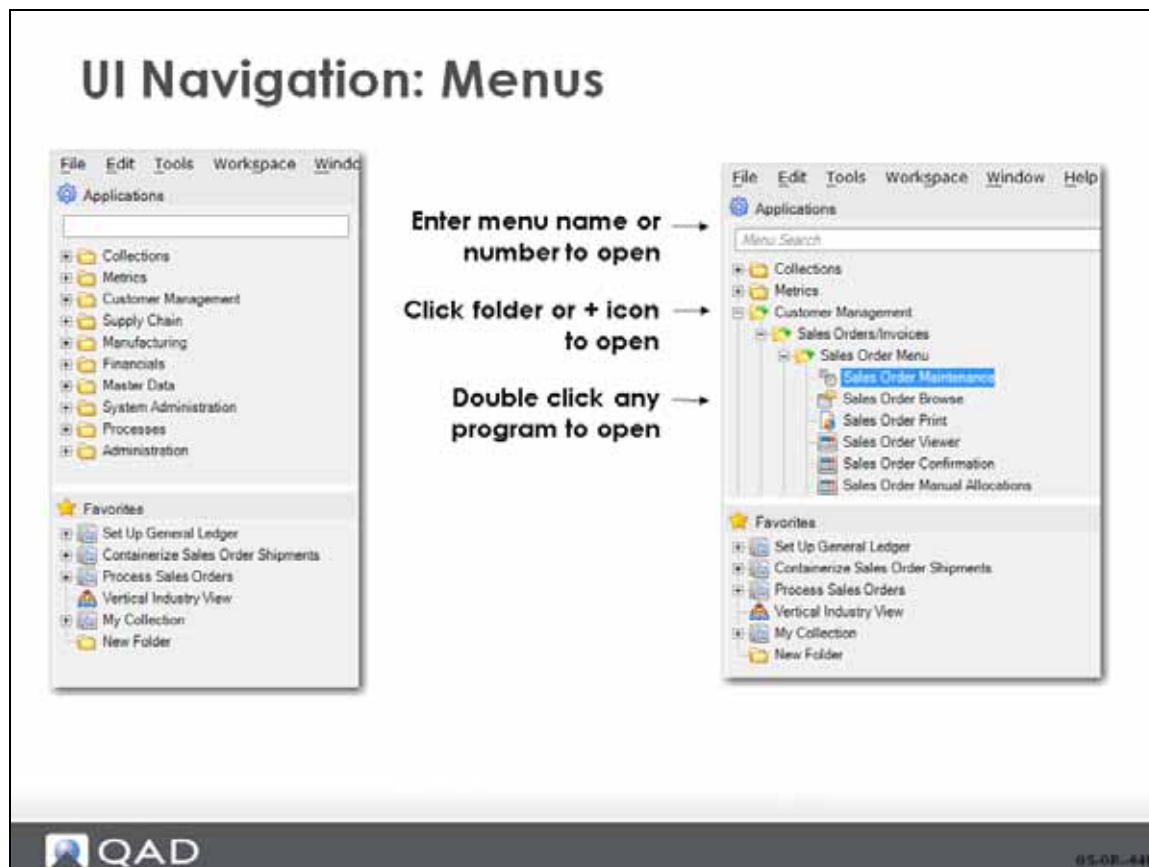
Process Maps Benefits



Using process maps can:

- Improve end user performance by making process instructions visual and readily available, increasing awareness of standard procedures for routine and special tasks.
- Reduce errors and waste since users quickly access information regarding handling procedures, detailed documentation and instructions, eliminating guesswork.
- Increase global staff communication through maps that are globally available and editable to match regional language and operational demands.

UI Navigation: Menus

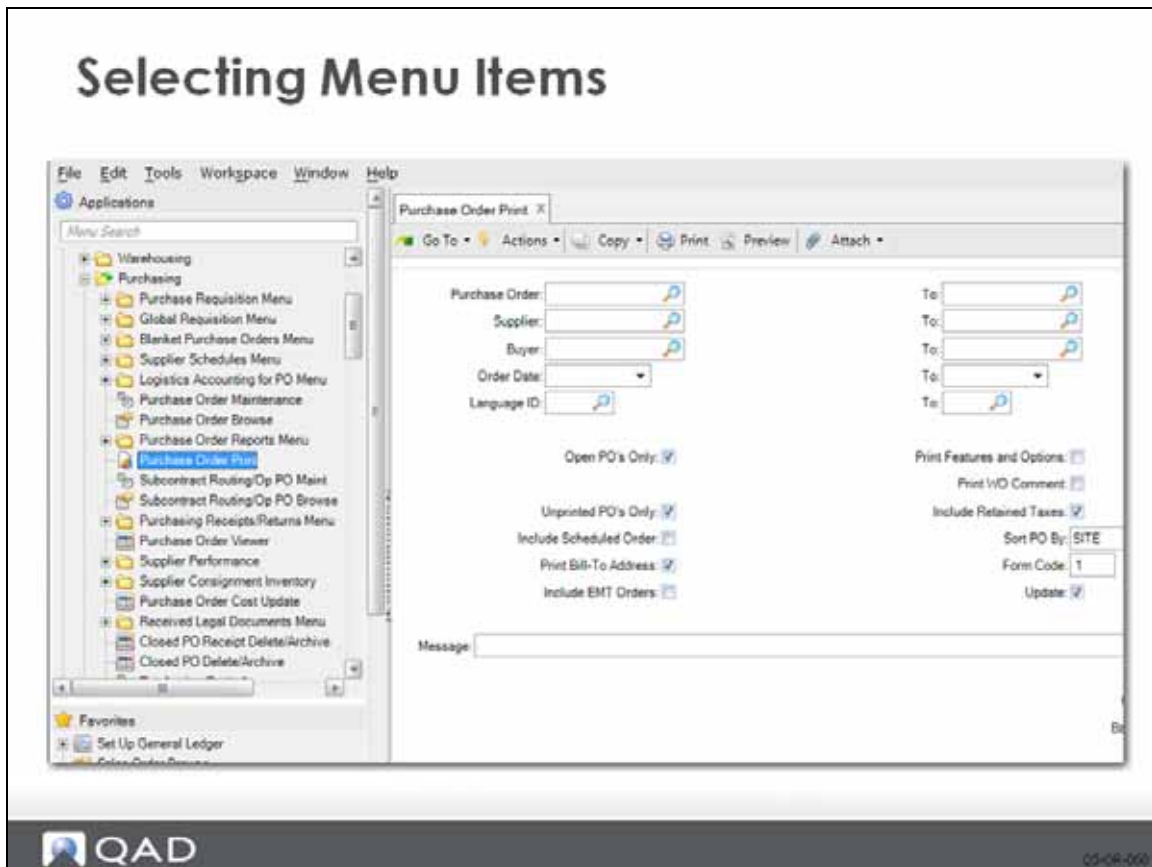


The Applications area displays the menu items for the QAD applications running in the QAD .NET UI. When the system is installed, the default menu organization is automatically loaded. Multiple screens can be open at any one time.

The menus are organized in folders, which groups functions into application-related sections. Each menu folder contains other folders or menus of related business activities called modules. This example of the menu structure shows the indented format of subfolders and items. Under the Customer Management folder is the Sales Orders/Invoices folder. It contains other folders for various functions required to manage sales orders and related functions such as Customer Schedules and Shipment Processing.

Note The menu structure for QAD EE has been significantly revised from the QAD Standard Edition. If you are upgrading from a standard version of the system, you will want to familiarize yourself with the new menu structure. Enterprise Financials are completely revised from previous releases. User guides and training guides exist for Enterprise Financials for those who require in-depth knowledge of the new financial functionality.

Selecting Menu Items



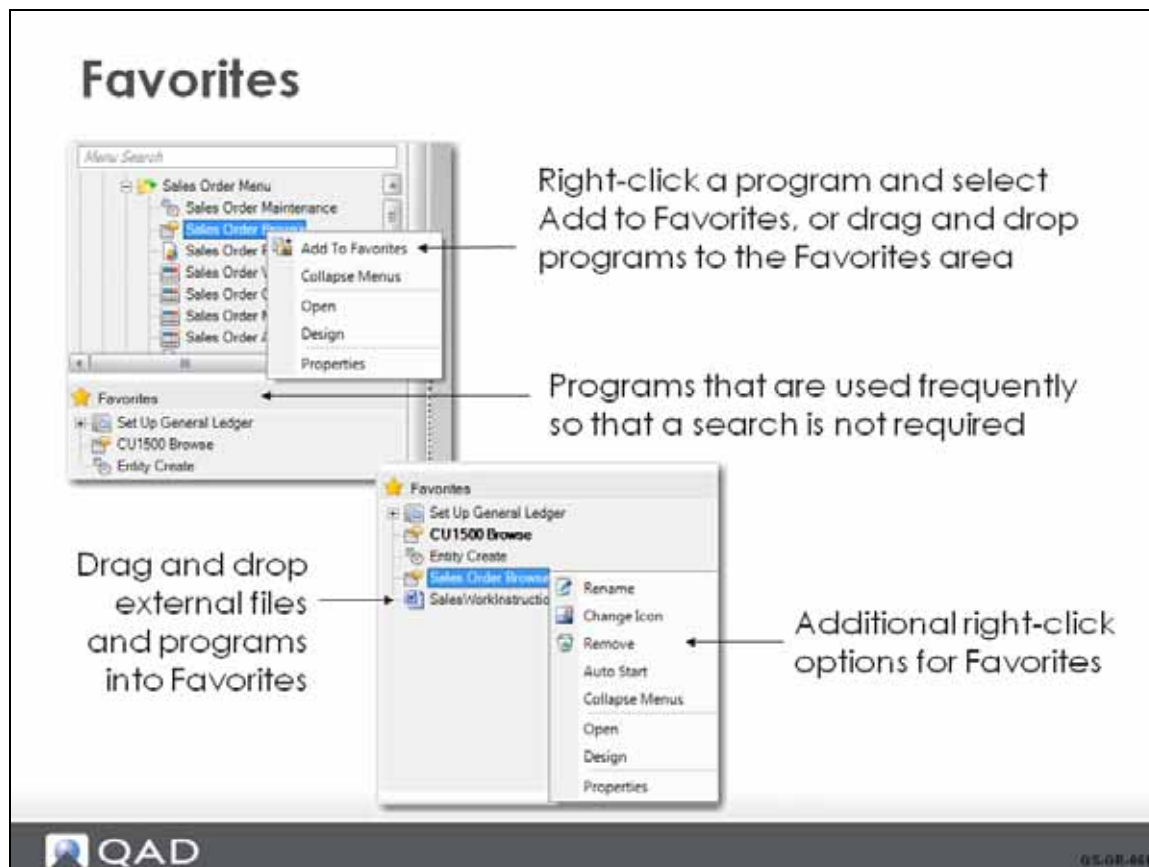
You use the mouse to select menu items. You can execute a program by:

- Clicking on the menu folders until you find the program in the menu and then double-clicking on its name. You can single-click the plus or minus sign to toggle the folder open or closed or double-click the folder icon directly.
- Double-clicking a discrete function, such as Purchase Order Maintenance, to display its UI in the main window.
- Entering part of its descriptive label in the Menu Search field. For example, enter sales to display all menu labels that include the word sales.
- Entering its technical program name (sosomt.p for Sales Order Maintenance) or its number, which represents a shorthand pointer to its position in the menu system.

Menu numbers are typically only used by experienced users; most users find the label search easiest. This guide assumes you are using menu labels but menu numbers are provided when a function is first introduced. When typing in the menu search area, different menu items appear as the typing continues until the proper label is located. This is called predictive text.

The application window uses tabs and lets you open multiple functions at one time. You toggle between functions by clicking the tabs. Close a tab by mouse clicking the X in the tab corner.

Favorites



The .NET UI lets you customize the interface in many ways to make your work easier. One way to do this is to set up your own personal favorites menu. You can do this in two ways:

- Right-click on a program in the top list and select Add to Favorites.
- Use your mouse to drag the program to the area below. This makes a copy of the menu item; you can still find it in the list above as well.

Remove an item from the favorites using the same steps: either right-click and select Remove or drag out of the Favorites.

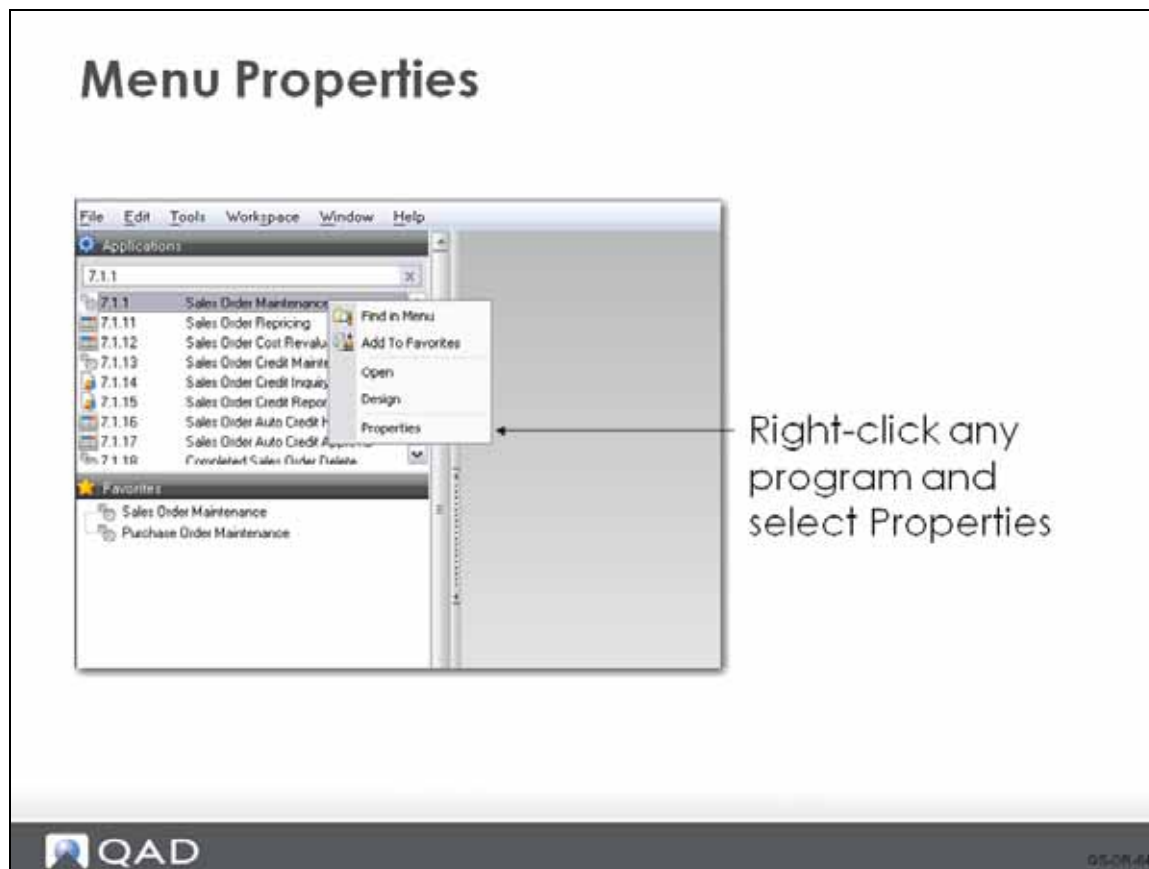
You can rename programs in your favorites so they are even more personalized. In addition, you can create folders and subfolders for organizing favorites by right-clicking in the Favorites area.

Two other options let you further manage favorites. You can:

- Select one or more items to start automatically when you log in using the Auto Start option. So if, for example, you typically log into the system to approve requisitions, you can have the Purchase Requisition Approval program start automatically every time you log in. Items selected for Auto Start display in bold text in the menu.
- You can change the icon associated with a program by loading the image you want to use.

One other useful feature for favorites is that you can add external files by simply dragging and dropping them into the Favorites area. This slide shows a Microsoft Word file with work instructions added as a favorite.

Menu Properties



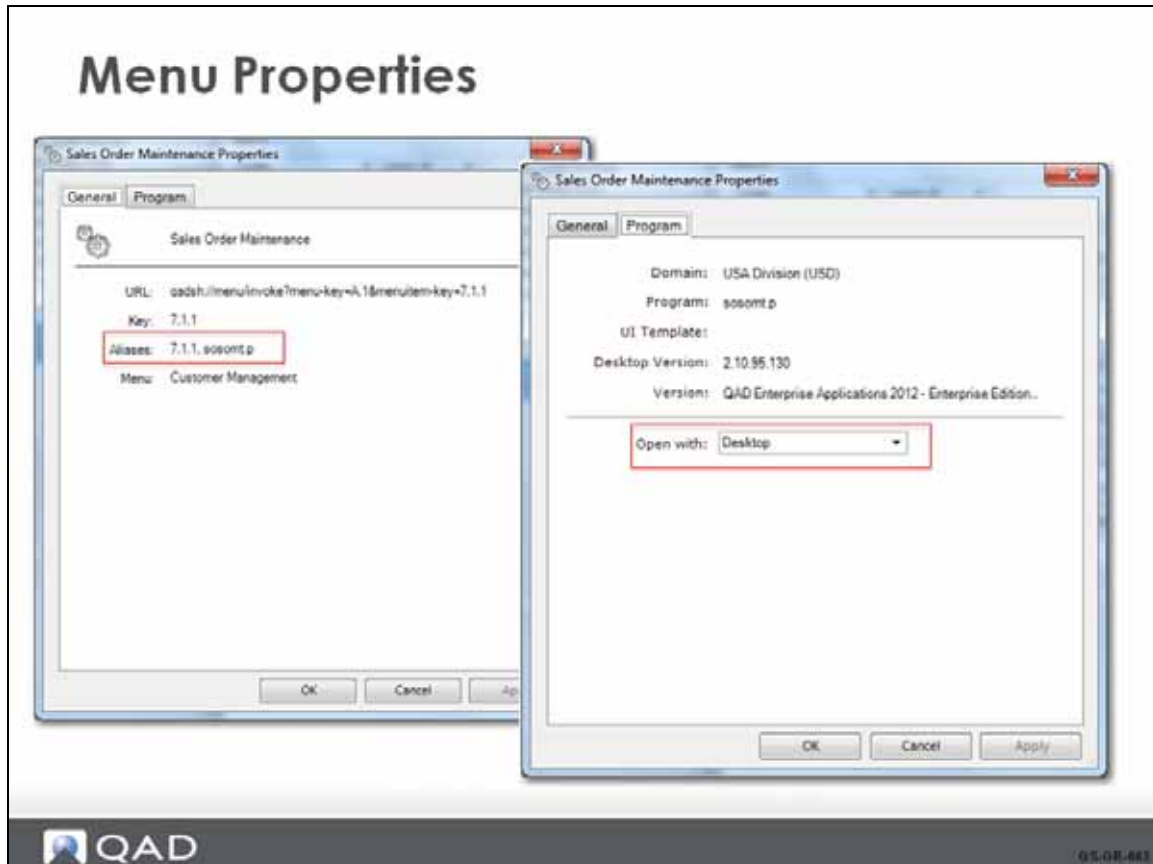
You can view the information about a menu item by right-clicking it and choosing Properties from the pull-down menu. The Properties window includes two tabs: General and Program.

The other options on the right-click menu let you:

- Find the program in the menu system, so you can see its hierarchical position relative to other programs.

Note The Find in Menu option changes to Collapse Menu when the hierarchy is already displayed.

- Add the program to the Favorites area (you can also do this by dragging).
- Open the program in the workspace so you can use it.
- Design a custom version of the program. This option is disabled unless you belong to a special group of users with access to the Configurable Screens feature. Configuring custom program screens is an administrative function that is covered in *Training Guide: QAD .NET UI Administration*.



The Properties window includes two tabs, General and Program. If you are a new user of QAD EE, you can learn the numeric shortcut for the program and its technical program name this way, shown in the General tab with the label Aliases.

On the Program tab, the Open with field indicates how the program will display in the application area.

Desktop: The mode normally used by non-component programs in the .NET UI, which supports all of the enhanced navigation features.

.NET User Interface: This mode is supported by only a few programs that have been rewritten using a client-side plug-in that supports additional navigation features such as drag and drop.

Browse Viewer: This is the normal mode for browses that displays data in an interactive grid or chart format.

Terminal: This mode is a simple representation of a character-based screen.

You can change the Open with property from Desktop or Browse Viewer to Terminal according to your preference. If you do so, your choice will be retained from session to session.

Note Component-based programs in Enterprise Financials run in one mode only.

Exercise 1-1: Using General UI Features

These exercises and discussion questions will help you become familiar with navigating the QAD EE user interface.

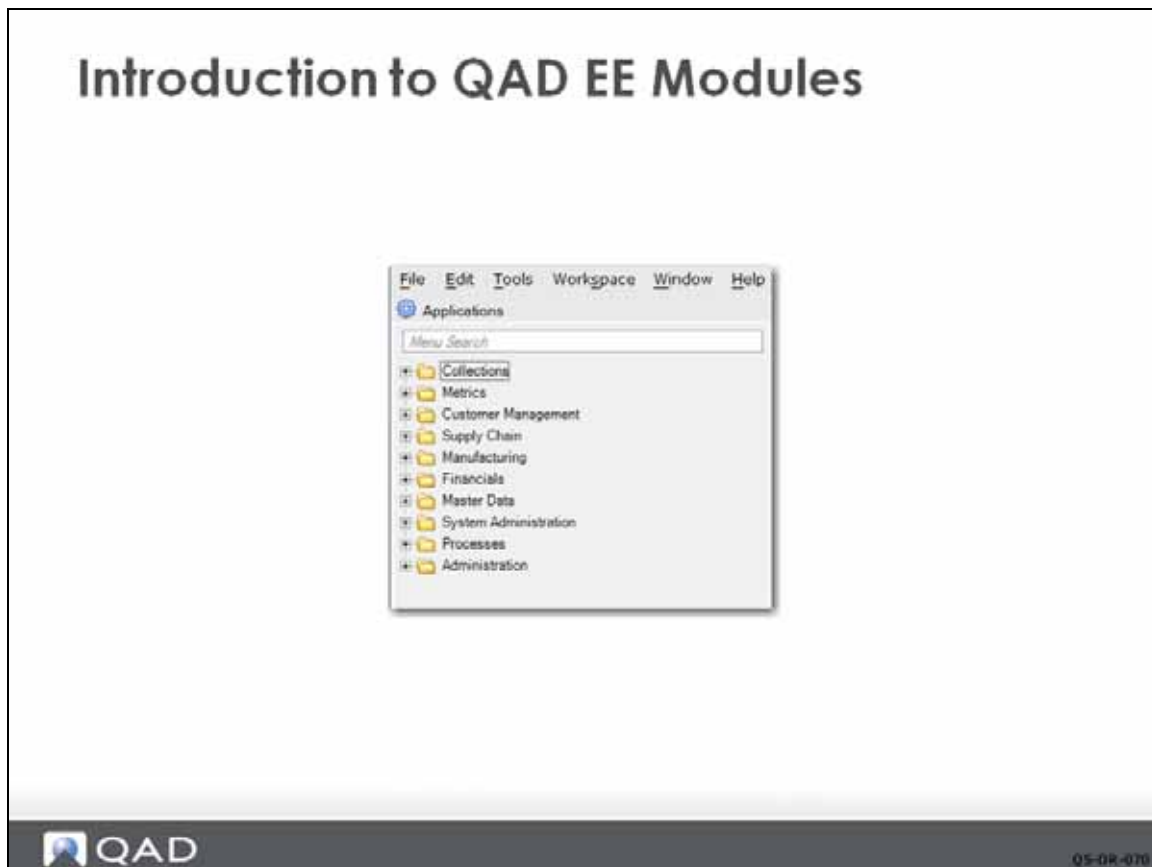
- 1 Using each of the Process maps (Vertical Industry, End-to-End, and Supply Chain), drill down until you can create a sales order. Which view seemed easiest to you?
- 2 Create a custom menu by:
 - a Right-clicking a menu item and selecting Add to Favorites.
 - b Drag several menu items into the Favorites section of the UI.
- 3 Display an existing sales order in Sales Order Maintenance by selecting it from the lookup on the Order field. Send the sales order to your user ID by using the workflow.
 - a Click Actions and select Workflow.
 - b Enter your class login.
 - c You should see the message appear in the Messages area of the UI. Open the message and see what information is included.
- 4 Create a document in Microsoft Word. Save it to the c:\ drive and attach the document to a purchase order.
- 5 Open the following four programs:
 - Sales Order Maintenance
 - Sales Order Shipments
 - Sales Order Browse
 - Sales Order Credit Browse

Right-click on Sales Order Browse and create a new tab group. Add Sales Order Credit Browse to the tab group with the other browse. Can you see how this arrangement could help you when processing a sales order?

Right-click on Sales Order Browse again and select Close All.

- 6 Change the way a program displays:
 - a Select Customer Data Maintenance from the menu.
 - b Right-click and select Properties.
 - c On the General tab, note the menu number associated with this program. What is this field labeled?
 - d Click the Program tab and change Display with to Terminal. Click OK.
 - e Type the menu number (2.1.1) in the search and press Enter.
 - f Compare the two program displays by selecting a customer record and moving through the frames. How is this UI different than the normal Desktop mode?

QAD EE Modules



The main menu in QAD EE has seven application-related sections: Customer Management, Supply Chain, Manufacturing, Financials, Master Data, System Administration, and Administration. The figure above shows this top-level menu in the .NET UI.

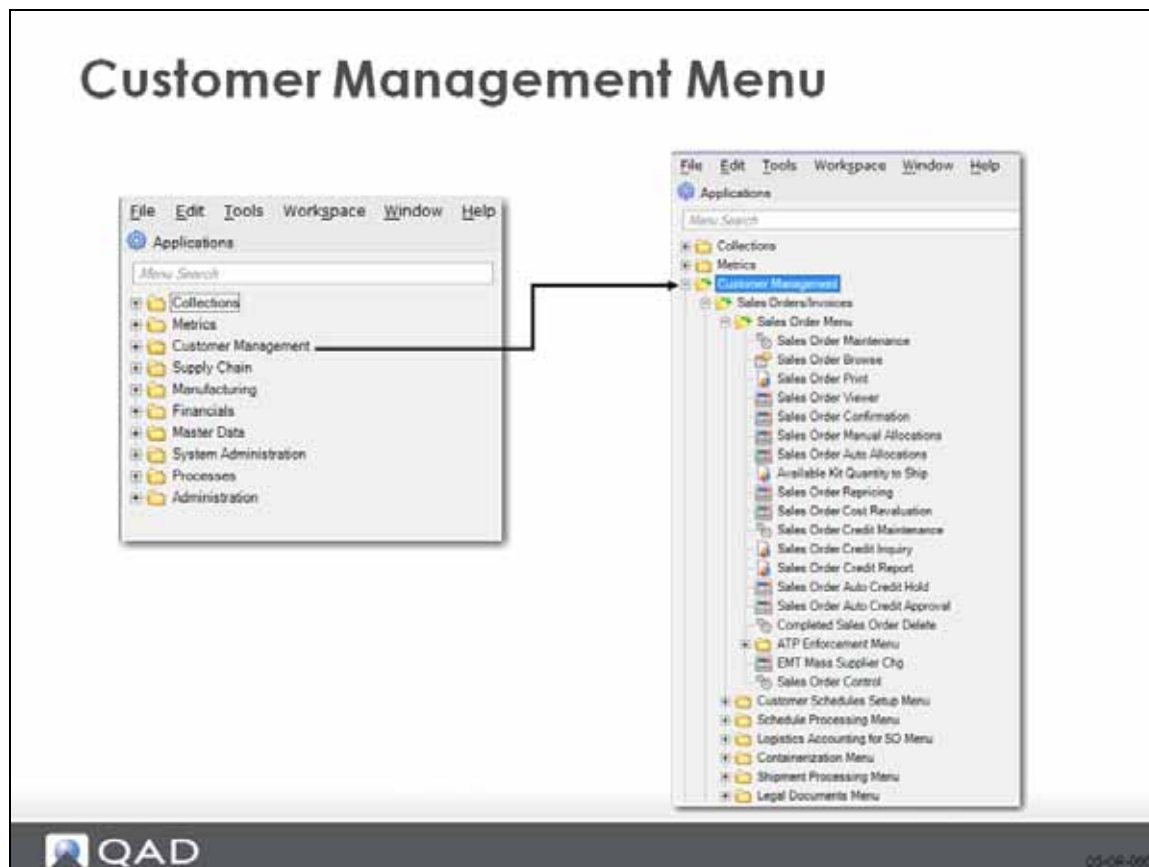
Note The Collections, Metrics, and Processes folders group these UI features supplied with the system. They provide access to system functions, but do not represent distinct functions in themselves.

Each folder contains groups of related business activities called modules and individual programs.

The next few pages provide a quick look at these seven main menus and the modules each contains. This course covers only a very small portion of QAD EE application functionality. The system includes many more capabilities than can be covered here. In-depth, module-based training is provided by other QAD classes; information and schedules can be accessed on the QAD Web site.

Within each of the seven sections of the main menu are several top-level menu items. Each of these menu items represents a module.

Customer Management Menu



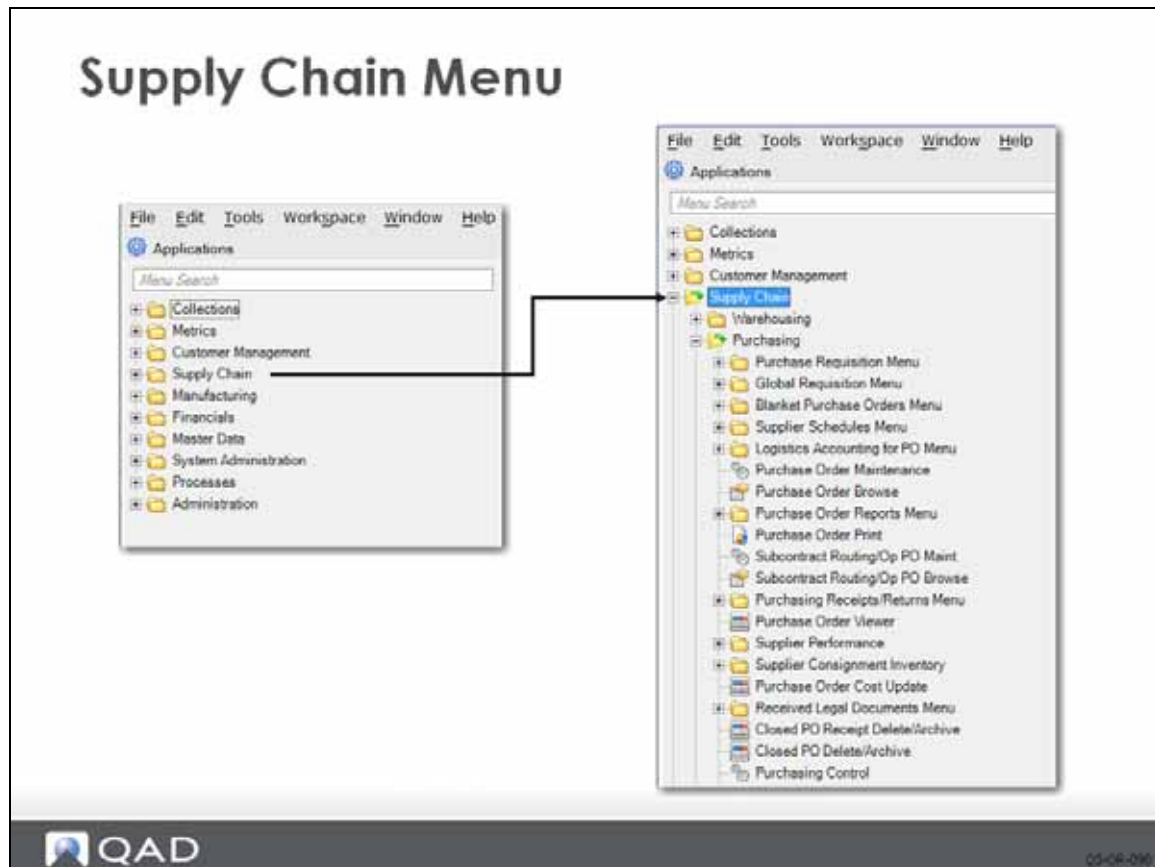
The Customer Management menu contains the menu folders needed to manage all aspects of your customer relations.

The three major subdivisions under Customer Management are Sales Orders/Invoices, Configured Products, and Service/Support. As shown, both Sales Orders/Invoices and Service/Support have many subfolders or menus under them.

This course covers an overview of the Sales Order and Invoicing functions and a simplified shipment process. Other functions such as Sales Quotes, Customer Schedules, Containerization, Consignment Inventory, Configured Products, and Service/Support are covered in detail in their respective training guides. While these topics are not included in this course, a good understanding of the information presented here is prerequisite to learning to use these more advanced functions.

See Chapter 10, “Sales Orders/Invoices,” on page 303 for details on Customer Management.

Supply Chain Menu



Supply chain management is the process of planning and controlling the movement of goods and information from suppliers and multiple company sites through the manufacturing and distribution processes to the customer.

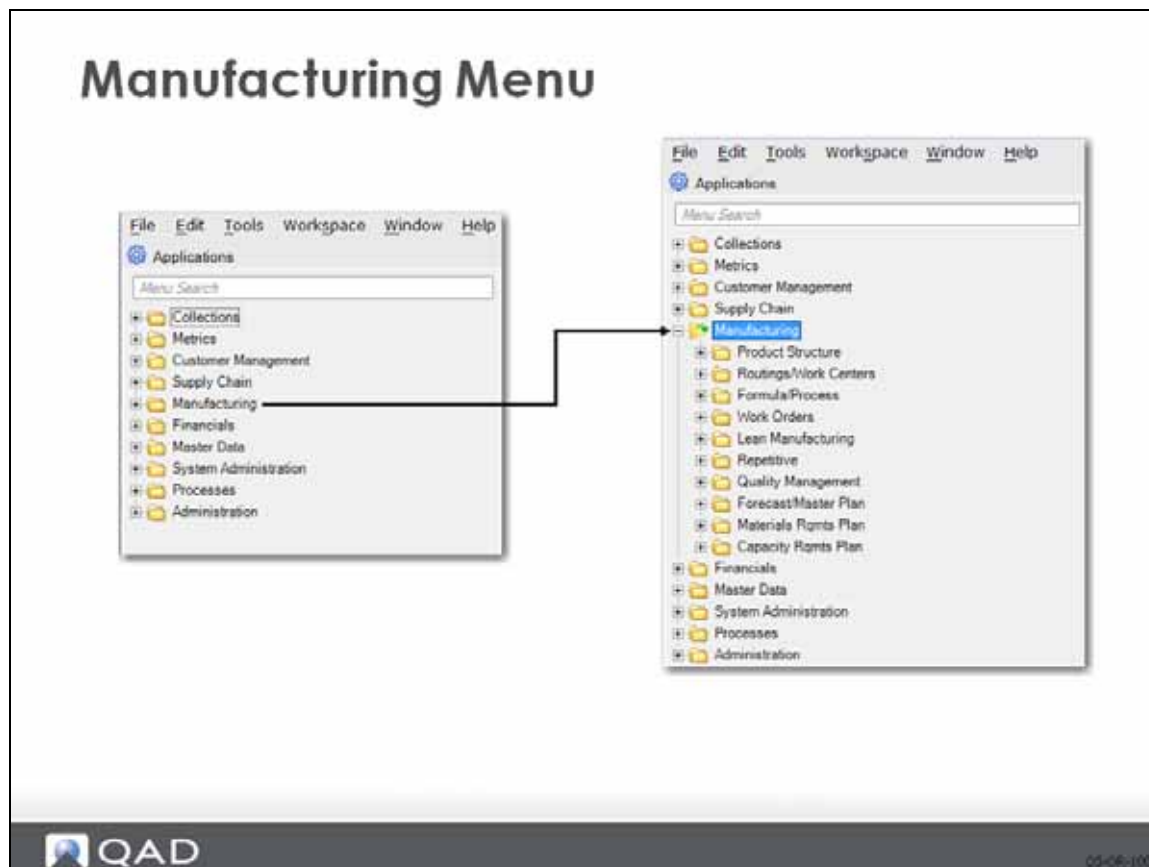
Modules in the Supply Chain menu are: Warehousing, Purchasing, Distribution Plan, Product Line Plan, Resource Plan, Operations Plan, and EDI eCommerce. The activities in these modules are focused on planning so they have significant system-wide impact.

Modules in this section support traditional purchasing functions and supply chain planning practices—distribution, product line, resource, and operations—as well as electronic data interchange (EDI) transactions using EDI eCommerce, which is typically used to support supplier schedules as well as other functions.

This course covers basic purchasing activities. Other supply chain functions are all covered by separate courseware and are not covered in this course.

See Chapter 8, “Purchasing,” on page 211 for details on Supply Chain.

Manufacturing Menu



Manufacturing modules manage internal supply and demand. Components and raw materials are moved out of inventory into production (WIP). Work orders process these materials and return them to stores or finished goods inventory locations, or components are moved from production into inventory.

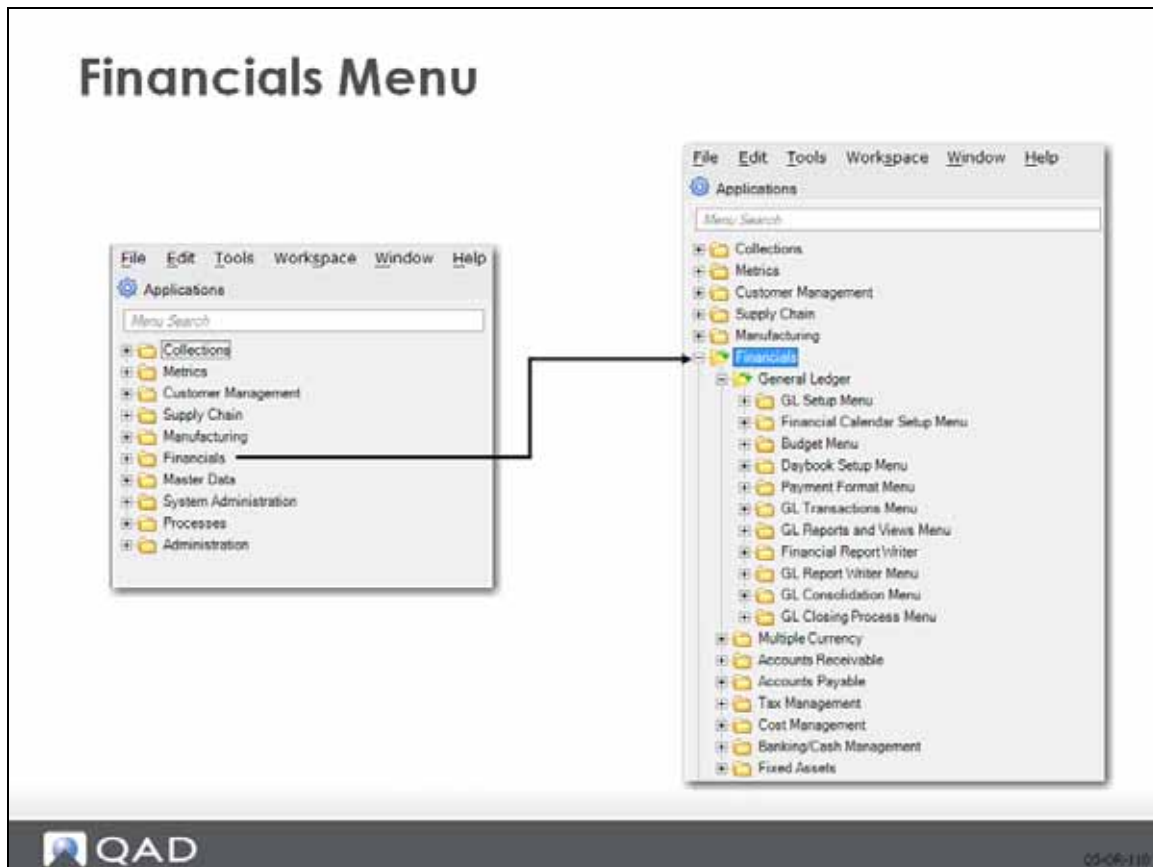
Modules in Manufacturing are: Product Structures, Routings/Work Centers, Formula/Process, Work Orders, Shop Floor Control (which includes Flow Scheduling and Kanban), Repetitive, Quality Management, Forecasting/Master Schedule Planning, Material Requirements Planning (MRP), and Capacity Requirements Planning (CRP).

This course provides an overview of activities in the Product Structures, Routings/Work Centers, Work Orders, Shop Floor Control, Forecasting/Master Schedule Planning, and MRP modules.

See the following chapters for details on manufacturing and planning:

- Chapter 4, “Manufacturing Overview,” on page 117
- Chapter 5, “Product Definition,” on page 131
- Chapter 6, “Manufacturing Setup,” on page 165
- Chapter 7, “Cost Calculation,” on page 185
- Chapter 11, “Manufacturing Planning,” on page 347

Financials Menu



The introduction of Enterprise Financials with QAD Enterprise Edition has significantly enhanced the functionality of the QAD financial modules and also has had some impact on the system setup. While this course does not deal with the financial aspects of the system directly, it does reflect the differences in setup procedures.

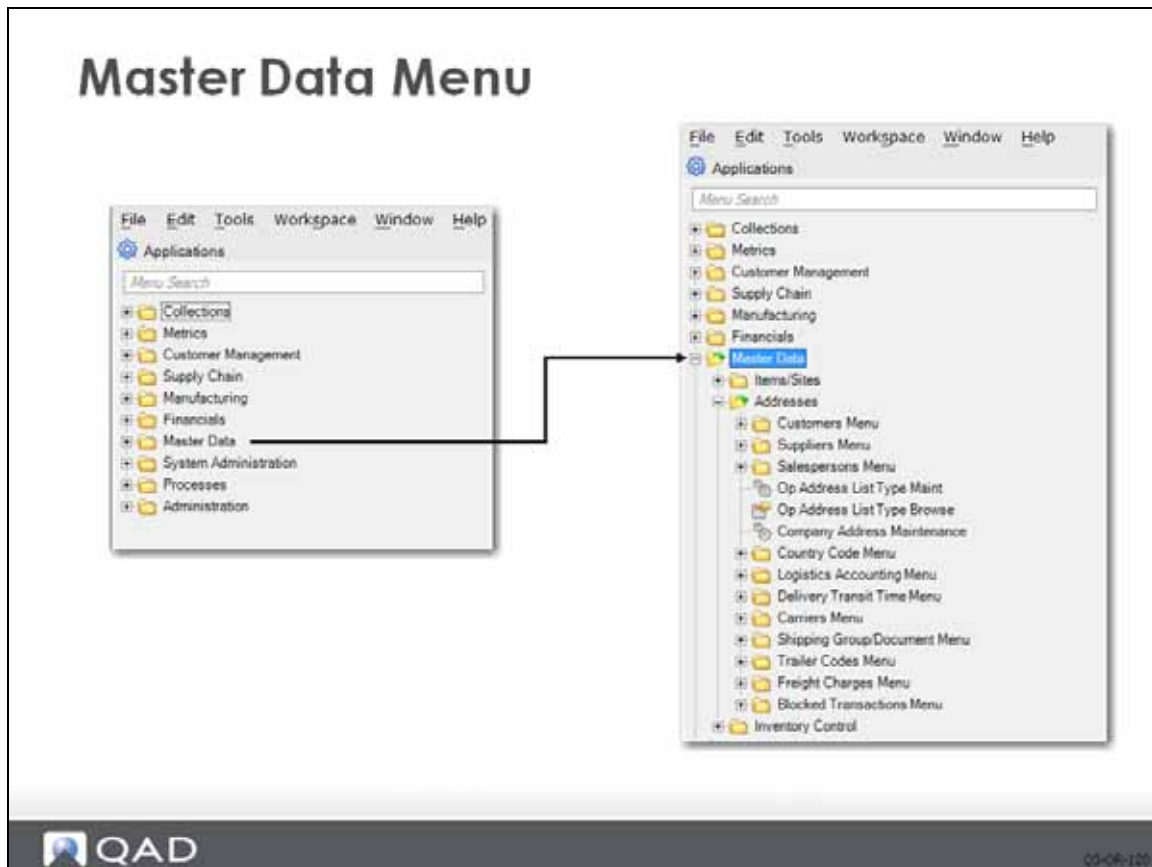
Financial modules support financial activities of the business and set up the financial aspects of system administration:

- General Ledger, Accounts Receivable, and Accounts Payable track the financial effects of activities in other modules.
- Multiple Currency, Tax Management, Banking, and Cash Management are used primarily to set up financial data used during financial transactions.
- Cost Management, while having some setup features, is used primarily for cost planning and tracking.
- The Fixed Assets module manages the company's fixed assets from acquisition to retirement.

This course discusses various aspects of the General Ledger, Accounts Receivable, and Accounts Payable modules, generally as they relate to sales and manufacturing activities. Only broad concepts and tasks needed for system setup are covered. Detailed courses are provided on Enterprise Financials, as well as some of the specific modules such as Fixed Assets and Cost Management.

See Chapter 3, "Enterprise Financials," on page 85 for an overview of Enterprise Financials.

Master Data Menu

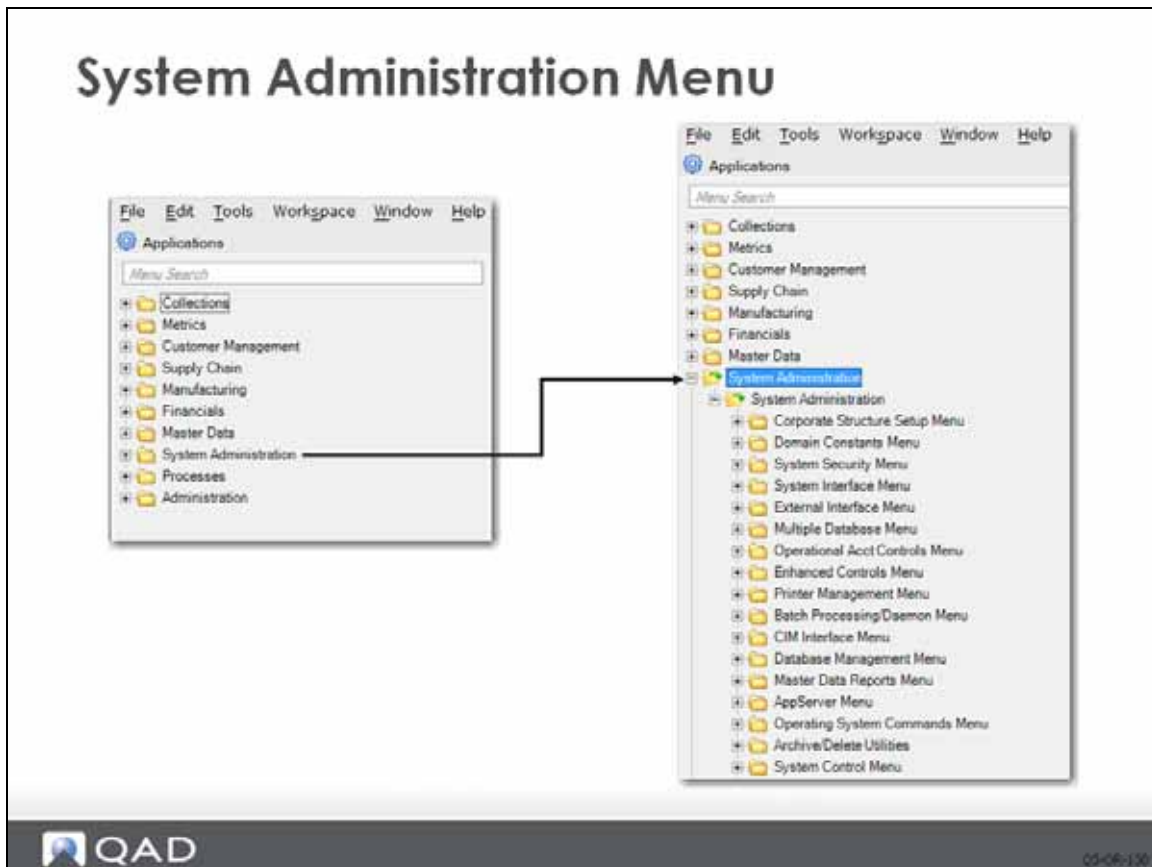


Use the modules in Master Data to set up basic business information including item codes, site codes, and inventory control information. Basic address information is defined in Financial setup activities. You use the Master Data Addresses module to define additional operational information about customers, suppliers, and salespersons used during sales and purchasing activities. You also define codes associated with these activities such as country codes and freight charges.

This course covers activities in the Items/Sites and Addresses modules.

See Chapter 5, “Product Definition,” on page 131 for information on Items/Sites. Customer and Supplier address data is reviewed in the discussion of sales and purchasing.

System Administration Menu

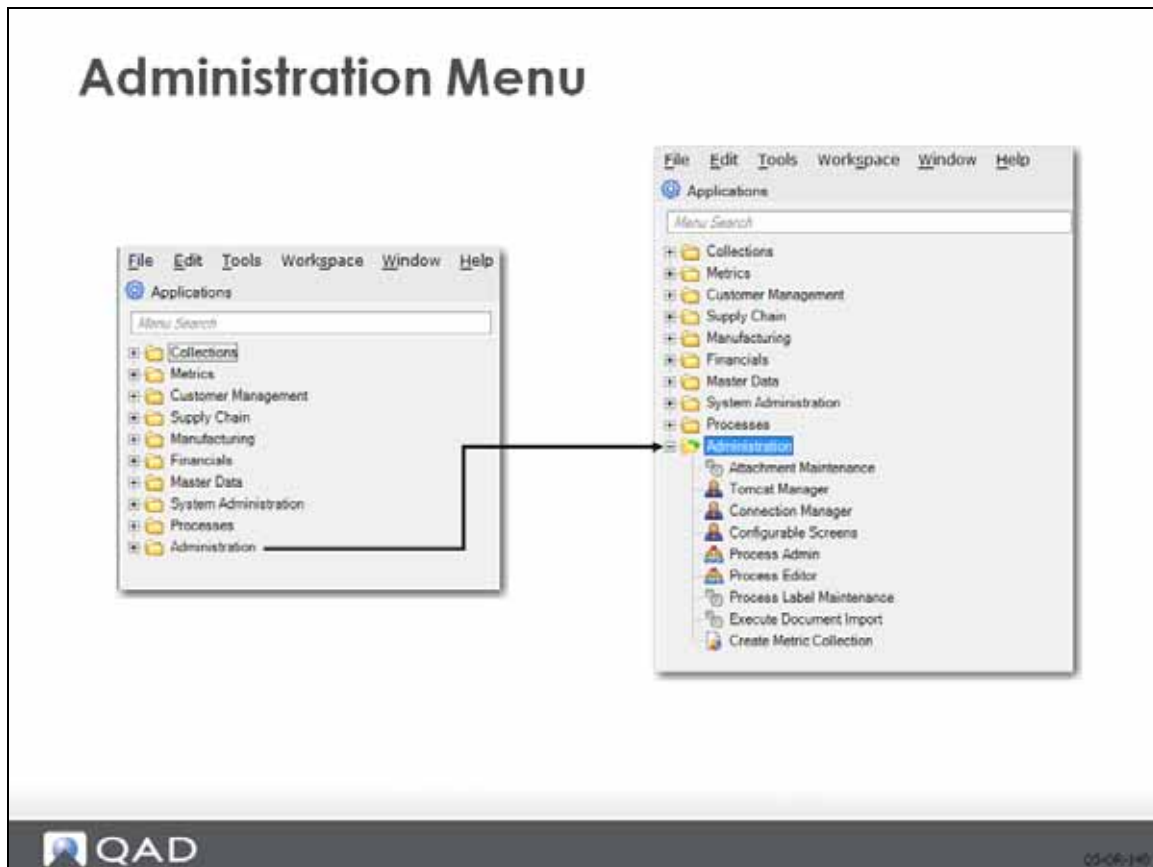


The System Administration menu contains many submenus or folders. Most of these are related to the technical administration and setup of the system hardware, software, security, and communications. These activities are beyond the scope of this course. Most users will not have access to these modules.

The Domain Constants menu does have several user-defined functions that are discussed in this course. While the individual user may not have access to these functions, it is important to understand the concepts behind them. This module contains the work day and holiday calendars, reason codes, generalized code validation tables, and sequenced number ranges for various documents. Several of these are covered in this course.

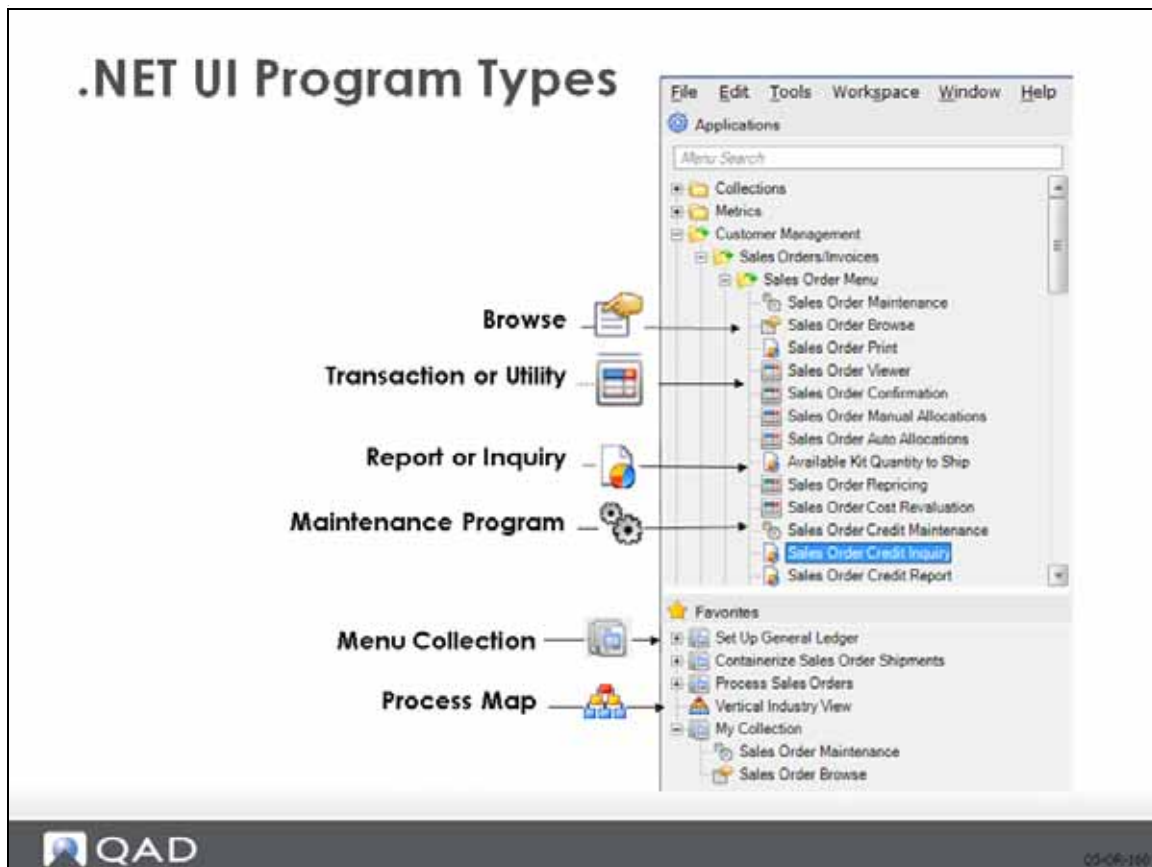
In addition, the concepts underlying the Corporate Structure Setup module are essential to a high-level understanding of the system as a whole. These concepts, as well as a brief overview of system security, are introduced in Chapter 2, “System Foundation,” on page 57.

Administration Menu



The functions on this menu are used to manage features of the .NET User Interface that are typically reserved for users in an administrative role. Most of these functions are covered in *Training Guide: QAD .NET User Interface Administration*.

Types of Programs and Data in QAD EE



On the menu, a distinct icon indicates the type of program:

- Maintenance programs
- Transactions and utilities
- Reports and inquiries
- Browsers and browse collections
- Menu collections
- Process maps

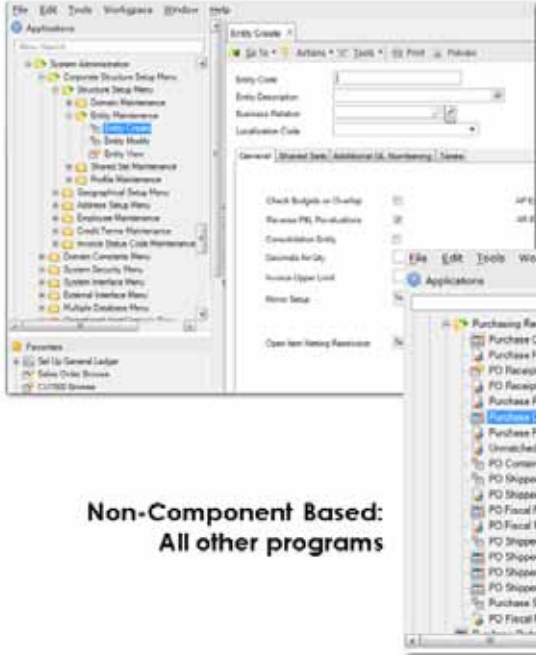
Each type of program maintains a specific kind of data within the database.

The next slides illustrate the types of programs that you will encounter as you use the product during this course.

However, you need to be aware of an additional distinction between component and non-component based programs.

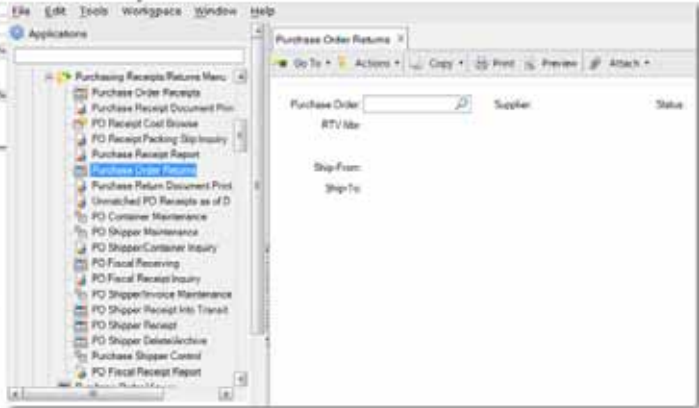
Component and Non-Component Programs

Component and Non-Component Based Programs



Component Based: Enterprise Financials and System Administration programs only

Non-Component Based: All other programs




QAD-155

A subset of programs within the .NET UI use a component-based architecture that changes their appearance and supports some extra features. Within QAD EE, only Financials and some system administration programs are component-based. Component-based programs have individual maintenance programs for Create, Modify, and Delete.

The following slides illustrate both a non-component and a component-based example of each type of program.

Maintenance Programs

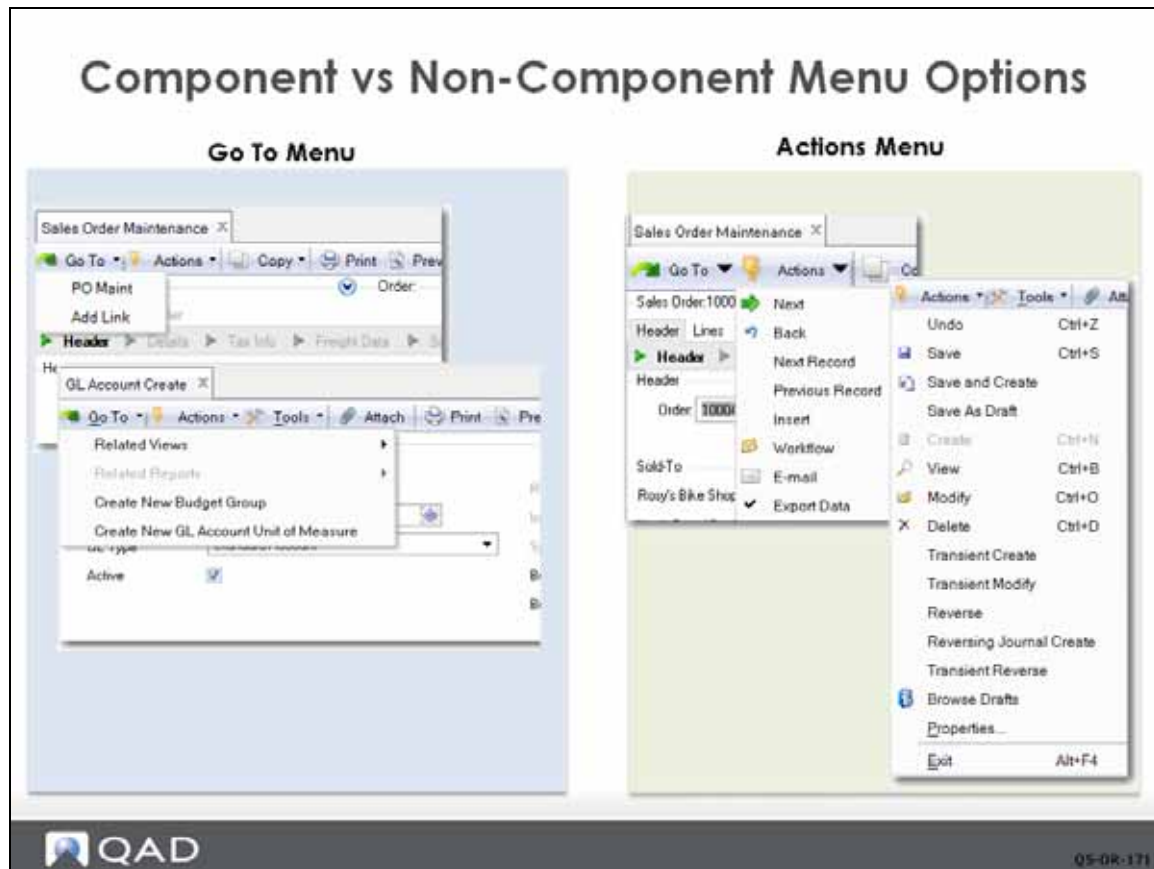
The screenshot displays two overlapping windows from the QAD EE User Interface. The top window, titled 'Item Master Maintenance', is for a 'Non-Component Program'. It features a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu, it shows 'Product Line: (1)' and 'Item Number: (2)'. The bottom window, titled 'GL Account Create', is for a 'Component-Based Program'. It has a similar menu bar and includes a 'Tools' button highlighted with a red box. This window contains various input fields for 'GL Account', 'Description', 'GL Type' (set to 'Standard Account'), 'Active' (checked), 'Referenced', 'In Posting', 'System Type', 'Budget Group', 'Budget Enabled' (checked), and 'Category' (set to 'Asset'). It also has tabs for 'Posting', 'Currency', 'Analysis', 'Report Link', 'Banking', 'Cash', and 'Defaults'. At the bottom, there are fields for 'Balance Pl.', 'Auto/Manual' (set to 'Manual'), 'Intercompany Account', and 'Fixed Intercompany'. The QAD logo is visible in the bottom left corner, and the version 'Q3-06-170' is in the bottom right corner.

Maintenance programs create and maintain basic codes such as customers, inventory items, GL accounts, currencies, and other data. They are also used to record data that initializes business activity in a module such as sales orders and purchase orders. Most maintenance programs update static data, which is changed infrequently.

Entering data in a maintenance program creates a record in one or more tables controlled by the maintenance program. For example, item records are stored in the Item Master table controlled by Item Master Maintenance.

With non-component maintenance programs, all changes to the record are made in the same maintenance program. In component-based maintenance programs, changes are made in separate Create, Modify, or Delete functions.

Component vs. Non-Component Menu Options



The menu options for component and non-component based programs are slightly different.

Non-Component Based	Component Based
Go To links are added manually using User Tool Maintenance (36.4.8.5).	Go To links are supplied automatically by the system based on the structure of the program. These include related views and other options based on the field currently in focus. For example, when GL Account is in focus, you can go directly to creating a new budget group.
No Tools menu; Workflow option is on Actions menu. Design customizations is accessed directly through menu-level programs and using right-click menu.	Tools menu includes Workflow and Design Mode. Users with access can modify the user interface appearance of the program.
Simple workflow with link to program.	More complex, structured, and predefined workflows.
Actions menu is mainly simple record-level actions. It includes an Export action that creates an XML file.	Actions menu is more complex and changes based on specific program context. You can save and open draft versions of a document.

Inquiry and Report Programs

The screenshot displays two overlapping QAD software windows. The background window is titled 'Item Master Inquiry' with a date of 05/15/12. It shows item details for Item Number 01010 and Site 10-100, including production lines, design groups, and various codes. The foreground window is titled 'Item Cost Report' with a date of 5/14/2012 9:00. It displays a detailed cost breakdown for the same item and site, organized by line description and cost set.

Item Master Inquiry Data:

- Item Number: 01010
- Site: 10-100
- Prod Line: 10
- Added: 01/11
- Design Group: PRODA
- Promo Group:
- ABC Class:
- Lot/Serial Control:
- Location:
- Location Type:
- Auto Lot Numbers:
- Lot Group:
- Article Number:
- Corp Com Code:
- Ship Weight:
- Freight Class:
- Trade Class:
- Mstr Sched: Yes
- Plan Orders: Yes
- Time Fence: 0
- MRP Required: Yes
- Order Policy: POQ
- Order Qty: 5
- Batch Qty: 1.0
- Order Period: 7

Item Cost Report Data:

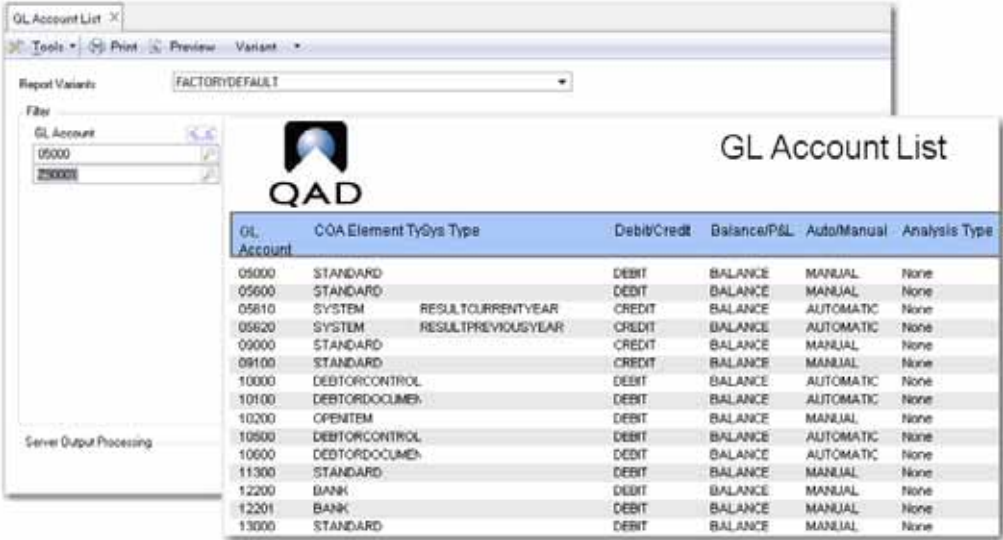
Site	Description	Line Description	Cost Set	Material	Labor	Burden	Overhead	Subcontract
10-100	Ultrasound Mfg Site	10 Finished Goods						
01010	EA Medical Ultrasound							
			Current	1,226.18	51,477.27	0.15182	0.00	0.00
			Standard	1,219.92	563.67	1.86157	0.00	0.00
01011	EA Supplies Kit							
			Current	0.00	0.00	0.00	0.00	0.00
			Standard	0.00	0.00	0.00	0.00	0.00
01020	EA Implantable Ultrasound							
			Current	369,182.51	1,832,660.97	5.87811	0.00	0.00
			Standard	359,875.16	2,274,421.76	7.36045	0.00	0.00
01030	EA Consumer Ultrasound							

Inquiries and reports retrieve and display database records.

- Inquiries are primarily used to answer specific questions and are typically viewed online, although they can be printed
- Reports usually provide more detail and are printed for a range of data records. You select data by entering a specific range of criteria, such as item number or date. Reports are often sent to a printer or file. Other output options, such as e-mail, are available.

Component-Based Reports

Component-Based Reports



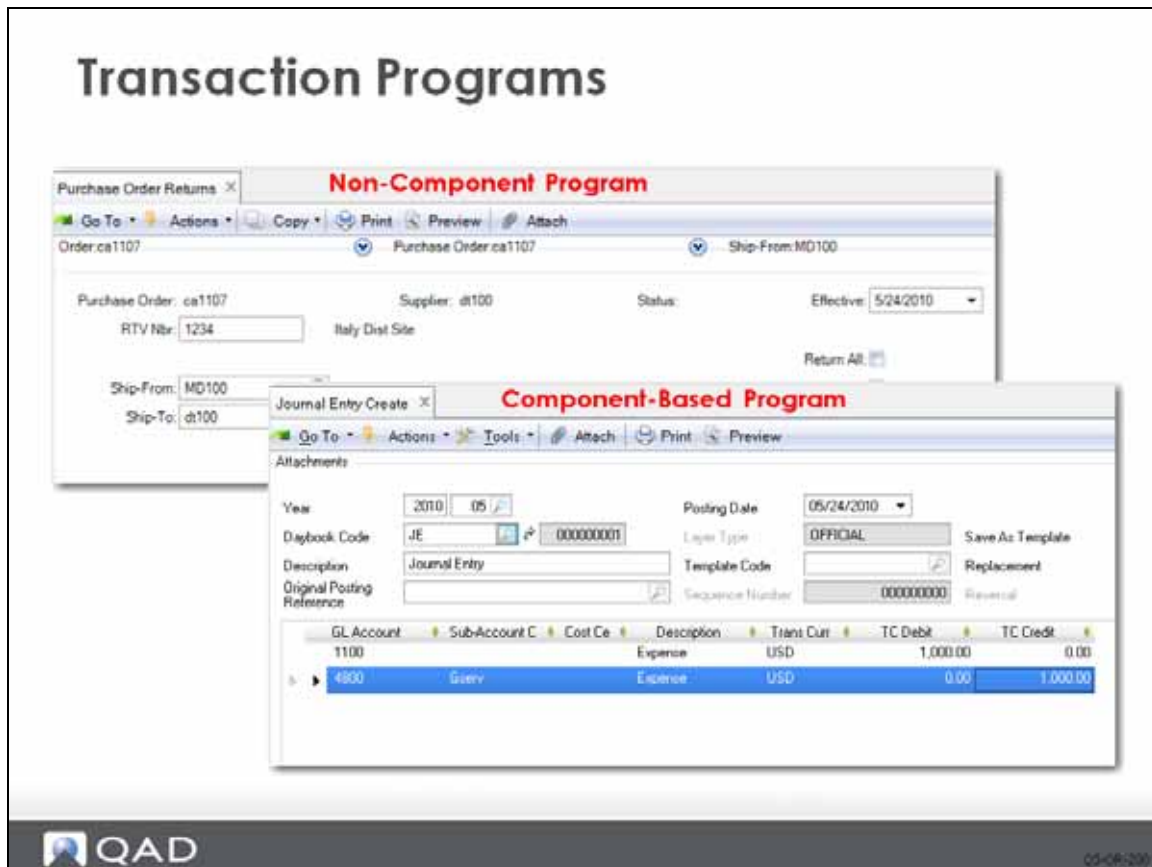
The screenshot displays the 'GL Account List' report window. The window has a title bar 'GL Account List' and a menu bar with 'Tools', 'Print', 'Preview', and 'Variant'. Below the menu bar is a 'Report Variants' dropdown menu set to 'FACTORYDEFAULT'. On the left, there is a 'Filter' section with 'GL Account' and '05000' entered. The main area shows a table of GL accounts with the following columns: GL Account, COA Element TySys Type, Debit/Credit, Balance/P&L, Auto/Manual, and Analysis Type. The table lists 15 accounts, including 05000, 05600, 05610, 05620, 09000, 09100, 10000, 10100, 10200, 10500, 10600, 11300, 12200, 12201, and 13000. The QAD logo is visible in the top left corner of the report area. The bottom of the window shows the QAD logo and the text 'Server Output Processing'.

GL Account	COA Element TySys Type	Debit/Credit	Balance/P&L	Auto/Manual	Analysis Type
05000	STANDARD	DEBIT	BALANCE	MANUAL	None
05600	STANDARD	DEBIT	BALANCE	MANUAL	None
05610	SYSTEM RESULTCURRENTYEAR	CREDIT	BALANCE	AUTOMATIC	None
05620	SYSTEM RESULTPREVIOUSYEAR	CREDIT	BALANCE	AUTOMATIC	None
09000	STANDARD	CREDIT	BALANCE	MANUAL	None
09100	STANDARD	CREDIT	BALANCE	MANUAL	None
10000	DEBTORCONTROL	DEBIT	BALANCE	AUTOMATIC	None
10100	DEBTORDOCUMENT	DEBIT	BALANCE	AUTOMATIC	None
10200	OPENITEM	DEBIT	BALANCE	MANUAL	None
10500	DEBTORCONTROL	DEBIT	BALANCE	AUTOMATIC	None
10600	DEBTORDOCUMENT	DEBIT	BALANCE	AUTOMATIC	None
11300	STANDARD	DEBIT	BALANCE	MANUAL	None
12200	BANK	DEBIT	BALANCE	MANUAL	None
12201	BANK	DEBIT	BALANCE	MANUAL	None
13000	STANDARD	DEBIT	BALANCE	MANUAL	None

Component-based reports have multiple output options, including viewer, printer, and export to PDF, XLS, and DOC standards. The report output is easy to customize, and you can create an extensive set of reports with unlimited report variants for many output types.

You can run a report immediately, or choose to schedule it to run later. In this case, a pop-up window opens to let you enter details for running the report at a later date.

Transaction Programs



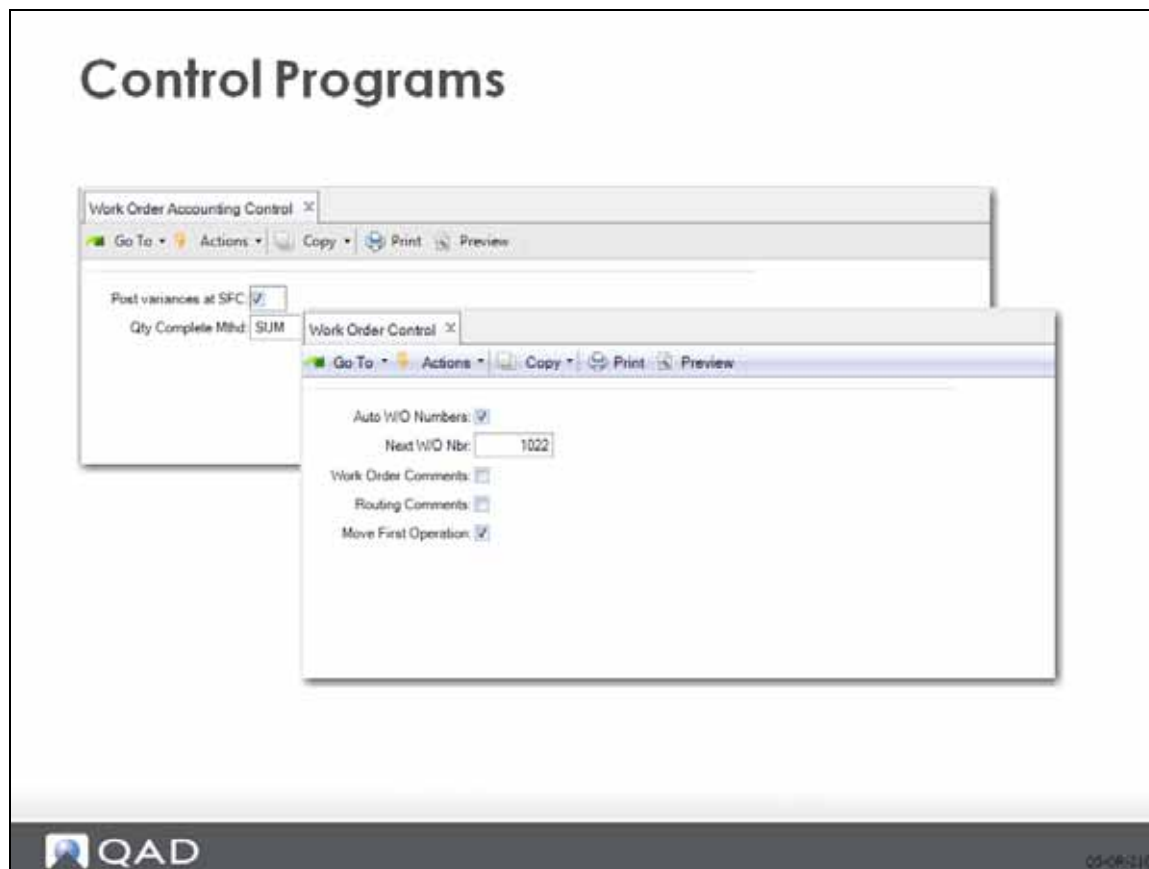
Transactions express the core business activities of a company. They control and record activities related to business documents such as sales orders and invoices. Example of transaction are shipping a sales order or receipt of a shipment for a purchase order. Enterprise Financials transaction programs include Customer and Supplier Invoice Create and Journal Entry.

Most data in the database is transaction data. Every day, sales orders come in, purchase orders go out, and work orders make demands on and create material for inventory. These events result in transactions, which are stored in transaction tables. In contrast to control programs, transaction tables are constantly updated by users of the system.

Transaction programs often update multiple database records and generate general ledger account transactions. Shipping a sales order and posting the invoice, for example, updates the on-hand inventory balance for the items shipped, charges the value to cost of goods sold, updates the sales ledger for the value of the sale, updates the customer's accounts receivable record, books charges to appropriate freight accounts, tax accounts, sales commission accounts, updates the inventory allocations, and updates the inventory quantities available to promise.

Utilities are a special type of transaction that is often designed to be used only once or under special circumstances. For example, many utilities perform one time data conversions following system upgrades. Other utility programs enable you to manage and perform calculations in internal databases. In Purchasing, Closed PO Delete/Archive is a database management utility, and in MRP, Net Change Materials Plan causes the system to run net change MRP calculations.

Control Programs



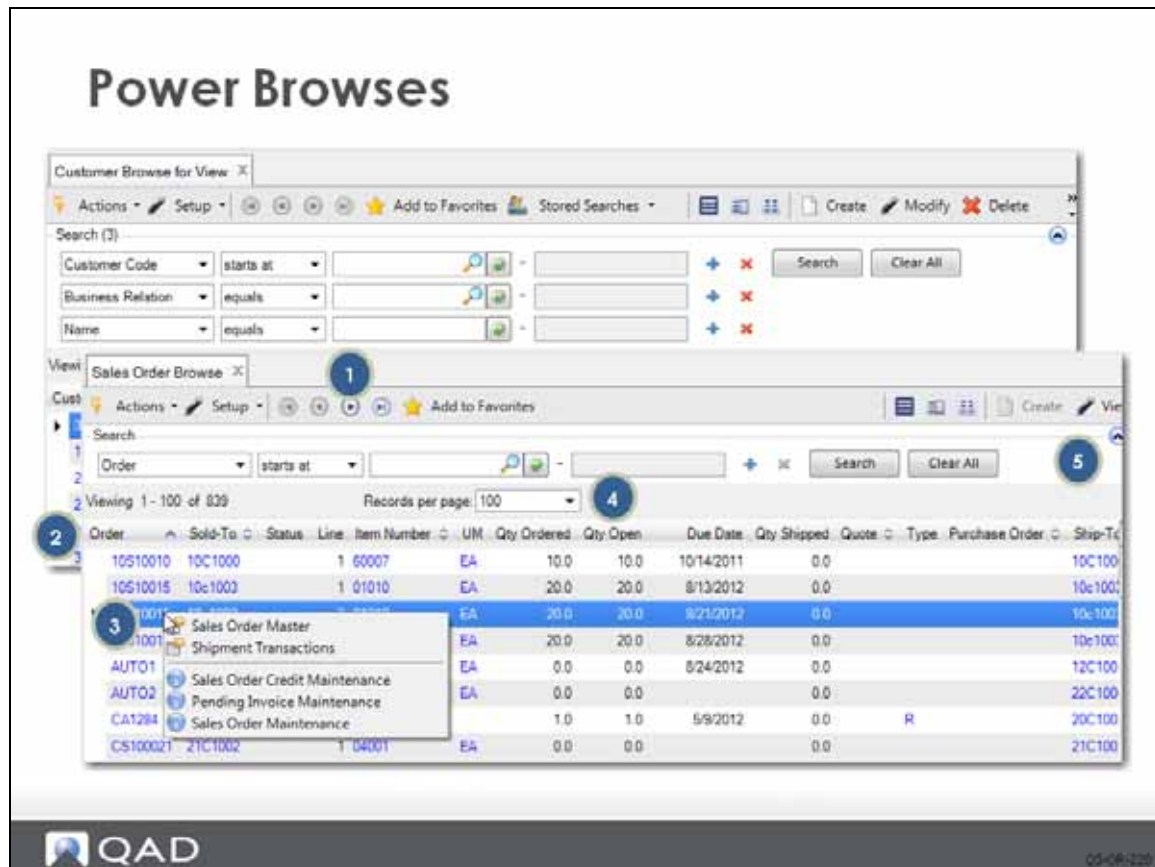
When you implement a module, you enter data that the system uses later to control the interactions with users and with the database. This data is stored in control tables.

Control tables enable you to adapt QAD EE to your environment. The data and settings in these tables determine how certain programs are displayed, the numbers assigned to transactions, the GL accounts for particular transactions, and so on. When you can manage a typical manufacturing function in more than one way, control settings enable you to establish a preference.

This slide shows two control programs with settings that affect work order processing. To support the enhanced segregation of duties features of QAD Enterprise Edition, financial control settings are updated separately from operational controls. For example, Work Order Control (16.24) under the Work Order menu in Manufacturing has only the operational control settings for work orders. All of the financial control settings for work orders are in Work Order Accounting Control (36.9.11) under the Operational Acct Controls menu in System Administration.

Note This is unlike QAD Standard Edition, where all control settings for a functional area are updated in one program.

Power Browsers

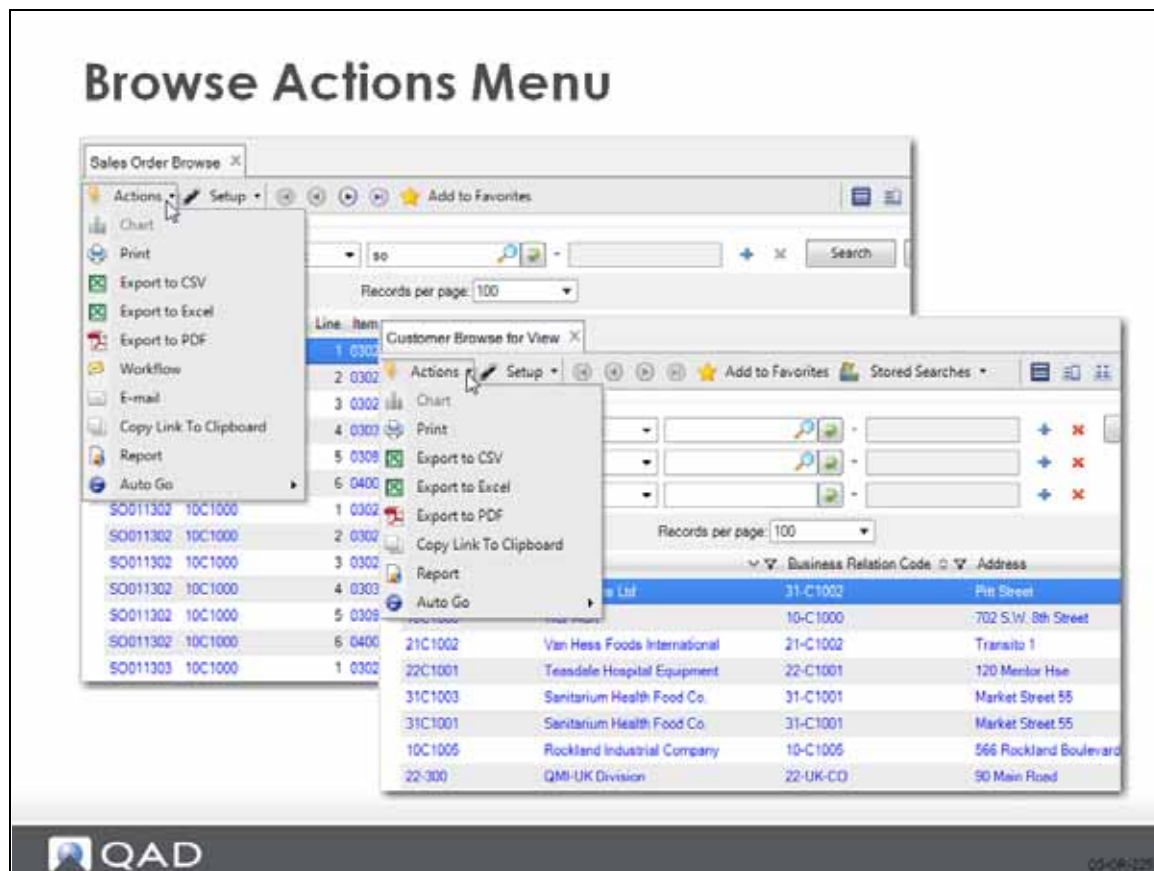


Browuses are inquiry programs with advanced features such as filtering, sorting, graphing, and printing. The system supports several types of browuses. Complex browuses, such as the ones in this slide—sometimes called *power browuses*—are listed on the menu. They can also be associated with a field in a program so users can drill down on related data. Component-based browuses and non-component based power browuses have a few different options.

Use the following navigation features in power browuses

- 1 Use the navigation buttons to move through the records. The buttons from left to right move to the first set, previous set, next set, last set.
- 2 Drag columns by their headings to rearrange the display or click any column heading to sort in ascending order; click again to sort in descending order.
- 3 Blue text indicates a drill-down. Right-click any value to display associated links: either a more detailed browse, a related program, or an external Web page. This slide shows the drill-downs associated with the Order column.
Note Component browse drill-down applies to the whole record not a field.
- 4 Use the Records per page drop-down to determine how many records display at one time in the browse. The default value can be set using the Rows Per Page setting in Tools|Options. Some browse options are only available when displaying all records.
- 5 Click Clear All to clear browse results.

Browse Actions Menu



The Actions menu contains export and reporting options, as well as additional workflow and e-mail options in non-component browses.

Chart. Select Chart or Grid View to toggle between viewing a chart or the grid view of a browse. If a chart has not been created for the browse, the Chart option is not available. Charts are set up using the Chart Designer on the Setup menu.

Print. Select to print the current browse. The system displays the standard Windows print dialog so that you can select a remote or local printer or print to file. When you print a browse, all columns in the browse are printed and scaled to fit the paper size of your printer.

Export to CSV. Exports the contents of the browse to a comma-separated-value (.CSV) file, which you can open in spreadsheet applications. The export includes only the columns that are marked as visible, so you can exclude columns from the export by hiding them in the grid.

Export to Excel/Export to PDF. Generates an Excel worksheet or PDF file with the browse data.

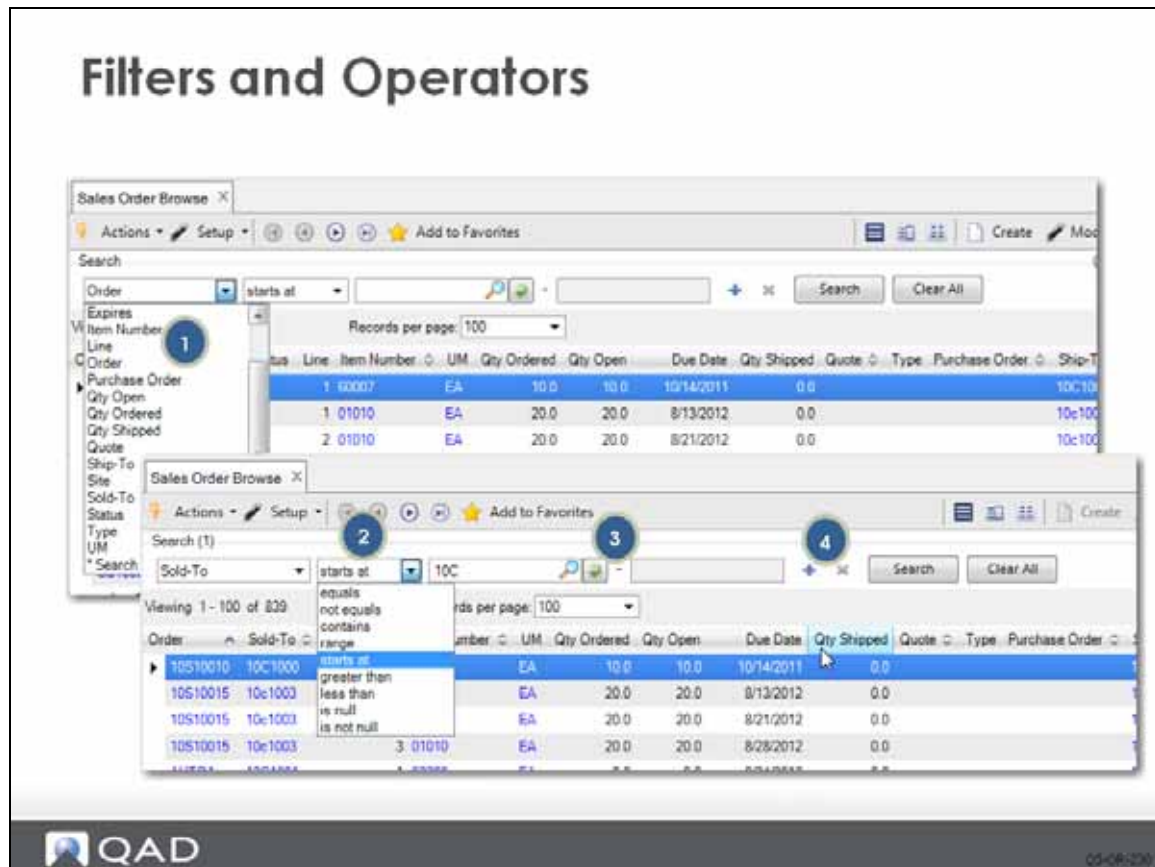
Workflow. Sends the current browse as an e-mail attachment to a selected user. When the user double-clicks the link in the e-mail message, the browse is displayed.

Email. Sends this browse as a program link in an e-mail.

Report. Generates a report of the current browse results.

Auto Go. Automatically refreshes the data in the browse at a user-specified rate.

Filters and Operators

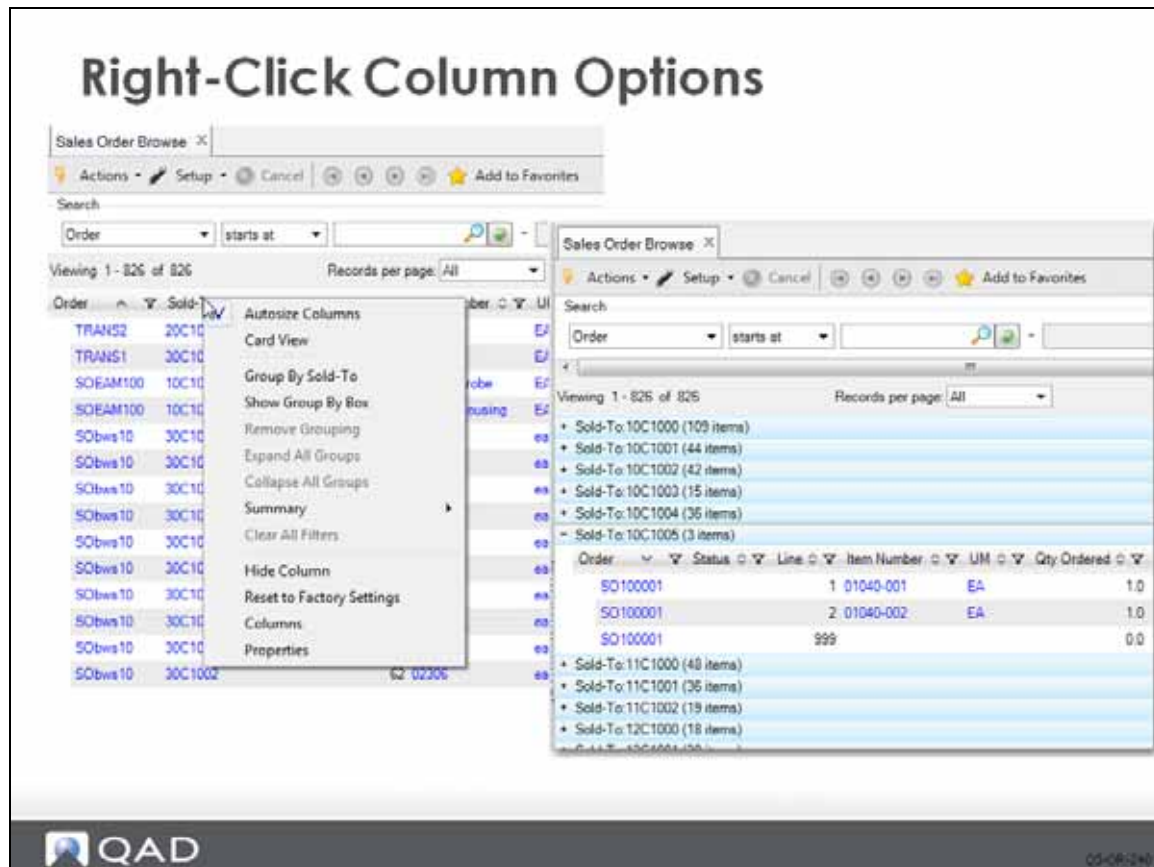


The fundamental purpose of the browse is to help you find the exact information you are looking for and then display it in the way that is most useful for you. To enable this, browses have many complex search features:

- 1 The search fields display with a default configuration but you can also define and save your own. For non-component browses, save browses to your favorites. Component-based browses support a saved search feature.
- 2 The various search operators include equals, not equals, contains, range, starts at, greater than, less than, is null, and is not null. When an equal sign is displayed next to the field, you enter an exact matching value.
- 3 By default, you specify field values for the search, such as Sold-To equals C10553. You can also search on logical relationships such as Sold-To equals Ship-To. Click the green toggle symbol next to the Search field to toggle between search modes.
- 4 To refine your search further, click the plus (+) icon to add another search row, and the x to remove filters you no longer want. You can add as many rows as needed, each with different search values and operators. If you choose the range search operator, the second search box is enabled for the ending value of the range.

After defining filters, saving the browse to your Favorites saves not just the browse, but all its settings. For example if you track orders for sales region US-West, configure the sales order browse to show these orders, add it to your favorites, and then rename it Orders for US-West.

Right-Click Column Options

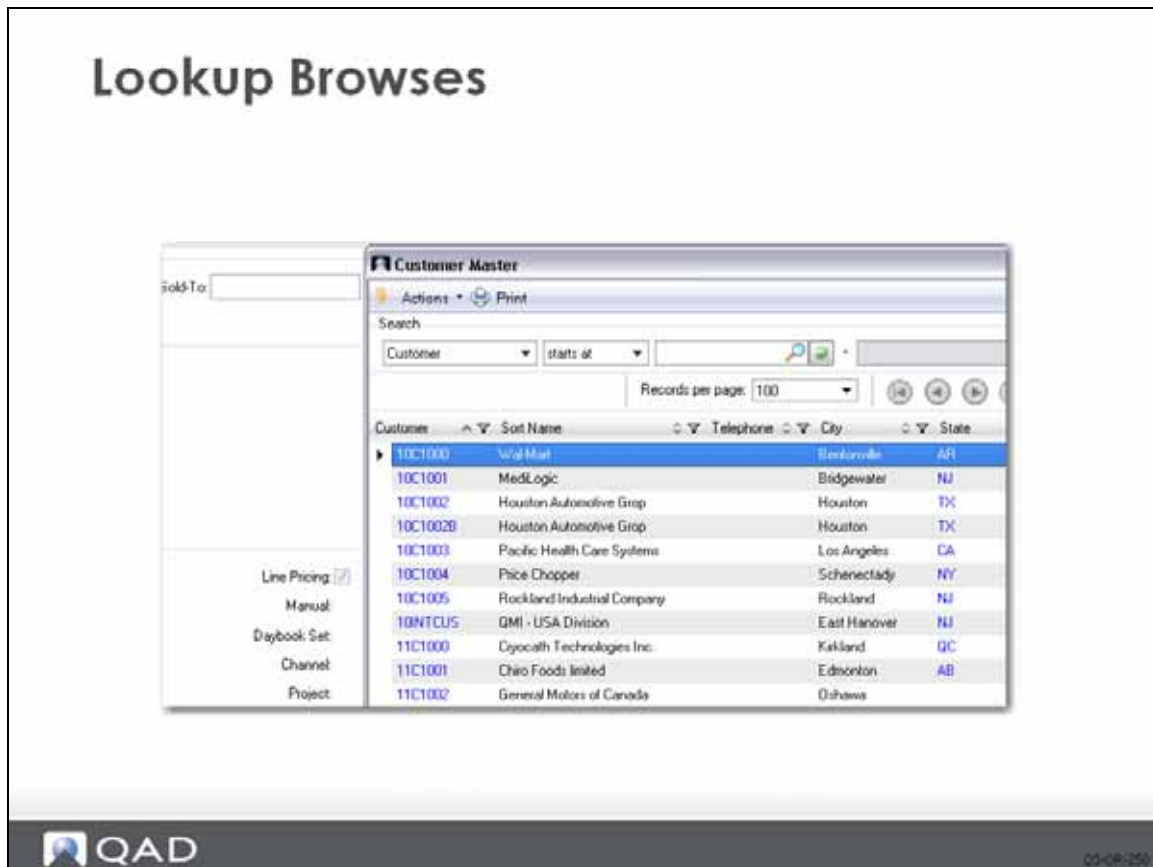


Many other options are available when you right-click a column heading in a browse.

- Use Autosize Columns to resize browse columns based on the size of the displayed data. By default, the browse displays with columns already autosized.
- Use Group By to create and manage custom views of the browse data. (You must be viewing all records to use Group By). This slide shows the result of grouping sales orders by Sold-To and then summarizing all options for the Qty Ordered column. Each group can be expanded using the + sign next to it. You can add other columns to the grid to create a hierarchy.
- Use Summary to get a summary of the data in the browse column. Choices are based on the data you are viewing. For some columns, you can only summarize by count. But the Qty Ordered column can be summarized by the total sum of ordered amounts, count, average, and the minimum and maximum amounts.
- Use Hide Column to remove a column from display.
- Use Reset to Factory Settings to return to the default column display settings. The search conditions, autosizing, page sizing, and chart definition are all reset. (This Reset is a subset of the reset on the browse Setup menu, which resets all aspects of the browse.)
- Use Columns to display a list of all browse columns and toggle the show/hide settings.
- Use Properties to display technical information about the data in the column. This includes the name of the program and the database table and field where the data for the column is stored.

Group By options are saved automatically in your last used settings, and can be reused when you open this browse again. You can also save these options as a stored search.

Lookup Browsers



Lookup browses are much simpler than the browses on the menu. They are a form of on-line help and are attached to various fields in programs. You can use them to display all of the valid choices for the current field.

In the example, selecting the Sold-To lookup in Sales Order Maintenance launched a lookup browse of all customers.

Exercise 1-2: Using Browse Features

- 1 Open up Sales Order Browse (7.1.2). Highlight any order and drill down by double-clicking a sales order number. When Sales Order Maintenance appears, click the Sold-To lookup.
- 2 Use Sales Order Browse and limit the output of the browse to orders for one specific customer. What filter did you use? What operator did you use? Send the output to an Excel sheet.
- 3 Run Sales Order Browse and rearrange the columns. Group the results by Sold-To. Remember you must be displaying all records to use the Group By feature.
- 4 Add the Sales Order Browse you just configured to your Favorites. Right-click to rename the browse Orders for Customer <ID> (replace <ID> with the customer you used).

Using Component-Based Reports

- 5 Go to Supplier Invoice View (28.1.1.3) and display a component-based browse. Try rearranging the columns by dragging them to new positions. Click the up or down arrow in the column heading to resort the browse.
- 6 Select GL Account List (25.15.1.10), run the report, and send the output to a printer. (If you do not have access to a printer, view the output on your monitor).

Getting Help in the .NET UI

Getting Help

Multiple sources of help

1. Help menu
2. Context sensitive application help
3. QAD Guide Me (hover help)
4. Search
5. External Resources

The image shows four different help sources in the QAD .NET UI:

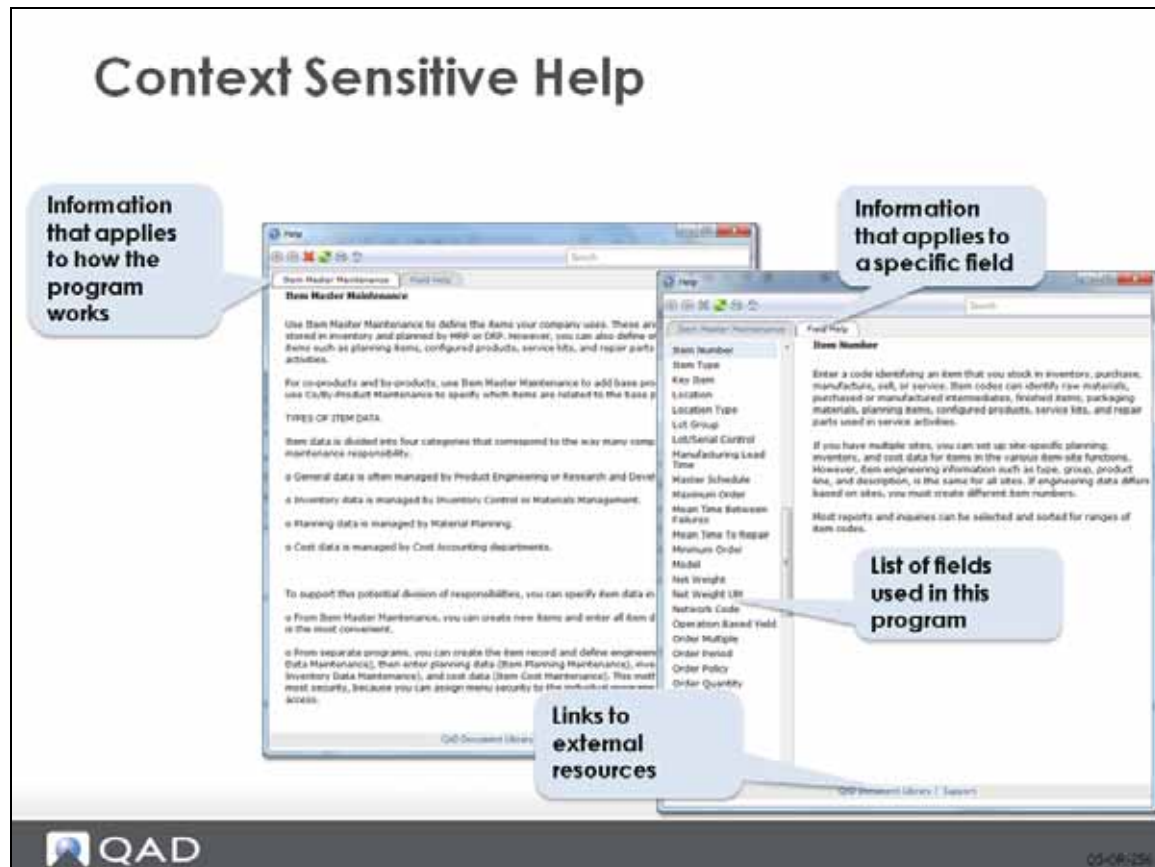
- 1. Help menu:** A screenshot of the top toolbar showing the 'Help' menu.
- 2. Context sensitive application help:** A screenshot of the 'Sales Order Maintenance' window showing a 'Sales Order' header and a 'Sales Order' line. A green circle highlights the 'Sales Order' line, indicating context-sensitive help.
- 3. QAD Guide Me (hover help):** A screenshot of the 'Sales Order Maintenance' window showing a 'Sales Order' header and a 'Sales Order' line. A green circle highlights the 'Sales Order' line, indicating hover help.
- 4. Search:** A screenshot of the 'QAD Search' window showing a search bar and a list of search results.

Whenever you have questions, the system offers several different ways of finding the information you need.

Options on the Help menu include:

- Search displays a panel where you can search field or program help or both using terms and operators.
- Application Help is available when your cursor is in a field. Choosing it displays the relevant field or program help. You can display the same information by pressing the F1 key.
- View Configuration opens a window that displays various configuration settings that cannot be directly changed. This information can be useful for system diagnostics.
- About displays information about the version of QAD .NET UI that is running, the time the session was started, and the total amount of physical memory being used.

Context-Sensitive Help

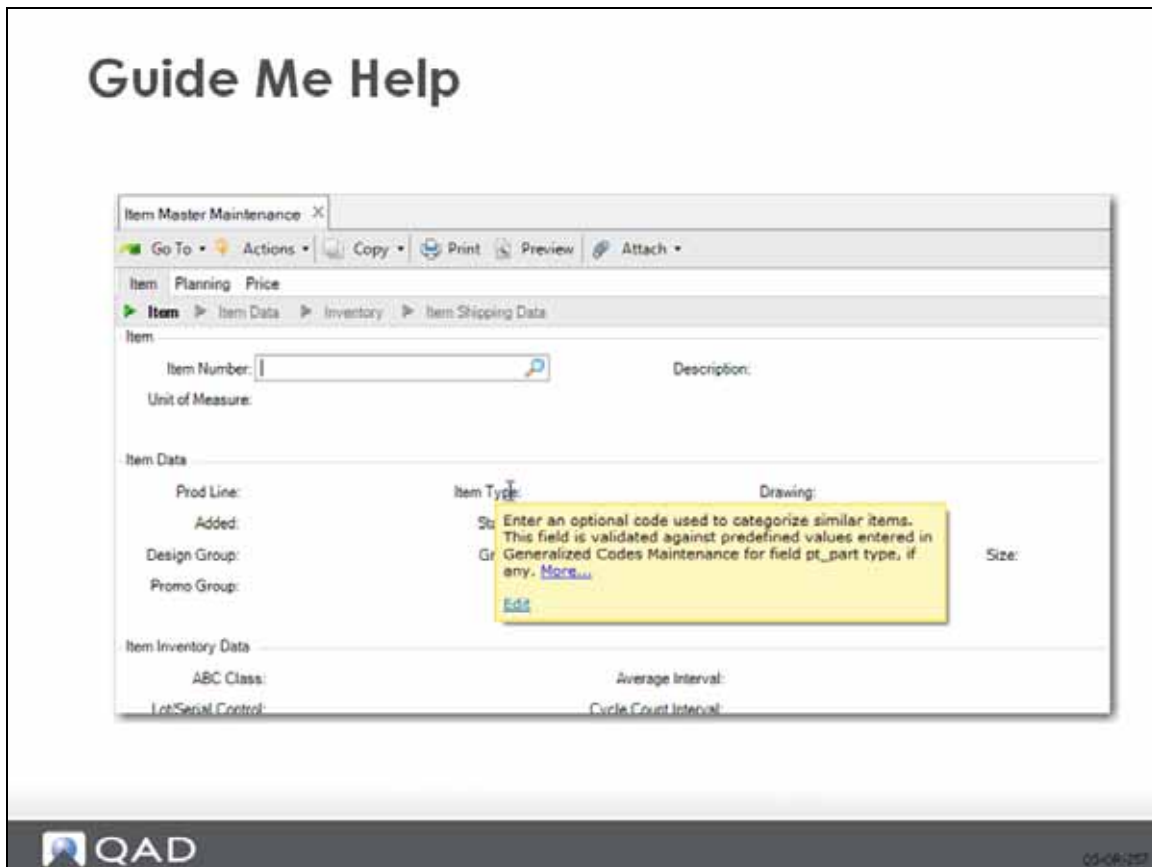


When your cursor is in a program field, you can press F1 or choose Help | Application Help to display online help. Help is organized into two tabs:

- The Field Help tab displays a list of fields associated with the current program. Help for the field where your cursor is located initially displays in the help panel.
- The other tab displays the name of the program and the associated help information.

At the bottom of the help panel, you can access links to the QAD Document Library or to QAD Support, which includes an extensive knowledgebase.

Guide Me Help



The QAD Guide Me feature provides immediate mouse-over descriptions of fields in both component and non-component programs.

Note If this help does not display, it may be disabled. You can enable it using the Guide Me setting found on the Tools|Options menu.

One useful feature of this help is that you do not need to locate your cursor in a field to see the help. In the current example the help for Item Type is being displayed even though the active context field is Item Number.

Click the More... link to display an extended description of the field, and the Edit link to edit this description in Field Help Maintenance.

Note The Edit option displays only if your role gives you access to this program.

Using Search



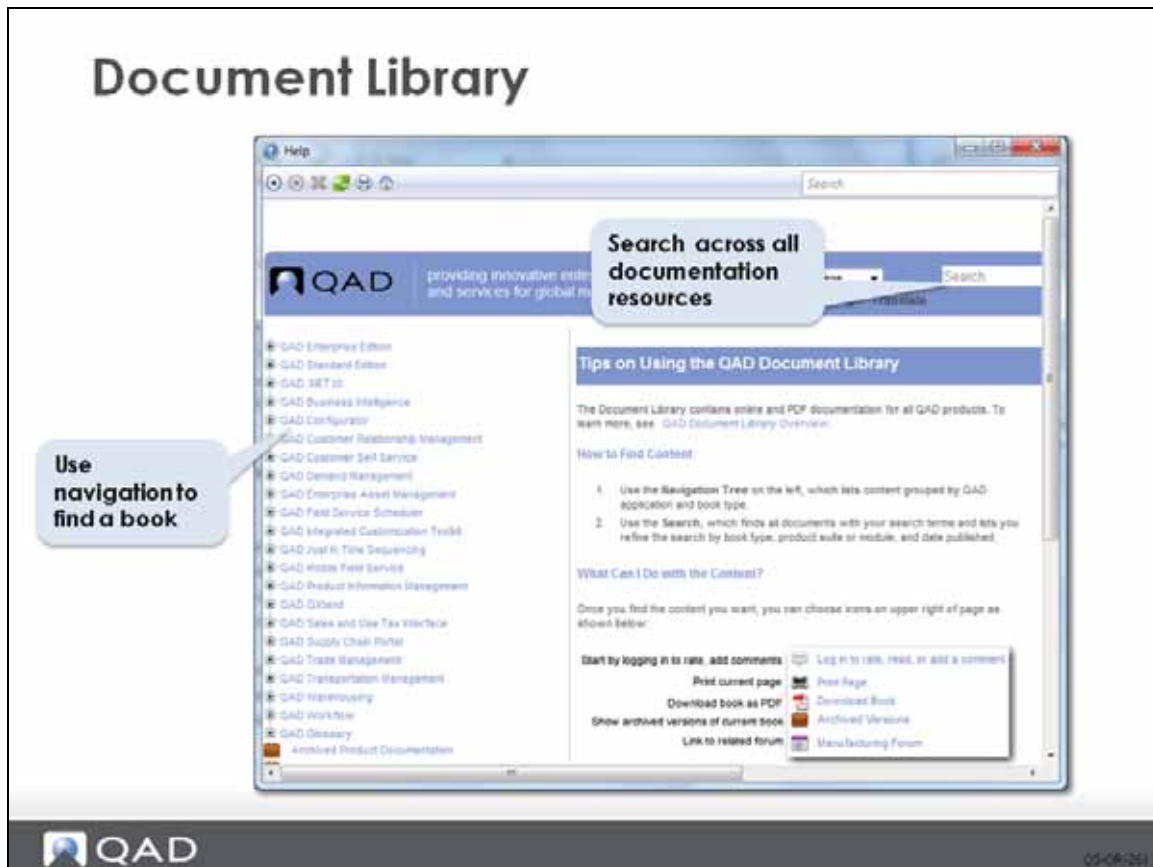
The QAD Search panel lets you do simple searches for single terms such as *Sales* and phrases such as *Sales Orders*. You can also create more complex terms using operators such as *Sales AND Region*. You can use any of the following operators (entered in upper case):

AND, +, OR, NOT, -

If you are unsure of the exact term you are searching for, use wild cards:

- Use a question mark (?) to replace a single character; for example, *S?les*
- Use an asterisk (*) to replace multiple characters; for example *S**es*
- Use the tilde symbol (~) to perform fuzzy searches, which return results similar to the term you entered. You can specify the similarity to the searched term using a numerical option between 0 and 1 for example, *sales~0.8*. The closer the value to 1, the greater the similarity. The default value is 0.5.
- Use numerals to specify words within a specified distance from each other. For example, if you enter *Sales Region~10*, the panel displays all instances of *Sales* and *Region* that appear within 10 words of each other in a document.

External Help Resources



Access the QAD Document Library by clicking the link at the bottom of the application help or search panel. The library includes user guides, administration guides, installation guides, training guides, and other materials.

You can also access this library directly from your browser:

<http://www.qad.com/documentlibrary>

From the Document Library, you can:

- Use the navigation tree on the left, which lists content grouped by QAD application and book type.
- Use the Search, which finds all documents with your search terms and lets you refine the search by book type, product suite or module, and date published.

Exercise 1-3: Using Help

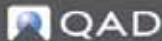
- 1 Find out the answer to the following question by using one of the forms of online assistance:
When a sales order is created, a default value displays for Credit Terms. Where is this default value set?

Which form of help did you use to find the answer? Why?

Special UI Features

Special UI Features

- .NET UI offers other features to streamline and support user interactions
 - Screen customization, including
 - Marking fields as required
 - Disabling or hiding fields
 - Adding fields and frames
 - Setting field defaults
 - Menu collections let a user launch a group of related programs at one time
 - Browse collections where a main browse can drive the data in other program fields
 - Operational metrics display real-time production data in graphic format



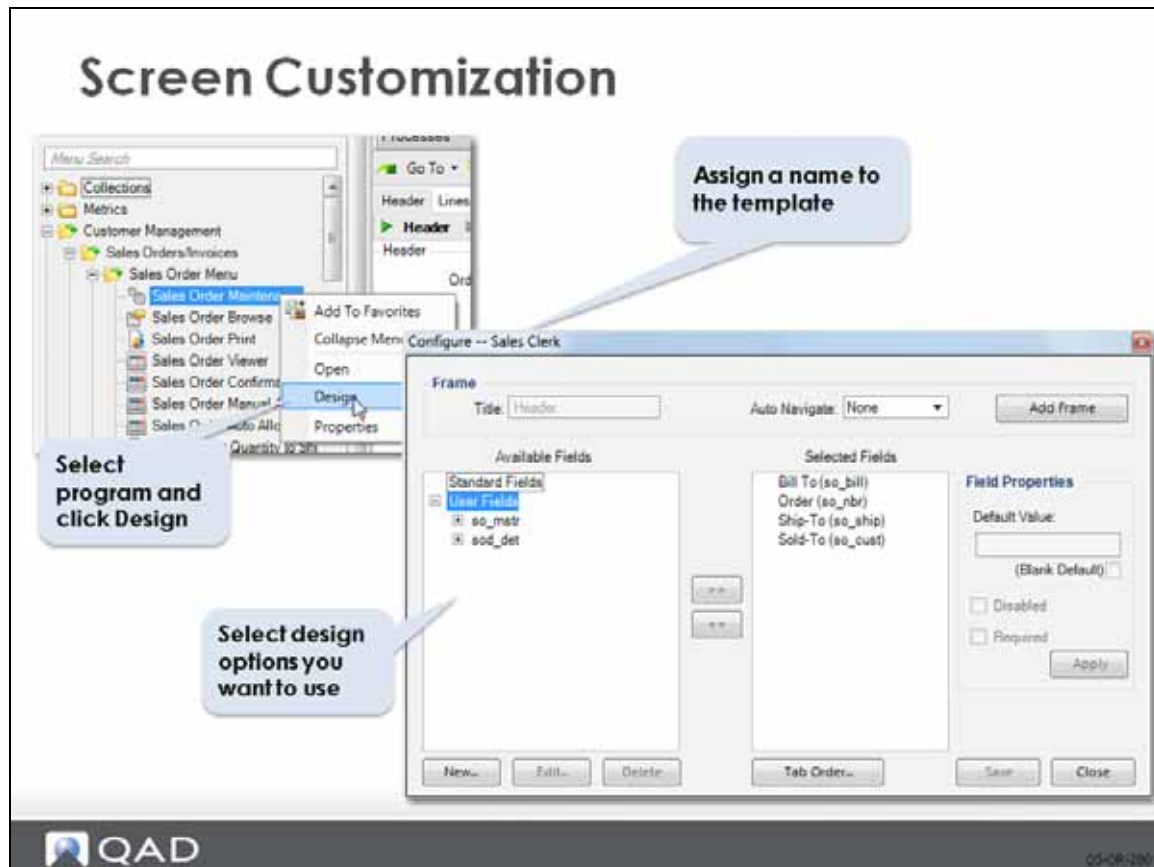
CS-08-020

QAD applications are designed to meet a wide range of business needs. Many options and tools are provided with the .NET UI to let users work efficiently and to streamline typical operations.

The next few slides highlight a few of the additional features of QAD .NET UI that can be used:

- Screen customizations let administrators modify the UI by adding new fields, disabling or hiding fields, marking fields as required, or setting field defaults.
- Menu collections let a user launch a group of related programs at one time.
- Browse collections use a main browse to drive the data in related programs.
- Operational metrics display real-time production data in graphical format.

Screen Customization



Each installation may find that the screen design does not exactly match the way they want to use a program. Two methods are provided that let administrators quickly change aspects of the interface:

- Design mode is used with component based programs and is covered in detail in *Training Guide: Advanced Financials*.
- Configurable screens is used with non-component programs and is covered in detail in *Training Guide: .NET UI Administration*.

To use configurable screens, you first enable it for the database and assign a role with access to make these kinds of changes. Members of this role can then select Design when they right-click a non-component program in the menu.

The designer uses a tool that supports a number of kinds of changes:

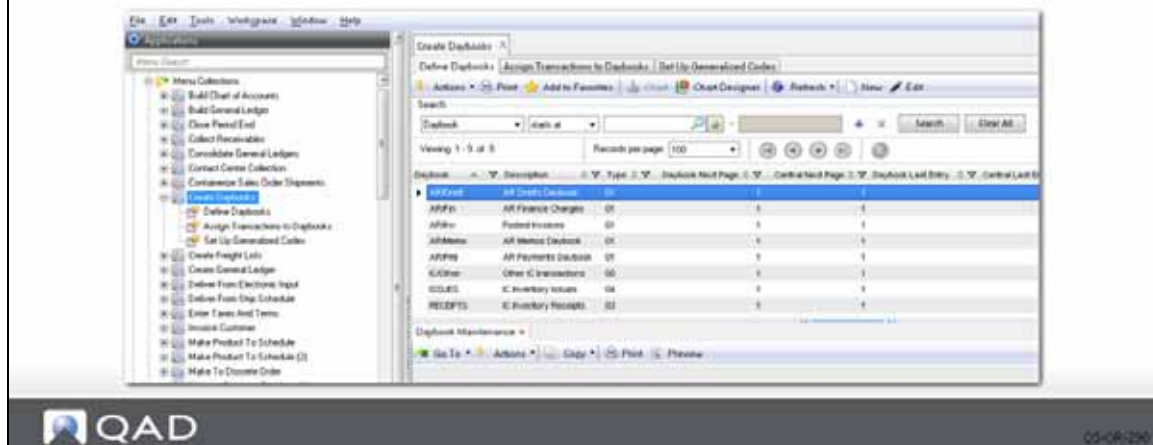
- Disable fields for input or hide them
- Set a predefined default value for a field
- Mark a field as required
- Add fields and frames and control frame navigation

These changes are stored as templates and assigned to user roles. This lets you tailor the screen for the specific user function. For example, the appearance of Sales Order Maintenance can be different for the sales order entry clerk and the sale order manager.

Menu Collections

Menu Collections

- Group menu items such as programs, browses, process maps, and dashboards
- Stored in the Menu Collections folder
- Combine related programs and open together



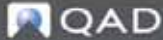
You can launch a group of menu items organized under a folder together. Right-click on the folder and select Menu Collection. The folder icon changes to a collection icon. Click on the icon to launch all the functions at the same time.

Menu collections are located in the Menu Collections folder, located in the Collections folder on the Application pane. Administrators can also use Menu Collection Maintenance to create collections.

Browse Collections

Browse Collections

- A main browse drives selected fields in other browses and programs
- Can be customized and saved to user favorites
- Can link to
 - Other browses
 - Maintenance and report programs
 - Other URLs such as web pages, Google maps
- Additional collections can be created by UI administrators



CS-06-000

A browse collection features a main browse displayed at the top of a split-screen with related programs and browses below. The fields and records selected in the related programs and browses are based on the currently selected record in the main browse.

Browse collections are located in the Browse Collections folder, located in the Collections folder on the Application pane.

Browse collections are created by UI administrators using Browse Collection Maintenance.

Browse Collection Example

Browse Collection Example

Show or Hide

Select a row in main browse....

Control view

...and data changes in related programs

QAD

When you drill-down a couple of times, the screen can display a lot of useful information. So that you can focus on an area of interest, buttons that hide or show a browse or program are available on the left side of the toolbar. These Show/Hide buttons display as two up-arrow symbols when a view is open and as two down-arrow symbols when a view is closed.

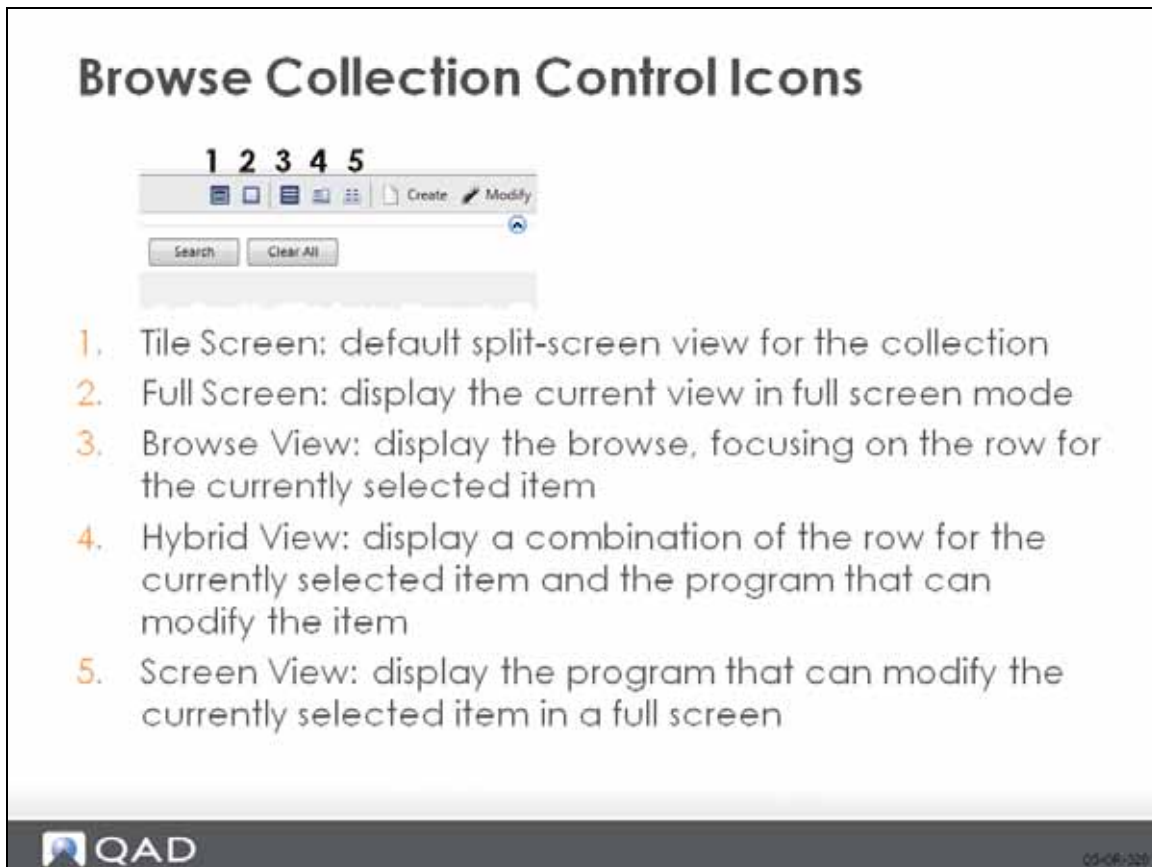
Additionally, on the right side of the toolbar, you can use a set of icons to control the view.

The first two icons—Tile Screen and Full Screen—let you switch between the tile screen view (the default) and the full screen view.

- When you select the full screen view for a program or browse driven by the main browse, the screen expands to show just the selected program or browse.
- To return to view all the driven programs and browses, click on the Tile Screen icon.

Next to the Tile Screen and Full Screen icons, the browse hybrid view icons (Browse View, Hybrid View, and Screen View) let you control the main browse.

Browse Collection Control Icons

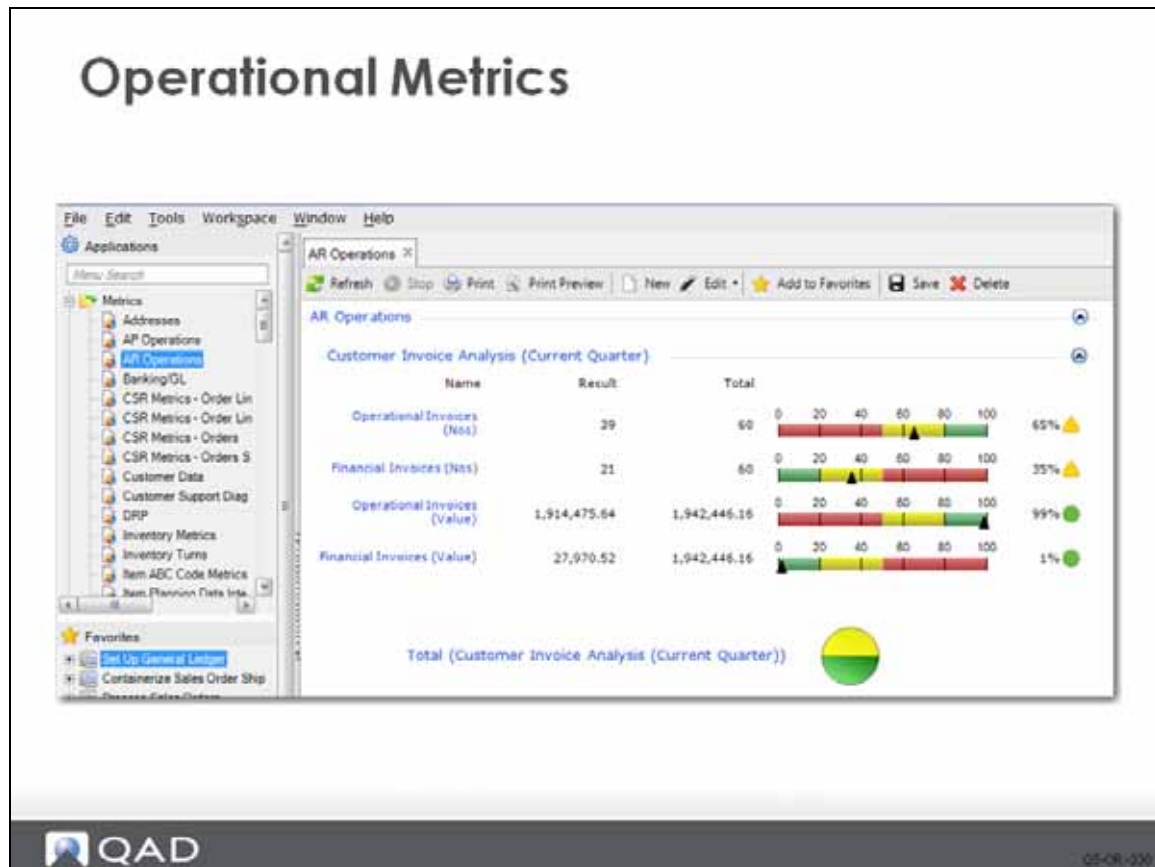


The following summarizes the browse collection display icons:

- Tile Screen: the default split-screen view for the collection
- Full Screen: display the current view in full screen mode
- Browse View: display the browse, focusing on the row for the currently selected item
- Hybrid View: display a combination of the row for the currently selected item and the program that can modify the item
- Screen View: display the program that can modify the currently selected item in a full screen

These icons provide you with a useful way to control the display and focus on the information you need.

Operational Metrics



The Operational Metrics option lets you create a graphical metric from browse data. Operational metrics provide a live snapshot of production data, which lets you monitor in real time how the system is being used. You can use operational metrics to visually track any type of browse data, including data from customized browses created in Browse Maintenance.

A number of predefined metrics are supplied with the system in the Metrics folder. In this slide, the Accounts Receivable metric displays different customer metric results.

Metrics are created and managed by administrators using the Create Metric Collections function on the Administration menu.

Exercise 1-4: Using Collections

- 1 Become familiar with how browse collections work:
 - a Locate Browse Collections on the Application pane.
 - b Open Process Sales Orders-Sales Admin.
 - c Select an order from the browse. Notice how the order changes in the programs below.
 - d Experiment with the various icons to see how they affect the display.

2 Create a new menu collection:

- a** Right-click in My Favorites and select Create New Folder. Name the folder My Collection
- b** Open the Sales Order Menu in the Application pane. Drag Sales Order Maintenance, Sales Order Browse, and Sales Order Print into the My Collection folder.
- c** Right-click on the My Collection folder and select Menu Collection. Notice how the folder icon changes to a collection icon.
- d** Double-click the My Collection folder. Notice how all three programs open under the single My Collection tab.
- e** Click the x on the My Collection tab to close the collection. Notice how all three programs close at the same time.

System Foundation

This chapter provides an overview of the basic building blocks of the system that form the foundation for other activities.

Overview of System Foundations

Business Model: Four Levels of Data

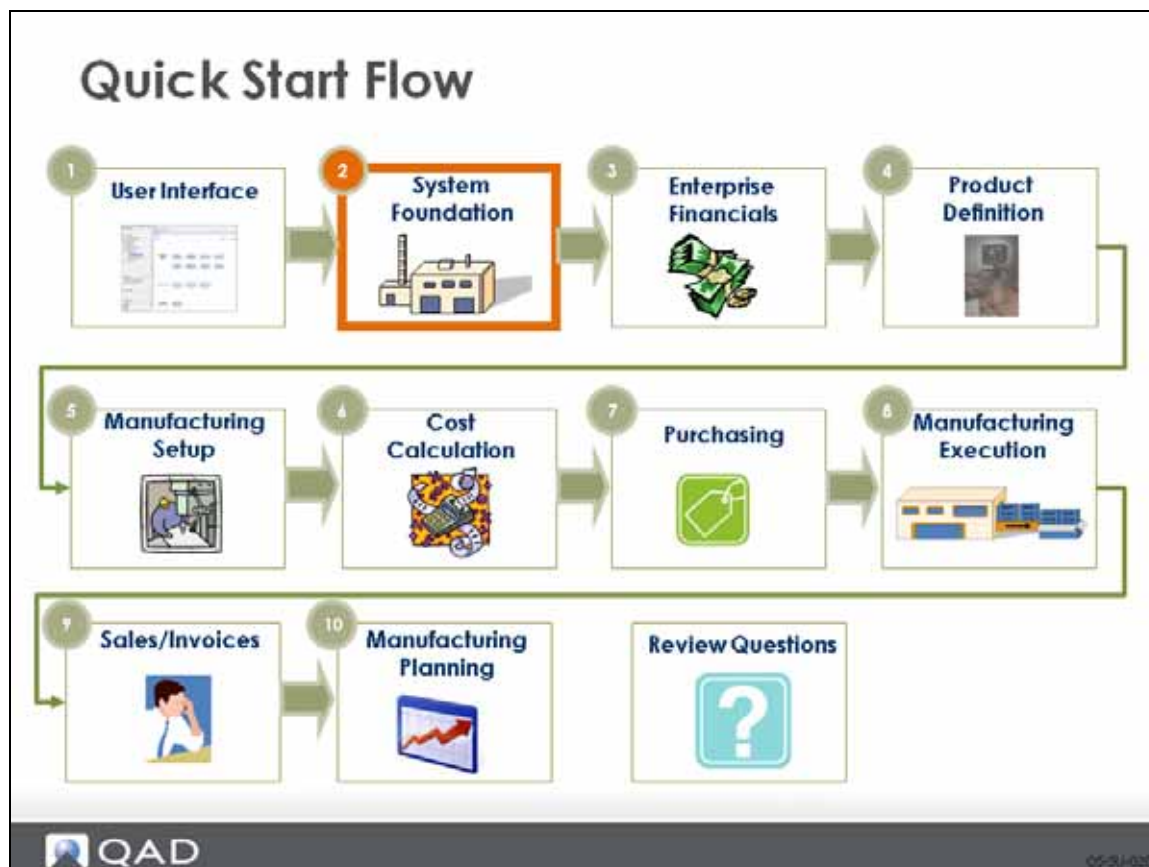
Security Setup

Example: QMI Business Structure

Review

Exercise 2-1: Define Site and Location

Overview of System Foundations



In QAD EE, you can view a company from either a financial or operational perspective. In financial terms, a company is an entity that publishes financial statements and files tax returns. In terms of other activities, a company can be defined by its combined operations, such as sales order entry, purchasing, manufacturing, and general accounting.

Business Model

The following pages discuss the most basic pieces used to support financial and operational activities. First, is the environment itself database. To this are added:

- Domains, which can be thought of as templates for businesses that use the same base currency, chart of accounts, and GL calendar.
- Entities, which are used to identify business units for reporting and tax purposes, and their GL transactions and financial reports including Income Statements and Balance Sheets.
- Shared data sets with information about customers, suppliers, employees, and other data used throughout the system. This shared data exists at the database level.

This chapter begins with a discussion of databases, domains, and the types of data they contain and share.

Security

Protecting valuable company resources and ensuring proper separation of responsibility is a basic requirement for any business. The next topic covered is a high-level overview of how to manage who is able to complete various activities in the system by setting up users, roles, and access.

Operational Structure

Sites and locations comprise the basic structure required for managing inventory in the system, and determine how the inventory transactions affect the GL. Inventory status codes are an essential part of this key area of control.

Chapter Topics

This chapter covers the following topics:

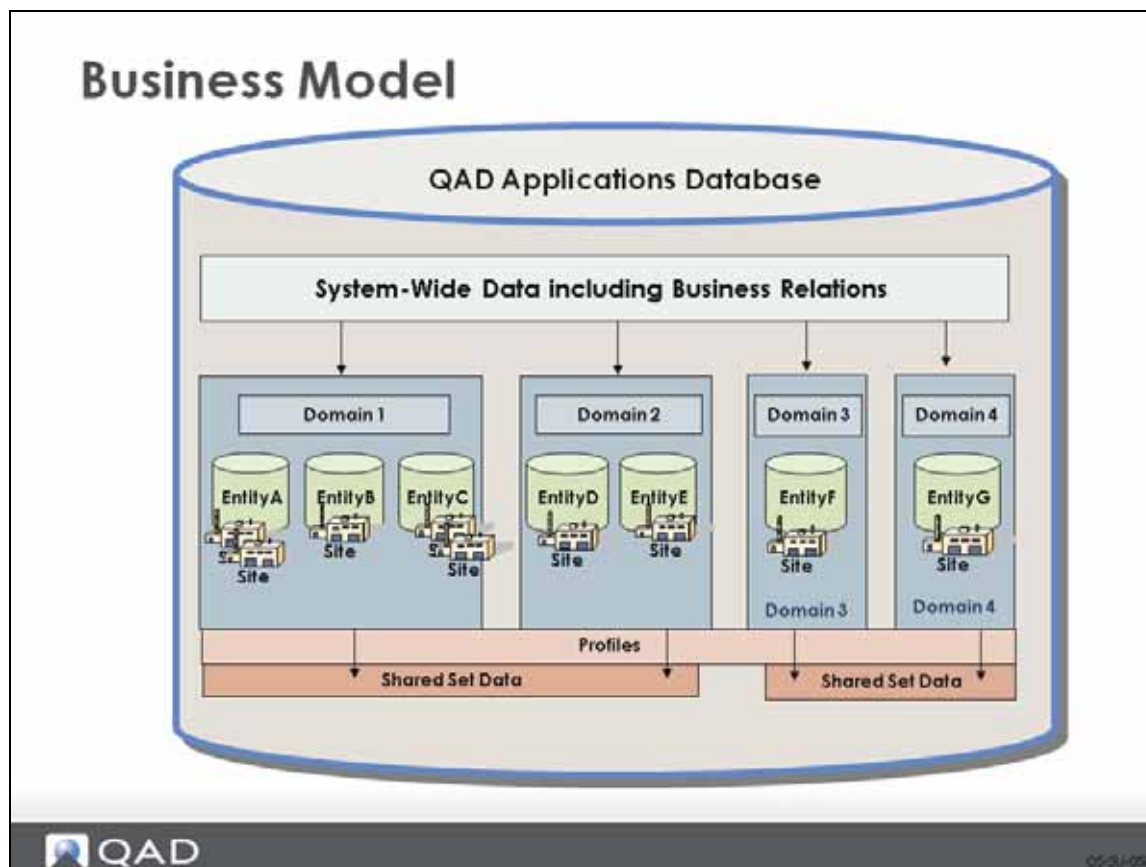
- Key Concepts
 - Databases and System-Wide Data
 - Domains, Entities, and Shared Sets
 - Sites, Locations, and Inventory Status Codes
 - Security Setup
- Example
 - Review Domain and Entity
 - Review Entity Business Relation
 - Review Domain/Account Control
 - Define Inventory Status Codes
 - Set Up Site
 - Set Up Inventory Locations
- Review
- Exercise

Learning Objectives

This chapter provides a high-level overview of the QAD EE system structure. When you finish this chapter, you should be able to:

- Describe what a database is and list the key data it contains.
- Describe and understand how domains and shared sets are used.
- Distinguish between the role of domains and entities.
- Describe what business relations are and how they are used.
- Describe how users and roles control access to system functions.
- Distinguish between the kind of information sites and locations contain.
- Describe the role of inventory status codes in the system.

Business Model: Four Levels of Data



System Wide. Some data is shared throughout the system, such as currencies, country codes, and tax data. This data never differs from one business unit (entity or domain) to another, so it makes sense to share it across all business organizations. System-wide data includes administrative data related to security, the user interface, and technical setup. Business relations are one critical system-wide resource that provide location, contact, and tax information for all addresses in the system.

Shared Sets. Shared sets group data that can be shared across domains. A single domain can have an independent chart of accounts or several domains can share the same chart of accounts, streamlining setup and maintenance. Other types of data that can be shared are customers, suppliers, and exchange rates. Profiles are used to resolve accounting issues when customers and suppliers are shared by domains with different charts of accounts. They act as links between the shared set and specific accounts or daybook types.

Domains. A domain represents the base unit of the system and includes one or more entities. Each domain has its own base currency, and, optionally, statutory currency, which is then shared by the entities within the domain. Domains derive some data from shared sets and also use system-wide data. However, most operational data is domain specific. So for example, all the item data and order transactions take place within a specific domain.

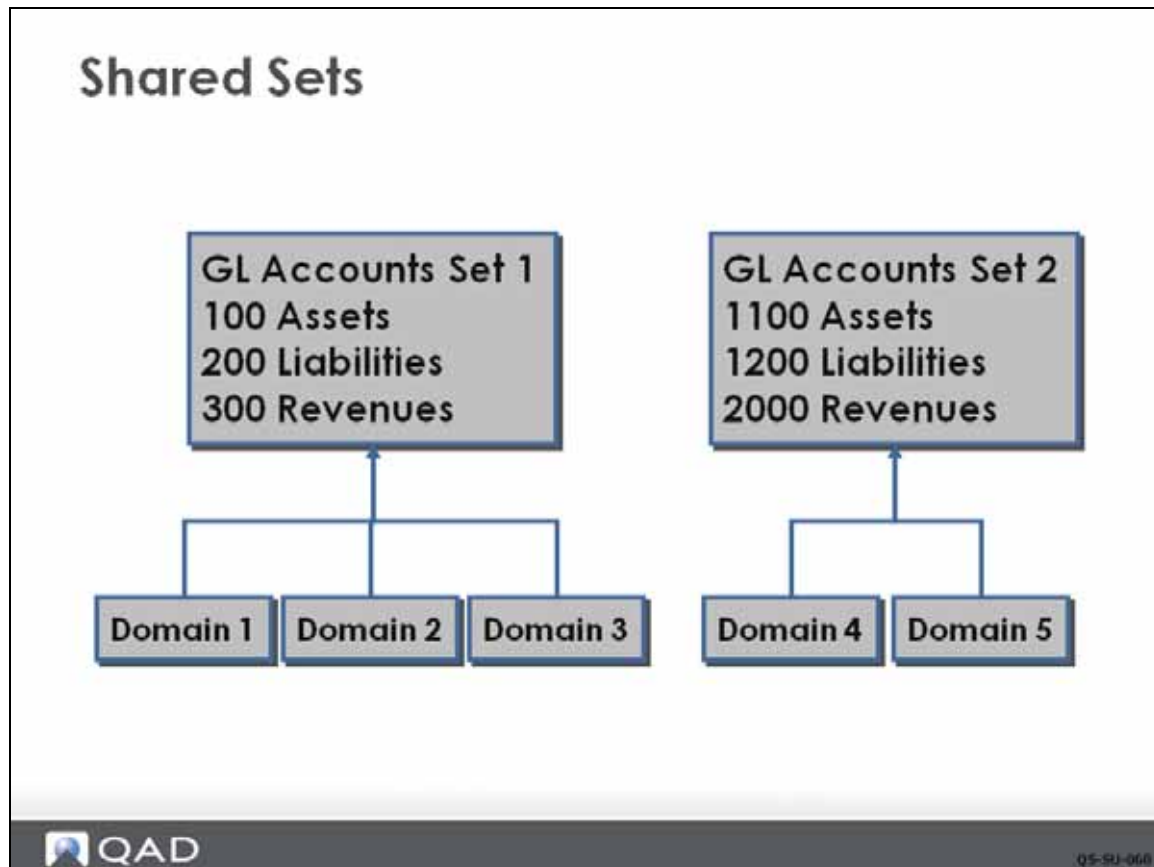
Entity. An entity exists within a domain and inherits the domain attributes, such as base currency. Entity-specific data is limited, for example, the organization's own bank account number. General ledger transactions are associated with specific entities.

Sites and Locations. Inventory control and planning information is maintained by site, including inventory availability, manufacturing methods and costs, sales, purchases, manufacturing plans and orders, and forecasts. When GL transactions are created by operational transactions, the entity associated with a transaction is determined by the site.

The following table summarizes the kinds of data found at each level of the business model.

Level	Category	Detailed Data Types
System wide (database)	business relations and address related data	Address types, corporate groups, currencies, rounding methods, languages, counties, countries, states
	Address related tax data	Tax zones, tax environments, tax classes, tax usage codes, tax types
	Financial codes	Shared set codes, credit terms, invoice statuses, profiles, and Supplementary Analysis Fields (SAFs)
	Security data	Users, roles
	Administrative data	E-mail definitions, printers, some EDI and eCommerce setup data
	User interface data	Labels, menus, messages, lookup definitions
Shared sets	Financial data	Accounts, sub-accounts, cost centers, projects, daybooks, exchange rates
	business relations	Customers, suppliers
Domain	Financial data	GL mask (combination acct/sub-acct/cc/project), accounting periods
	Operational data	Sites, locations, items, default accounts, generalized codes
	Orders	Purchase orders, sales orders, work orders, distribution orders, service calls
Entity	Financial data	Employees, bank account numbers, period closing status, general ledger and sub-ledger transactions and balances, transaction numbering
Site	Inventory planning	Inventory control and planning information, including inventory availability, manufacturing methods and costs, sales, purchases, manufacturing plans and orders, and forecasts.
Location	Inventory	Inventory detail records

Shared Sets



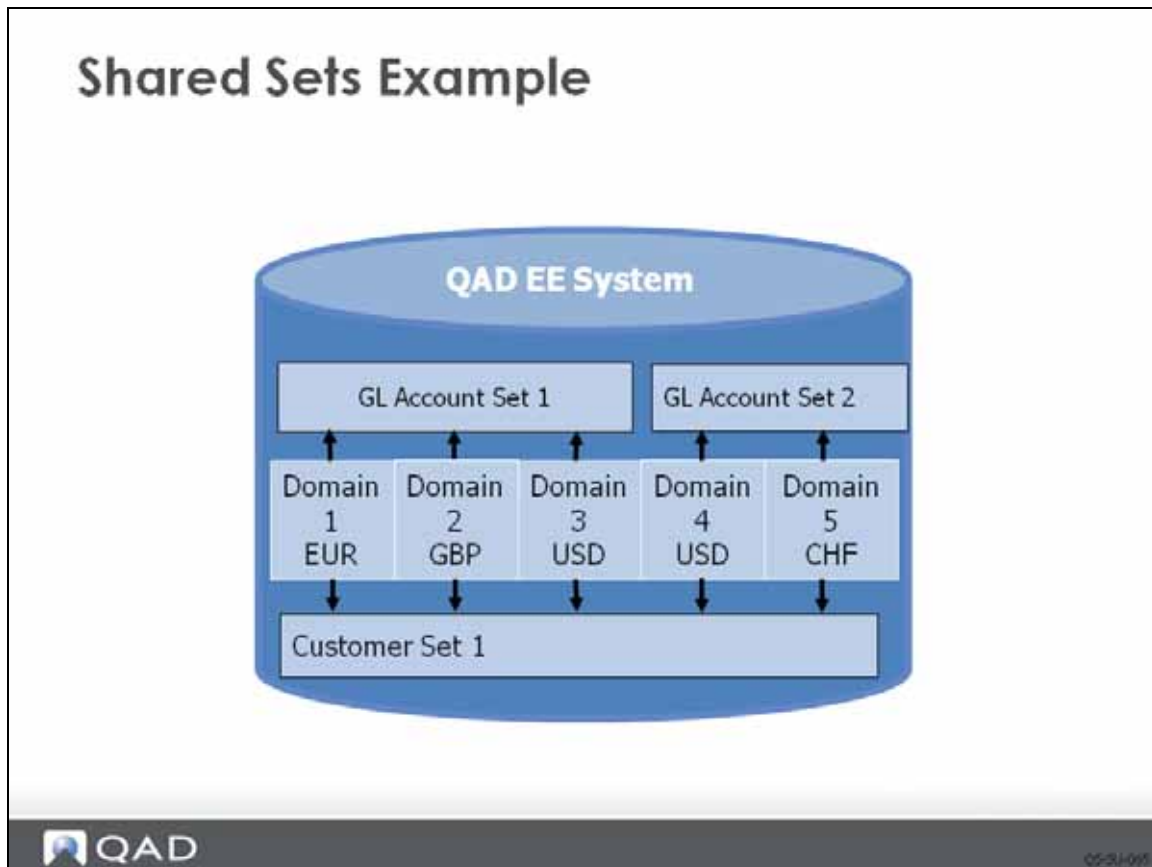
Shared sets provide great flexibility in how a system can be set up. A default set of shared set codes is supplied with the system. However, as many shared sets as necessary can be created.

The following types of data exist at the database level and can be shared for some or all domains in a database:

- Customers
- Suppliers
- Accounts
- Sub-accounts
- Sub-account COA mask
- Cost centers
- Cost center COA masks
- Projects
- Project COA masks
- Exchange rates
- Daybooks

Example Three US domains can use the same chart of accounts, while two other domains in Japan can use another account shared set. This streamlines and standardizes the use of accounts across the enterprise.

Shared Sets Example



To determine how many shared sets you need, create a table like the one below. Down the side is a list of types of data that can be shared. List the domains you plan to use on the top. Then consider what information will be shared and what will be different among domains.

Shared Set Type	US - Domain	EMEA - Domain
Customer	AllCustomers	AllCustomers
Supplier	AllSuppliers	AllSuppliers
Account	US_Accounts	EUR_Accounts
Sub-Account	US_Sub	EUR_SubMask
Sub-Account COA Mask	US_SubMask	EUR_Sub
Cost Center	US_CC	EUR_CC
Cost Center COA Mask	US_CCMask	EUR_CCMask
Project	US_Project	EUR_Project
Project COA Mask	US_ProjMask	EUR_ProjMask
Exchange Rate	SystemExRate	SystemExRate
Daybook	US_Daybook	EUR_Daybook

Discussion

A customer references an AR account. What if the same customer set is used by domains that point to different GL account sets?

Business Relation

Business Relation

Business Relation Modify X

Go To Actions Tools Print Preview Attach

Business Relation: 10-USA-CO

Name: QMI-USA Division

Search Name: QMI-USA Division

Second Name:

Third Name:

Group Name:

Active: ☒

Address Info General Defaults

Address	Address	Name	State	Country	Telephone	Fax
30 Ridgedale Avenue	Building 47	QMI-USA Divisio	NJ	USA	201-233-546	201-233-9967

Address Info General Defaults

Language Code: US

Domain Restricted: ☐

Internal Entity: ☒

Intercompany Code: 10-USA-CO

Intercompany: ☒

Customer/Supplier Compensation Allowed: ☐

Tax Report: ☒

Name Control: QMI56

Last Filing: ☐

QAD

Business relation codes are generally defined at the database level, but can optionally be defined at domain level. They let you maintain all address data in one function, and then reference it in other functions that require address data.

Address details for the following types of records are referenced from a business relation: banks, carriers, customers, docks, employees, entities, end users, salespersons, ship-to locations, sites, and suppliers.

When the business relationship address data is modified, all other codes that reference that address are automatically updated.

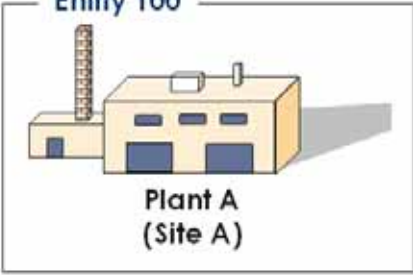
One business relation can have multiple different types of addresses associated with it:

- Head office (mandatory, only 1)
- Ship-to (multiple)
- Reminder (only 1)
- Remittance (only 1)
- Dock (multiple)
- Enduser (multiple)

When creating a customer or supplier, the business relation can be created at the same time. Both a customer and a supplier can reference the same business relation. This supports netting of customer and supplier invoice amounts.

Entities

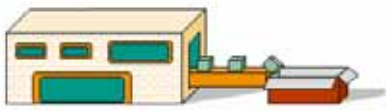
Entities



Entity 100

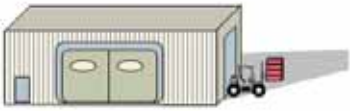
**Plant A
(Site A)**

- An entity is a business unit with financial reporting responsibility
- An entity may have as many Sites as needed
- Inventory activity at a site is tracked by its associated entity

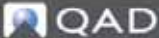


Entity 200

**Plant B
(Site B)**



**Warehouse
(Site C)**


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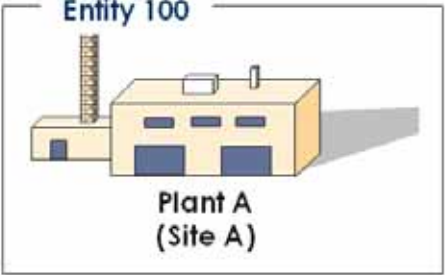
An entity is a subset of the business that does financial reporting. In QAD EE, balance sheets and income statements are prepared by entity.

Other structures are used within a QAD EE database to manage inventory and execute planning functions. The next section introduces these elements:

- Sites
- Locations
- Inventory status codes

Sites

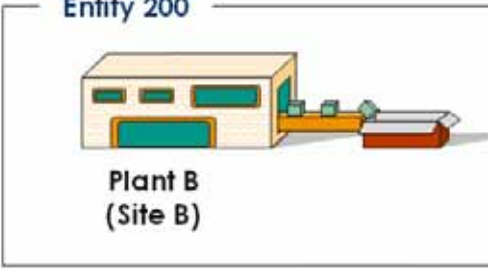
Sites



Entity 100

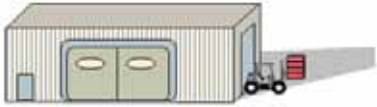
Plant A
(Site A)

- An entity requires at least one site to plan, manage, and control inventory
- Separate sites are usually set up for separate physical locations
- Site address comes from company business relation

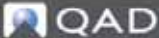


Entity 200

Plant B
(Site B)



Warehouse
(Site C)


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A site is an inventory planning and control concept. Inventory control and planning information is maintained by site, including inventory availability, manufacturing methods and costs, sales and purchasing data, manufacturing plans and orders, and forecasts.

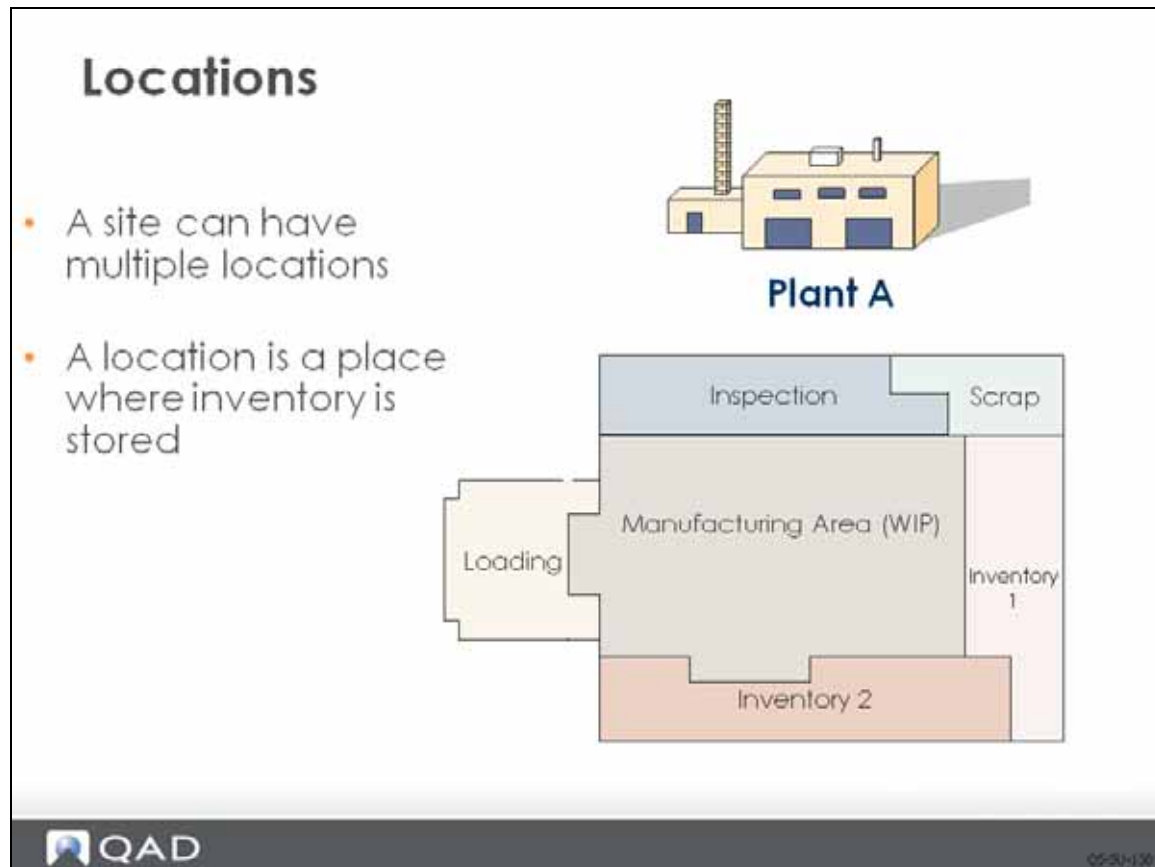
Each site must be associated with a physical address, defined initially as a business relation, as are all other address codes in the system. The business relation is referenced in Company Address Maintenance (2.12) for the site code and additional site-specific data defined.

Multiple sites can reference the same business relation address. For example, you can set up separate sites for manufacturing, finished goods inventory, and field service in one physical location. There are no limitations on how many sites you have under one entity. Each site belongs to Oneida only onetime, but each entity can have more than one site. A site can be, for example, a distribution center, a warehouse, a manufacturing plant, or a combination of these.

Site Maintenance (1.1.13) defines several attributes that default into inventory locations including a default inventory status code, whether or not automatic locations are allowed, and a transfer variance account.

Most planning and control functions work within one site. The system expects to find all the components for a manufacturing order at the same site (with a few exceptions); MRP and DRP calculate requirements one site at a time. A few functions deal with multiple sites, such as multi-site purchase or sales orders, distribution orders, and distributed inventory inquiries.

Locations



Every inventory transaction must have a site and location, which default from the item master. A site may have a variety of locations where inventory is stored such as shelves, bins, tanks, silos, refrigerators, freezers, humidity and or temperature controlled rooms, segregated quarantine or material review areas.

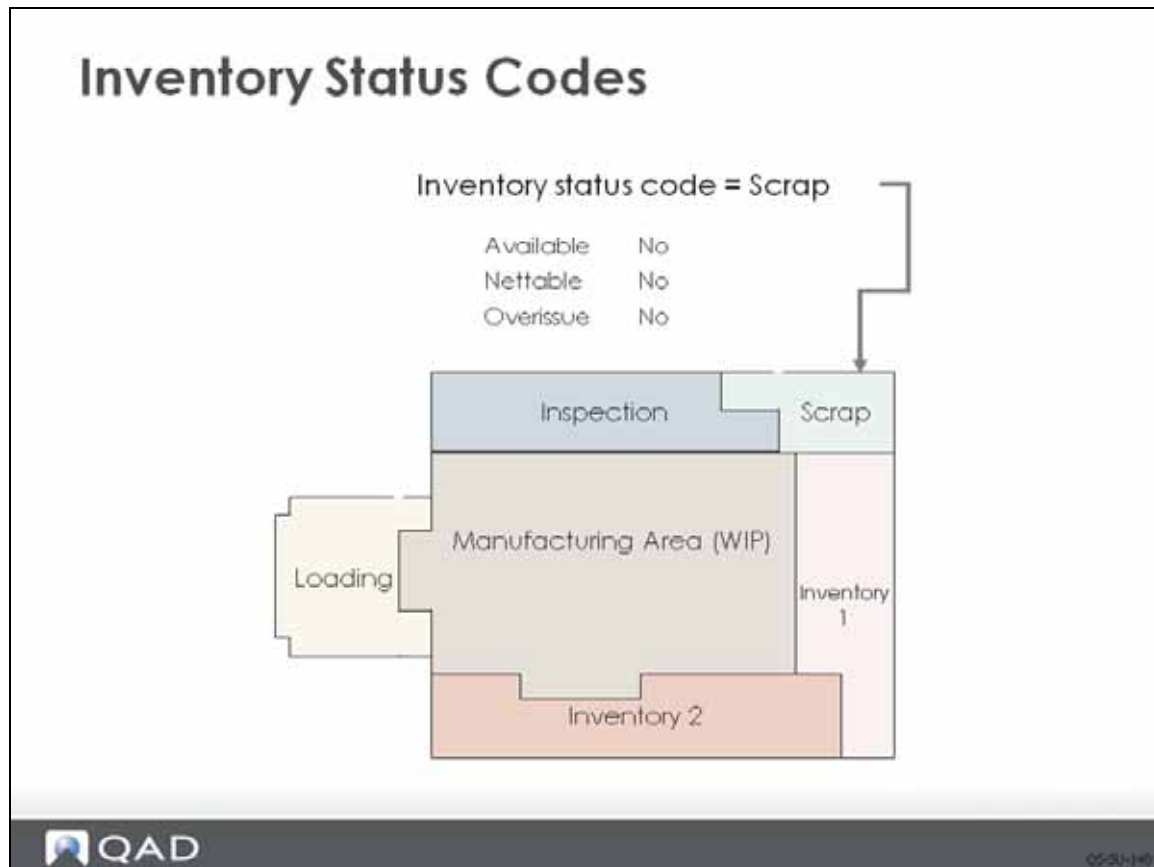
Most businesses have multiple predefined inventory locations such as raw material and component inventory, finished goods inventory, and perhaps other locations for sales returns, scrap, quality control, quarantine, or material review board. In general the more carefully locations are defined, the higher level of inventory control you will obtain.

Locations do not have to be predefined. The system can automatically create location codes when an undefined value is entered when Automatic Locations is Yes in Site Maintenance. While useful in some situations, this offers a very low level of control since anyone with access to inventory transactions can create new locations, possibly as a result of an error.

Location attributes identify what can be stored there and how that inventory can be used:

- A default inventory status code (available, nettable, overissue)
- A permanent setting, which determines if inventory detail records are retained when the on-hand quantity is zero. (The location itself is never removed, regardless of this setting.)
- A location type code that can also be matched with the type code of the item
- Restricted to single item (liquid tanks are usually restricted to a single item, for example) and restricted to a single lot of a single item (lot-controlled liquids)

Inventory Status Codes



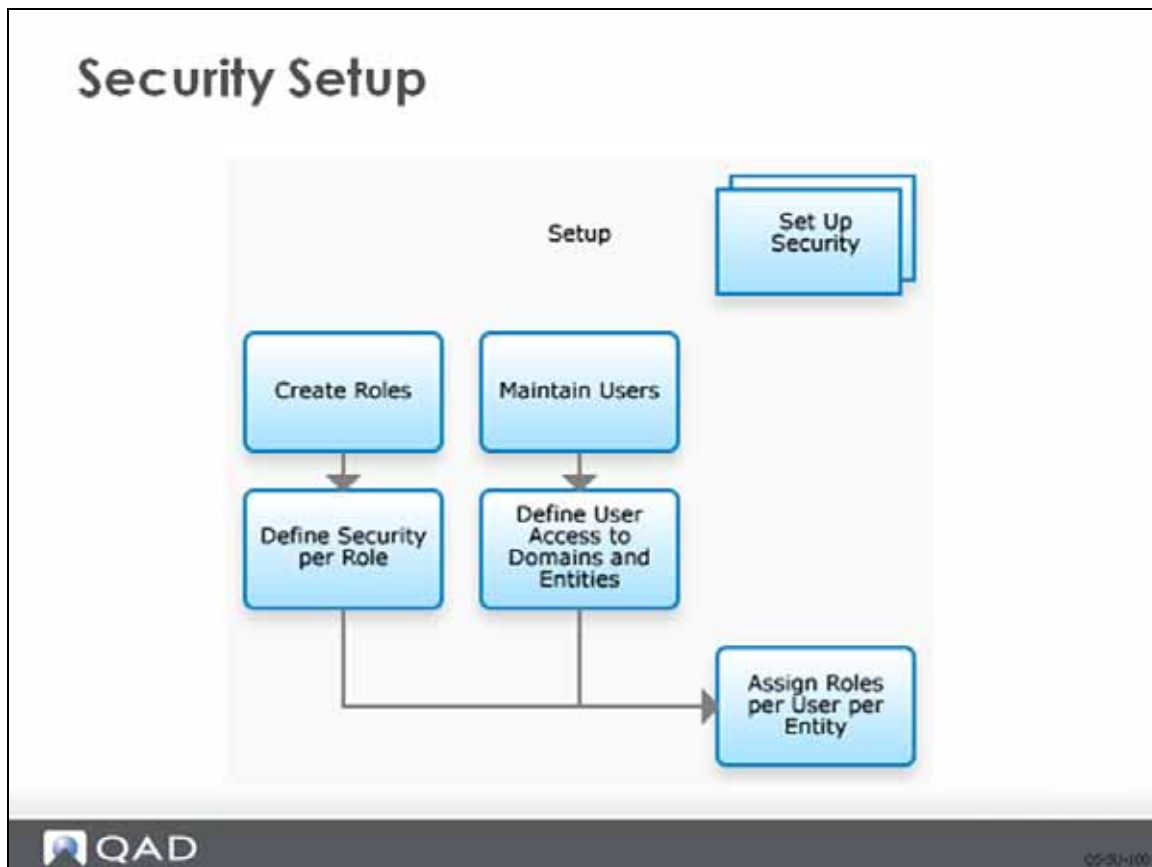
Inventory status codes control inventory and manage how it is used. Think about how scrap is managed differently than finished goods inventory or spares. Generic inventory status codes are set up for each type of inventory you have and determine whether that inventory is:

- Available to allocate to sales orders and manufacturing orders.
- Nettable, to be considered by MRP when calculating net quantity on hand.
- Overissue, to denote if this inventory balance is allowed to go negative.
- Restricted. Each code can have a list of restricted transactions attached. For example, access to sales order issues can be restricted from a Quality Control Hold location.

Items received into inventory are assigned a default status code based on the location, which can be changed using Inventory Detail Maintenance (3.1.1). When the items are allocated, issued, or moved, the system checks the status code and ensures the action is valid. Some general guidelines on how status codes are used:

- Scrap inventory would not be available or nettable.
- Material received in quarantine is often not available but is nettable since it is likely good.
- Material in material review board is usually not available but can be either nettable or not based on the likelihood of its being approved for use.
- Consignment inventory held for a specific customer is not normally available.
- Negative inventory balances are always errors and should not be allowed.
- Inventory in transit is usually not available.

Security Setup



After defining a new domain, you must define user security and access. To set up security, you use three main elements:

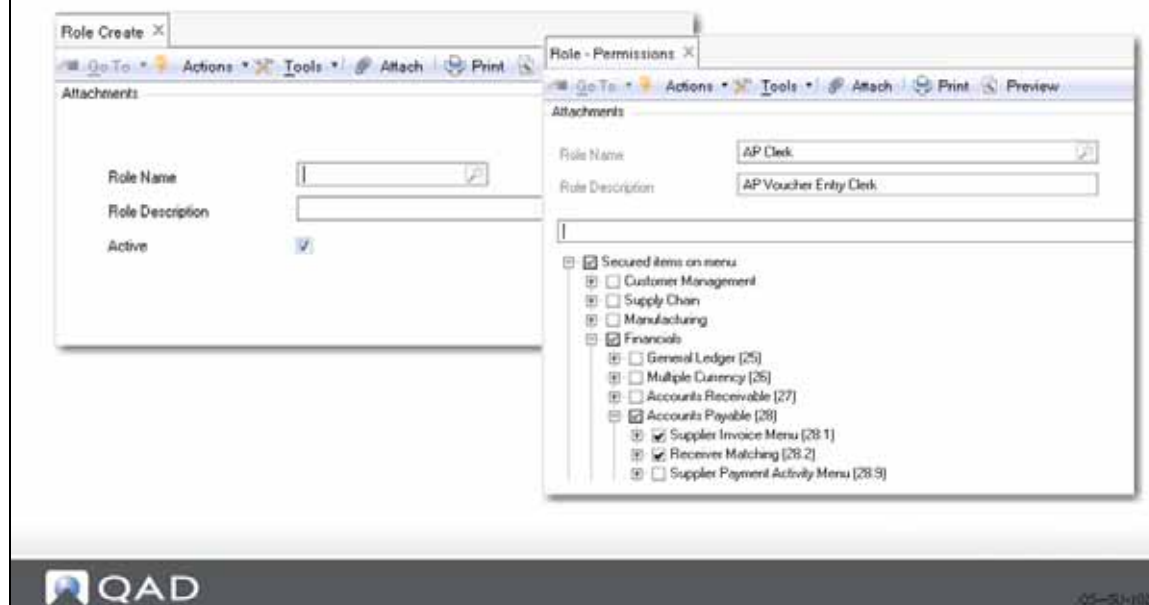
- Roles
- Users
- Permissions

The configuration for the three areas is linked in a fourth step.

To access the system, a user must have a valid active record and must be assigned a role. The role determines which activities the user can perform and which domains and entities the user can access.

Set Up Roles

- Set up role
- Add permissions to the role



In Role Create (36.3.6.1), enter a name and description to create a new role. During implementation, you can create inactive roles by clearing the Active field. An inactive role cannot be referenced in any functions other than Role Create.

A number of default roles are supplied with the system. Members of these roles are notified by the system when new records are created in Finance (customer, employee, end users, suppliers), since additional operation data needs to be specified for these records:

- CustomerNotify
- EmployeeNotify
- EndUserNotify
- SupplierNotify

Two other special roles are supplied with the system:

- qadadmin
- SuperUser

After defining the role names, go to Role Permissions Maintain (36.3.6.5) and associate the system activities that you want members of each role to be able to complete.

Set Up Users

Set Up Users

User Maintenance X

Go To Actions Copy Print Preview Attach

E-mail Del

User ID: ACCT User Name: Alan Cutin

Language: us Variant:

Country Code: usa Restricted: ☐

User Type: Employee Access Location: Primary

Time Zone: PST/PDT Initial:

E-mail Del:

E-mail Address:

Menu Substitution: ☒

Remark:

System Access

Enabled: ☒ Last Login: 3/19/2008 00:54

Enabled Reason: QAD_DEF QAD DEFINITION

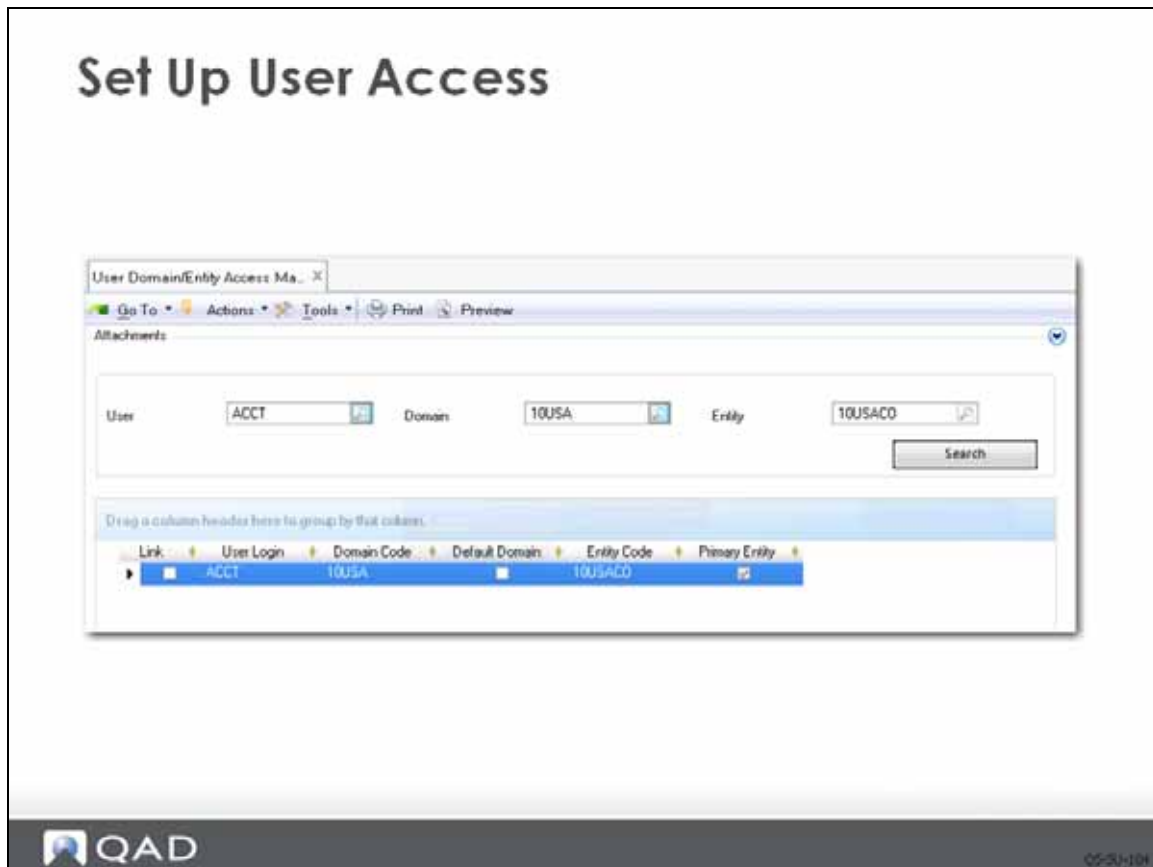
Force Password Change: ☒

Update Password: ☐ Last Password Change: 3/18/2008

QAD CS-30-103

In User Maintenance (36.3.1), define the IDs for the users in your system and associate other data with them such as an e-mail address, language, country, and type.

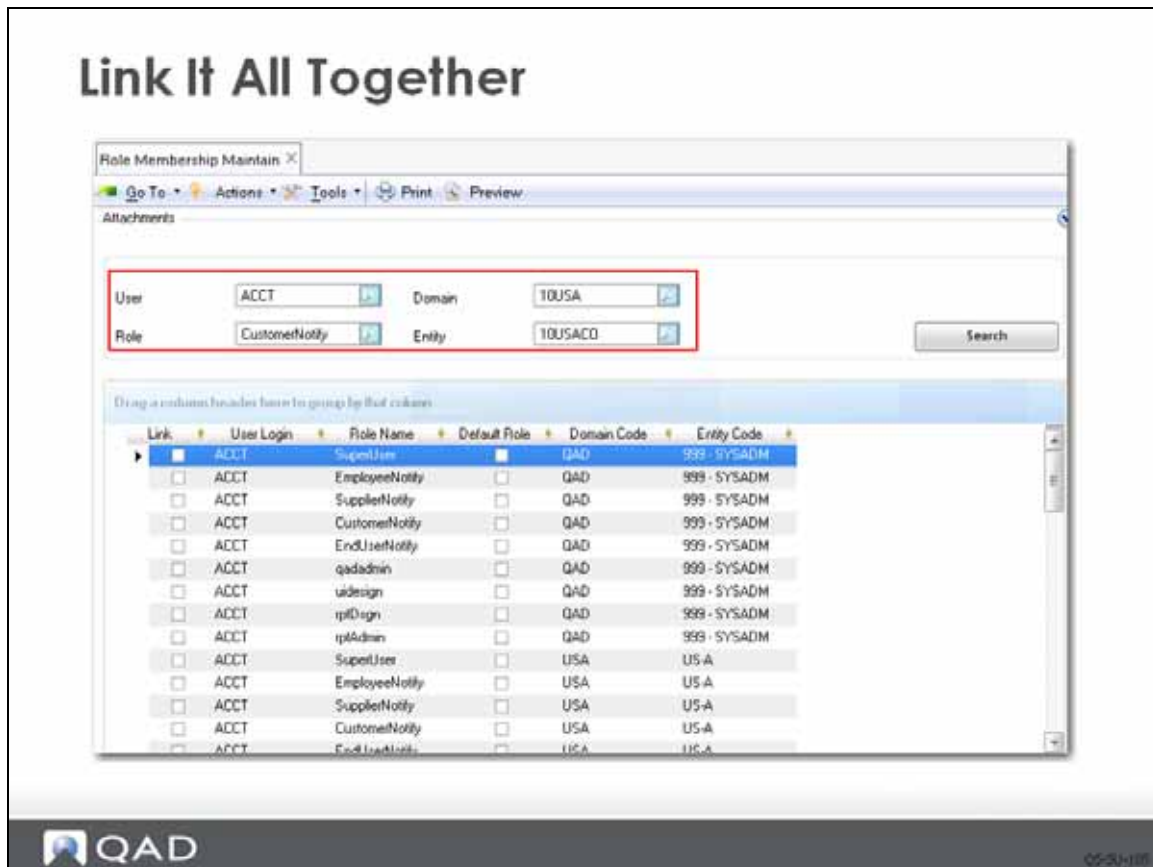
Set Up User Access



Go to User Domain/Entity Access Maintain (36.3.4) to set up the user access.

Select the user and click Apply. A new window displays. Link a user to an entity by selecting the field in the Link column.

Link It All Together

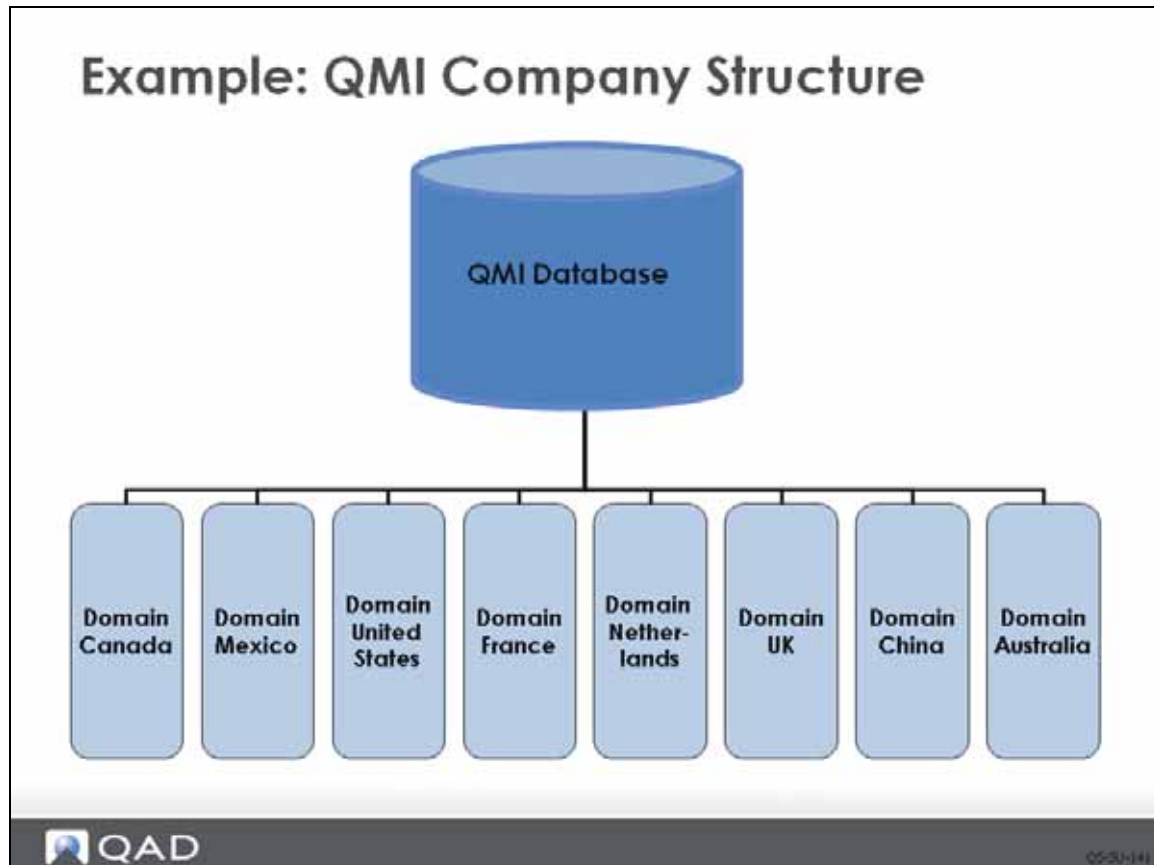


In the final security setup step, you link users, roles, entities, and domains.

Go to Role Membership Maintain (36.3.6.6). Select either a user, role, domain, entity, or a combination, then click Apply. Link a user to a role for the entities that the user has access to (entity by entity).

A user can have different roles in each entity.

Example: QMI Business Structure



Quality Manufacturing International (QMI) is a multinational company with its headquarters located in New York, NY.

- QMI has eight divisions located in USA, Canada, Mexico, France, UK, Netherlands, China, and Australia.
- QMI produces a wide range of products that cover Electrical and Industrial, Life Sciences, Consumer Products, and Automotive industries.
- These products are produced at all of the eight company divisions around the world.
- QMI uses shared services to manage their customers and suppliers. Customers and suppliers are also located in each of the countries where a QMI division is located.

The example on the following pages shows how QMI has set up the foundations of its business structure to support shared services. The example includes these activities:

- Review the setup of domain 10USA and entity 10USACO.
- Look at the business relation associated with the entity.
- Review the options and defaults defined in Domain/Account Control.
- Define three inventory status codes.
- Set up a site with a default inventory status.
- Define three locations for finished goods, components, and inspection and assign inventory status codes.

Review Domain and Entity

Review Domain and Entity

Domain Modify

Domain: 10USA Primary Entity: 10USACO

Name: USA Division

Search Name: 10USA

Entity Modify

Entity Code: 10USACO Active

Entity Description: USA DIVISION Domain: 10USA

Business Relation: 10-USA-CD

Localization Code:

General Shared Sets Operational Cross-

Base Currency: USD

Statutory Currency: USD

Statutory Currency Enabled: ☐

Time Zone: EST/EDT

COA Mask:

Sub-Account COA Mask: ☐

Cost Center COA Mask: ☐

Project COA Mask: ☐

Shared Set Code **Shared Set Type**

QMS-CostCenter	Cost Center
QMS-SUP	Supplier
QMS-CUST	Customer
QMS-SubAccount	Sub-Account
QMS-ExchangeRate-US	Exchange Rate
QMS-GL-US	General Ledger
QMS-DB-US	Daybook
QMS-Project	Project
Sub-Account COA Mask	Sub-Account COA Mask
Cost Center COA Mask	Cost Center COA Mask
Project COA Mask	Project COA Mask

QAD Q5-93-170

Basic setup of the US domain (10USA) has been completed by the staff of QMI. This ensures that all accounting and financial reporting functions are set up in accordance with corporate procedures. 10USA has been set up with a base currency of US dollars (USD), a general ledger chart of accounts, and a GL calendar with periods that correspond to the standard 12-month calendar.

The system-wide data is defined first so that when the domain is defined, the correct shared sets can be selected.

Images of the domain and entity setup are shown here. Note that the US domain has several shared sets that are common with other QMI divisions and tachometers and slipperiest are unique to it. All of the entities in a domain inherit the domain's shared sets, as you can see in the image of entity 10USACO.

Review Entity Business Relation

Review Entity Business Relation

Business Relation Modify X

Go To Actions Tools Print Preview Attach

Business Relation: 10-USA-CO

Name: QMI -USA Division

Search Name: QMI - USA Division

Second Name:

Third Name:

Group Name:

Active: ☒

Address Info General Defaults

Address	Address	Name	State	Country	Telephone	Fax
30 Ridgedale Avenue	Building 47	QMI -USA Division	NJ	USA	201-233-546	201-233-9967

Address Info General Defaults

Language Code: US

Domain Restricted: ☐

Internal Entity: ☒

Intercompany Code: 10-USA-CO

Intercompany: ☒

Customer/Supplier Compensation Allowed: ☐

Tax Report: ☒

Name Control: QMI56

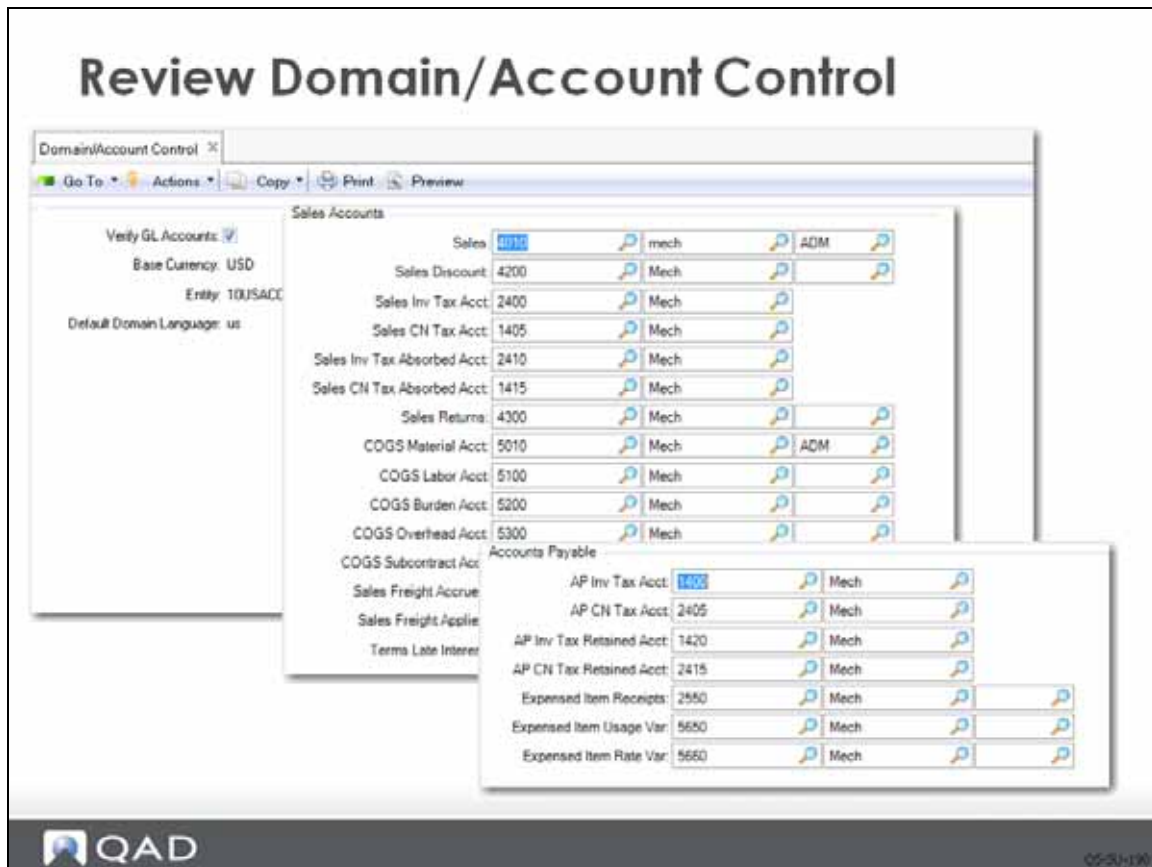
Last Filing: ☐

QAD CS-30-1180

The headquarters for QMI entity 10USACO is located in New Jersey; near the corporate New York office. The entity address has been set up as a business relation.

All addresses for entities, customers, suppliers, and employees are first set up as business relations.

Review Domain/Account Control



Domain/Account Control (36.1) is used to set up default account, sub-account, and cost center codes that are required by the system. Setting them up here ensures that all transactions in the system are booked to valid GL accounts when more specific accounts are not found.

The first frame in Domain/Account Control shows that GL accounts are verified, the base currency for the domain is USD, the default entity is 10USACO, and that the default language is US.

Default accounts are organized by type; Sales and AP accounts are shown in this image.

The next slide show the remaining default accounts organized by the type of account.

Department, Product Line Variances Service Accounts

Department, Product Line, Variances, Service

Department

Cost of Production:	5770
Labor:	5120
Burden:	5220

Product Line

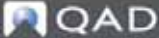
Inventory Acct:	1550	Mech
PO Receipts Acct:	2511	

Variances

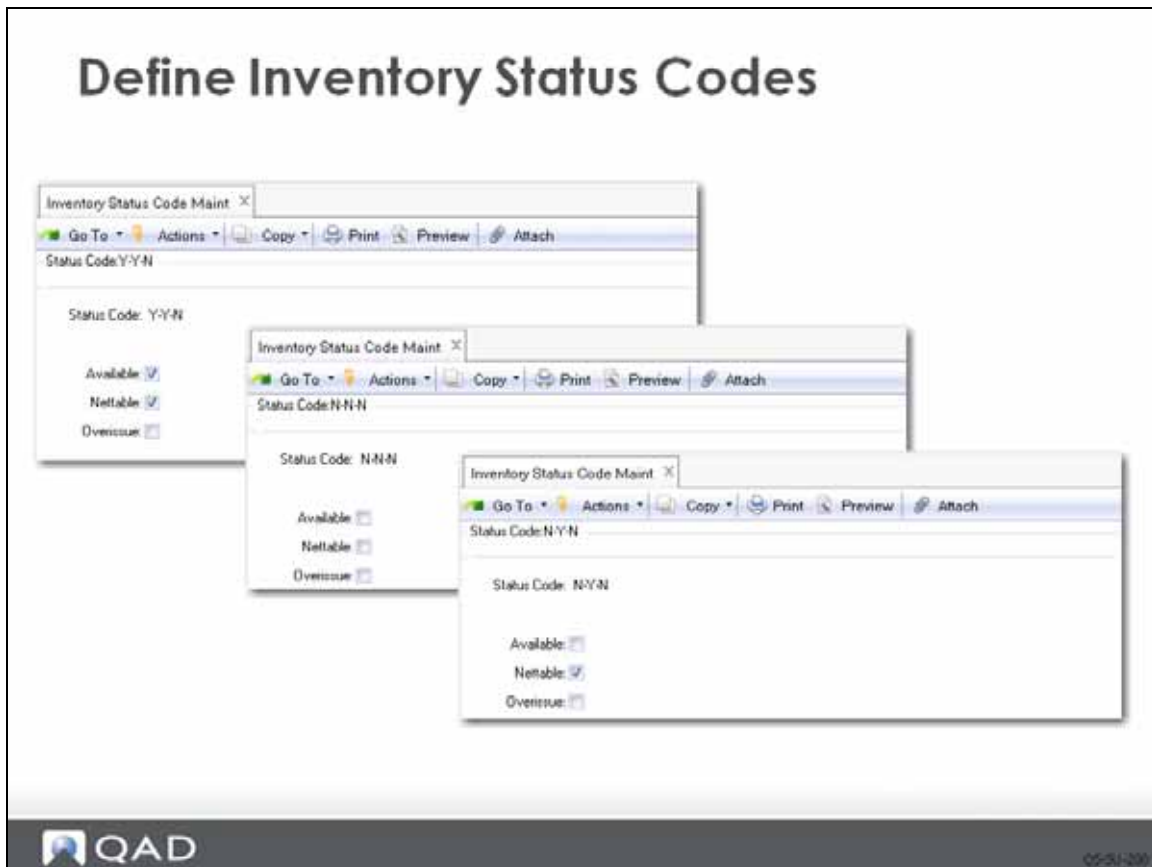
Purchases:	66	PO Price Var Acct:	7810	Mech	ADM
Overhead Appl Acct:	53	AP Usage Variance:	6720	Mech	
Scrap:	60	AP Rate Variance:	6740	Mech	
Work in Process:	15	Method Variance Acct:	6800	Mech	
Inv Discrpt Acct:	55	Transfer Variance:	6820	Mech	
Cost Revalue Acct:	61	Material Usage Var:	5040	Mech	
Floor Stock Account:	10	Material Rate Var:	5050	Mech	
		Labor Usage Variance Acct:	5140	Mech	mfg
		Labor Rate Variance Acct:	5150	Mech	mfg
		Burden Usage Variance:	5160	Mech	mfg
		Burden Rate Variance:			
		Subcontract Usage Variance:			
		Subcontract Rate:			
		Mix Variance:			

Service Accounts

Service Labor:	5900	Mech
Service Overhead:	5905	Mech
Service Expense:	5910	Mech
Expense Due:	5915	Mech
Service Returns:	5920	Mech
Deferred Revenue:	2450	Mech
Accrued Revenue:	1450	Mech


CS-30-181

Define Inventory Status Codes



Before QMI can enter a site or items, it needs to define at least one inventory status code. These codes have a significant effect on how inventory is managed.

In Inventory Status Code Maintenance (1.1.1), QMI can indicate if the inventory is available to be allocated to sales orders and/or work orders, nettable for MRP planning purposes, and whether overissues (items can be issued even if the current balance is insufficient to meet the demand) are permitted from the locations identified with this code.

QMI defines all its status codes to not allow overissues by leaving the Overissue box unchecked. This prevents inventory transactions that would result in a negative balance.

- QMI used code Y-Y-N for items that are OK to use. They are available to issue and nettable for MRP planning purposes.
- QMI uses the code N-N-N for items that are known to be unusable. They cannot be issued or used for planning.
- QMI uses the code N-Y-N for items that require review upon receipt or that are suspected of being unusable. These items are normally sent to an inspection area for disposition. They cannot be issued but can be used for planning.

Note It is highly recommended to not use blank code fields.

Set Up Site

The screenshot shows the 'Set Up Site' window in QAD software. The window title is 'Site Maintenance'. It displays the configuration for Site: 10-100, which is assigned to Domain: 10USA and Entity: 10USACO. The fields are as follows:

- Site: 10-100
- Domain: 10USA
- Entity: 10USACO
- Description: Ultrasound Mlg Site
- Default Inventory Status: Y-Y-N
- Automatic Locations: ☒
- Inspection Location: 030
- EMT Supplier: 10-300
- External Supplier: ☐
- Transfer Variance Acct: 6820, MECH
- Transfer Ownership: ☒
- PD Transit Location:

The QAD logo is visible in the bottom left corner, and the version number 05-31-210 is in the bottom right corner.

QMI has multiple sites that can be viewed in Site Maintenance (1.1.13). This example focuses on site 10-100, assigned to domain 10USA and entity 10USACO. Site 10-100 has a default inventory status code of Y-Y-N, which was defined earlier. This code will default to inventory locations created in this site.

Automatic locations is left unchecked, which requires that new inventory locations be set up in Location Maintenance prior to use. If the field is checked, then inventory transactions can be processed for locations that do not exist, and the system creates them as part of the transaction. Some companies like this because it lets users create new locations as required. The new locations use all defaults from the site record. However, since the input is not verified, locations can be created that are in effect typographical errors.

To calculate taxes, you must set up a corresponding address code for each site in Company Address Maintenance (2.12). On taxable transactions, the system uses the site address (from the business relation specified in Company Address Maintenance) to select the correct line-item tax environment. On purchase orders, the system retrieves the ship-to address code from the line item site code.

Set Up Inventory Locations

Set Up Inventory Locations

Location Maintenance (Background Form - Location 010)

- Site: 10-100
- Location: 010
- Description: Finished Goods
- Inventory Status: Y-Y-N
- Project:
- Date Created: 1/1/2008
- Permanent: ☒
- Type: SR
- Single Item: ☐
- Single Lot/Reference: ☐
- Capacity: 0.0
- Reserved Locations: ☐
- Transfer Ownership: ☒
- Physical Address:

Location Maintenance (Foreground Form - Location 020)

- Site: 10-100
- Location: 020
- Description: Components
- Inventory Status: Y-Y-N
- Project:
- Date Created: 1/1/2008
- Permanent: ☐
- Type: SR
- Single Item: ☐
- Single Lot/Reference: ☐
- Capacity: 0.0
- Reserved Locations: ☐
- Transfer Ownership: ☒
- Physical Address:

QAD

QMI has set up three locations in Location Maintenance (1.1.18) to subdivide site 10-100, two shown in this slide and one in the following:

- 010 is for storage of finished goods, The Finished Goods location uses the default inventory status code Y-Y-N from the site record.
- 020 is for components. Its inventory status is also Y-Y-N.

Check the Permanent field to retain inventory detail records even when the quantity on hand is zero.

Location Maintenance

An additional location is set up called Inspection to be used for material that is of questionable quality and requires further evaluation. This location has the status code N-Y-N.

Define a location for every place you store inventory items. If you store pallets or drums of raw material in the parking lot, the parking lot needs to be a location. If the supervisor keeps a safety stock of small items in a desk drawer, the drawer needs to be a location.

Additional Notes

You must associate an inventory status code with every location. By default, this is the inventory status from the site record.

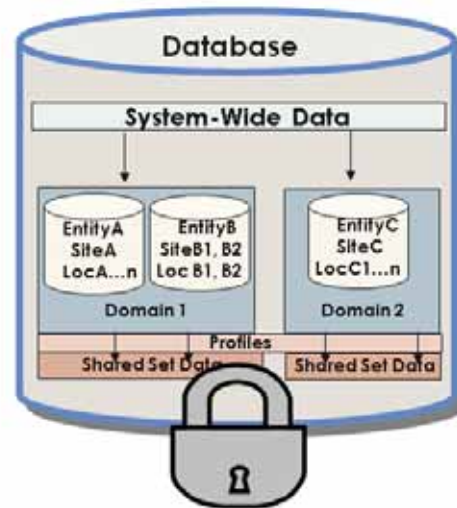
In this course, the other location attributes are left blank, but their usefulness should be evident.

- The Type code lets you indicate unique storage locations such as tanks, silos, and refrigerators. The item master can specify a location type for an item. During inventory transaction, the system ensures that the type of the receiving location matches the type of the item.
- Checking Single Item prevents the user from adding a different item to a location that already has an item in it. For example you cannot add olive oil to a tank that currently has vinegar in it.
- Checking Single Lot/Reference prevents adding a different lot number of an item to a location that already has a lot of material in it. For example you cannot add lot 3 olive oil to a tank that already has lot 2 olive oil in it.

Review

Review: Foundation Structure

- System-Wide Data
- Shared Set Data
- Domain Data
- Entity Data
- Sites and Locations
- Security Control



Q5-91-230

Database. To summarize, a database is a physical set of tables. All users who have access to that database have access to the data in those tables (subject to security restrictions).

Domain. A domain is a template for several entities that share the same base currency, general ledger chart of accounts, and calendar. A domain requires at least one entity.

Entity. An entity is a financial reporting concept. Balance sheets and income statements are produced by entity. A domain can have multiple entities. Consolidated reports can be focused by selecting a range of entities to report. At least one entity is required.

Site. A site is an inventory planning and control concept. All inventory is stored by site, and all planning is done by site. Each site belongs to one and only one entity, but each entity can have more than one site. Almost all reports produced in the system are selected and sorted by site. To manage inventory, at least one site is required.

Location. A site can have multiple inventory locations used to physically identify and control individual items in stock. Inventory reports normally are selected and sorted by location. To manage inventory, at least one location is required.

Exercise 2-1: Define Site and Location

In this exercise, you will set up a brand new site. In later exercises you will use a site prepared for you. Before beginning, you need to verify a setting.

- 1 Go to Requisition Control (5.2.1.24) and make sure that Using GRS is NOT checked.
- 2 Use Inventory Status Code Maintenance (1.1.1) to add a new status code.

Field	Data
Status Code	Y-Y-N; click Next
Available	Yes (checked)
Nettable	Yes (checked)
Overissue	No (unchecked); click Next

Click Next (or press Enter) until you come to the Restricted Transaction field, then click Back to complete the update transaction.

- 3 Use Site Maintenance (1.1.13) to enter a record for your manufacturing/distribution site.

Field	Data
Site Code	10-101; click Next
Description	Ultrasound Mfg Site
Domain	10USA
Entity	10USACO
Default Inventory Status	Y-Y-N

Click Next 3 times, then Back.

Set Up Inventory Locations

Add three inventory recolonizations Goods, Components, and Pending Inspections site 10-101. The inventory status code of Y-Y-N should default from the site code.

- 4 Use Location Maintenance (1.1.18) to add three inventory locations with the attributes shown in the table below.

Site	Location Code	Description	Inventory Status
10-101	010	Finished Goods Inventory	Y-Y-N
10-101	020	Components	Y-Y-N
10-101	030	Pending Inspection	Y-Y-N

You can accept defaults for all other values.

Enterprise Financials

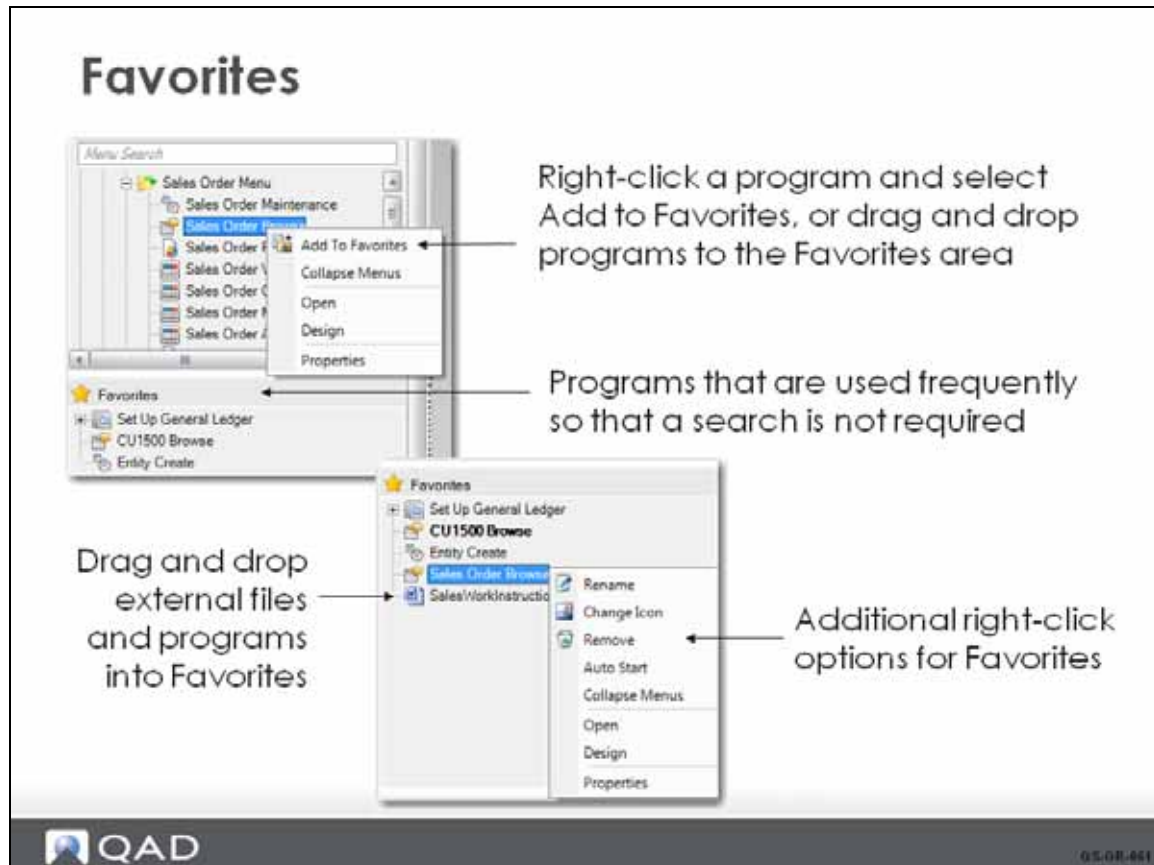
This chapter is an overview of the scope of Enterprise Financials, with a brief introduction of each module. It concludes with an introduction of key financial concepts, especially those required to understand how operational activities interact with Enterprise Financials.

Overview of Enterprise Financials

Components of QAD Enterprise Financials

Enterprise Financial Concepts

Overview of Enterprise Financials



In QAD EE, Enterprise Financials is closely linked with the foundation of the system, which supports the powerful segregation of duties that is a requirement of many auditing systems.

Chapter Topics

This chapter covers the following topics:

- Financial Components
- Financial Concepts
 - GL Accounts
 - GL Analytical Coding Segments
 - Accounting Layers
 - Daybooks
 - GL Transaction Flow
 - Currencies

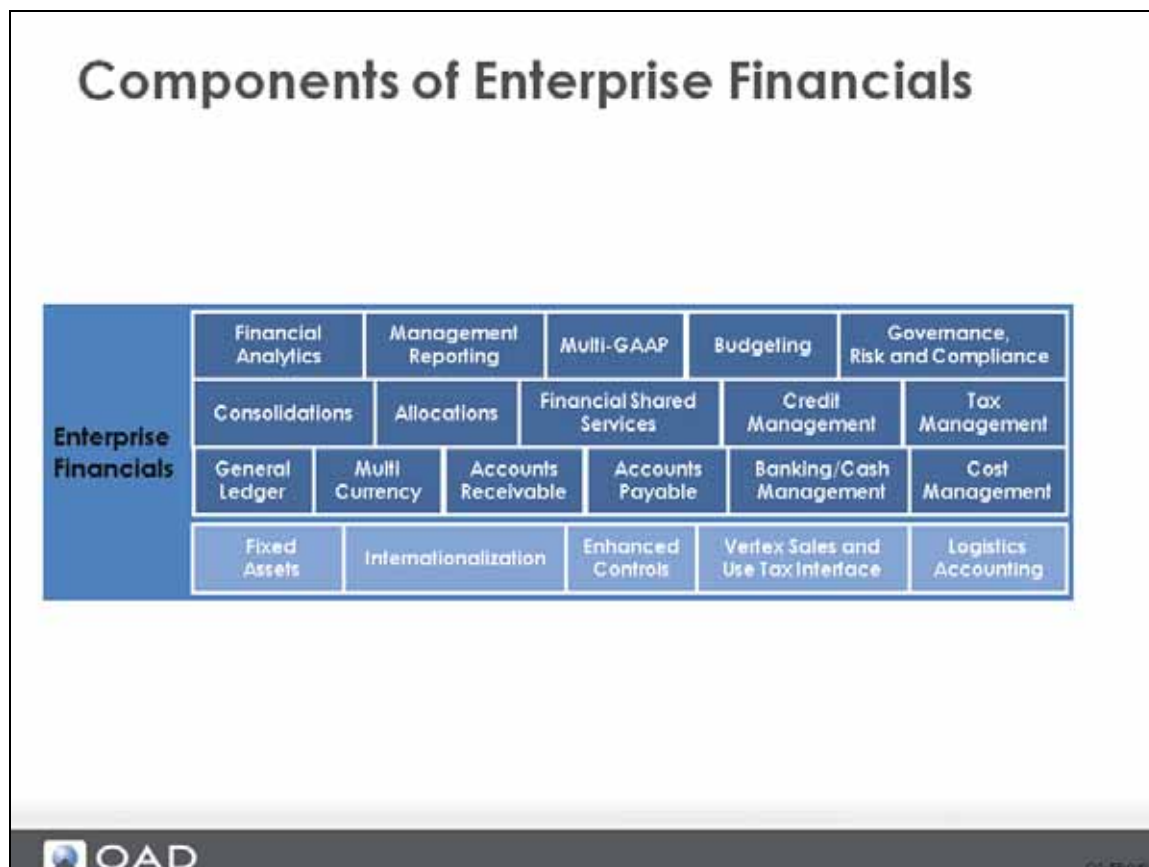
Learning Objectives

This chapter introduces the components of QAD Enterprise Financials and briefly describes some concepts that will help you with later exercises. The quick start course only highlights aspects of Enterprise Financials that interact with the other activities presented in the course, such as the AR aspect of sales orders, the AP aspect of purchase orders, and costing aspect of product definition.

When you finish this chapter, you should be able to:

- Describe the various components of Enterprise Financials.
- Understand the importance of accounting layers.
- Describe the role of daybooks in generating document numbers.
- Understand how manufacturing operations affect the General Ledger.
- Understand how the system manages multiple currencies.

Components of QAD Enterprise Financials



Enterprise Financials includes a broad range of components that address all of the financial and accounting requirements of both simple and complex businesses. It supports complex regulatory requirements, strict segregation of duties, and the controls required by larger, more complex enterprises. It includes sophisticated budget modeling capabilities, advanced reporting, multiple reporting layers that simplify complex multi-GAAP reporting requirements, and enhanced audit capabilities.

Details about Enterprise Financials can be found in other focused training classes:

- *Financials Overview*
- *Financials Fundamentals*
- *Advanced Financials*
- *Financials Troubleshooting*

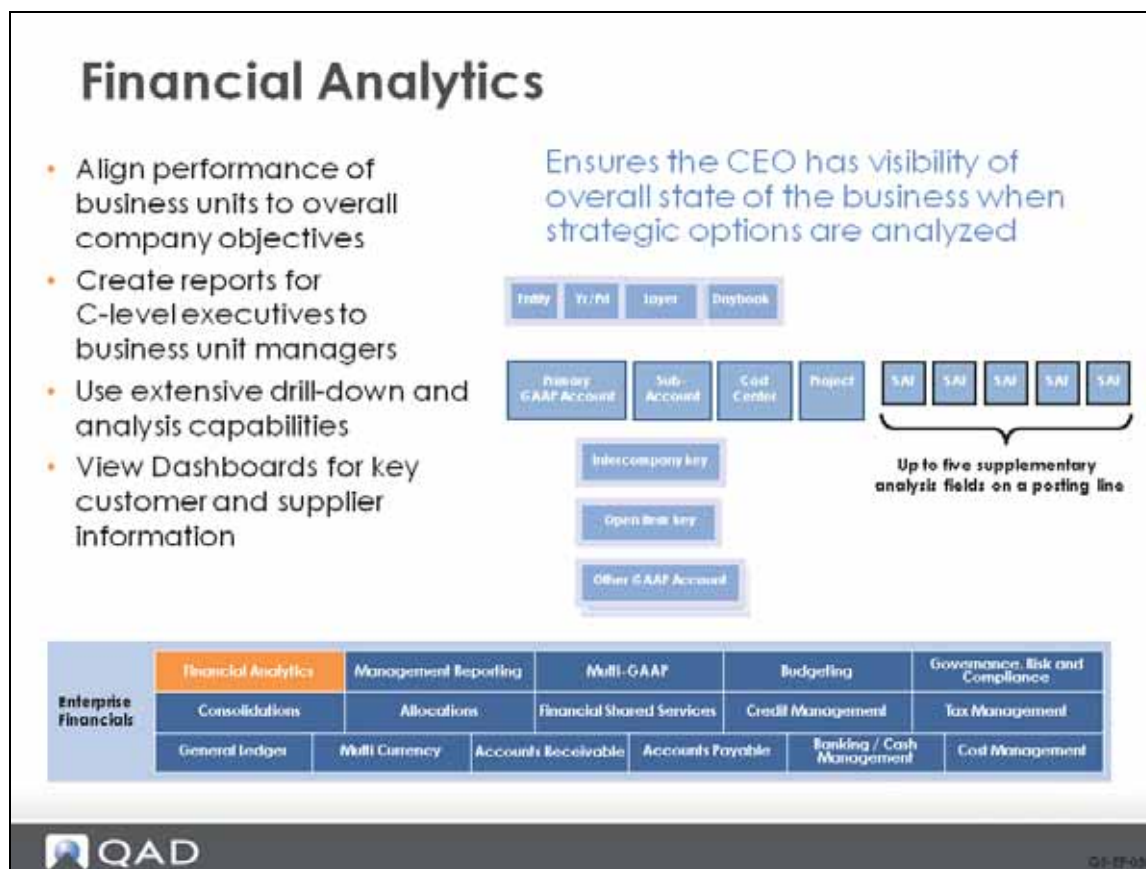
This course only highlights aspects of Financials that interact with the other activities presented in the course, such as the AR aspect of sales orders, the AP aspect of purchase orders, and costing aspect of product definition.

This section of the course briefly reviews each of the standard components of Enterprise Financials. It does not cover the optional components (shown in lighter blue in the slide).

- *Fixed Assets*: Ensures accurate management and tracking of fixed assets throughout their life cycle; from asset acquisition through depreciation, to retirement, transfer or disposal.

- *Enhanced Controls*: Provides complete audit trail tracking of changes, helps with FDA Part 11 (medical) and Sarbanes-Oxley compliance, and supports electronic signatures.
- *Vertex Sales and Use Tax Interface*. Ensures accurate tax rate data with automatic updates for US and Canada, and reduces sales and use tax audit exposure and liability.
- *Logistics Accounting*: Improves visibility and control of costs and payments for transportation. It ensure accurate payments to carriers by matching freight accruals with invoices and allows deferred costs such as freight and shipping charges to be accommodated in standard costs and variances to be tracked.
- *Internationalization*: Supports features required by regional and national reporting requirement.

Financial Analytics



Financial Analytics provide powerful financial analysis to determine the overall state of the business as strategic options are reviewed. It ensures that the C-level executive to the line-of-business managers have the best information to confidently make critical business decisions.

Financial Analytics enable the analysis of the business, development of business plans and budgets, and performance tracking. As companies grow and business opportunities present themselves, Financial Analytics ensure the best analysis to move the company in the right direction.

Management Reporting

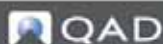
Management Reporting

- Use an extensive set of reports
- View graphical output that is easy to customize with report variants
- Generate reports in company statutory currency and company chart of accounts for comparison of business operations
- Easily customize and select data based on spreadsheet style browses

Simplified board reporting and decision making for the CFO with flexible, graphical reporting



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
	Consolidations	Allocations	Financial Shared Services	Credit Management	Tax Management
	General Ledger	Multi Currency	Accounts Receivable	Accounts Payable	Banking / Cash Management



QAD

Enterprise Financials includes an extensive set of reports and reporting options that let you analyze general ledger transactions, supplier and customer details and activity, banking and cash transactions, and other specialized areas.

Enterprise Financials offers a robust reporting framework. The extensive reporting features, in conjunction with browses and views that are easily exported to Excel, cover all business requirements and provide maximum flexibility and operational efficiency for users.

Multi-GAAP

Multi-GAAP

- Use accounting layers to support multi-GAAP reporting
- Set up multiple charts of accounts (COA) for business or legal reporting purposes
- Combine accounting layers in reporting
- Simulate GAAP transformation transactions
- Use allocations and supplementary analysis fields to support IFRS segment reporting

Accounting layers support multi-GAAP reporting from a single set of books

Layer Code	Description	
IFRS	IFRS adjustments	Management
USGAAP	USGAAP adjustments	Management
Official	Official	Official
Trans-Approve	Approval layer	Transient

Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
	Consolidations	Allocations	Financial Shared Services	Credit Management	Tax Management
	General Ledger	Multi Currency	Accounts Receivable	Accounts Payable	Banking / Cash Management
					Cost Management

QAD

Accounting layers provide different ways of segregating transactions within a single GL account to satisfy reporting requirements. The posting of transactions is controlled by associating daybook types with one of the three system-defined accounting layers: official, management, and transient, or with additional user-defined layers. Transient layers can be used for simulation and approval processes; management layers can be used for multi-GAAP valuation of balances, such as comparisons between International Financial Reporting Standards (IFRS) and local GAAPs.

In addition to the basic components of the general ledger—account, sub-account, cost center, and project—you can define supplementary fields (SAFs) to fine-tune transactions and reporting. These provide a basis for powerful and flexible financial reporting and analysis.

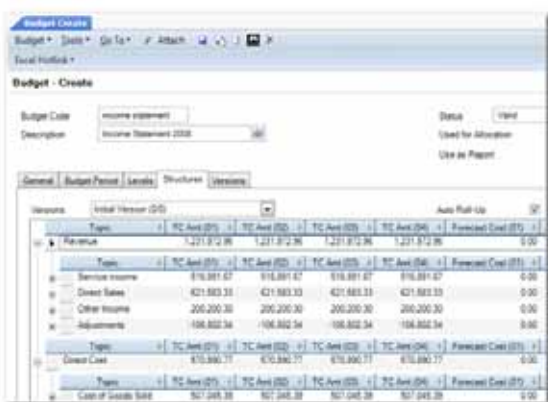
See “Allocations” on page 96 for information on allocations.

Budgeting

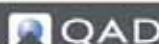
Budgeting

- Maintain multiple budget versions
- Define budget periods different from accounting periods
- Record forecasts
- Check budgets on-line and view on-line warnings
- Import and update budget data from Microsoft Excel
- Combine multi-level budgets and actuals from multiple companies

Quick, flexible, collaborative budgeting process for Finance Manager



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
	Consolidations	Allocations	Financial Shared Services	Credit Management	Tax Management
	General Ledger	Multi-Currency	Accounts Receivable	Accounts Payable	Banking / Cash Management


QAD

Enterprise Financials supports budgeting for all elements of the chart of accounts: accounts, sub-accounts, cost centers, projects, and supplementary analysis fields. Budget figures can be prepared in Excel or in external systems and then uploaded to the budget structure.

Budget periods can be set up to differ from GL periods. This lets you produce non-period budgeting, for example, in the form of quarterly budgets.

Within the same period and budget structure, multiple versions of a budget can be created and reported against.

Governance, Risk, and Compliance

Governance, Risk, and Compliance

Helps companies stay compliant

- Minimize cost of compliance to government regulations such as Sarbanes-Oxley, IFRS, 21 CFR Part 11
- Use extensive automated controls
- Implement role-based security down to the activity level
- Enforce segregation of duties with associated reporting
- Implement sophisticated access control with forced password complexity, aging, and intrusion detection



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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					Cost Management

QAD

Financials combines local legislative and business processes with cost accounting and management accounting practices specific to an organization's needs, while providing support that enables the organization to comply with Sarbanes-Oxley, International Financial Reporting Standards (IFRS), Code of Federal Regulations (CFR), and other governance requirements.

Consolidations

Consolidations

- Implement proportional consolidation when a subsidiary entity is part of multiple consolidation entities
- Set up hierarchies of consolidation entities
- Automatically track intercompany transactions to support elimination
- Consolidate separately by accounting layer
- Simulate consolidation

Provides a quick and complete consolidation process for the Finance Manager



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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QAD					

GL consolidation lets you combine the financial records for two or more entities within a single database into one consolidated set of financial statements. Proportional consolidation lets you consolidate partly-owned subsidiaries based on the percentage of the subsidiary owned by the parent entity. You can perform multiple consolidations within the same organization.

The consolidation process consists of determining the entities with accounts you want to consolidate, and setting up a consolidation entity in which to store the consolidation data. All accounts, sub-accounts, cost centers, and projects in the source entities can be mapped to the corresponding consolidation accounts in the consolidation entity using COA cross-references.

Allocations

Allocations

- Distribute costs and revenues to appropriate accounts, sub-accounts, cost centers and projects
- Support recursive allocations (reuse previous run)
- Validate results of an allocation run before final posting
- Use different allocation methods, including proportional based on usage/activity

The power of control



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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					Cost Management


QAD-116

Allocation codes allow transaction amounts to be split based on rules you set up. The system supports two types of allocations:

- Operational allocation codes are used when operational transactions, such as sales and purchasing, are posted.
- More complex allocations can be set up for use in GL transactions within financial modules. These allocations can be linked together and executed in batch.

Financial Shared Services

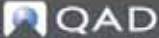
Financial Shared Services

- Share chart of accounts and other key master data
- Share customers and suppliers across business units
- Use workflow to move documents between business entities
- Use document links to store electronic versions of paper documents such as invoices
- Manage cross-company AR and AP payments

Economies of scale save back-office costs and support growth



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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					Cost Management


QAD 12.1

Financial Shared Services can be as simple as sharing account structures and accounting activities such as accounts payables and receivables processing; or as complex as standardizing and rationalizing the customer and supplier base across regions.

Any sized company can benefit from Financial Shared Services:

- Cut back-office costs and gain economy of scale in AR and AP
- Generate company-wide savings through better supplier relationships
- Decrease risk and maximize cash flow by maintaining a central view of customer balances and netting payables against receivables
- Save time by ensuring consistency in financial reporting

Credit Management

Credit Management

- Check credit based on percentage of turnover or fixed limit
- Specify maximum days overdue
- Optionally overrule the system
- Share credit limit of shared customers across companies
- Configure warning levels
- Use Dashboard for customer activity and credit information
- Set up multi-level reminder letters

Extensive, flexible credit check ensures visibility of credit issues for the Finance Manager



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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QAD					

Credit terms are used to calculate invoice due dates and to apply settlement discounts on early payments. You can also use credit terms to define staged payments, which allow multiple payments to be made in stages based on invoice percentages.

The Customer Activity Dashboard (27.18.1) lets you display credit information for a customer. The Supplier Activity Dashboard (28.18.1) lets you use grid features to group and sort information by key credit-related details such as the number of weeks overdue, or see all invoices due in a certain week.

You can use the Reminder Letter report (27.17.10) to print various levels of reminder letter that list open items for a customer and include text that depends on the reminder level of the invoice.

Tax Management

Tax Management

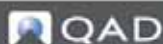
- Manage global tax treatment for multiple tax environments in the same database
- Create unlimited number of tax types and rates (VAT, luxury, capped, non-recoverable)
- Consider:
 - ✓ Geography
 - ✓ Item status (taxable, non-taxable)
 - ✓ Customer/Supplier status
 - ✓ Effective date
- Utilize flexible reporting

Serves the different sales, use, and VAT taxes globally

Ensures correct tax registrations and smooth tax reporting



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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Q1-14

Tax Management offers precise tax calculations and flexible setup for calculating taxes for multiple countries. You can set up an unlimited number of taxes and rates—each associated with customers, suppliers, or items. You can define when taxes are calculated, the formula used to calculate them, and the amount subject to tax.

You can also set up reports to accommodate the legal reporting requirements of various jurisdictions.

General Ledger

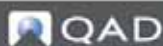
General Ledger

- Multiple entities, currencies, layers
- Recurring/reversing entries
- Extensive drill-down capability
- Flexible account structure
- Up to 5 optional supplementary analysis fields per account
- Posting templates
- Multi-stage period closing process
- Separate period for year-end corrections
- Two-way Excel Integration for journal entries and account setup

Ensures all financial data is quickly accessible for drill down and corporate reporting



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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QAD-11-11

QAD Financials uses standard, industry-recognized components to implement a chart of accounts (COA). The strength of the application is in its flexibility—you can configure the model to generate many different types of accounting information.

The combinations of COA elements that are considered valid are defined through a *COA mask*. These combinations are validated when transactions are posted, preventing any errors.

In addition to the basic components of the general ledger—account, sub-account, cost center, and project—you can define supplementary analysis fields (SAFs) to fine-tune transactions and reporting. These provide the basis for powerful and flexible financial reporting and analysis.

Accounting layers provide different ways of segregating transactions within a single GL account to satisfy reporting requirements. The posting of transactions is controlled by associating daybook types with one of the three system-defined accounting layers: official, management, and transient, or with additional user defined layers.

Once you have set up your chart of accounts and other general ledger features, you can use them to manage transactions in the system. Monthly closing and reporting processes provide a broad range of reports with which to check the completeness and consistency of data before proceeding with formal reporting.

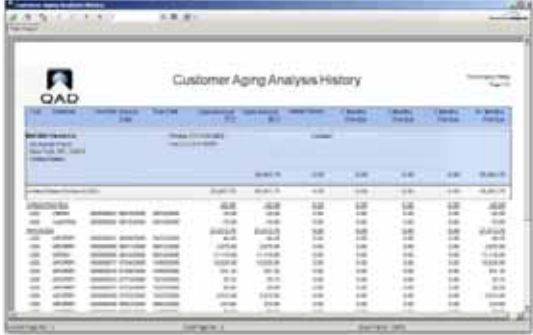
You can manage year-end processing and consolidation with General Ledger functions. A wide-range of analytical and structural reports lets you view accounting data in many different formats.

Accounts Receivable

Accounts Receivable

- Generate flexible aging reports
- Implement self billing
- Use retro-billing for price changes after items are shipped and invoiced (Automotive)
- Share customers and credit limits among business units
- Automatically net invoices and credit notes and net customer/supplier invoices
- Create write-offs and open item adjustments
- Generate automatic reminder letters

Full control of the total process between billing and collecting



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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					Cost Management


QAD® 17.0

The Accounts Receivable module covers all accounting processes related to customer invoices and payments. This module also manages customer definition, credit terms, credit limits, finance charges, aging analysis, and reminder letters.

Most customer invoices are generated from sales transactions in the Sales Orders/Invoices module. When customer invoices are created from confirmed shipments or deliveries, the system creates customer invoices using Invoice Post and Print. You then process the invoice using the AR functions. You collect receivables by tracking customer activity and identifying and resolving overdue invoices. The sales invoices and the payments received against them are recorded in the Accounts Receivable ledger.

Invoice handling supports a complete follow-up procedure for payments. The system manages payments in the form of checks, direct debits, drafts, promissory notes, and summary statements. After recording the payment, you manage it through various statuses.

Direct debits and electronic drafts can be automatically formatted in electronic files based on bank requirements.

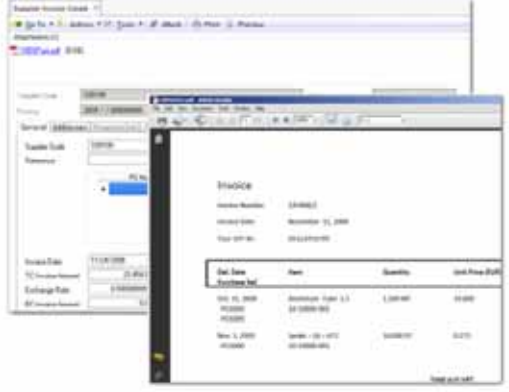
Reports on open items, transactions, history, and summary are supported with extensive selection criteria. Aging lists can be drawn per customer, group, or sub-account.

Accounts Payable

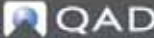
Accounts Payable

- Review variances based on 3-way match: PO, receipt, and Invoice
- Use flexible matching and approval
- Automate supplier invoices with scanning, document management, and workflow
- Use Evaluated Receipts Settlement (ERS) to avoid entering invoices
- Net customer/supplier invoices
- Create write-offs and open item adjustments
- Use Supplier Activity Dashboard

Streamline the process from PO to supplier payment



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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QAD® 10.1.18.1

The Accounts Payable module covers all accounting processes that relate to suppliers. This module manages supplier definition and all other criteria necessary for supplier management, such as credit terms, aging analysis, locking, and payment procedures.

The system manages payments in the form of checks, drafts, promissory notes, transfers, electronic transfers, and summary statements. Electronic transfers can be automatically formatted based on bank requirements.

Invoice status codes let you manage the stages of invoice processing, and are primarily used with suppliers. Using invoice status codes you can manage the approval, allocation status, and payment of invoices for suppliers, and identify contested invoices. You approve supplier invoices and release them for payment by modifying the status code applied to the invoice. You can also control when and how postings occur by specifying an code with a different allocation status.

You can generate reports on open items, transactions, history, and summary. Aging lists can be generated for supplier, group, or sub-account. You can easily select held invoices by supplier or approval status and due date, providing complete control of the invoice approval process in your organization.

The Supplier Activity Dashboard (28.18.1) offers a comprehensive overview of all activity related to a single supplier, in a single entity or over multiple entities. The drill-down generates read-only information that includes invoices, credit notes, and payments. You can select open or closed payments and display individual payment details, as well as total amounts for each selection you make. You can filter by currency.

Banking/Cash Management

Banking/Cash Management

- Use powerful cash flow projection reports
- Import electronic bank files
- Process US lockbox
- Automate payments, including drafts and direct debit
- Use QAD Internationalization to support local payment formats
- Design flexible payment formats using EDI eCommerce
- Handle petty cash
- Validate local bank account formats including IBAN

Automatic monitoring of cash flows to quickly make key decisions based on the cash position of the business



Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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QAD 11.0

To process banking transactions, you set up your own bank accounts—as well as customer and supplier accounts—as GL accounts of type Bank. You can then add details to the account to manage the banking transactions. A business relation contains the bank address, contact, and tax details.

Banking features let you process banking transactions and allocations to open items or GL accounts. This process also supports discounts, prepayments, and multiple currencies. Realized currency differences are automatically analyzed, and each bank account can be linked to a separate daybook.

The import of bank statements is automated. Automation also includes customer invoice collection, supplier payment processing, and allocation of miscellaneous banking transactions. The module supports a large variety of global banking standards.

Banking features let you define payment formats for delivery of electronic files to your bank.

Banking supports full coverage on the following transaction types:

- Accounts receivable bank transactions
- Accounts payable bank transactions
- Miscellaneous bank transactions

Cash management reports present information on open items, bank and cash accounts, loans and deposits, and accruals.

Cost Management

Cost Management

- Supplement standard costing model to allow actual cost analysis
- Use powerful tools to model and implement cost changes to standard costs
- Set up cost structures as required for the corporation or make them unique by plant
- Utilize unlimited cost sets, multiple costing methods, and cost elements
- Implement periodic valuation using average or FIFO

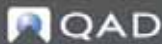
Accurately cost parts and track variances to standards based on flexible cost components

ITEM: 30-10000-001 GO_TO ACTIONS

Item Number: 30-10000-001 Description: Wheel - 26 - Narrow 2
Unit of Measure: EA High Tension Extra Light

Totals:	8.00	41.08	50.08	10/26/07
SE Cost Data (SE Cost Source: 578-A / 76.5 / 500 / Manual)				
Element	This Level	Lower Level	Total	Prs. Category
Material	0.00	27.00	27.00	07 Material
Labor	8.00	0.00	8.00	07 Labor
Burden	1.70	0.00	1.70	07 Burden
Overhead	0.00	3.78	3.78	07 Overhead
Subtotal	9.70	0.00	9.70	07 Subtotal

Enterprise Financials	Financial Analytics	Management Reporting	Multi-GAAP	Budgeting	Governance, Risk and Compliance
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					Cost Management



Q3-FY206

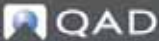
Costing covers how costs are applied and tracked. It provides information for setting up and using costing features with the Cost Management module, as well as using standard inventory functions.

Enterprise Financial Concepts



Financial Concepts

1. General Ledger Setup
 - GL Account Elements
 - Supplementary Analysis Codes
 - Daybooks
 - Accounting Layers
2. General Ledger Transactions
3. Multiple Currencies

 QAD QSF201

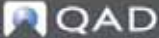
The next few slides cover basic financial concepts that will help you understand the financial effects of the operational transactions discussed in the remaining sections of the training.

- 1 The financial effect of manufacturing operations depends on the setup of the General Ledger. Important concepts to understand include:
 - GL account elements
 - Supplementary analysis codes (SAF)
 - Accounting layers
 - Daybooks
- 2 Manufacturing operations create transactions that must be posted to the GL.
- 3 All GL transactions can be maintained in multiple currencies.

GL Accounts

GL Accounts

- GL Type
 - Standard
 - Bank
 - Customer/Supplier Control
 - System (rounding differences, exchange gains/losses)
- Posting Control
 - Debit/Credit
 - Balance Sheet/Profit and Loss
 - Intercompany
 - Quantities
- Analysis
 - Cost Center, SAF, Sub-Accounts (default values)


GL-17-316

Enterprise Financials uses standard, industry-recognized components to implement a chart of accounts (COA) with flexibility to accommodate many different types of accounting needs.

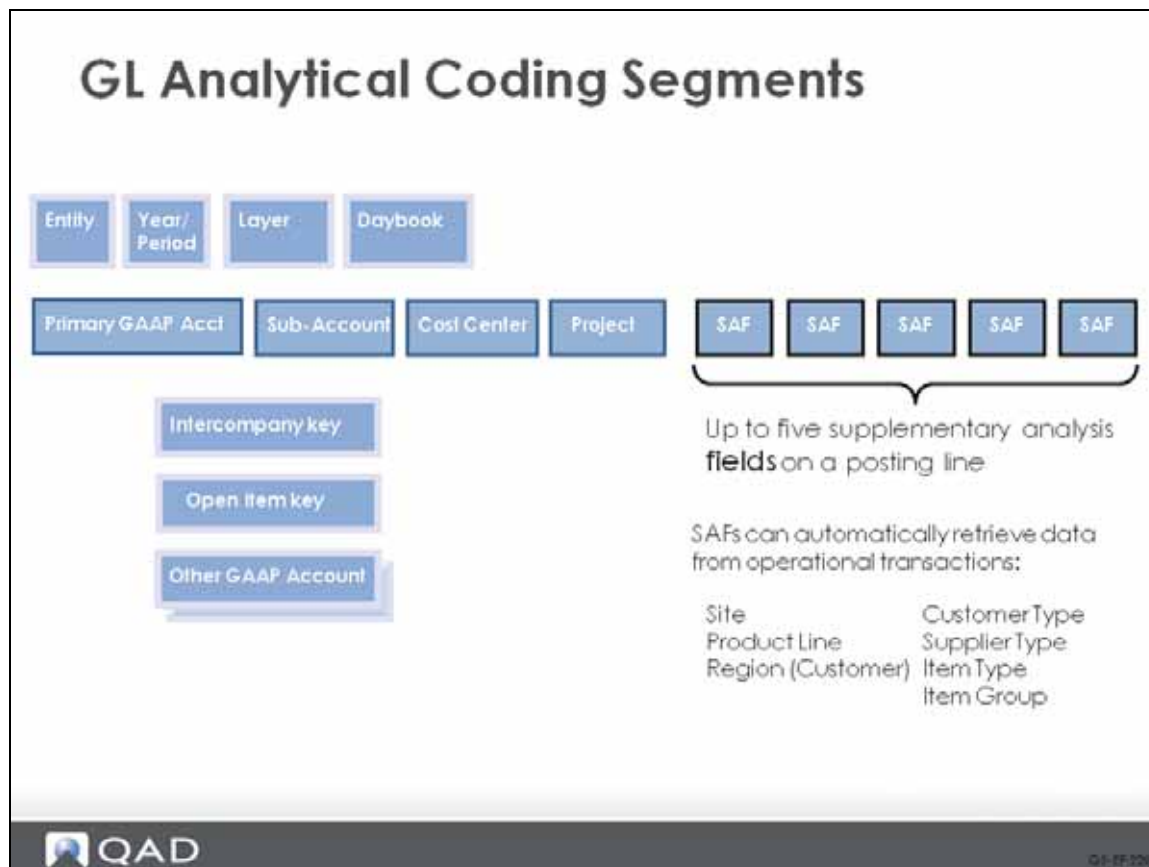
- Extensive analysis capabilities with sub-accounts, cost centers, projects, and supplementary analysis fields (SAFs)

GL Account. GL accounts track financial transactions, manage account balances, and are used to produce financial statements and comparisons. GL reporting is detailed or summarized and includes information on one or a range of entities. Banks are defined as a special type of GL account with additional banking attributes.

Sub-Account, Cost Center, and Project. As a further level of detail within an account, sub-accounts, cost centers, and projects can be defined. Sub-accounts can be linked to customers and suppliers and their individual transactions.

- Several GL types with added functionality for each
- Posting control, where some of the attributes are mandatory. GL accounts, sub-accounts, cost centers, and projects combinations can be validated using a GL mask. The GL mask validates account element combinations when transactions are posted, preventing any posting errors. these components can be used for additional analytical reporting on transactions.

GL Analytical Coding Segments



You can optionally define up to five supplementary analysis fields for more detailed analysis. This lets you analyze a single account in many different ways by filtering based on the SAF codes included in the postings to the account. A carefully planned set of SAF structures avoids the need to set up separate COA elements for individual reporting.

SAF analysis can be applied to all standard GL accounts except for bank, closing, and tax accounts. SAF analysis is not supported for system accounts, except for Purchase Order Receipts. You can apply SAF analysis to both revenue and expenses, and you would normally create a separate SAF structure for each of these types of transaction.

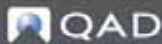
Seven SAF concepts are predefined and provided with the system. The predefined SAF concepts are designed to interact with operational transactions, and capture key analysis details used to report the GL effects of operations, such as sales by region, sales to OEM customers, or work orders by item type.

Accounting Layers

Three Accounting Layers

Layers let you segregate transactions within an account to satisfy reporting requirements:

1. **Official Layer** (primary, required)
 - For daily transactions and statutory reporting
 - Only one official layer
2. **Management Layers** (secondary, optional)
 - Additional transactions for management purposes
 - To translate to a different set of accounting standards, GAAP adjustments, IFRS
3. **Transient Layers** (optional)
 - Create temporary postings
 - Useful for simulations or prior to management approval



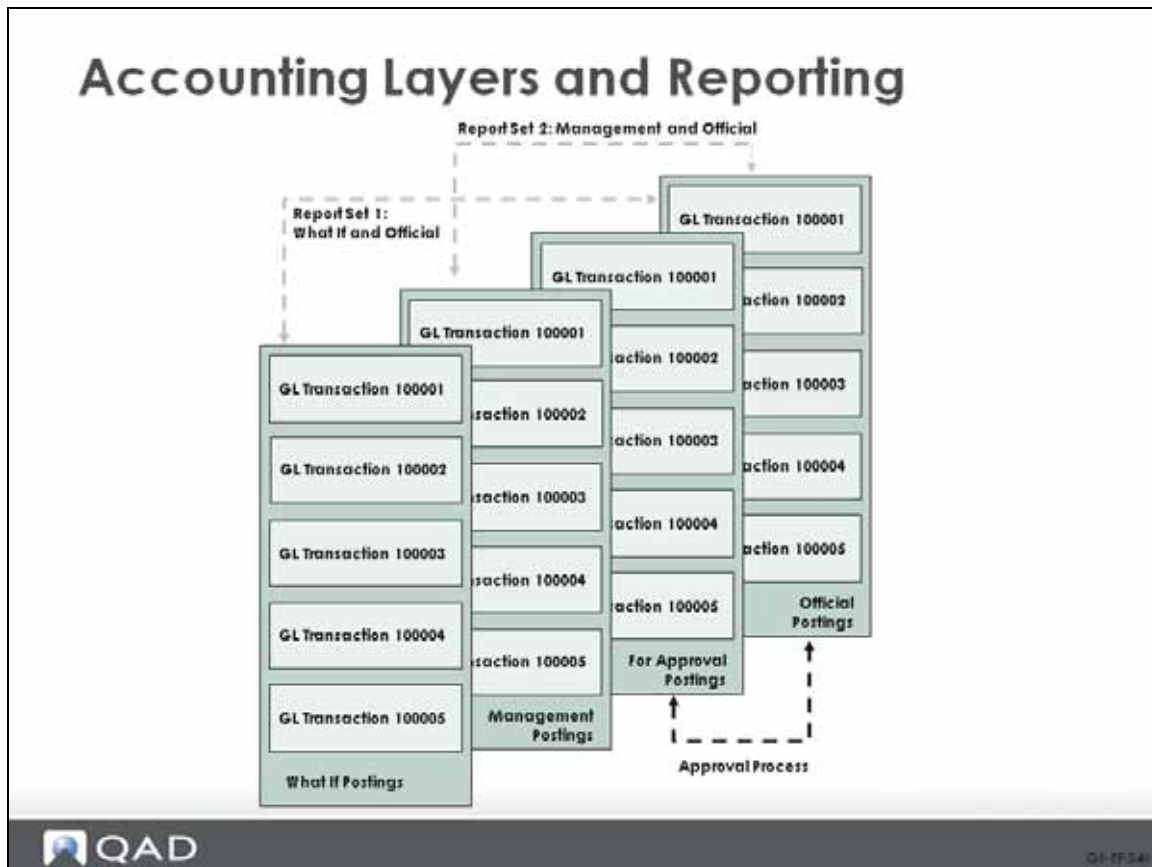
GL-17-036

Accounting layers provide different ways of segregating transactions within a single GL account to satisfy reporting requirements. The posting of transactions is controlled by associating daybook types with one of the three system-defined accounting layers: primary (labeled official in the system), secondary (labeled management in the system), and transient.

- The primary layer is used for daily transaction posting.
- Define one or more secondary layers to allow for adjustments required to meet different GAAP or IFRS requirements, or for management reporting.
- The transient layer is used to temporarily post transactions pending approval, or to simulate postings.

GL entries can be moved from layer to layer by changing the daybook. You can use Mass Layer Transfer Execute (25.13.11) to change many transactions at one time. In reporting, multiple layers can be selected.

Accounting Layers and Reporting



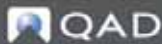
Financial reports let you select multiple layers at a time; for example, you can select both the primary and secondary layers to include management adjustments. Any combination is possible, as shown in the slide.

- Layer combinations for reporting can be stored as user preferences.
- An account can have a balance for each layer.

Daybooks

Daybooks

- Mandatory
 - Also known as journals
 - Multiple daybooks possible (recommended)
 - Grouped into sets
 - Default when single daybook by type
- Control document numbering
 - AR daybook sets manage customer invoices
 - AP daybook sets manage supplier invoices
- Linked to an accounting layer
- Controlled by
 - Financials activity
 - Operational activity
 - External programs



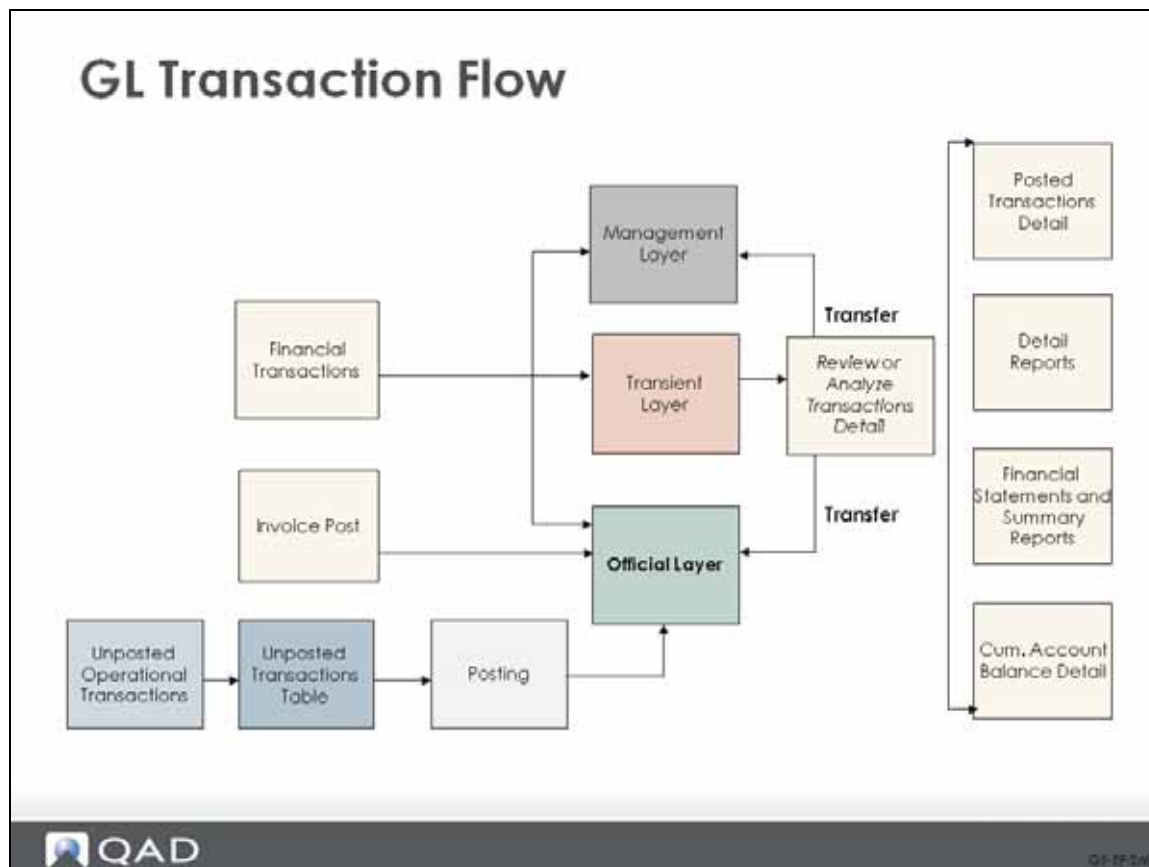
Q1-F13M

Daybooks, also known as journals, are system or user-defined views of the general ledger and contain all transactions.

Daybooks play an important role in QAD Enterprise Financials, and their use is mandatory. It is recommended to use more than one daybook as a means of grouping transactions. Daybooks can be used to distinguish between different types of journal entries, such as auditor adjustments, payroll entries, GAAP adjustments, and manually prepared accruals.

Daybooks also control the numbering of invoices and credit notes, in addition to GL transaction numbers. Daybooks are linked to an accounting layer, and can be controlled by the financial functions, the operational functions, or externally with a third-party add-on product interface.

GL Transaction Flow



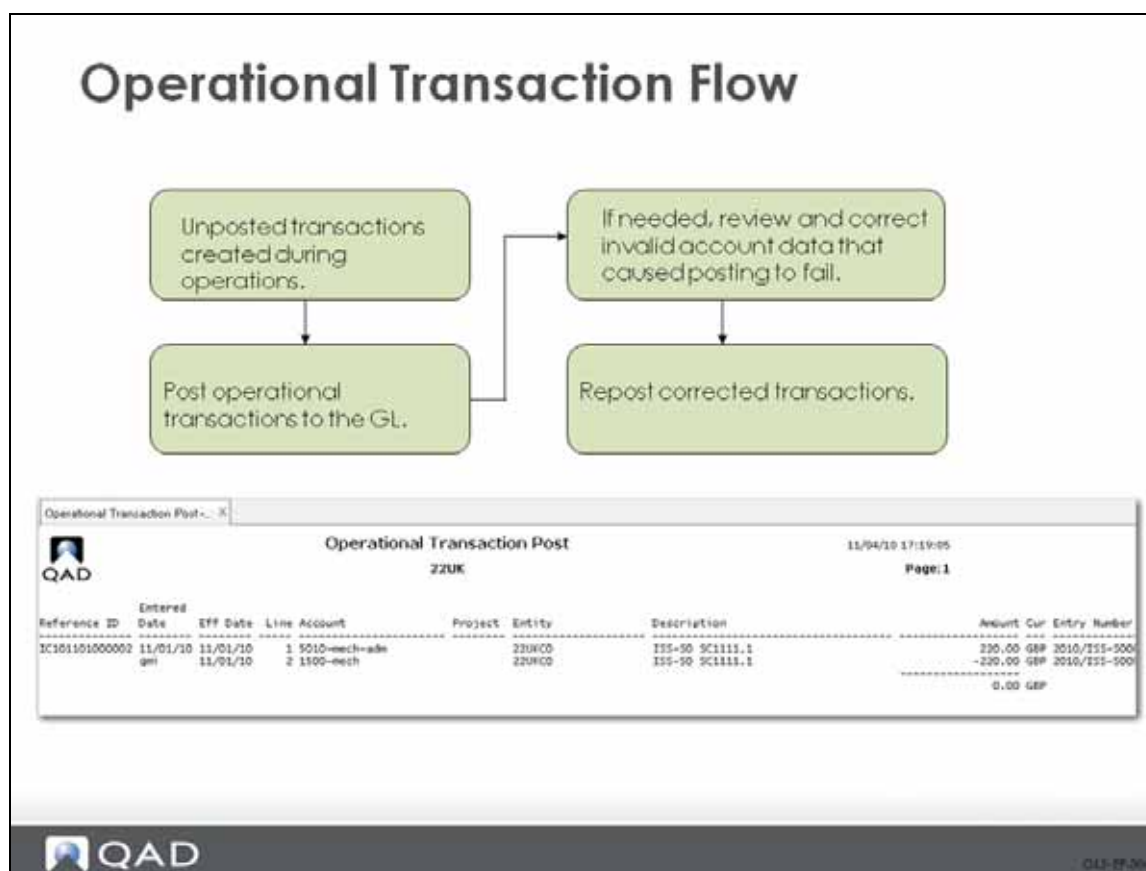
The general ledger is updated by recording debit and credit transactions in a process known as posting. After posting, the balance of each account is updated, and the transaction becomes a permanent part of your financial records and can only be modified using adjusting entries.

GL transactions are of two basic types:

- Transactions from operational areas such as inventory movements, sales order shipments, and purchase order receipts
- Transactions created in financial functions, such as supplier invoices, bank and cash transactions, journal entries, open item adjustments, and AR and AP payments

The process of updating the GL is somewhat different for these two types of transactions. Financial transactions are generally managed based on layers and daybooks and approval procedures set up within the Finance Department. Operational transactions have a separate life cycle.

Operational Transaction Flow



Operational transactions fall into four areas:

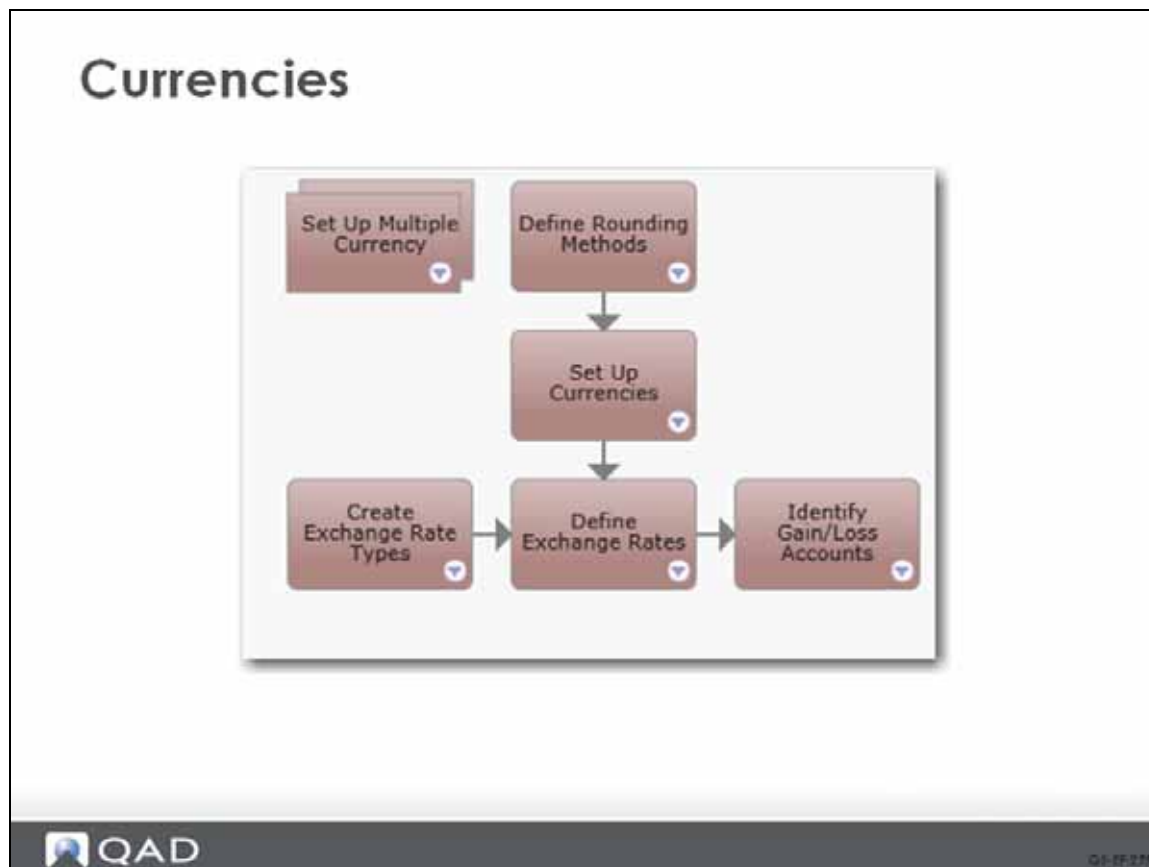
- Inventory Control (IC), such as those created by purchase order receipts and sales order shipments
- Work Order (WO), created during manufacturing processes
- Fixed Assets (FA)
- A limited number of sales order (SO) transactions

Operational transactions are not posted to the GL automatically. Rather, the system collects them in an unposted transaction table. The Finance Department uses Operational Transaction Post (25.13.7) to post verified transactions. You can select transactions for posting by entity, date, or assigned daybook. The system verifies that all transactions contain valid combinations of active account, sub-account, cost center, and project code and that the effective posting date is within a valid GL period. Transactions must also be balanced, with debits equaling credits. Otherwise, an error message displays and the transaction is not posted.

Note The transactions created by shipping items on a sales order are collected and posted using Operational Transaction Post. Update of customer balances from sales orders is done directly by Invoice Post and Print.

If any transactions fail to post, you can use Unposted GL Transaction Correction (25.13.16) to modify a limited number of fields: Account, Sub-Account, Cost Center, Project.

Currencies



QAD Enterprise Financials provides a full set of functions to support monetary amounts expressed in one of three currencies:

- Domain base currency. The base currency is the currency in which all entities within a domain conduct business. The base currency for a domain is specified in Domain Create and is used for recording all financial transactions within that domain.
- Non-base transaction currency. Transaction currencies can be used with purchase orders, sales quotes, sales orders, price lists, AR and AP payments, customer and supplier invoices, journal entries and other GL transactions.
- Statutory currency used for reporting

This three-currency system lets you display a transaction or create a report in any of the defined currencies. A set of ISO currencies is supplied with the system. You can define as many other currency codes as your organization uses.

Rounding methods are defined first and associated with currencies to control how the system rounds monetary amounts for data entry and display.

Exchange rates determine the amount by which one unit of a currency must be multiplied to give the equivalent value in a second currency and are required whenever a transaction is not in the base currency. Exchange rates are used for any transaction that is denominated in a currency other than the base currency of the domain. The gain and loss accounts are used for posting changes due to currency revaluation.

Currencies

Currencies

- Transactions are always stored in:
 - **Transaction currency** : The currency the transaction is recorded in
 - **Base currency** : The currency of the entity in which the transaction is recorded
 - **Management currency**: The currency used for corporate-wide management reporting

The screenshot shows a 'Sample Customer Invoice' in the QAD system. The invoice header includes fields for Type, Inv Date, Da, Voucher, Business Relation Code, It Balance, Ca, Due Date, It Balance, It Balance, SubAmt, and Cl Text. The values are: Invoice, 13-06-06, 01, 000000001, Essent, 1,231.00 GBP, 23-06-06, 1,773.01, 2,000.00, and Various. Three callout boxes point to specific values: 'In GBP (transaction)' points to '1,231.00 GBP', 'In EUR (base)' points to '1,773.01', and 'In USD (management)' points to '2,000.00'. The QAD logo is in the bottom left corner, and 'QAD EF 2006' is in the bottom right corner.

Type	Inv Date	Da	Voucher	Business Relation Code	It Balance	Ca	Due Date	It Balance	It Balance	SubAmt	Cl Text
Invoice	13-06-06	01	000000001	Essent	1,231.00 GBP		23-06-06	1,773.01	2,000.00		Various

Each domain has a primary base currency at the domain level, and optionally a second management currency for reporting purposes. This currency is known as the statutory currency, and is normally the local currency of the country in which the organization must produce its declarations and financial reports.

The need for a statutory currency is most likely to arise in a country that is geographically close to a strong currency zone (for example, Mexico and Poland), where the country itself has another local currency. Companies operating in countries close to strong currency zones, such as the Euro and US dollar, might use the stronger currency as their base currency (functional currency). However, local auditors and tax controllers can mandate that companies submit their declarations and financial reports in the local currency of the country. In these cases, the local country currency becomes the organizations' statutory currency.

Definitions

- **Transaction currency**: The functional currency of the transaction that is recorded.
- **Base currency**: The functional currency of the entity in which the transaction is recorded.
- **Management currency**: The currency used for corporate-wide management reporting.

The system stores all three currency amounts: Transaction, base, and management. Transactions are always posted in transaction and base currency using the exchange rate in place at the time of the transaction.

Currency Example

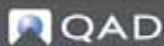
Currency Example

A US company in Mexico:

- Keeps its accounting records in USD
- Submits reports to the Mexican government in MXN
- Receives a supplier invoice from a UK supplier in GBP



Transaction Currency	= GBP
Base Currency	= USD
Statutory Currency	= MXN



Q1-17-2016

Example A multinational corporation has a subsidiary in Mexico. In the Mexican subsidiary, most business transactions are conducted in USD, the base currency. However, all reports that the subsidiary must produce for the Mexican government are in Mexican pesos, which is the statutory currency.

- Transaction currency = GBP
- Base currency = USD
- Management currency = MXN

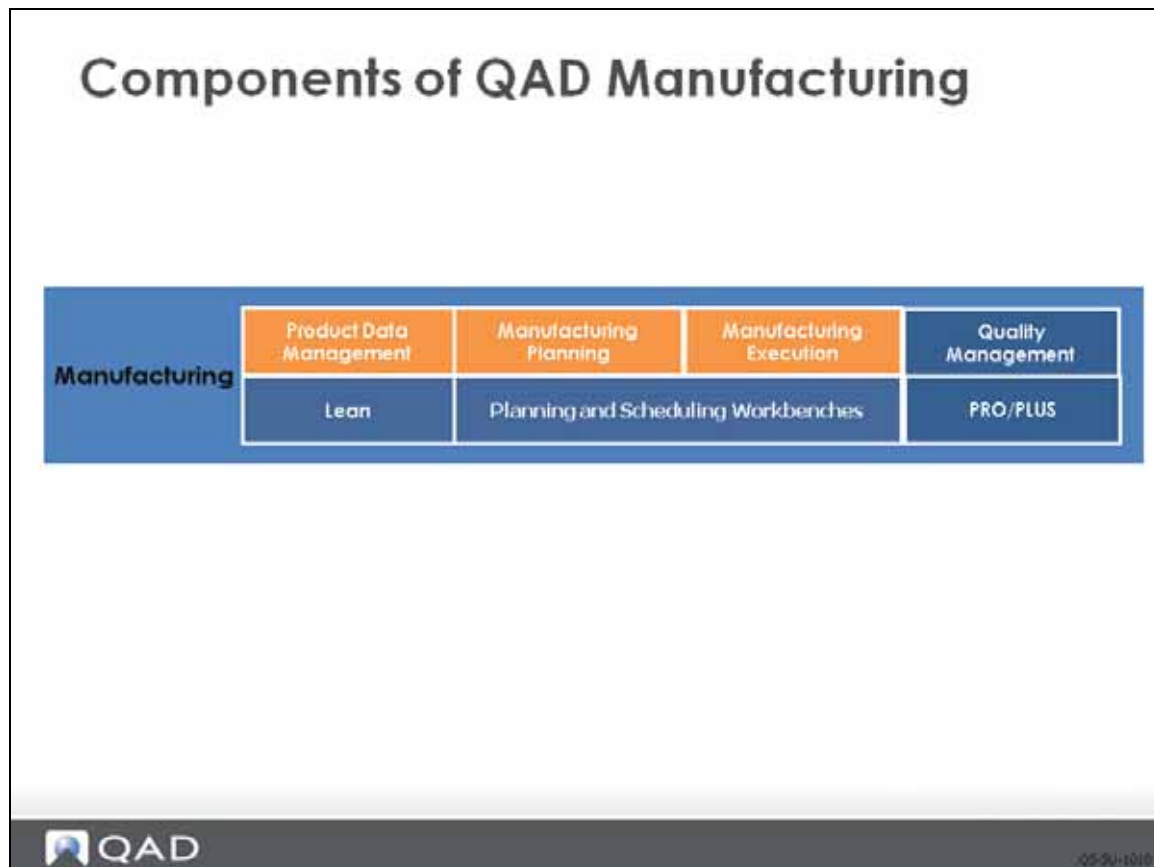
Manufacturing Overview

This chapter provides an overview of the QAD Manufacturing suite, with a brief introduction to each component.

Components of QAD Manufacturing

Manufacturing Review

Components of QAD Manufacturing



QAD offers a complete and feature-rich manufacturing suite that provides tools for planning, scheduling, cost management, material control, shop floor control, and reporting in a variety of manufacturing environments including:

- Discrete
- Repetitive
- Kanban (lean)
- Flow
- Batch
- Formula/Process
- Co-product/by-products

To help you quickly get an idea of how QAD features are used, this course focuses on a simple path through the three areas of manufacturing shown in gold in this slide.

Product Data Management

- Chapter 5, “Product Definition,” on page 131 describes defining items and item/component relationships.
- Chapter 7, “Cost Calculation,” on page 185 discusses how data associated with items is used to calculate costs.

Manufacturing Execution

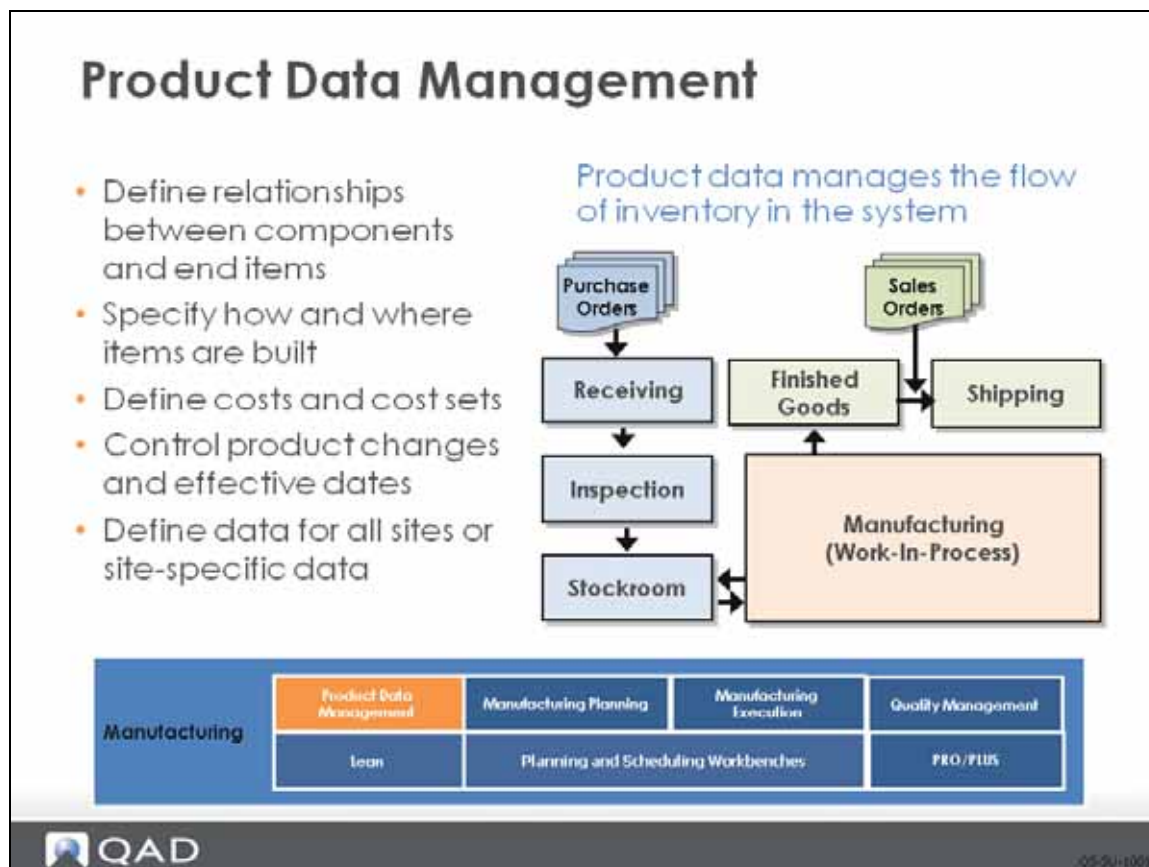
- Chapter 6, “Manufacturing Setup,” on page 165 describes the shop calendar, departments, work centers, and how routings specify the steps for building a product.
- Chapter 9, “Manufacturing Execution,” on page 261 describes how work orders are used to manage the steps required to create products, how labor is reported, and how variances are calculated.

Manufacturing Planning

- Chapter 11, “Manufacturing Planning,” on page 347 steps through the planning process, from entering a forecast to running MRP and approving planned work and purchase orders. You then see how approving and releasing the work orders creates supply that can then be shipped on a sales order to meet demand.

Before you begin the chapters that describe the details of discrete manufacturing, this section of the class offers a brief overview of the standard components of the QAD Manufacturing suite. This will help you understand where the specific areas that are highlighted fit in the broader pictures.

Product Data Management



The business processes of a manufacturing company are focused on moving items. Raw materials or components are purchased and stored until they are needed for manufacturing. After products are made, they are often stored until they are needed to fill a sales order or work order. Items stored for these purposes are called inventory.

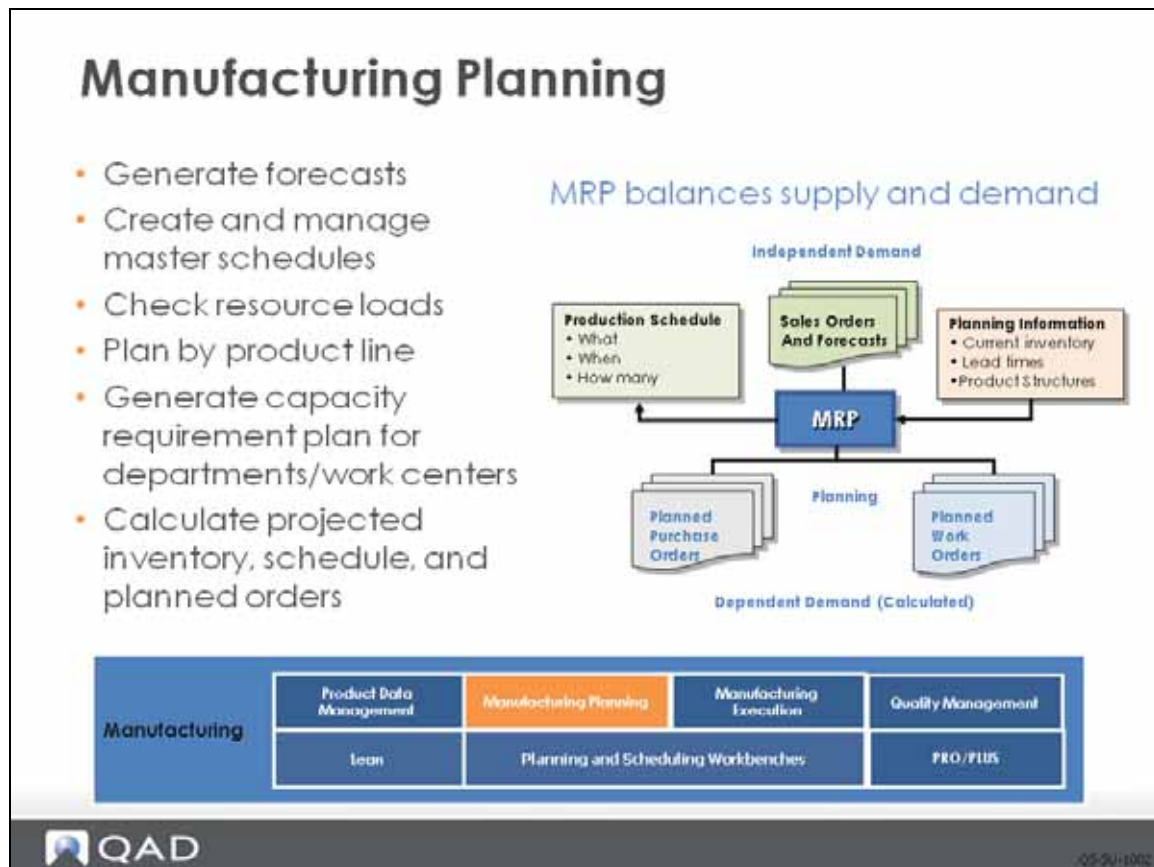
The control and management of inventory through complex business processes is accomplished in QAD EE through the data associated with them. This data is used to determine how they are typically used, moved, and stored.

Most inventory transactions result from:

- Sales order allocations and shipments
- Purchase order receipts
- Work order issues and receipts

Chapter 5, “Product Definition,” on page 131 describes defining items and item/component relationships and Chapter 7, “Cost Calculation,” on page 185 discusses how data associated with items is used to calculate costs.

Manufacturing Planning



Material Requirements Planning (MRP) is at the heart of manufacturing planning activities. MRP looks at all of the demand for items in the system and calculates a production schedule with planned purchase orders and work orders to meet the demand.

Many other types of planning activities are supported in the system.

- Product line planning lets you plan for all items in a product line.
- Resource planning analyzes the master schedule for key resources and verifies that resources are adequate to produce the projected quantities.
- Forecasting analyzes sales shipment history to calculate projected demand.
- Capacity requirement planning determines work center loads and generates capacity plans for departments, work centers, or machines.

Chapter 11, “Manufacturing Planning,” on page 347 steps through the planning process.

Manufacturing Execution

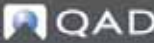
Manufacturing Execution

- Create work orders to authorize and control the manufacture of products
- Develop schedules for high-volume, repetitive items
- Report labor and calculate variances
- Manage configured product options/features
- Manage orders for co-/by-products together

Control all activities on the shop floor with visibility and traceability



Manufacturing	Product Data Management	Manufacturing Planning	Manufacturing Execution	Quality Management
	Lean	Planning and Scheduling Workbenches	PRO/PLUS	


Q5-20-1003

QAD's manufacturing execution systems support multiple modes of manufacturing as well as accommodating mixed-mode environments.

- Discrete work orders authorize and control manufacture of items, record material issues and receipts, and control rework and scrap.
- Special types of work orders accommodate:
 - Configured items, where features and options are chosen individually
 - Joint order sets that combine orders for multiple co-products and by-products
- Repetitive schedules streamline material planning and reporting in high volume repetitive environments.
- Shop floor control tracks activities and records operation status and labor times for manufacturing jobs, using the work order routing to calculate usage variances, efficiencies, and utilization.
- Complete lot and serial number tracking history can be maintained from finished goods back to the supplier's lot, providing the foundation for product liability tracking and regulatory traceability.

Chapter 6, "Manufacturing Setup," on page 165 describes how to set up data used in discrete manufacturing and Chapter 9, "Manufacturing Execution," on page 261 shows how the products are made using the data previously defined.

Quality Management

Quality Management

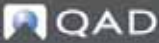
- Track product quality at Incoming Inspection, testing points, and product samples
- Identify problems early with trend reports
- Include test instructions in work order documentation
- Generate certificate of analysis

Ensures suppliers are delivering quality parts so productivity is not impacted





The diagram shows a central 'Manufacturing' block connected to four main modules: Product Data Management, Manufacturing Planning, Manufacturing Execution, and Quality Management. Below these are sub-modules: Lean, Planning and Scheduling Workbenches, and PRO/PLUS.

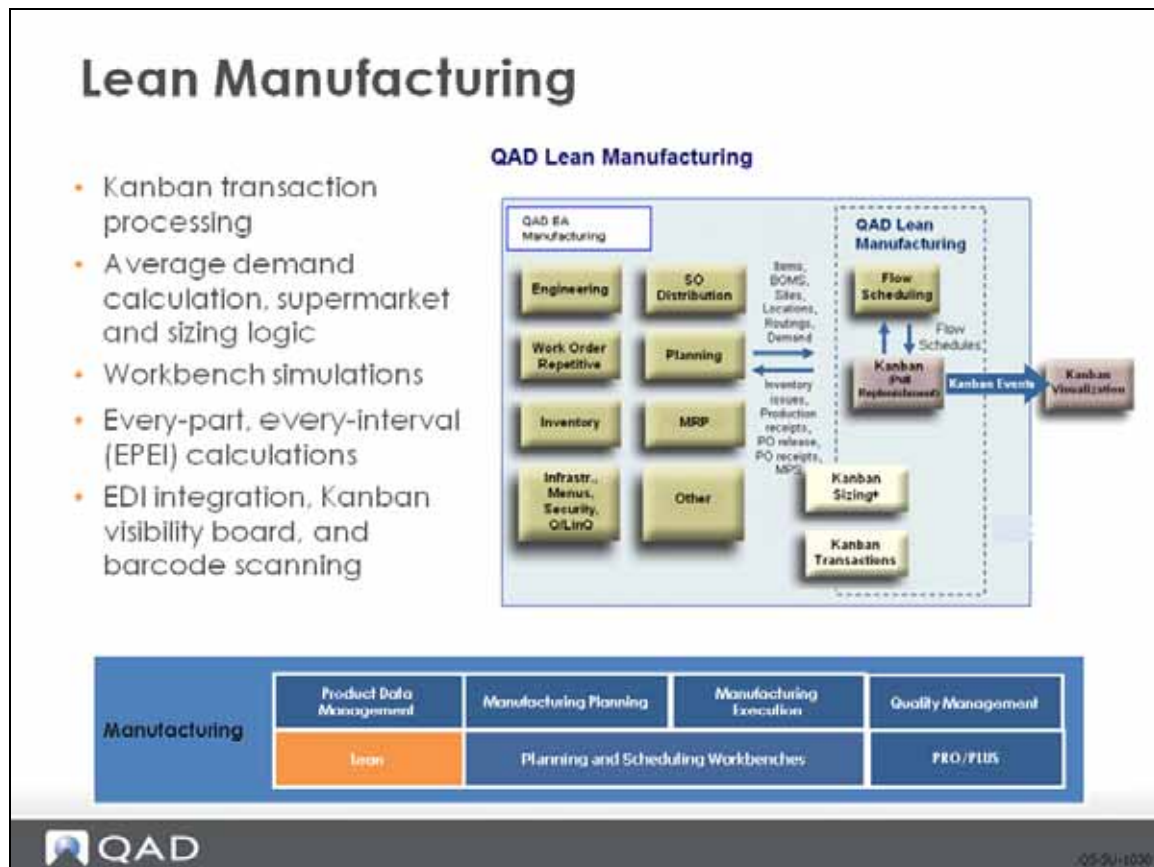

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QAD's Quality Management module enables you to test incoming material, finished products, and inventory; inspect first articles, processes, or items in-process; and perform destructive testing. For all but in-process inspection, you manage quality with quality orders: documents that are similar to a work order and specify what is tested, how, and when. You can define specifications, test procedures, and inventory sampling, and record the results of testing.

Testing is generally done in one of two ways:

- As a stand-alone task—at purchase receipt or at an inspection station. For this method, you create a quality order to control quantities and dates. The order provides authority to move inventory, perform work, and route items to various locations after the work is completed.
- As an operation within a work order or repetitive schedule routing. In this case, material is moved to a location where the quality tests are performed. Reporting occurs in the Shop Floor Control or Repetitive modules.

Lean Manufacturing



Lean manufacturing is a set of production practices that focuses on creating value for the end customer and eliminating any waste or non-value added activity. Lean principles were made popular through their successful implementation at Toyota.

QAD's Lean offering provides tools that accommodate best practice techniques in lean environments. These are focused in two areas:

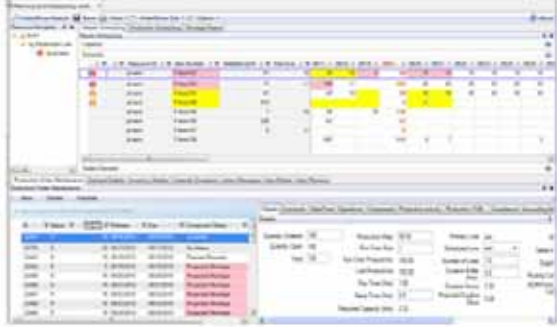
- The Flow Scheduling module lets you create and manage the life cycle of time-phased production schedules for use in a flow-driven, lean manufacturing environment. Optionally, you can link flow scheduled orders with existing demand orders and work orders.
- The Kanban module lets you tightly manage the amount of inventory within the value stream based on pull-replenishment principles. Features include multiple methods for calculating and setting supermarket quantities based on either manual data entry or system calculations that include a variety of flexible, user-defined parameters. Users can also examine what-if scenarios for supermarket sizing in a workbench before updating the system as well as analyze how well the supermarket is handling actual historical demand. Kanban loops can be established and levels visibly communicated throughout the supply chain.

The Lean modules integrate with the QAD Supply Chain Portal (QAD SCP), an inventory visibility tool provided on a hosted Internet site that lets customers and their authorized suppliers share information about inventory, scheduling, purchase orders, shipments, kanbans, invoices, and bills of material.

Planning and Scheduling Workbenches

Planning and Scheduling Workbenches

- Assemble all critical data in two integrated workbenches
- Monitor shortages with integrated reports
- View summaries and drill down into detail as needed
- View visual alerts as well as MRP action messages
- Filter and sort data using advanced criteria
- Customize and save layouts






05-20-1040

QAD's Planning and Scheduling Workbenches are an integrated, stand-alone .NET UI application that combine many features and functions of the QAD manufacturing execution system in one place. Offering a powerful user interface that supports advanced filtering, drill down, and drag and drop, the integrated workbenches allow schedulers to quickly and easily monitor and manage both long-term schedules and daily production.

Integrated component availability check reports allow the scheduler to find all necessary information in one place.

In addition to combining features that already exist in the system, the workbenches provide enhancements to the standard manufacturing processes.

The Master Scheduling Workbench lets schedulers:

- Schedule repetitive items multiple times per day.
- Schedule a discrete order on a production line if needed.
- Schedule discrete, kanban, and repetitive orders on one resource needed.

The Production Schedule Workbench lets schedulers:

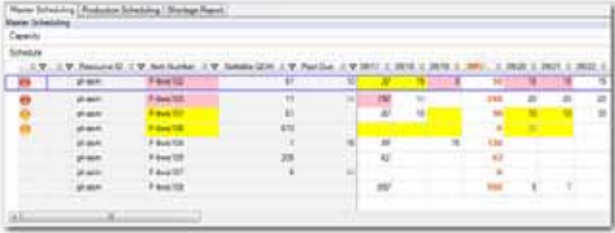
- Schedule an item for production multiple times in a day or shift
- Easily track performance to schedule

The workbenches support various types of manufacturing including discrete, mixed-mode, advanced repetitive, kanban, and subcontracting.

Master Scheduling Workbench

Master Scheduling Workbench

- Create medium-to-long term master schedules, balancing demand, supply, and capacity
- Access combined functions in one place
- Set up rules-based schedules
- Reduce time and complexity of scheduling
- Simulate changes and review effects



Manufacturing

Product Data Management

Manufacturing Planning

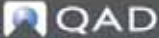
Manufacturing Execution

Quality Management

Lean

Planning and Scheduling Workbenches

PRO/PLUS


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The MSW increases master scheduling efficiency by letting you simulate and commit scheduling changes, factoring demand, supply, inventory, production orders, and MRP data from multiple separate QAD EE programs in a single workbench.

Note Production orders are all orders associated with production—production lines, work centers, or other production areas—including discrete orders, repetitive orders, scheduled orders, cumulative orders, and so on.

You can use the MSW to interact with production line and work center schedules and make changes where necessary. Within MSW, you can update the production order status, as well as release, create, or close production orders, while considering all supply, demand, and capacity sources from the single workbench.

You can also identify items with demand issues, and check component availability for each production order to be released.

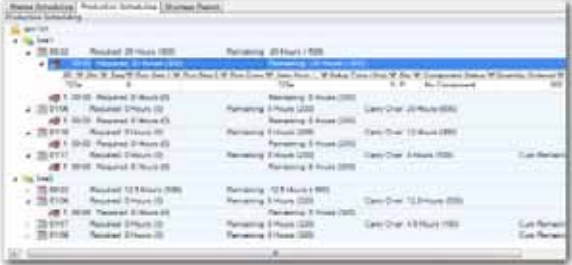
User-configurable parameters control the number of days that you are in control of the schedule as opposed to MRP control. You can also set the number of future and historical days to which you want visibility to your production data in the MSW.

Event-based color coding lets you easily identify areas of concern. You can review and manipulate schedule and production order data. Once satisfied, saving your schedule creates firm repetitive production schedules or revised and new production orders in QAD EE applications.

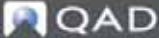
Production Scheduling Workbench

Production Scheduling Workbench

- Create short-term schedule, sequencing and prioritizing orders at the line level
- Modify, split, and resequence orders
- Integrate with Excel to create dispatch lists
- Set up defaults, scheduling horizon, and custom rules
- Easily track performance to schedule



Manufacturing	Product Data Management	Manufacturing Planning	Manufacturing Execution	Quality Management
	Lean	Planning and Scheduling Workbenches	PRO/PLUS	

 QAD

Once you generate a master production schedule over a daily, weekly, or monthly horizon, you may need to create a production schedule for a shorter, two-to-five day period for the shop floor to drive shop floor execution. The production scheduling goal is to optimize shop floor efficiency by scheduling and sequencing production orders that have like attributes together, reducing machine setups and maximizing labor utilization.

Some companies run a single production order over several days, while others run multiple production orders within a single day. Further, some companies define a production sequence/priority by shift to monitor shift performance or to ensure that products are available for a specific shipment time. The PSW lets you schedule discrete and repetitive items on production lines. You can schedule, sequencing items within a day and shift.

Schedulers can also create and print dispatch lists with Excel for use on the shop floor.

PRO/PLUS

PRO/PLUS

Features of special interest to Automotive Vertical:

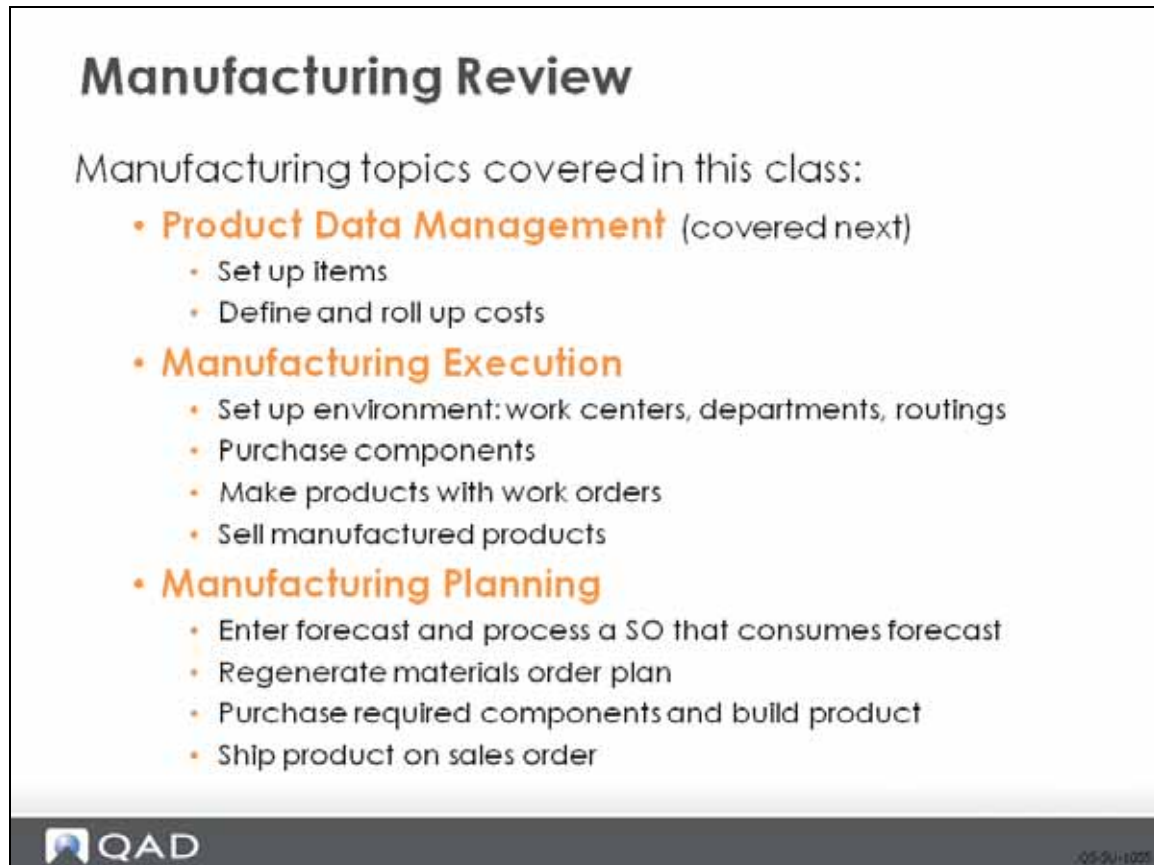
- **Trade Sales:** Automate management of trade sales between an OEM, tier-one supplier, and trade-sales supplier
- **Container and Line Charges:** Track and invoice customers for containers and line charges
- **Sequence Schedules:** Generate sequence schedules for planning, building, and shipping goods
- **AR Self-Billing:** Process customer-initiated payments

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PRO/PLUS is a set of tools that supports advanced production tracking and other activities of special interest to companies in the Automotive vertical.

- Trade Sales automates the trade sales process between an OEM, a tier-one supplier, and trade sales suppliers where the tier-one supplier manages material and delivery of parts from trade sales suppliers. Trade sales features are built upon QAD EDI eCommerce, customer and supplier-schedule ordered and shipping functionality.
- Container and Line Charges lets you track and invoice customers for expendable containers and provide for additional line charges such as extra shipping and handling charges.
- Sequence Schedules facilitates supply chain efficiency through scheduled sequencing for planning, building, and shipping of goods by creating schedules with requirements that outline the sequence in which items are needed to build product.
- Accounts Receivable Self-Billing processes customer-initiated payments, records the associated documents, and applies payment credit to accounts receivable based on line-item shipper details. The payments are based on the shipments a customer receives and pays for, and not the invoice.

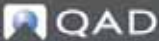
Manufacturing Review

A presentation slide titled "Manufacturing Review". The slide lists manufacturing topics covered in a class, organized into three main categories: Product Data Management, Manufacturing Execution, and Manufacturing Planning. Each category has a list of sub-topics. The slide has a QAD logo in the bottom left corner and a small text "Q5-2U-1025" in the bottom right corner.

Manufacturing Review

Manufacturing topics covered in this class:

- **Product Data Management** (covered next)
 - Set up items
 - Define and roll up costs
- **Manufacturing Execution**
 - Set up environment: work centers, departments, routings
 - Purchase components
 - Make products with work orders
 - Sell manufactured products
- **Manufacturing Planning**
 - Enter forecast and process a SO that consumes forecast
 - Regenerate materials order plan
 - Purchase required components and build product
 - Ship product on sales order

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The next section of this class explores how to set up items and product structures. This is followed by information on setting up a basic manufacturing environment and rolling up product costs.

After all data required by manufacturing activities is defined, you will see how the purchasing process supplies the components and raw materials needed to make products. The next chapter illustrates basic manufacturing with work orders and is followed by an overview of sales orders and invoicing.

Finally, the planning section ties all these activities together in an end-to-end process from entering a forecast to executing MRP, approving planned orders, acquiring components, making end items, and shipping a sales order.

Product Definition

This chapter provides information on setting up items and defining the components that are used to build them.

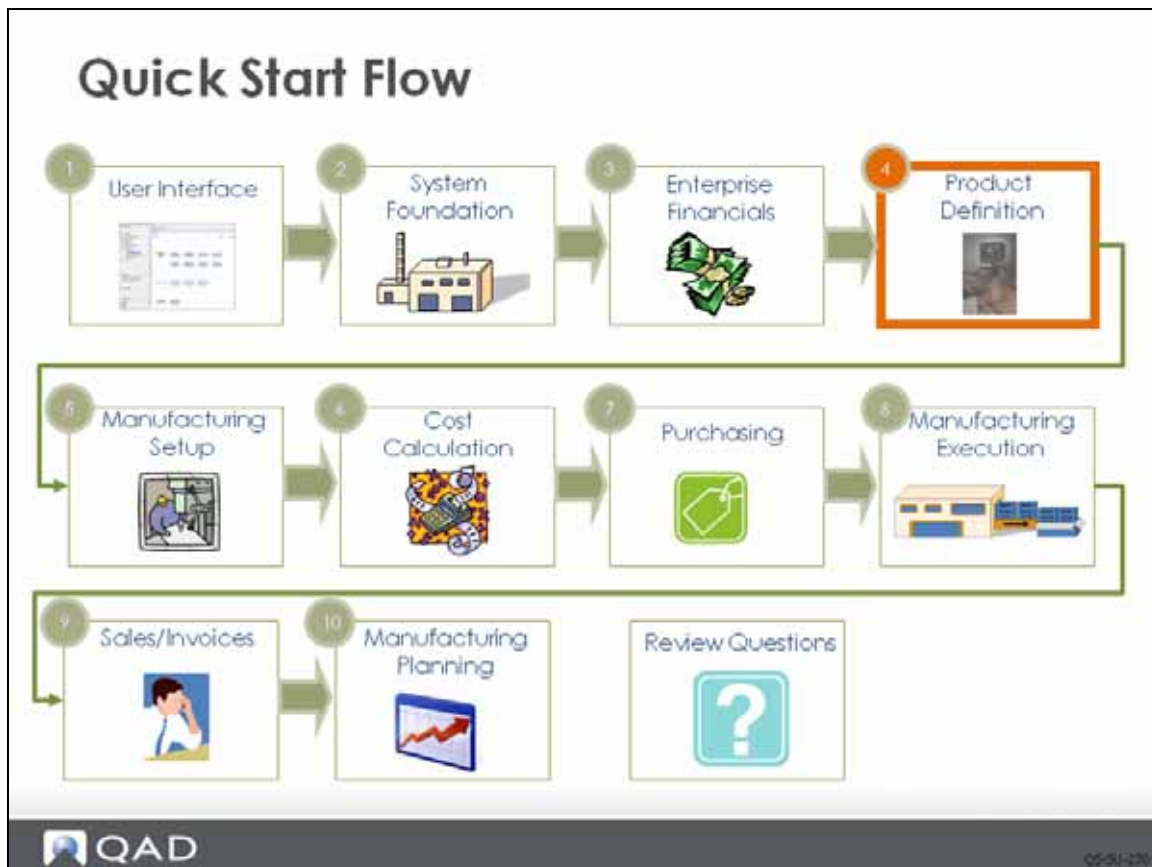
Overview of Product Definition

Key Concepts

Example

Review

Overview of Product Definition



After setting up the basic company structure and chart of accounts, you can enter information about company products and how they are made.

Chapter Topics

This chapter covers the following topics:

- Key Concepts
 - Product Lines
 - Current Costs
 - Item Information
 - Purchase/Manufacture Code
 - Item Costing Data
 - Product Structure
- Example
 - Set Up Product Lines
 - Set Up Accounting Parameters
 - Define Codes Associated with Items
 - Enter Item Information

Exercise

Set Up Product Structure

Exercise

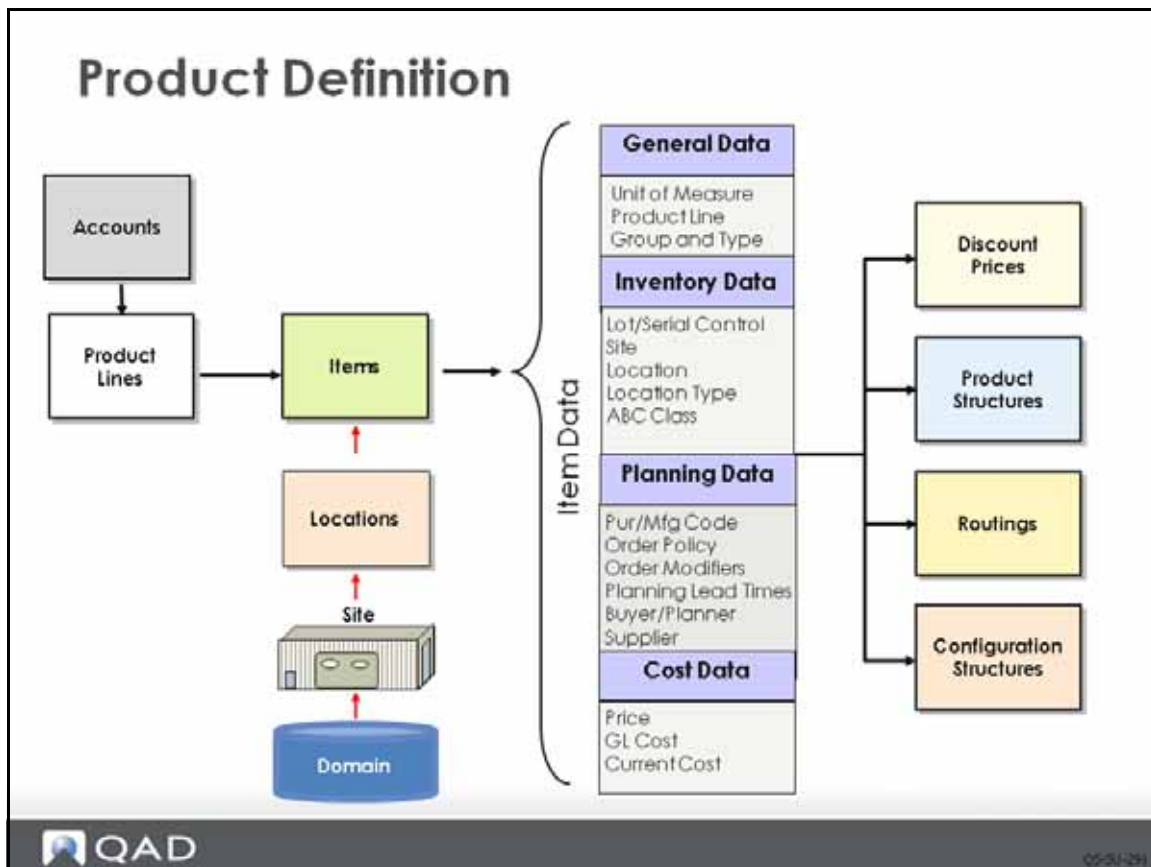
- Review

Learning Objectives

When you finish this chapter, you should be able to:

- Explain the importance of a product line.
- Explain the difference between current costs and GL costs.
- Provide examples of order policies and order modifiers.
- List an item's five cost elements.
- Describe the information contained in a product structure.
- Set up a product line.
- Enter an item.
- Define an item's product structure.

Key Concepts

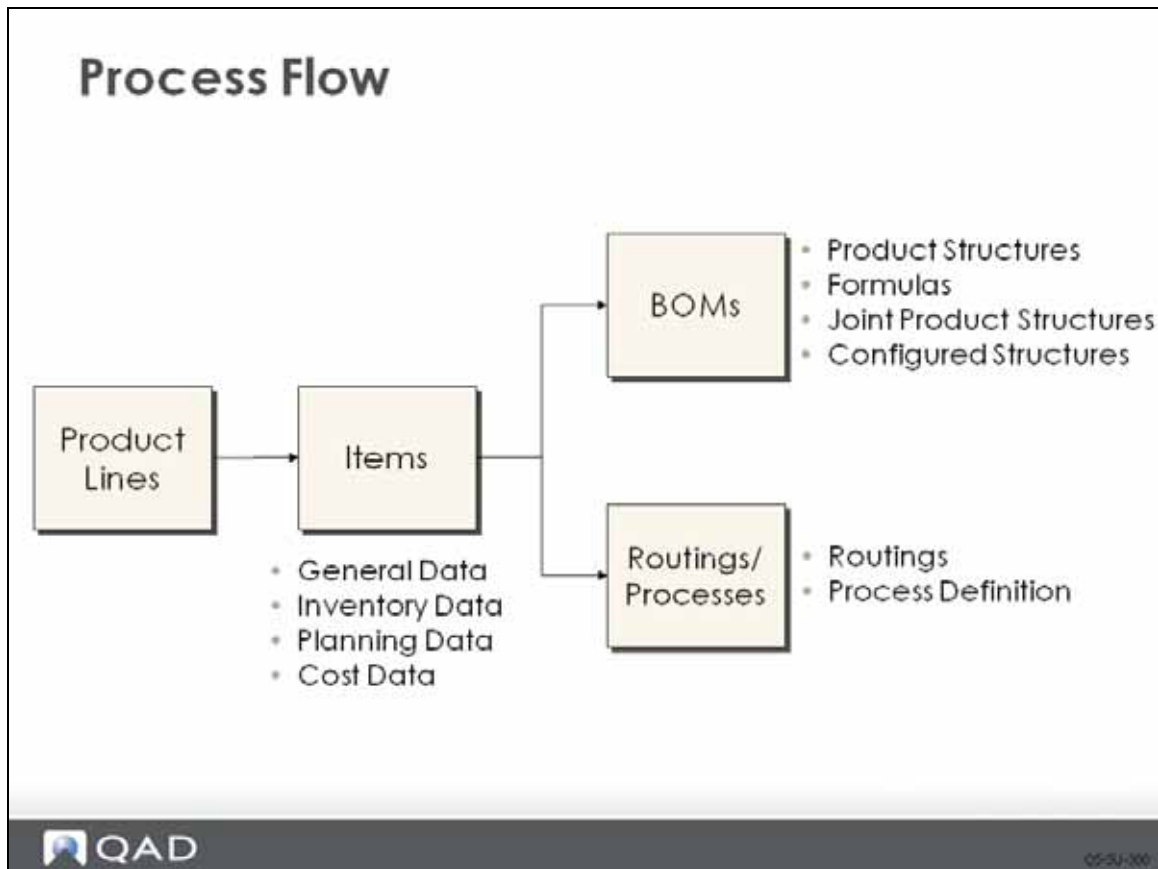


As shown in this slide, to establish a product definition, you must first establish accounts, which you associate with product lines, and then assign items to them. Although each item needs to have an associated product line to capture inventory costs and movement, each item may or may not have a bill of material (BOM) or routing associated with it.

Configuration structures and discount prices are also optional and beyond the scope of this class.

Item records are created primarily for items and products that are stored in inventory and/or planned by Material Requirements Planning (MRP) or Distribution Requirements Planning (DRP). The data associated with items is used in inventory control, sales, purchasing, planning, and costing. You can customize item inventory, planning, and cost data by site after you set up the initial record.

Process Flow



This chapter discusses bills of material; routings are discussed in Chapter 6, “Manufacturing Setup,” on page 165.

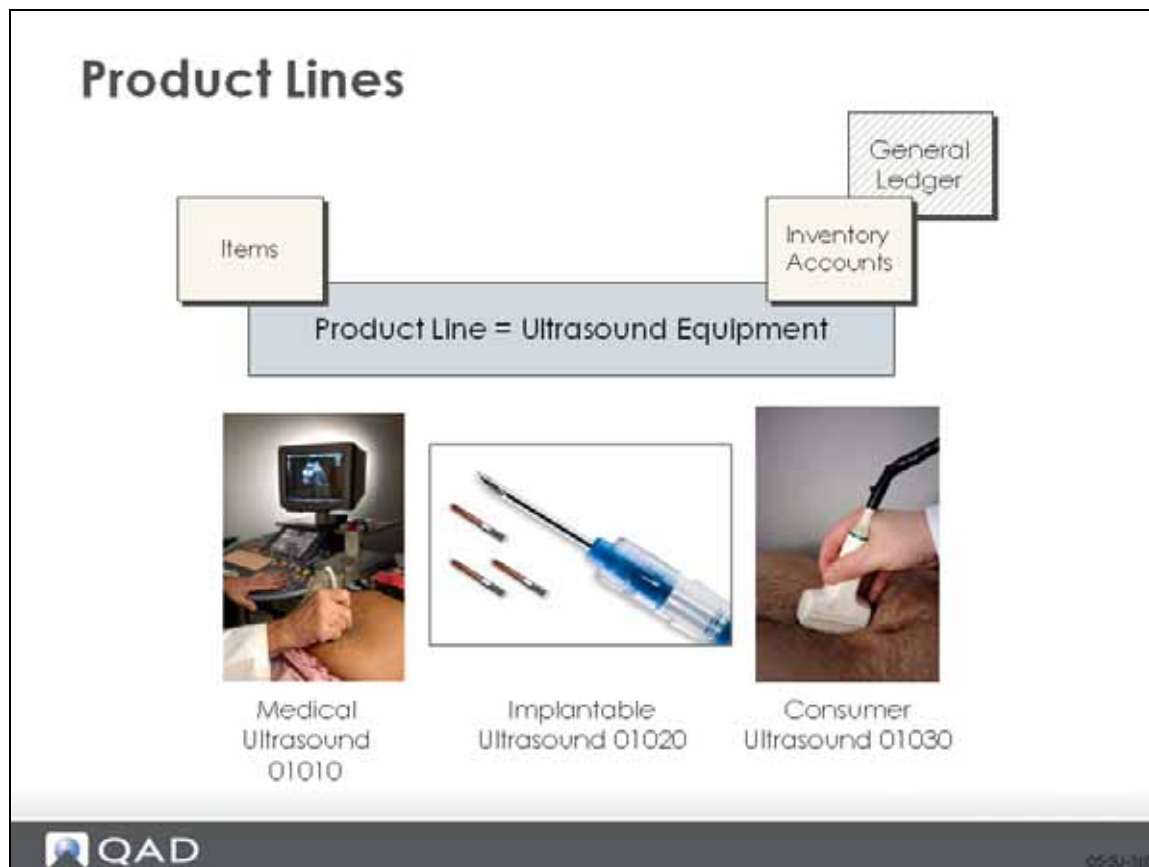
- A bill of material (BOM) is a listing of all subassemblies, components, and raw materials of a parent assembly with the quantity of each required to make one parent assembly. A BOM is also called a product structure or formula. The master production schedule uses the BOM to determine items for which purchase requisitions and production orders must be released.
- Routings quantify where and how the product is made, the steps in the process of putting the materials together.

In very common terms, this is like a recipe. Most recipes have a list of ingredients (the bill of material) and a list of steps telling you how to combine the ingredients and how to process them (the routing).

The next few pages describe each step in the process flow shown in the figure above, beginning with product lines, followed by items and bills of material (product structures).

Note A formula identifies ingredient usage as a quantity per batch or percent of batch, rather than specific item quantities. In general, product structures and formulas work in the same way, and both are referred to as bills of material (BOMs).

Product Lines



In QAD EE, a product line is a group of items or products with similarities in manufacture or application. While product line codes can be related to a marketing concept, they are more accurately considered an accounting concept since the product line code links items to GL accounts. This link is the way the system ensures that all transactions for an item have GL consequences. All items must belong to a product line; otherwise, no GL transactions associated with them could be recorded.

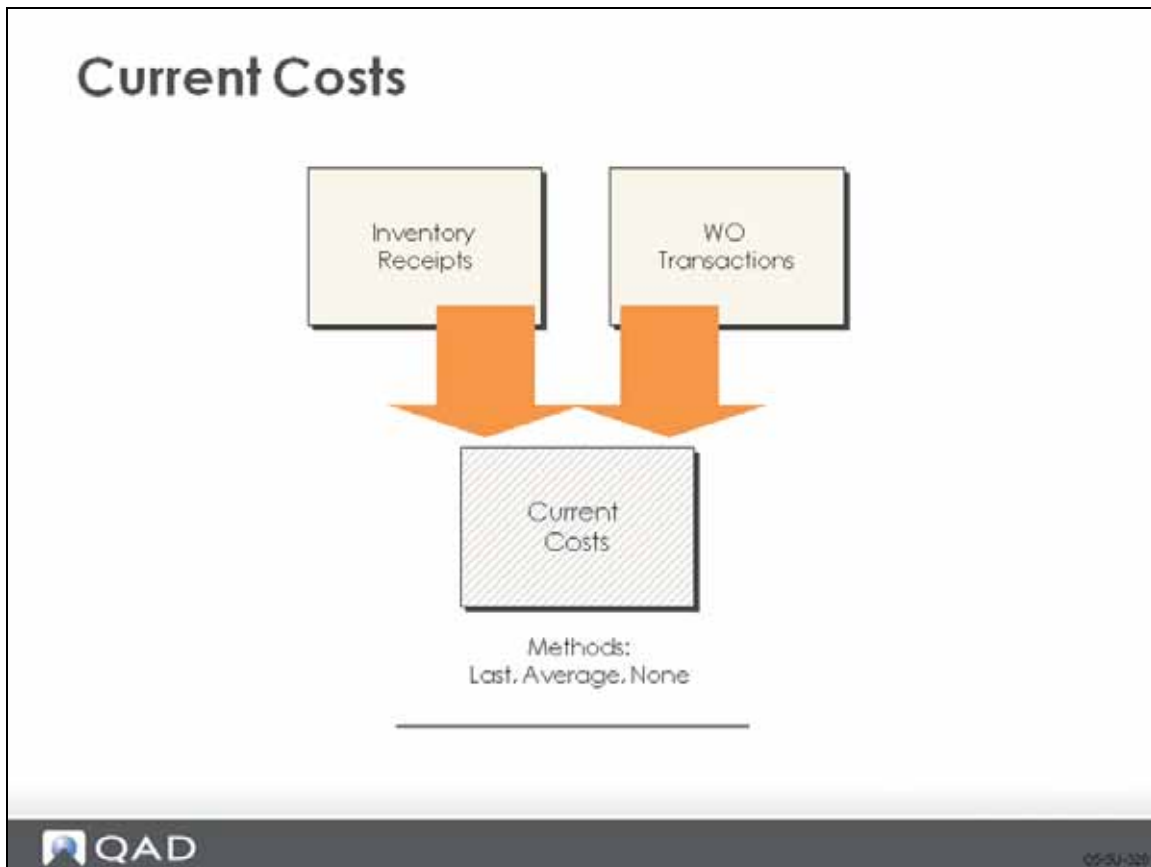
While product lines are primarily a financial construct, they should not be assigned by finance. While finance will play a role in defining product lines, both manufacturing and marketing will want to understand the structure and the ability to track costs and revenues for their items.

Note Many browses, inquiries, and reports in QAD can be sorted on product line. So some thought should be given to how you want to organize various reports.

The example in the slide shows three different types of ultrasound devices in one product line, so that all costs and revenues for these items is collected in the same set of GL accounts. Your company could decide that the nature of the materials and the manufacturing processes used for these items are different enough to require three product lines. Then you could use different accounts or sub-accounts to track costs and revenues.

Some companies would want different product lines for purchased materials or manufactured components. You must have at least one product line code but you can have as many as you need. After the product line has been set up, the method of updating the current costs of items is selected, discussed next.

Current Costs



Current costs represent the costs for producing your products based on inventory receipts and work order labor transactions. These reflect what you are currently paying your suppliers for purchased materials and the current labor hours being consumed in producing the items at the work center labor rates.

When you have a standard costing system, the current cost set can be used to track the running average or last cost for use in determining next year's standard cost or for providing a record of recent actual costs.

Methods that can be used with the current cost set are Last, Average, or None.

Last. Each receipt sets the current cost to the last cost of that item. In the case of purchased material, this is the purchase or invoice price.

Average. Whenever an item is received, a new weighted average cost is calculated and stored in the cost set, this values all inventory at the new weighted average cost.

None. Current costs are maintained manually in the system or not used.

The method to use is selected in Inventory Accounting Control (36.9.2).

Costing is covered in more detail in Chapter 7, "Cost Calculation," on page 185.

Terminology

Cost Set. QAD EE has two default cost sets—GL and current—that are available for each site. A site can have additional cost sets set up in the Cost Management module, such as historical costs from prior periods and simulated costs for planning purposes.

Current Cost Set. The current cost of an item is normally based upon recent production and/or purchases. Current costs are the actual costs from inventory receipts and work order labor transactions.

The use of the term actual is a convention adopted by cost accountants and may not be an actual cost in the strict sense of the word. For example the labor cost of an item is the hours charged multiplied by the work center labor rate. The work center labor rate usually reflects an average rate for all workers in the work center, rather than the actual rate of the person who worked on a specific work order.

Average Costing. Costs are recalculated as they occur. The costs associated with a transaction are weighted with the existing costs to provide a new average cost. The average cost can be used for valuation as a GL cost or for information only as a current cost.

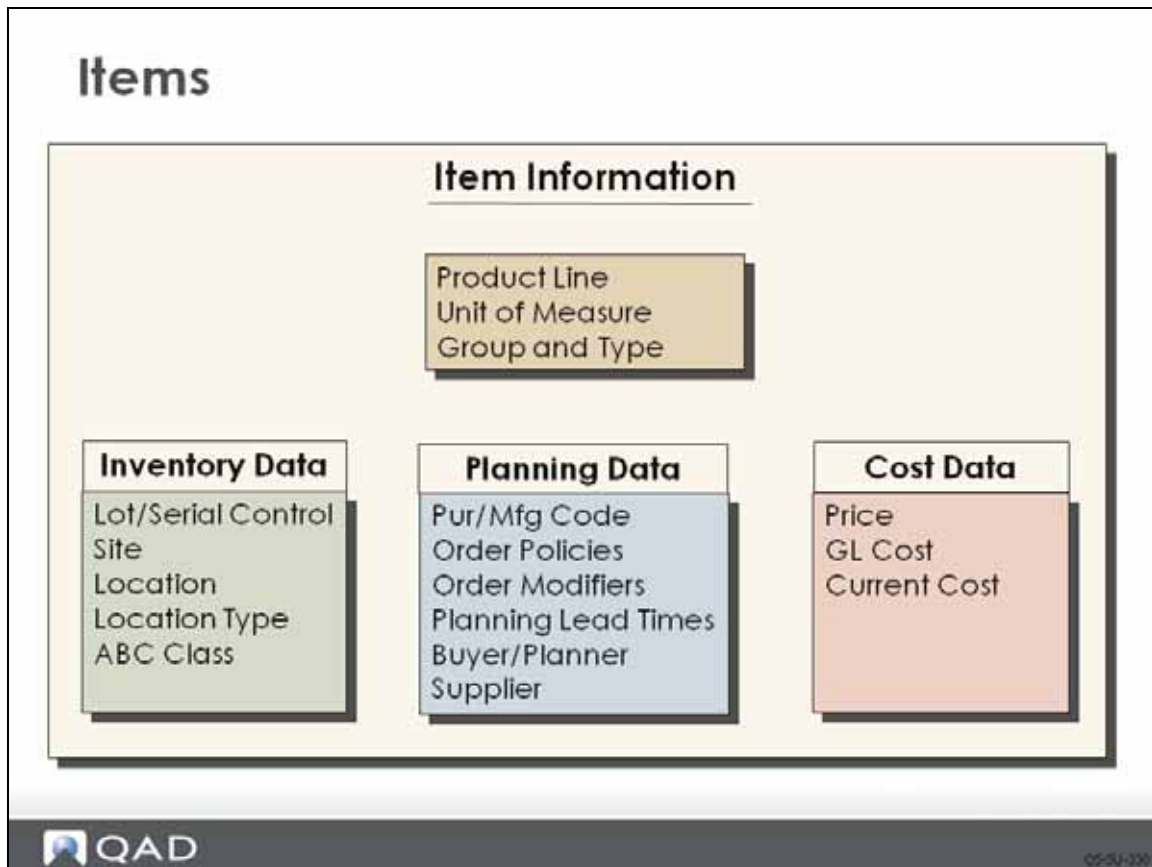
Standard Costing. Costs are preestablished for items and all transactions are valued at that cost as they are processed. Deviations in the costs are reported as variances. Standard costs are usually established once a year.

GL Cost Set. GL cost is a term that distinguishes costs used for valuing inventory and for determining cost of goods sold from other costs such as current costs. GL costs can be based on either a standard or an average cost method.

Variance. In a standard cost system the variance is the difference between the standard cost and the current cost. It is usually reported on a monthly basis.

This-Level and Lower-Level Costs. This-level costs are the costs to either obtain or produce an item. Thus, a purchased item has this-level material cost, but it has no lower-level costs. Lower-level costs represent costs that are added at prior stages of manufacturing.

Item Information



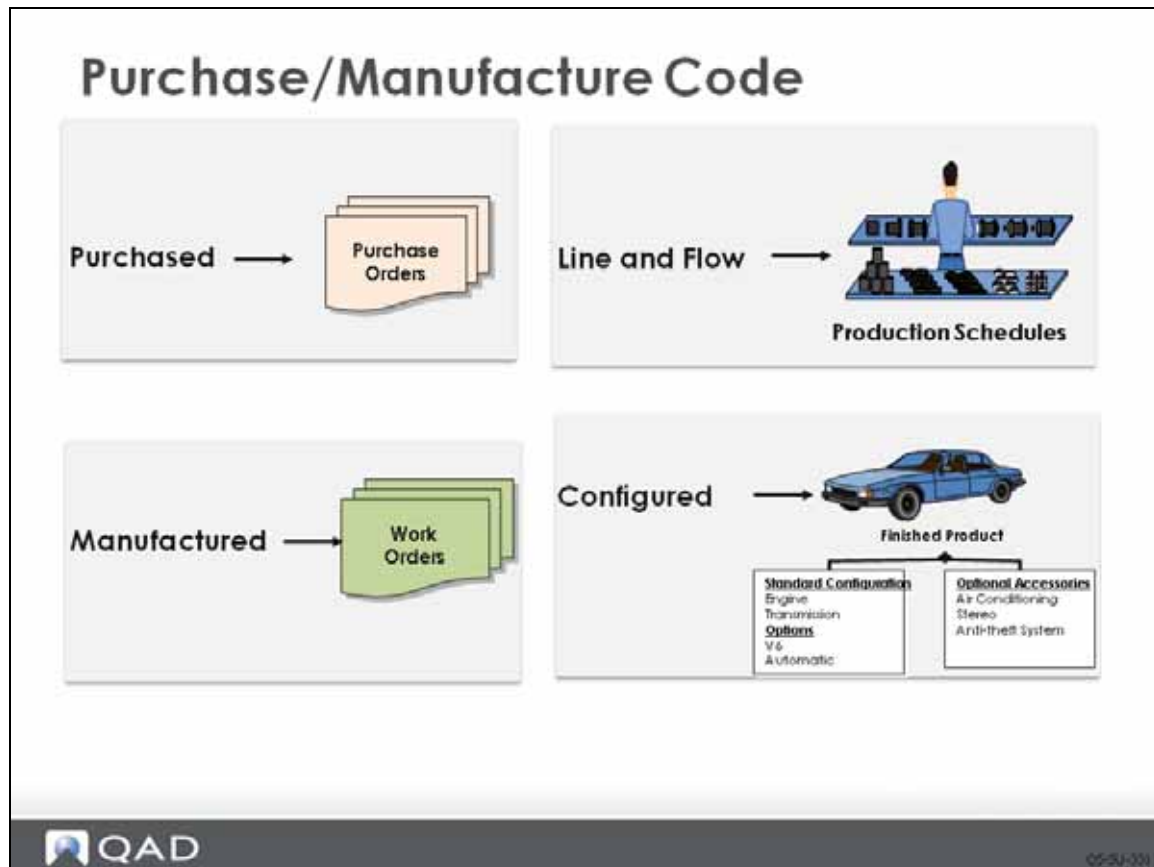
After you set up the product lines and current cost method, you can define more specific information about each item. Item information must be entered for every item you use or produce. Item master data defaults to all sites in a domain. Later in the course, you will learn that many attributes of an item can be different at each site.

Every item is identified by an item number, which is the same for all sites, as is some of the other general information, such as product line, unit of measure, and group and type.

In Item Master Maintenance (1.4.1), you enter inventory data, planning data, and cost data. The slide shows the basic information recorded in each of these areas.

You can also use separate functions to add or maintain item data, inventory data, planning data, and cost data. This lets different functional areas in your organization such as production planning and cost accounting have update access to their data only.

Purchase/Manufacture Code



Data associated with items affects how the item is planned and managed in the system. For example, the Purchase/Manufacture code determines if MRP creates a planned purchase order or a planned work order, or manages the item in some other way. This course only looks at the values of P and M. Possible values are:

Purchased. Obtained from suppliers. MRP creates a planned purchase order using the purchasing and inspection lead times to calculate planned order release dates.

Manufactured. Produced internally, typically with work orders. MRP creates a planned work order using the manufacturing lead time.

Line. Manufactured repetitively on a single or on multiple production line and managed through schedules and cumulative orders.

Flow. Produced internally on a flow production line.

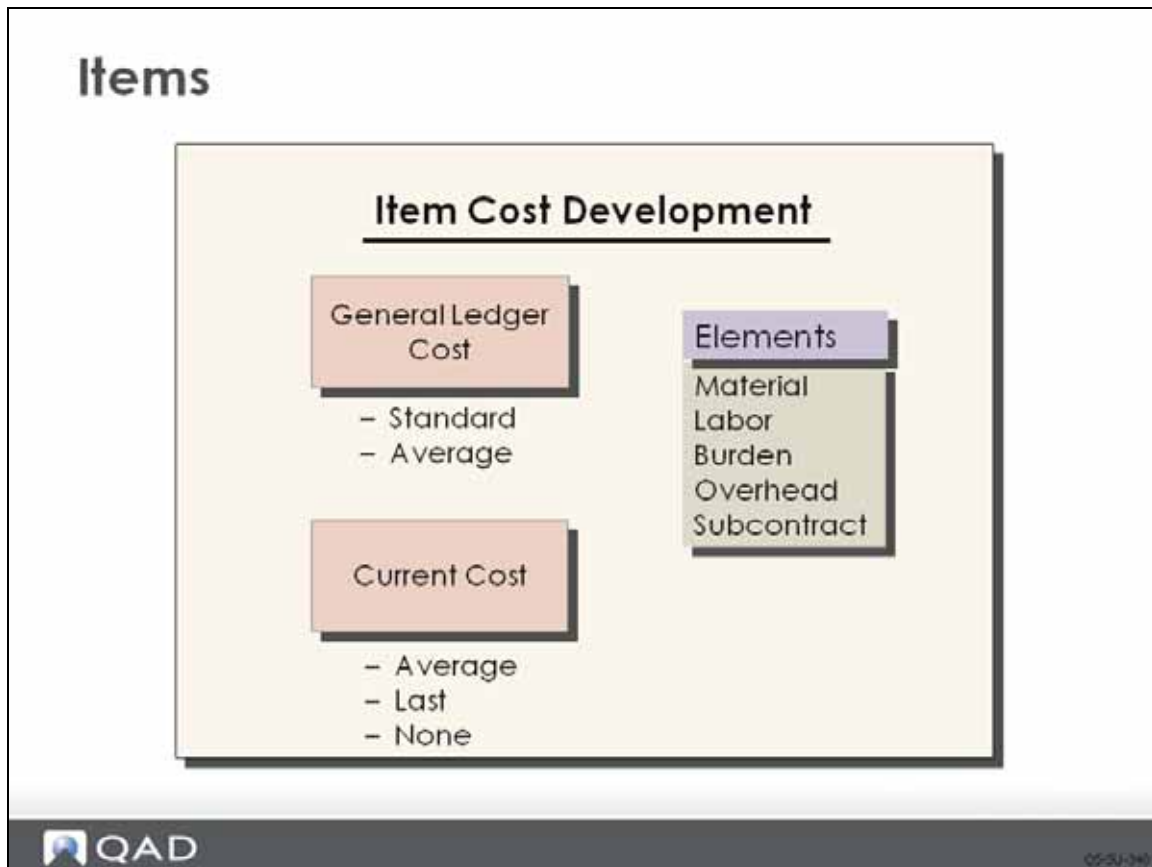
Routable. Produced internally when required by an upper-level assembly, and created automatically when the work order for the parent is released.

Distribution. Supplied internally from another site. Requirements for these items are generated by running Distribution Requirements Planning, not MRP.

Configured. Configured to customer order and produced internally. A work order is created as part of the sales order process, determining requested features and options.

Family. A special type of item used for operations planning and not actually manufactured.

Item Cost Development



The cost of a manufactured item can be calculated based on its standard bill of material and routing. Depending upon the BOM and routing, costs can be both this-level and lower-level.

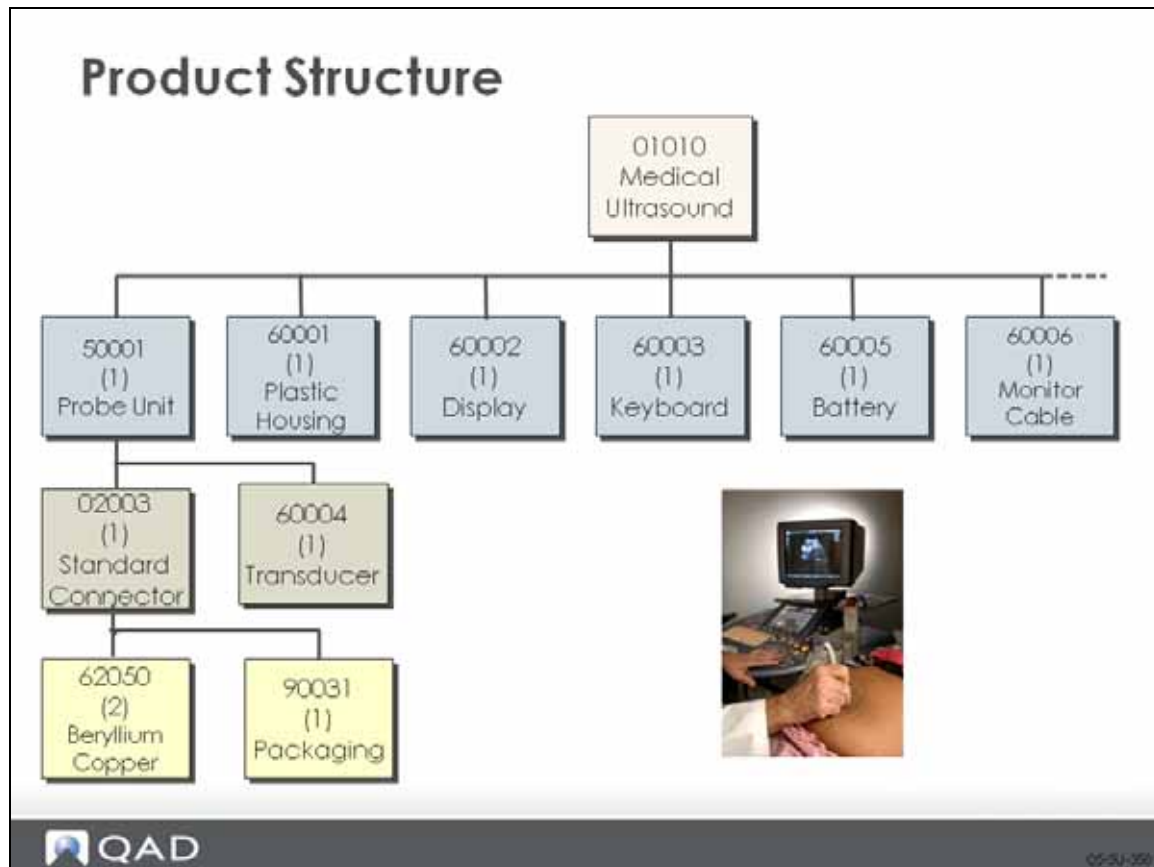
The slide shows that an item has two cost sets:

- The GL cost set has either a standard or average costing method.
- The current cost set is determined by either the average or last cost of the item or it is maintained manually (setting = none).

Both the GL and current cost sets are split into five standard cost categories and elements: material, labor, variable burden, fixed overhead, and subcontract.

In the example in this chapter, you will see how item costs are organized by these cost sets and elements.

Product Structure



The system uses the product structure, which defines parent/component relationships, for the planning and control of manufacturing. This slide illustrates the bill of material for the medical ultrasound (device 01010). The BOM shows three levels in the product structure below the end item 01010, the medical ultrasound.

- Not all level 1 components are shown; several more are needed to build the end item.
- The probe unit has two components: a standard connector and a transducer.
- The standard connector also has two components.

Alternate Product Structure or Formula

Different formulas for different batch sizes of product or alternate product structures used in different circumstances require multiple BOMs for the same item. This is done by adding a BOM code in Product Structure Code Maintenance (13.1) or Formula Code Maintenance (15.1) and then using this BOM code as the parent in Product Structure Maintenance (13.5) or Formula Maintenance (15.5).

The normal situation is to have the BOM code be the same as the item number. When several alternate structures are available, they are given other identifiers. The alternate BOM you use most often can be linked to the item number in Item Planning Maintenance (1.4.7).

Example

This example shows how QMI's Manufacturing Department completes these steps:

- Set up product line 10 for the ultrasound.
- Select the LAST method for current costs.
- Update the default site in Inventory Control.
- Set up status codes to be linked to items.
- Define the item data for parent item 01010, the medical ultrasound.
- Select the components of parent 01010 in a product structure relationship, specifying quantity required and routing operation.
- Review the product structure.

Set Up Product Line

The screenshot displays the 'Set Up Product Line' application with several overlapping windows. The main window, titled 'Product Line Maintenance', shows the following details:

- Product Line: 10
- Description: Finished Goods
- Taxable: ☒
- Tax Class: [empty]
- Default Sub-Account: [empty]
- Default Cost Center: [empty]

Below these fields are sections for 'Inventory Accounts' and 'Override'.

The 'Inventory Accounts' section lists:

- Inventory Acct: 1500
- Inv Discrep Acct: 5900
- Scrap Account: 6000
- Cost Revalue Acct: 6100

The 'Override' section is currently open, showing a list of accounts with search icons. The 'Sales Accounts' window is also open, showing:

- Sales Account: 0010
- Sales Disc: [empty]
- COGS Material: [empty]
- COGS Labor: [empty]
- COGS Burden: [empty]
- COGS Overhead: [empty]
- COGS Subcontract: [empty]

The 'Purchasing Accounts' window is open, showing:

- Purch. Work Order Accounts
- PO Rec: [empty]
- Overhead: [empty]
- PO Price: [empty]
- AP Usage: [empty]
- AP Rate: [empty]

The 'Work Order Accounts' window is open, showing a list of accounts with search icons and a 'Mech' button next to each:

- Floor Stock Account: 1100
- Material Usage Var: 5040
- Material Rate Var: 5050
- Mix Variance: 5830
- Cost of Production: 5770
- Sub Usage Var: 5440
- Subcontract Rate Var: 5450
- Work in Process Acct: 1550
- Method Variance Acct: 6800

The QAD logo is visible in the bottom left corner, and the text 'CS-SU-360' is in the bottom right corner.

QMI's Manufacturing Department has set up a product line 10 with the description Finished Goods. The sales and operations of all ultrasound components will be planned, reported, and analyzed by this product line. Additionally, costs are tracked by the inventory accounts set up in Product Line Maintenance (1.2.1).

Note Once your cursor is in the bottom frame (Inventory Accounts) if you continue to click Next, the system displays additional frames of account data—Sales, Purchasing, and Work Order—which default from Domain/Account Control (36.1)

Select Cost Method

QMI uses a standard cost method for the GL cost set, and tracks actual costs in the current cost set. The method of updating the current cost set is selected in Inventory Accounting Control (36.9.2). QMI uses the method Last, so that the last or most recent cost of an item becomes the current cost.

Additional settings include:

Current Cost from AP. Optionally, you can indicate whether current cost should be affected by rate variances calculated in Accounts Payable (AP) when the supplier invoice cost is not the same as the purchase order cost.

Create GL Transactions. Create GL Transactions is selected unless you are using the periodic method of inventory accounting. With this method, the period ending inventory is based on the cost of beginning inventory plus purchases minus sales. No GL entries are created if inventory is manually created.

Note Periodic inventory accounting is essentially an obsolete concept. Only the smallest business could manage with this technique. This is a financial inventory method giving only the value of the inventory, and only at period end. If you wanted to know how much of an item you had on hand, you would need to do a physical inventory count.

Update Inventory Control

Update Inventory Control

Inventory Control X

Go To Actions Copy Print Preview Attach

Default Site: 10-100

Inventory Count Parameters

Tolerance From Qty On Hand or Annual Usage: Qoh

Issue Days: 5

Default Site: 10-100

Item Tolerances:

Class A:	3.00%	0.00	Class C:	5.00%	0.00
Class B:	4.00%	0.00	All Others:	5.00%	0.00

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Use Inventory Control (3.24) to set other non-financial inventory parameters. Use it to set the default site to 10-100. This will prefill the site field on many transactions saving you some effort.

Most of the other settings in Inventory Control are used in cycle count and physical inventory functions, including the tolerance and ABC settings. Issue days is used to manage obsolete inventory by indicating the number of days before it is set to expire that the system can issue it.

Set Up Item Status Codes

The image displays two overlapping screenshots of the 'Set Up Item Status Codes' window in QAD software.

Top Screenshot (ACTIVE):

- Window Title: Item Status Code Maintenance X
- Buttons: Go To, Actions, Copy, Print, Preview, Attach
- Item Status: ACTIVE
- Description: ACTIVE
- Restricted Transactions: A list of 10 empty dropdown menus.

Bottom Screenshot (OBS):

- Window Title: Item Status Code Maintenance X
- Buttons: Go To, Actions, Copy, Print, Preview, Attach
- Item Status: OBS
- Description: Obsolete
- Restricted Transactions: A list of 10 dropdown menus. The first four are populated with the following values:

Restricted Transaction
ADD-FC
ADD-PO
ADD-WO
ADD-SO

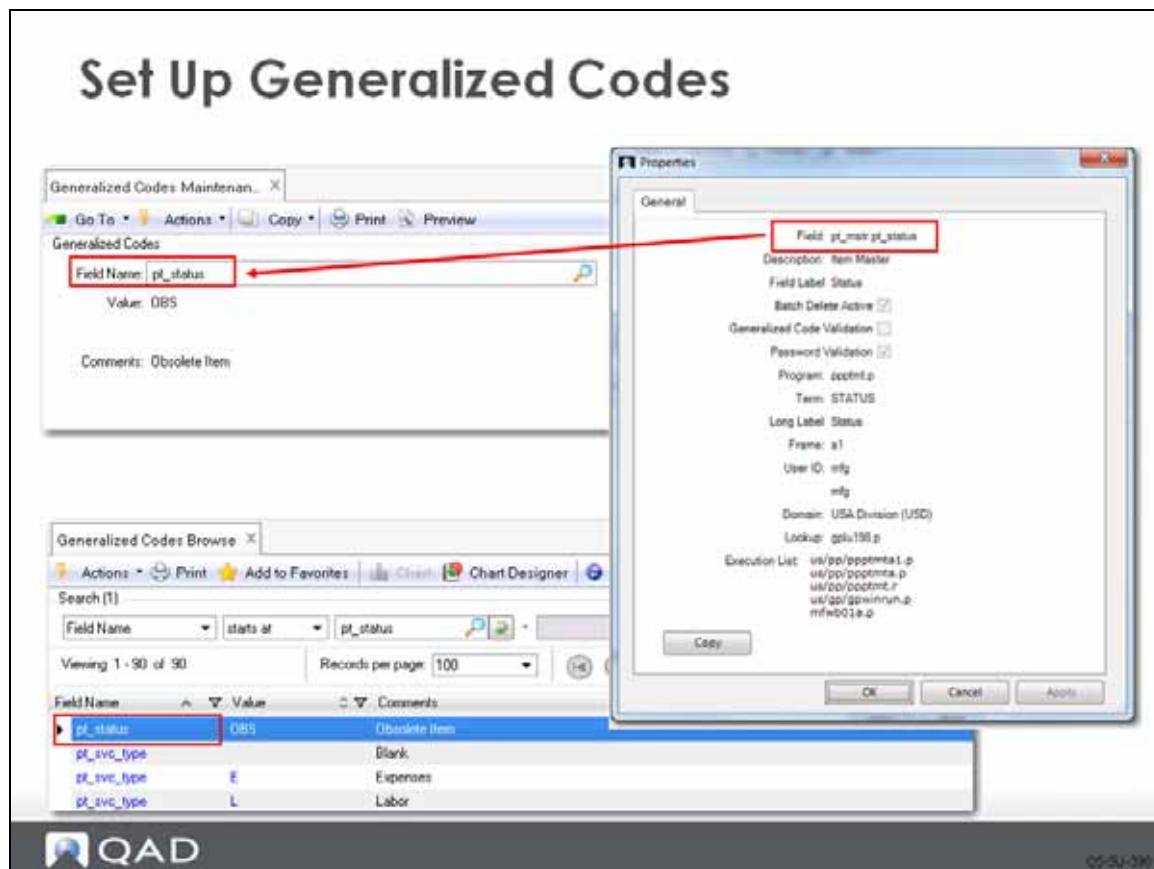
The QAD logo is visible in the bottom left corner, and the text 'CS-SU-300' is in the bottom right corner.

Item status codes are optional but a very useful feature. The codes are designed to relate to an item's life cycle. This example shows two codes: one for active items and one for obsolete items.

The first image displays the Active code and the second displays the code OBS for obsolete items. For the obsolete item status, several inventory transaction codes are prohibited. The codes are selected by clicking on the lookup icon. Those selected in the example prevent users from adding a forecast, a purchase order, sales order, or work order for any item with the status code OBS.

Item status codes are user defined and you can set up as many as you need. Used in conjunction with inventory status codes, they offer powerful control for your items.

Set Up Generalized Codes



After you have created item status codes, you can choose to enforce the use of only those you created. This is done using Generalized Codes Maintenance (36.2.13), which lets you control the values that can be specified in fields with user-defined codes.

To set up code validation, you need to know the name of the field where you want the validation to occur. To find its name, go to the program where it is used and press Next through a record until your cursor is in the field. Then press the key combination Ctrl+F.

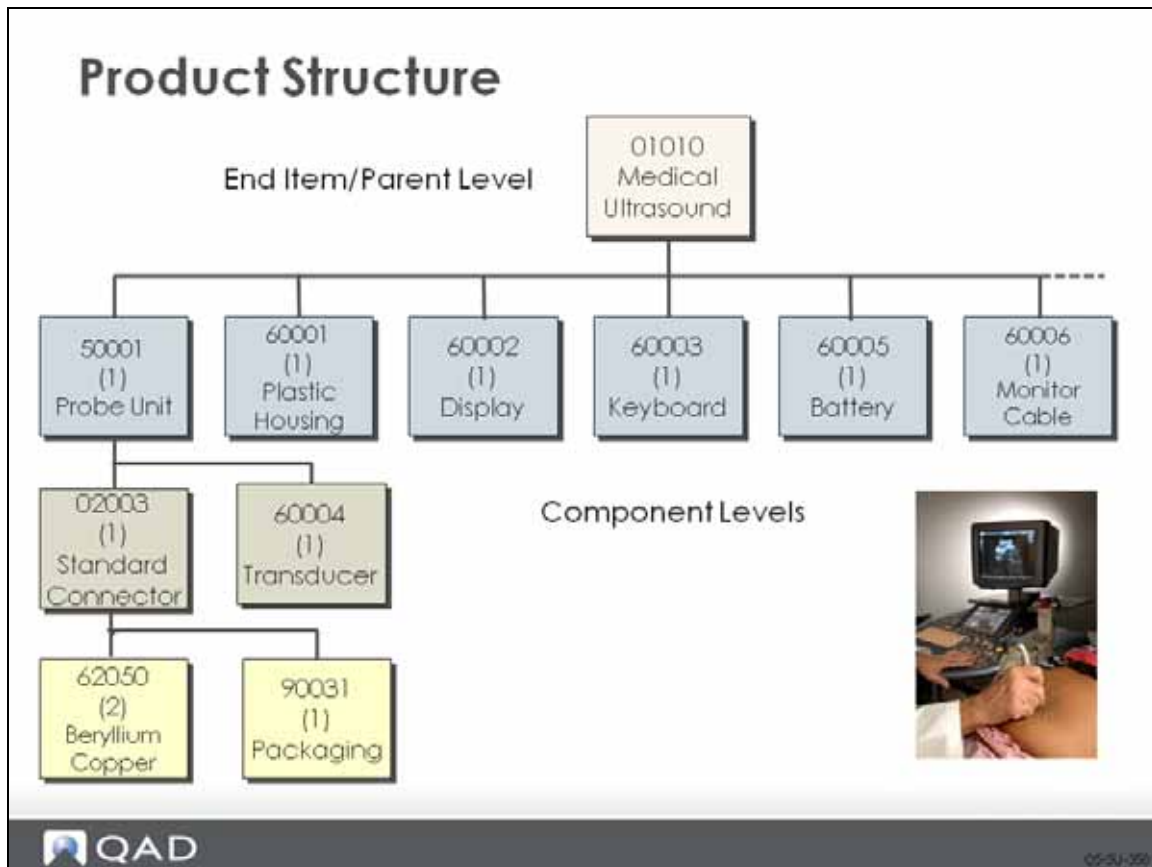
In this example, you would go to Item Master Maintenance (1.4.1), click Next until your cursor is in the Item Status field, and then press Ctrl+F. The Properties window (shown in the slide) displays all the information about your current context, including the technical table and field name (pt_mstr.pt_status). You can find the name of any active field in the same way.

To create the list of acceptable codes for item status in Generalized Codes Maintenance:

- 1 Enter pt_status for Field Name; then click Next.
- 2 In the field labeled Value, enter the acceptable code value and click Next.
- 3 Enter a description for the code and click Next.

You can enter as many codes as you want. When done, check your work by using the browse. Users can see the codes that have been set up when they use the lookup on the Status field in Item Master Maintenance.

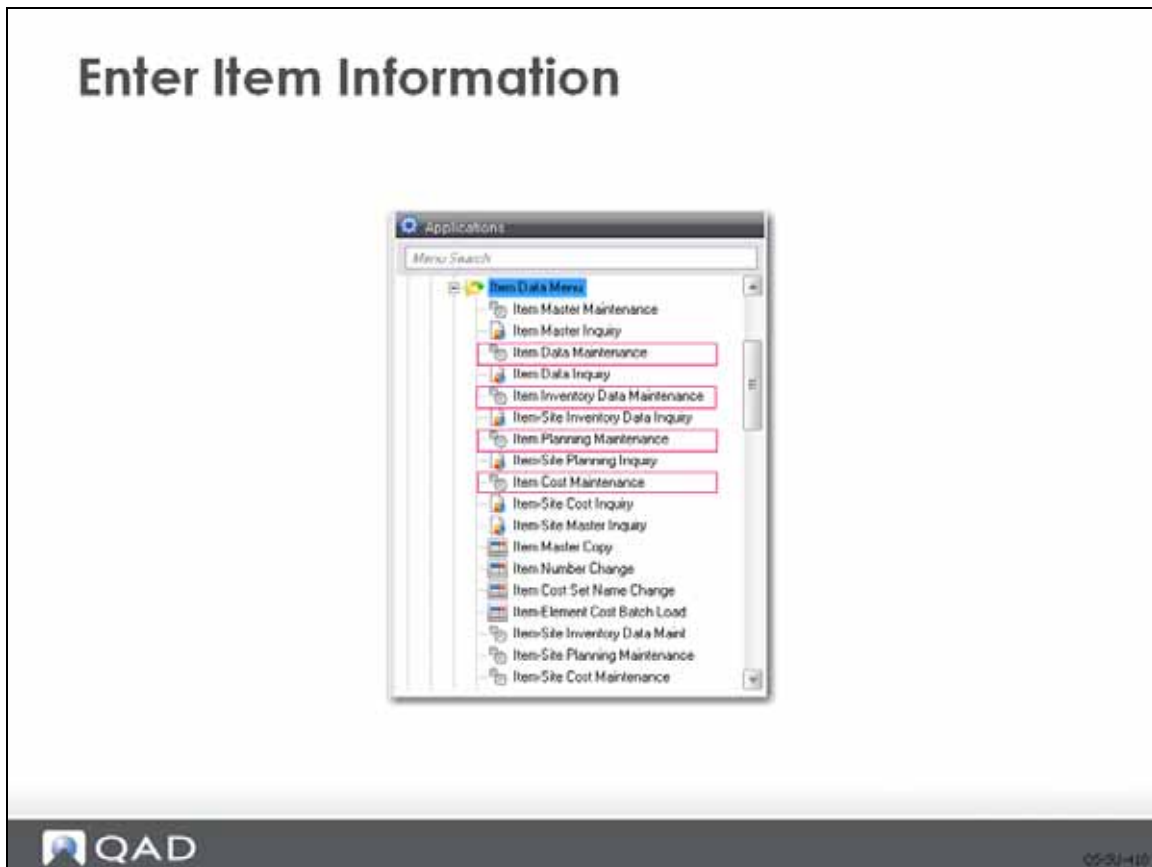
Set Up Parent Item



The product structure of the medical ultrasound is shown again in this slide. In this example, you will see how QMI set up the parent item in this product structure.

Note In the exercise, you will set up two additional items. All the items belong to product line 10.

Enter Item Information



Item Master Maintenance (1.4.1)—at the top of the menu shown in the slide—is a series of linked frames labeled:

- Item Data
- Item Inventory Data
- Item Planning Data
- Item Cost Data

As highlighted in the menu, each of these frames can be accessed with its own separate menu selection. This is often useful for job separation. You can use system security to limit access to a particular function to only those authorized to add or maintain that specific data.

Note In the exercise, you may find it more convenient to use one of the separate functions.

The menu also has separate functions for the same data at different sites. This training guide use only one site, 10-100. If additional sites are used, each item can have different data at each site.

General Item Data and Inventory Data

The screenshot displays the 'Item Master Maintenance' window in QAD. The window is divided into several sections. The top section, 'Item', contains fields for 'Item Number: 01010', 'Description: Medical Ultrasound', and 'Unit of Measure: EA'. The 'Item Data' section includes 'Prod Line: 10', 'Item Type: FINGOOD', 'Status: ACTIVE', 'Drawing: F-10000A23', 'Revision: D', 'Design Group: PRODMGMT', 'Group: Medical', 'Drawing Loc: B2-1', 'Size: 10', and 'Price Break Category'. The 'Item Inventory Data' section includes 'ABC Class: A', 'Average Interval: 90', 'Lot/Serial Control: S', 'Cycle Count Interval: 90', 'Site: 10-100', 'Shell Life', 'Location: 010', 'Allocate Single Lot', 'Key Item', 'Location Type', 'Auto Lot Numbers', 'PD Receipt Status', 'Active', 'Lot Group', 'W/O Receipt Status: N-Y-N', 'Active', 'Article Number: F10000-0123', and 'Memo Order Type'. The QAD logo is visible in the bottom left corner, and the version number 'Q5-3U-420' is in the bottom right corner.

In Item Master Maintenance, QMI enters item number 01010, a description, and the item unit of measure (UoM), and in the Item Data frame, product line 10. Remember, each item is assigned to one and only one product line. In addition to Item Number, Product Line is the key field required by the system. Units of measure are defined as generalized codes and are critical to both inventory control and costing. Careful consideration should be given to how you plan to use them.

Item Data Frame. Item Type, Item Status, and Item Group are optional (unless validated by generalized codes) and user defined. If you choose to use them, plan carefully since these codes offer additional capability in sorting browses, reports, and inquires. Enter Active in the Status field.

Item Inventory Data Frame. Enter site 10-100; this is the default site. In the Location field, enter 010, the default inventory location for this item. You can override the default site and location on a transaction by simply typing over the default value and entering the site and or location to be used for the current transaction.

Set the ABC Class code to A. This code is used for ABC analysis of inventory, managing inventory count tolerances, and cycle counting. After the system has some data and history to work from, it can compute the ABC class code. When you click Next on the Inventory Data frame, the Shipping Data frame appears. Leave this data blank for the time being and click Next to advance to the Item Planning Data frame.

Item Planning Data

Item planning data determines how and when to replenish inventory. The planners want to let material requirements planning (MRP) automatically create planned orders for this item, based on demand, so the Plan Orders field is selected.

Plan Orders. When selected and a value is specified in the Order Policy field—as it is in this example—MRP generates planned purchase and work orders to satisfy net requirements for this item. Since this is an end item, Mstr Sched is also checked.

The Mstr Sched field is normally checked only for items that need to be forecast or otherwise planned. These are usually the end items the company sells. Reports, inquiries, and browses can be selected for master schedule items only, providing an excellent high-level filter.

Order Policy. Determines the rules for planning orders. The ordering rule QMI applies to item 01010 is Period Order Quantity (POQ). This means that MRP calculates demand for this item over the number of calendar days specified as the Order Period (7 in this example) and creates one order to satisfy all demands in a seven-day period.

Purchase/Manufacture. Item 01010 is manufactured, indicated by M. The manufacturing lead time is 4 days—the number of days it takes to complete the manufacturing cycle for this item. The Purchase/Manufacture field defines the source for this item at this site.

Note Chapter 11, “Manufacturing Planning,” on page 347 discusses in more depth the effect of item planning parameters. For example, order policies and how they are used to calculate order quantities are covered on page 358.

Item Cost Data

Item Cost Data

Item Master Maintenance
Go To Actions Copy Print Preview Attach

Item Planning Price
Price Cost

Item
Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Totals
Totals: 579.27275 1,226.17882 1,805.45157 06/28/10

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	1,219.92	1,219.92		Material	
Labor	577.50	6.17	583.67		Labor	
Burden	1.77275	0.08882	1.86157		Burden	
Overhead	0.00	0.00	0.00		Overhead	
Subcontr	0.00	0.00	0.00		Subcontr	

QAD
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The item cost section is divided into three sections: price, general ledger cost, and current cost. The three frames appear sequentially with repeated clicks of the Next button.

- In the first frame, QMI's Marketing Department has determined a price of \$2,500 for each unit.
- The next frame displays GL costs.
- The last frame (shown in this slide) displays current costs. This example focuses on the Current Cost Data frame.

For manufactured items, material costs are calculated based on actual costs recorded in the system. In the case of a purchased item, the material cost is the purchase cost. As a purchased item, it has no lower-level manufacturing related costs, only this-level costs.

Exercise 5-1: Set Up Item Data and Items

Set Up a Product Line

Important Remember to check the screen shots in the example if you are unsure how to fill in the data fields for these activities.

- 1 Use Product Line Maintenance (1.2.1) to create a new product line, 15.

This will be the product line for the medical ultrasound quality check.

Key fields to populate are:

Field	Data
Product Line	15; click Next
Description	Quality

Click Next slowly 6 times.

Review the account numbers. Where did this default data come from? Accept the default accounts and update the record. (When the product line is highlighted, click Back.)

Review Control Settings

- 2 Use Inventory Accounting Control (36.9.2). Accept the defaults, but change Current Cost to LAST.

Field	Data
Current Cost	Last

Click Next to save your change, then Back to exit.

- 3 In Inventory Control (3.24), ensure the default site is set to 10-100. Click Next, then Back to exit.

Field	Data
Default Site	10-100

Click Next to save your change, then Back to exit.

Define Item Status Codes

- 4 Use Item Status Code Maintenance (1.1.5) to set up two status codes, Active for Active and OBS for Obsolete. Do not define any restricted transactions for Active. For OBS, select ADD-SO from the list of restricted transactions.

Why might you want to prevent users from adding an obsolete item to a sales order?

Define Generalized Codes

- 5 To be able to group items and components of the medical ultrasound, you will create a new generalized code for Item Group (pt_group) using Generalized Codes Maintenance (36.2.13).

Field	Data
Field Name	pt_group
Value	MEDICAL; click Next
Group	App; click Next
Add to system domain	Yes; click Next

Review Item Data

- 6 Use Item Master Maintenance (1.4.1) to verify that item 01010 has been created correctly.

Key fields to verify are:

Field	Data
Item Number	01010; click Next twice
Promo Group	Blank
Group	ELECTRON; click Next
Site	10-100 (in Item Inventory Data frame)
Location	010 (in Item Inventory Data frame)

Click Next until the Item Number is highlighted, then click Back.

- 7 Review the planning data for the end item using Item Planning Maintenance (1.4.7). Key fields to notice are:

Field	Data
Item Number	01010; click Next
Mstr Sched	Yes (checked)
Plan Orders	Yes (checked)
Order Policy	POQ
Order Qty	0
Purchase/Manufacture	M
Min Order	1
Order Mult	1

Use default values for all other fields.

Click Next until the Item Number is highlighted; click Back.

Define Component Items

Most of the necessary component items have been provided for you. In this exercise, you add two more items that are used in later exercises.

- 8 Use Item Master Maintenance (1.4.1) to add two component items to your database.

Field	Data
Item Number	60017; click Next
Unit of Measure	EA
Description	Mouse Pad; click Next
Prod Line	10

Field	Data
Item Type	COMP
Status	ACTIVE
Group	Medical; click Next
ABC Code	A
Location	020; click Next twice
Supplier	10S1002
Purchase/Manufacture	P; click Next
Price	3.99; click Next
Standard Cost: Material	Click on Material or press space bar; enter 0.49; then click Next twice

Field	Data
Item Number	60018; click Next
Unit of Measure	EA
Description	Dust Cover; click Next
Prod Line	10
Item Type	COMP
Status	ACTIVE
Group	Medical; click Next
ABC Code	A
Location	020; click Next twice
Supplier	10S1002
Purchase/Manufacture	P; click Next
Price	9.99; click Next
Standard Cost: Material	Click on Material or press space bar; enter 2.49; then click Next twice

Item Inventory Data

- 9 Use Item Inventory Data Maintenance (1.4.5) to modify the site associated with some of the components of 01010 so that it is the default site 10-100.

Item Number	ABC Class	Site	Location
50001	B	10-100	020
02003	C	10-100	010
62050	A	10-100	020
90031	C	10-100	020

Set Up Product Structure

Set Up Product Structure

Product Structure Maintenance

Top Level Parent: 01010 | New | Save | Product Structure | Component | Delete | Levels: 1

Parent: 01010 Medical Ultrasound

Component: 50001 Probe Unit - 10 Mhz

Reference:

Start Date: End Date:

Quantity: 1

Unit of Measure: EA

Structure Type: Sequence Number: 0

Remarks: Forecast Percent: 100.00%

Scrap: 0.00% Option Group:

Lead Time Offset: 0 Process:

Operation: 10

Component	Description	Unit of Measure	Reference	Quantity	Start Date	End Date	BOM Code
01010	Medical Ultrasound	EA		1			01010
50001	Probe Unit - 10 Mhz	EA		1			50001
02003	Standard Connector	EA		1			02003
60004	Transducer - 10 Mhz	EA		1			60004

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After defining items, QMI is ready to create parent/component relationships in Product Structure Maintenance (13.5).

Note Product Structure Maintenance is one of a few programs available in an enhanced .NET UI version, which lets you use drag and drop to add components beneath a parent item. If you want to use the more traditional UI, right-click on Product Structure Maintenance in the menu and select Properties. Click the Program tab and change Open with: from .NET User Interface to Desktop.

Click New to begin creating a product structure. After you select the parent item from the list of items by double-clicking, you can begin adding components. You add them the same way by finding them in the list and double-clicking to add them to the structure. After the item is added, you can double-click again to display the data associated with the component item in the structure (shown above). When data entry is complete for the first component, double-click the next component item you want to modify.

Quantity Per. Enter the number of the component item required to make one of the parent item.

Operation. You can also add the operation number from the routing where this component will be used. This item is used at operation 10. This field is especially important in repetitive manufacturing. When a component is associated with a routing step, it is automatically issued (backflushed) when you report quantities for the parent in Repetitive Labor Transaction or

Repetitive Scrap Transaction. If Operation is blank, the system assumes components are issued at the first operation. Operation is also used by both during cost roll-ups to calculate material costs.

Component Scrap. Scrap can be used to account for lost or defective material. For example, the beryllium copper component in the product structure is a small item, easily dropped and lost or found damaged. You can choose to add a small scrap value to the product structure at this operation. The planning systems adjusts the purchase requirements and the item cost for this loss.

Effective Dates. The elements that make up a product structure have a range of effective dates, so new components can be phased in and others phased out.

Product Structure Inquiry

Product Structure Inquiry

Parent Item/BOM Code: 01010

As Of: 4/15/2012 Levels: Rev: PCO Number: ID: Domain: Output:

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound						EA
1	50001	Probe Unit - 10 Mhz	1.0		EA			
..2	02003	Standard Connector	1.0		EA			
..3	62050	Beryllium Copper	0.0001		r1			
..3	62050	Discrete PO	0.0001		r1			
..3	90031	Beryllium Copper	0.0001		r1			
..3	90031	Discrete PO	0.0001		r1			
..3	90031	Packaging	2.0		EA			
..2	60004	Transducer - 10 Mhz	1.0		EA			
1	60001	Durable Plastic Housing	1.0		EA			
1	60002	Display / Readout	1.0		EA			
1	60003	Keyboard	1.0		EA			
1	60005	Battery	1.0		EA			
1	60006	Monitor Cable	1.0		EA			
1	60007	Movable Cart	1.0		EA			
1	60008	Printer	1.0		EA			
1	60050	Base Unit / CPU	1.0		EA			
1	90093	Shipping Carton	1.0		EA			

13.6 Product Structure Inquiry bmpsinq.p

Once the product structure is defined, it can be reviewed in Product Structure Inquiry (13.6). The slide shows the request setup and the inquiry output.

The parent item—the ultrasound—is listed first, and the component items are listed below it using an indented structure that indicates the level of the item in the product structure.

You can quickly see key information, such as unit of measure for each item and the quantity required to make one complete device.

Exercise 5-2: Set Up Product Structure

In this exercise you use Product Structure Maintenance (13.5) to add two new items to the parent/component relationships for the medical ultrasound.

Note The way you navigate this program varies depending on whether you changed the Open with setting from .NET User Interface to Desktop. The steps here assume you are using the .NET User Interface navigation mode.

- 1 Product Structure Maintenance initially displays all a browse of items in the current domain. In the Items tab, double-click item 01010. This displays the product structure below in a split-frame view.
- 2 Drag the lower frame up to view the component items already defined in the product structure. Note that item 50001 is a parent item to 02003 and 60004. Expand the + icon next to the item number to see the components indented below the parent.
- 3 Since there are over 200 items in the database, not all are displaying. To add items 60017 and 60018, specify Item Number starts at 60017 in the top frame of the Items tab and press Enter.
- 4 Make sure 01010 is highlighted in the product structure in the lower frame. Then double-click item 60017 in the top frame and it is added to 01010 structure below. Do the same for 60018.
- 5 Click the Save icon on the toolbar at the top of the screen.
- 6 Double-click item 60017 in the lower frame and note that the upper frame is now showing the Product Structure Maintenance tab. After adding the item to the product structure, you can modify the quantity per and the operation where the item is used. Enter 10 for operation. Click the Save icon in the toolbar.
- 7 Double-click item 60018 in the lower frame and enter 10 for operation in the Product Structure Maintenance frame above. Click the Save icon in the toolbar.
- 8 Use Product Structure Inquiry (13.6) to review the product structure for parent 01010. Make sure it looks like the following example with the addition of 60017 and 60018. Note how the items you added display in numerical order.

Exercise: Product Structure Inquiry

Product Structure Inquiry

Go To • Actions • Copy • Print • Preview • Attach •

Parent Item/BOM Code:

As Of: 5/15/2012 Levels: Rev:

PCO Number: ID: Domain: Output:

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound						EA
1	50001	Probe Unit - 10 Mhz	1.0					EA
2	01001	Standard Connector	1.0					EA
3	62050	Beryllium Copper	0.0001					r1
3	62050	Discrete P0						
3	62050	Beryllium Copper	0.0001					r1
3	90031	Discrete P0						
3	90031	Packaging	2.0					EA
2	60004	Transducer - 10 Mhz	1.0					EA
1	60001	Durable Plastic Housing	1.0					EA
1	60002	Display / Readout	1.0					EA
1	60003	Keyboard	1.0					EA
1	60005	Battery	1.0					EA
1	60006	Monitor Cable	1.0					EA
1	60007	Movable Cart	1.0					EA
1	60008	Printer	1.0					EA
1	60017	Mouse Pad	1.0					EA
1	60018	Dust Cover	1.0					EA
1	60050	Base Unit / CPU	1.0					EA
1	90093	Shipping Carton	1.0					EA

13.6 Product Structure Inquiry bmpsiq.p

You can also use the Product Structure by Item Report (13.8.1) to review your work. This view of the product structure also displays the operation number where the component is used. Direct the report to your monitor by selecting PAGE in the Output field.

Operations will be set up in the next section. When new items are created in manufacturing, the product structure and routing are usually developed together, so all the information is available to the person entering item data.

Exercise: Product Structure by Item Report

 **Product Structure by Item Report**
10USA

Level	Component Item	Reference	Description	Quantity Per UM	Op Ph	T Iss	Start Eff	End Eff
Parent	01010		Medical Ultrasound Rev: D	EA				
1	50001		Probe Unit - 10 Mhz Rev: AA	1.0 EA	10			
.2	02003		Standard Connector	1.0 EA				
..3	62050	Operation 10	Beryllium Copper Discrete P0	0.0001 r1	10			
..5	62050	Operation 30	Beryllium Copper Discrete P0	0.0001 r1	30			
..8	90031		Packaging	2.0 EA				
.2	80004		Transducer - 10 Mhz	1.0 EA				
1	60001		Durable Plastic Housing	1.0 EA	10			
1	60002		Display / Readout	1.0 EA	10			
1	60003		Keyboard	1.0 EA	10			
1	60005		Battery	1.0 EA	10			
1	60006		Monitor Cable	1.0 EA	10			
1	60007		Movable Cart	1.0 EA	10			
1	60008		Printer	1.0 EA	10			
1	60017		Mouse Pad	1.0 EA	10			
1	60018		Dust Cover	1.0 EA	10			
1	60050		Base Unit / CPU	1.0 EA	10			
1	90093		Shipping Carton	1.0 EA	30			

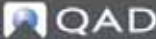
Review

Review

4

Product Definition

- **Product line**
Product Line Maintenance
- **Current cost method**
Inventory Accounting Control
- **Item data**
Item Master Maintenance
- **Product structure**
Product Structure Maintenance

 QAD

CS-3U-490

In this chapter, you saw how products are defined in QAD EE:

- Product lines are set up in Product Line Maintenance. They provide inventory accounts for an item so that costs can be tracked.
- Current costs for items are calculated based on the setting in Inventory Accounting Control (Last, Average, None).
- Item data is entered by area—general, inventory, planning, and cost data.
- Product structure is defined in Product Structure Maintenance (or Formula Maintenance) indicating the quantity per and routing operation where the item is used.

Manufacturing Setup

This chapter describes basic elements required for manufacturing activities to take place, including shop calendars, departments, work centers, machines, and routings.

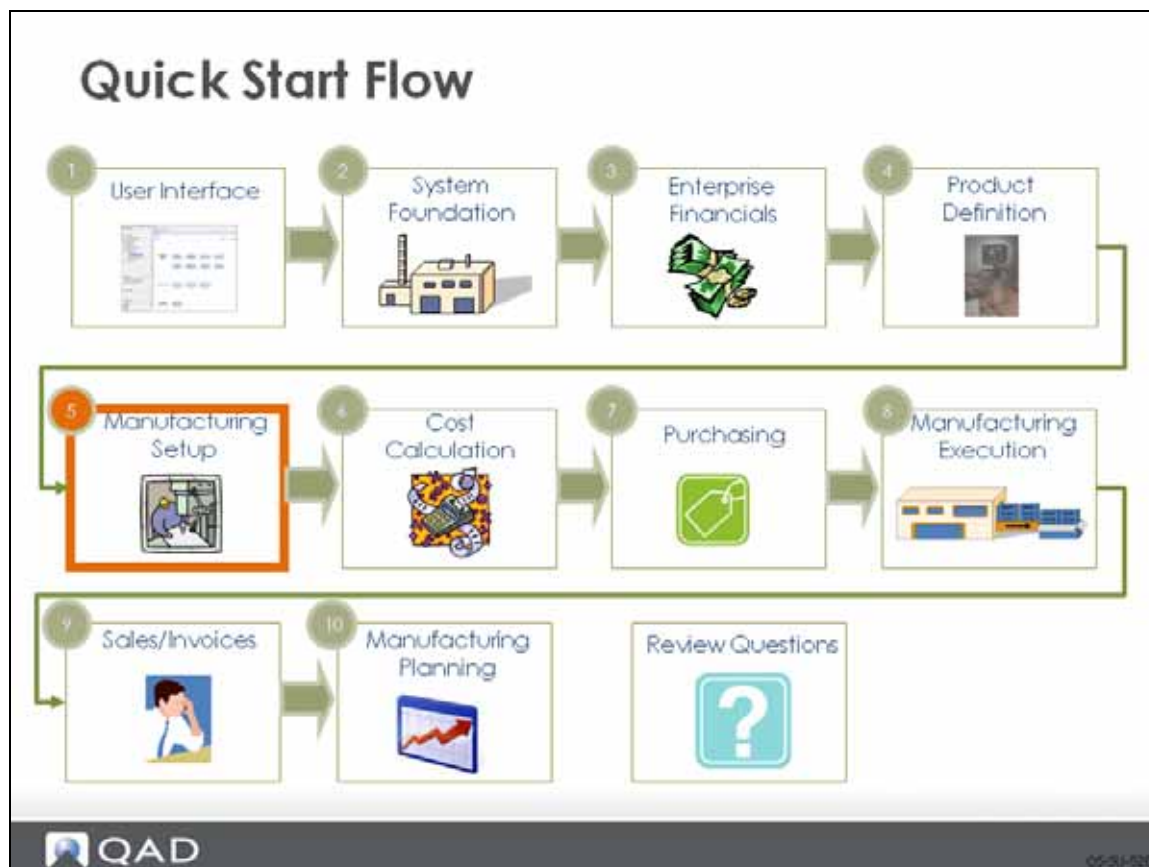
Overview of Manufacturing Setup

Key Concepts

Example

Review

Overview of Manufacturing Setup



Now that you have seen how to define a product in QAD EE, you will look at the manufacturing environment in which a product is built.

Chapter Topics

Topics in this chapter are the shop calendar, departments, work centers, machines, and routings.

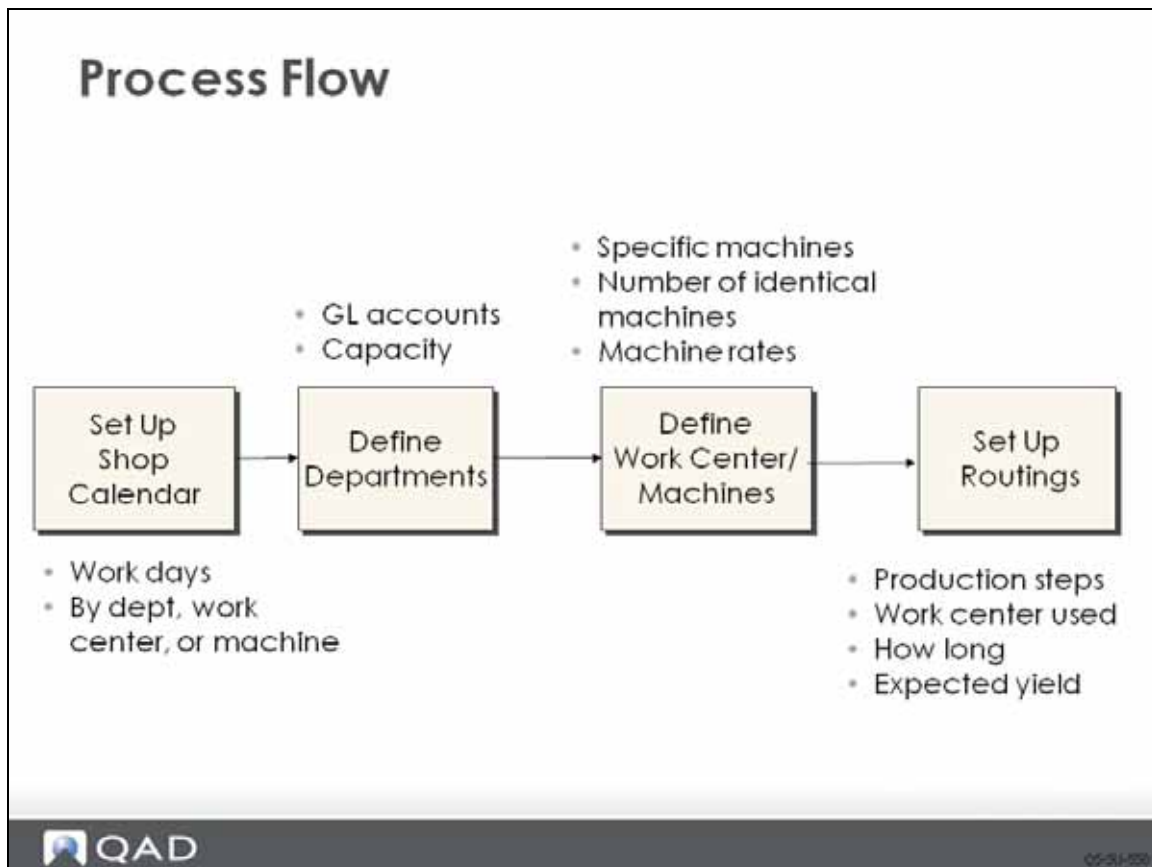
- Key Concepts
 - Shop Calendar
 - Departments and Work Centers/Machines
 - Routings
- Example
 - Set Up Shop Calendar
 - Define Departments
 - Define Work Centers/Machines
 - Set Up Routings
- Review
- Exercise

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the information provided by a department.
- Describe the information provided by a work center.
- Describe the information provided by a routing.
- Set up a shop calendar, department, work center, and routing.

Key Concepts

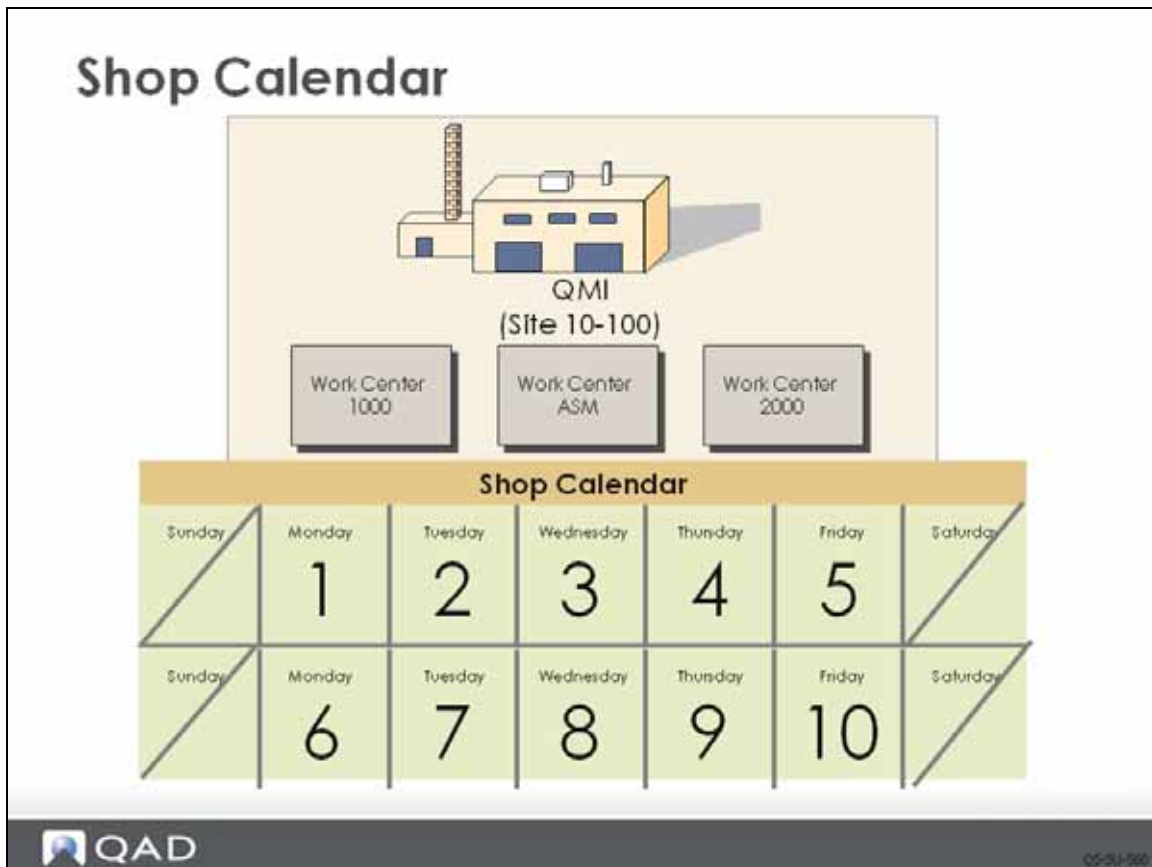


Once you have set up items in Item Master Maintenance, you need to identify where and how they are manufactured. This is done by:

- Setting up shop calendars
- Setting up manufacturing departments and work centers/machines
- Defining the manufacturing operations required to produce each of the items

The following pages follow the order shown in the process flow; the shop calendar is discussed next.

Shop Calendar



The shop calendar is required for planning, manufacturing, and distribution functions. The calendar indicates what days the plant is open and how many hours are worked each day. The calendar determines the hours a work center is available to do work. This information is also used by capacity requirements planning.

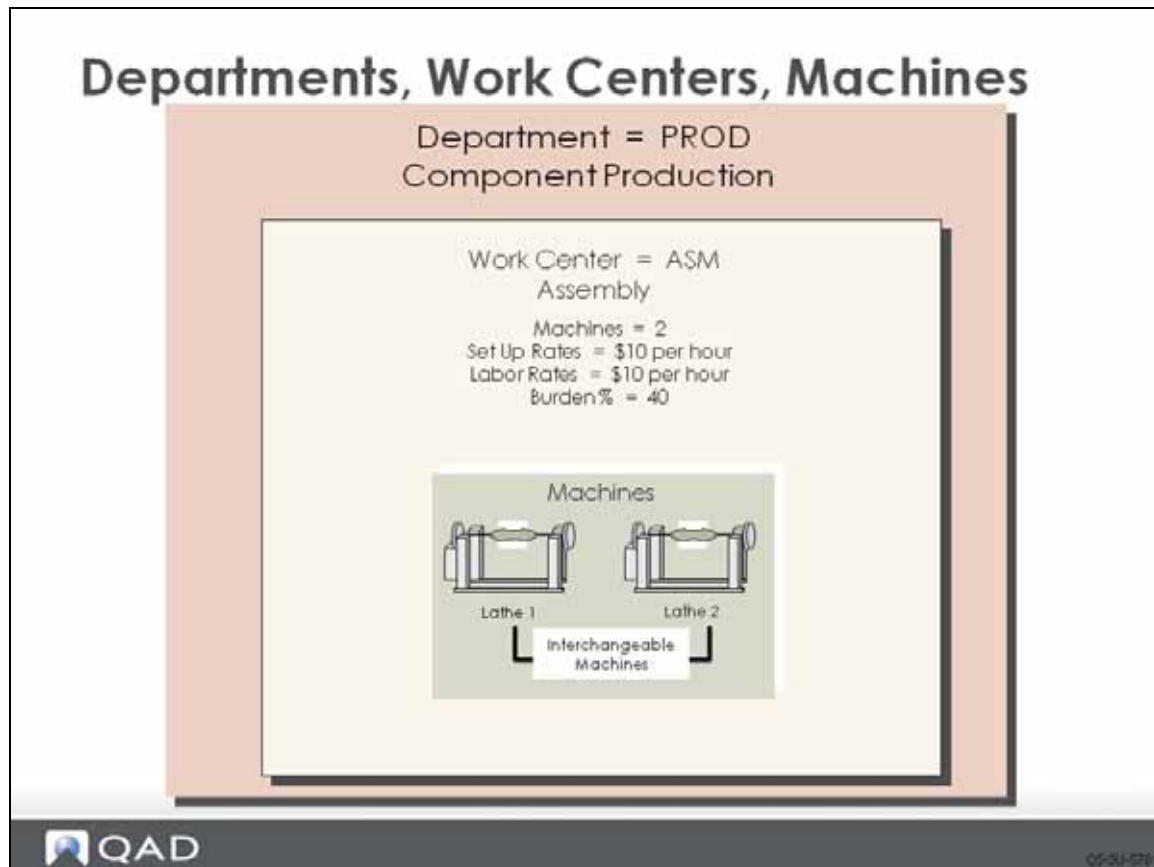
When a particular day is not defined as a work day, an order cannot be due on that day. None of the planning functions in QAD schedule an order to be due on a non-work day.

- Use Calendar Maintenance (36.2.5) to maintain the default calendar for all sites.
- Use Holiday Maintenance (36.2.1) to turn off a normal work day, that is, make it a non-work day for the entire site.
- Use the Reference field in Calendar Maintenance to modify a calendar for the short term. For example, add extra hours for a peak season, or indicate a two-week shutdown.
- Optionally define calendars for work centers or machines that have different schedules than the default calendar.

Calendar information is used to schedule:

- Start and due dates for MRP planned orders, master schedule orders, and work orders
- Operations for work orders and repetitive schedules
- The procurement or shipment of materials through association with suppliers and customers

Departments, Work Centers, Machines



Work areas in a manufacturing plant are defined in QAD EE using departments, work centers, and machines.

Departments. A manufacturing plant is split into departments for control purposes. Each production unit (work center) must belong to one, and only one, department. This grouping is used primarily for capacity planning and accounting. GL accounts are attached to each department. At least one department must be defined before you can enter work centers or routings.

Work Centers. A work center is a specific production unit within a department consisting of one or more people and/or machines. In QAD EE, work centers are the most basic units for operation scheduling, capacity requirements planning, and cost determinations for GL transactions. You must have at least one work center in order to set up routings and to report labor.

Machines. The combination of the work center and the machine identifies a specific machine. You can set up a work center with multiple identical machines or with distinct machines. When machines are identical you can use parallel production. If the machines are not completely interchangeable, each is identified with a distinct code.

Note While defining unique work center and machine combinations allows more precise costing and scheduling, it does limit the ability of the work center supervisor to decide which machines to schedule work on without generating method variances.

Work Centers

Work Centers

Production areas for completing specific tasks

Assemble

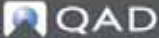


Test



Pack



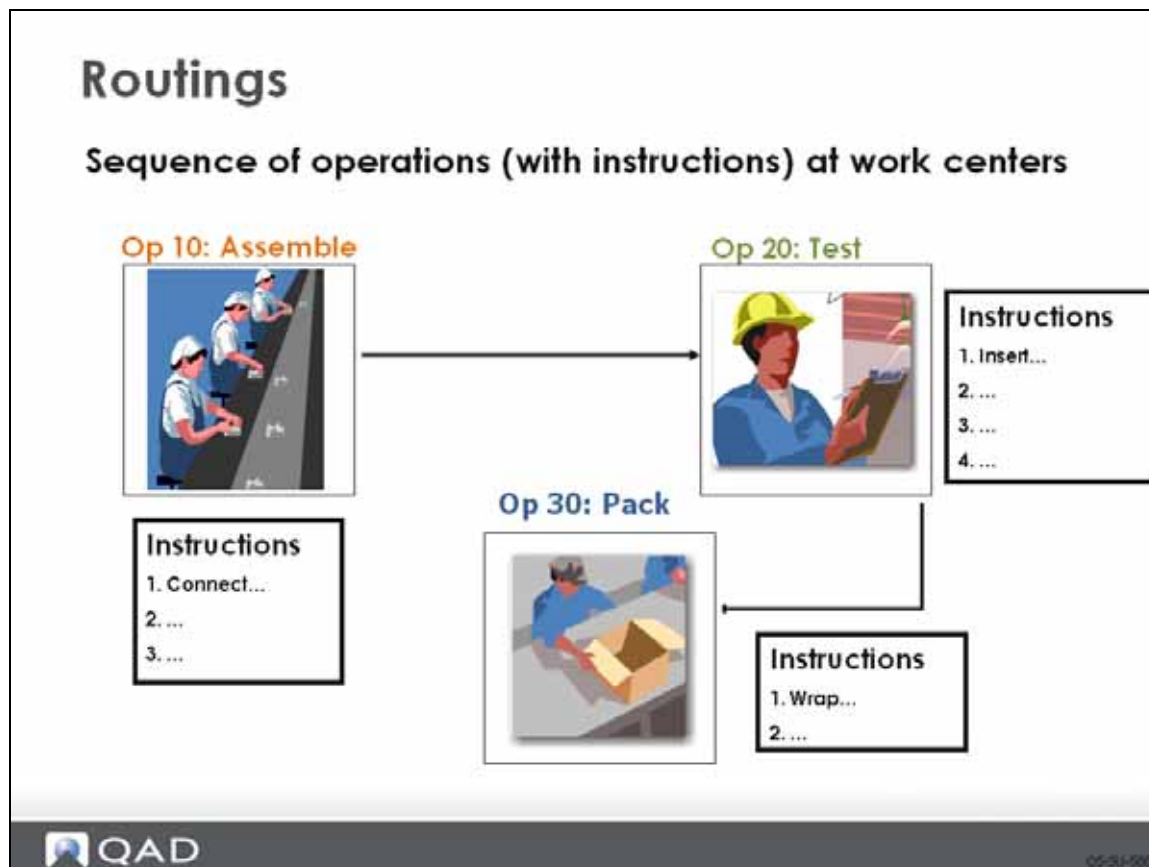
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The medical ultrasound is a manufactured product that uses discrete work orders with operations completed at work centers.

Remember from the overview of manufacturing that this is only one type of manufacturing process. High production, repetitive manufacturing uses production lines, not work centers, to manage the process. Lean manufacturing uses Kanban cards.

Batch environments use a formula rather than a product structure and a process rather than a routing.

Routings



To manufacture an item or product, you complete one or more activities or operations. The list of required operations—called a routing—defines the process needed to make the item. If a product structure is the list of ingredients in a recipe, a routing is the directions or instructions needed to process the ingredients to achieve the end product. The routing describes:

- The steps required to make the item (operations)
- Where the steps are performed (work centers)
- How long they take (queue time, setup time, run time, wait time, and move time)
- The expected yield percentage at each operation (yield %)

The department and work center codes associated with routing operations link actual production results with capacity planning, cost accounting, and other programs.

Note Queue time, setup time, run time, wait time, and move time are all elements of lead time.

To manufacture a medical ultrasound may require a routing with several operations with instructions to assemble the various components. The number of operations, how they are sequenced, and how much detail is included with each is determined by how the business sets up the process and how they want to manage it.

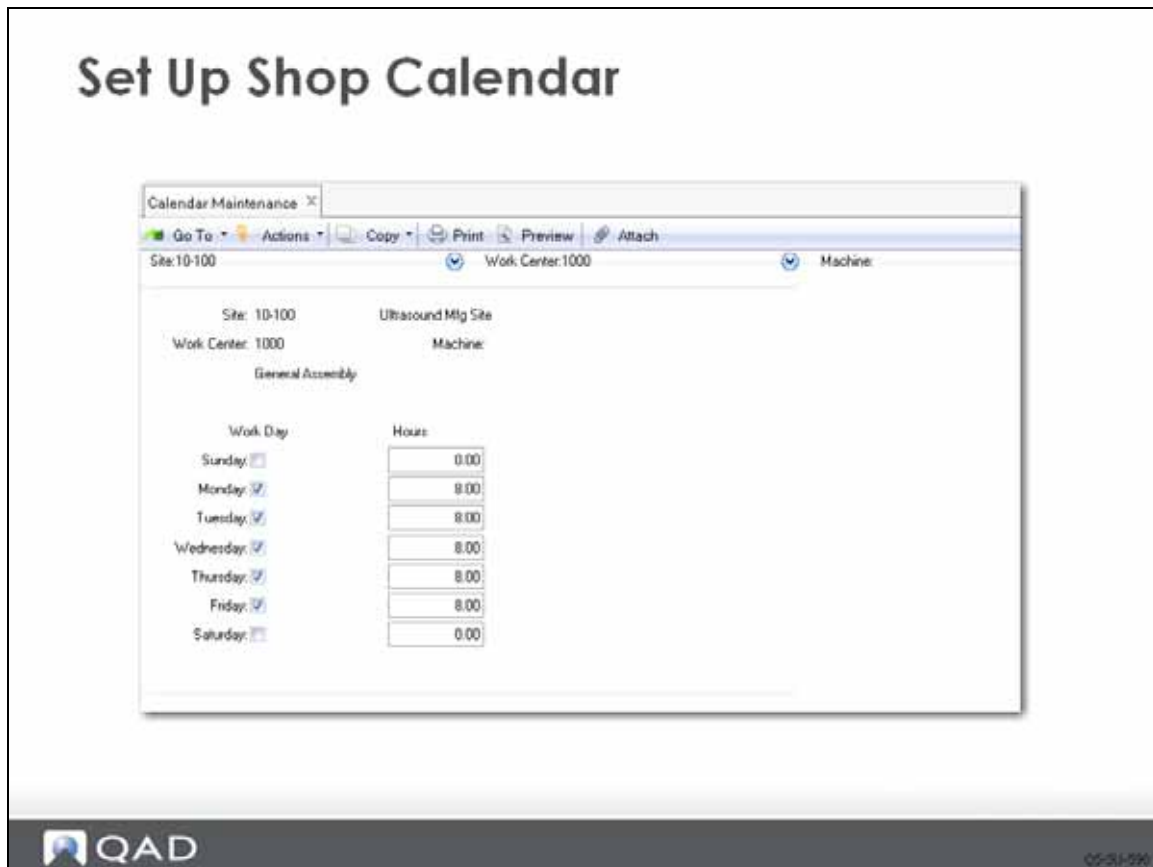
Alternate Routings. Typically, a routing code is the same as the item number. When several routings can be used to produce the same item, alternate routes are defined with different routing codes. The primary routing—the one you use most often—can be linked to the item number in Item Planning Maintenance (1.4.7).

Example

This example shows how QMI's Manufacturing Department completed these steps:

- Define a shop calendar with 5 eight-hour days.
- Set up department 0400 with a labor capacity of 8 hours/day.
- Create work center 1000 with a setup rate of \$5.00/hour, a labor rate of \$4.50/hour, and labor burden of 0.01%.
- Define a routing for item 01010 with three operations:
 - Operation 10 (assembly) requires 0.5 hours setup time to get the components from the inventory room; additionally, per device, it requires 1.00 hour run time to assemble the ultrasound.
 - Operation 20 (test) requires 0.5 hour setup time, and a run time of 0.2 hours.
 - Operation 30 (pack) requires 0.5 hour setup time, and 0.06 run time.
- Review results in Routing Inquiry.

Set Up Shop Calendar



QMI sets up the shop calendar in Calendar Maintenance (36.2.5) with a five-day week, Monday through Friday, with eight hours available for each day.

If additional sites and or work centers/machines are created, they will use this calendar as a default, but could then be changed to site or work center/machine specific calendars.

Additional Notes

The system supports defining separate shop calendars for each site/work center/machine that you create. Each can have its own work days and work-day duration entered in Calendar Maintenance. Holidays that affect all calendars can be entered in Holiday Maintenance, but work-center-specific holidays must be entered in Calendar Maintenance using the Reference field.

Define Departments

The screenshot shows the 'Department Maintenance' window in QAD. The title bar reads 'Department Maintenance X'. The menu bar includes 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. The main form displays the following information:

- Department: 0400
- Default Sub-Account: [text box]
- Default Cost Center: [text box]
- Override: [checkbox]
- Override: [checkbox]
- Description: Assembly
- Labor Capacity: 8
- Cost of Production: 5770
- Labor: 5120
- Burden: 5220
- Labor Usage Variance Acct: 5140
- Labor Rate Variance Acct: 5150
- Burden Usage Variance: 5240
- Burden Rate Variance: 5250

On the right side of the form, there is a table with three columns: 'Mech', 'mfg', and 'mfg'. The rows correspond to the account codes listed on the left, with 'Mech' in the first column and 'mfg' in the second and third columns.

QAD logo is visible in the bottom left corner, and the text 'CS-31-600' is in the bottom right corner.

QMI has set up department 0400 using Department Maintenance (14.1). A department is used primarily for capacity planning and accounting purposes and a Labor Capacity of 8 is defined, which means that this department has 8 hours of labor capacity per day Monday through Friday based on the shop calendar. This implies that only one person is in this department since the calendar shows 8 hours per day. If the department had 5 people, Labor Capacity would be 40.

Labor capacity is the total number of hours of work that can be performed within a department per day (day length is defined in Calendar Maintenance). The department labor capacity is entered manually as the sum of the capacities of all work centers and machines in the department. Capacity Requirements Planning (CRP) uses labor capacity to calculate capacity and load by department.

Important Care should be used in setting labor capacity since the system assumes all labor in the department can be used in any work center in the department. This is seldom the case and may be the cause of setting up more departments.

Notice the account codes that default from Domain/Account Control (.24) are manufacturing related. In this case, sub-accounts also default, and the variance accounts have a default cost center code of mfg to indicate these are manufacturing related variances. These account codes are used:

- When reporting labor and downtime in the Shop Floor Control and Repetitive modules
- When backflushing inventory and closing the accounting for completed work orders

Important If a given work center requires cost of production to be booked to a different account or sub-account, then you need to set up a new department for that work center.

Define Work Centers/Machines

Define Work Centers / Machines

Work Center Maintenance

Go To Actions Copy Print Preview Attach

Work Center: 1000 Machine: Department: 0400

Work Center: 1000 Machine:

Description: General Assembly

Department: 0400 Assembly

Queue Time: 0.25

Wait Time: 0.25

Mach/Op: 1

Setup Crew: 1.00

Run Crew: 1.000

Machines: 1.000

Mach Bdn Rate: 0.05

Setup Rate: 5.00

Labor Rate: 4.50

Labor Burden Rate: 0.02

Labor Bdn %: 0.01%

QAD CS-3U-610

QMI has set up work center 1000 (General Assembly). Because this work center has only one machine (actually just a work bench), QMI does not need to specify a machine in the Machine field so it is left blank. Notice that this work center belongs to the department 0400, set up in the previous step.

Machines

If a work area has multiple identical machines, you can define one work center and leave the Machine (code or number) field blank. Enter the number of machines in the Machines field. When a work center has several identical machines, you can specify the number of machines that can be used for each operation (parallel production) in the route operation.

If the machines are not completely interchangeable, identify each one with a distinct code. For example, you have multiple similar machines but they run at different rates. Or perhaps an older machine has a higher rate of rejects. In this case, each machine must have a unique machine code. The combination of the work center and the machine identifies a specific machine.

This example has only one machine per operation and the Machines field shows only one machine in this work center. If two machines were used per operation, then the processing time for an operation that uses that work center/machine combination will be cut in half. Any setup time would be doubled.

Cost Calculations

Important information for cost calculations is the specified in the rate fields. Machine Burden Rate, Setup Rate, Labor Rate, Labor Burden Rate, and Labor Burden Percent all enter into item cost calculations and labor feedback functions to determine actual costs and cost variances.

Additional Notes

In a work center, either the number of machines or the number of people limits capacity. The Machines field contains the number of machines or people. Capacity is then calculated by multiplying total hours (from the work center calendar) by the number of machines.

Field Definitions

Machine Burden Rate. The burden rate per hour applicable to machine run time and setup at this work center.

Setup Rate. The average hourly rate paid to set up this work center.

Labor Rate. The average rate paid per labor hour to run this work center.

Labor Burden Rate. The labor burden rate per hour applicable to both setup and run time at this work center.

Labor Burden Percent. The labor burden percentage applicable to the total labor cost at this work center.

Set Up Routing Op 10

The screenshot shows the 'Routing Maintenance' window for 'Set Up Routing Op 10'. The window has a title bar 'Routing Maintenance' and a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar, there are tabs for 'Routing Code: 01010', 'Standard Operation', and 'Standard Operations'. The main form contains the following fields:

- Routing Code: 01010
- Medical Ultrasound
- Operation: 10
- Start Date:
- End Date:
- Standard Operation (highlighted with a red box)
- Work Center: 1000
- General Assembly
- Machine: ASSEMBLE COMPONENTS
- Machines per Operation: 1
- Milestone Operation: ☒
- Overlap Units: 0
- Subcontract LT: 0
- Queue Time: 0.25
- Setup Crew: 1.00
- Wait Time: 0.25
- Run Crew: 1.00
- Setup Time: 0.5 (highlighted with a red box)
- Run Time: 1.0 (highlighted with a red box)
- Tool Code:
- Supplier:
- Move Time: 0.0
- Inventory Value: 0.00
- Start Date:
- Subcontract Cost: 0.00
- End Date:
- Comments:
- Yield Percent: 100.00%

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QMI's Production Manager has set up the routing in Routing Maintenance (14.13.1). Notice that the routing code is the same as the item number for the completed device (01010). This is usually the case.

This example has three operations involved in assembling a medical ultrasound:

- Operation 10 (shown here) requires 0.5 hours setup time to get components from the tool room; additionally, per device, it requires 1.0 hour run time to assemble components.
- Operation 20 requires 0.5 hour setup time and 0.2 hour run time to test the device.
- Operation 30 requires 0.5 hour setup time and 0.06 hour run time to pack the ultrasound for shipment.

These times are converted into decimal hours for the routing standard times by dividing the minutes by 60. You can also use Rate Based Routing Maintenance (14.13.2), which uses pieces per hour rather than decimal hours per piece to set the time standard for the operation.

Important Be careful not to use the Standard Operation field by mistake. This field has a special use that is covered in detail in the course on Routings and Work Centers. This feature is not described in this course.

Set Up Routing Op 20

Routing Maintenance X

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Standard Operation: Standard Operation:

Routing Code: 01010 Medical Ultrasound

Operation: 20 Start Date: End Date:

Standard Operation:

Work Center: 1050 Product Test

Machine:

Description: TEST FINISHED UNIT

Machines per Operation: 1 Milestone Operation: ☒

Overlap Units: 0 Subcontract LT: 0

Queue Time: 0.25 Setup Crew: 1.00

Wait Time: 0.25 Run Crew: 1.00

Setup Time: 0.5 Tool Code:

Run Time: 0.2 Supplier:

Move Time: 0.0 Inventory Value: 0.00

Start Date: Subcontract Cost: 0.00

End Date: Comments: ☐

Yield Percent: 100.00%

QAD CS-3U-636

For operation 20, testing the ultrasound, the run time is 0.2 hour, or 12 minutes

Field Definitions

Queue Time. The time work normally waits at a work center before the operation begins.

Setup Time. The time required to prepare the work center/machines for processing. This is independent of batch size.

Run Time. The standard amount of time required to process a single unit of this item; entered as the units per hour or run time per batch, and internally converted to run time per unit.

Wait Time. The time spent waiting after the operation is done; for example, drying, curing, cooling. This is based on a 24-hour clock, not the shop calendar.

Move Time. The time a work order is in transit from one operation to the next. Per order independent of order size.

Subcontract Lead Time. A routing operation can be a task performed by an outside vendor or subcontractor. In that case this is the number of calendar days it takes to process the standard order quantity at the subcontractor's site, including any transit time.

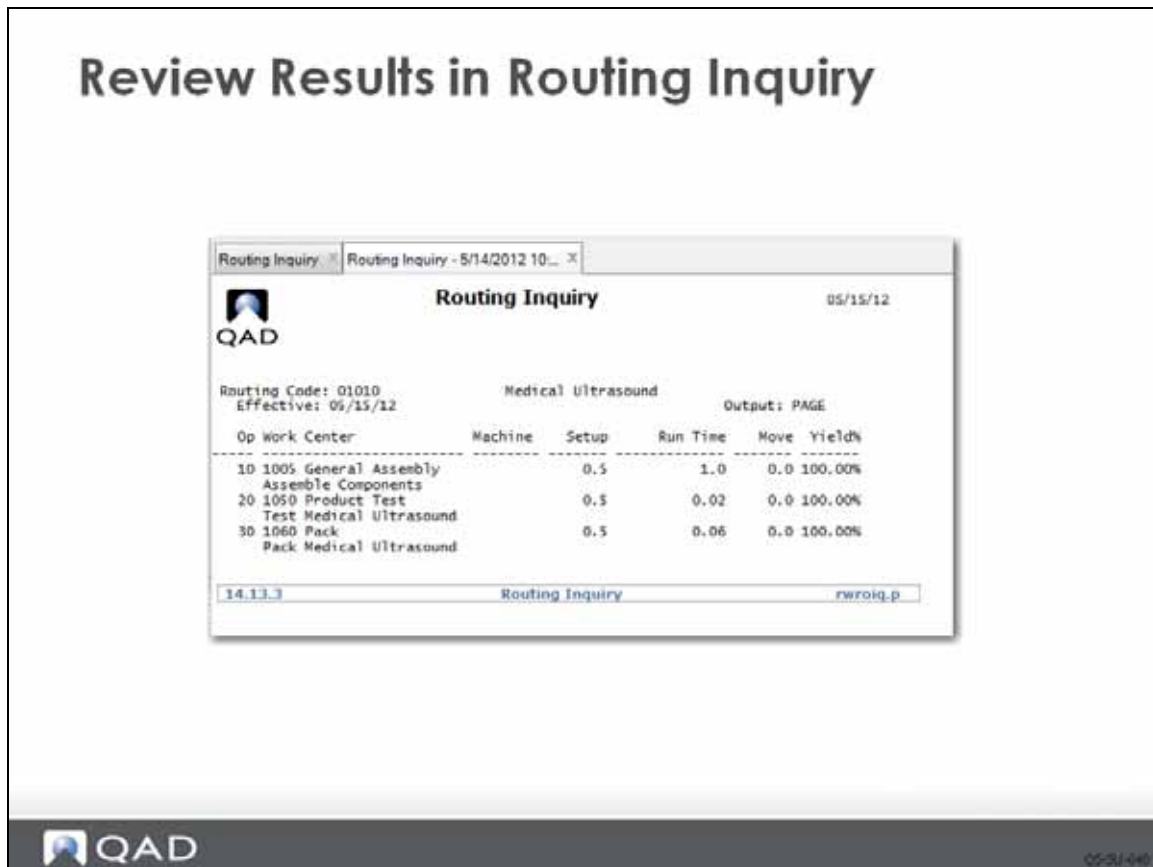
Yield Percent. The normal yield percentage for this operation. The percentage of any order expected to be in usable condition after this operation (used to calculate costs).

Yield in the operation route is intended to be used for scrap that occurs at a specific operation because of some aspect of that operation. It consumes all of the components that have been issued up to that point.

This is in contrast to scrap in the product structure which is associated with a specific component at a specific operation. It is important in setting up structures and routings to account for scrap and yield as accurately as possible and in the correct place. Use this rule:

- At the given operation, is the component scrapped before being assembled? This is component scrap in the structure.
- Is the assembly scrapped after the component is assembled? This is yield in the route.

Review Results in Routing Inquiry



The Production Planner reviews the routing in Routing Inquiry (14.13.3) to ensure that the information is accurate.

Exercise 6-1: Set Up Routing

Add a Department Record

Note Refer back to the screen shots in the example if you are unsure of any step.

- 1 In Department Maintenance (14.1), add a new department record, 050, for assembly. Key fields to populate are:

Field	Data
Department	050
Description	Assembly
Labor Capacity	8

Accept the default account numbers and update the record. Where did these account numbers come from?

Click Next until the Department field is highlighted, then click Back.

Add a Work Center Record

- 2 Use Work Center Maintenance (14.5) to add a work center record. Key fields to populate are:

Field	Data
Work Center	1005
Machine	<blank>
Description	General Assembly
Department	050
Queue Time	.25
Wait Time	.25
Mach/Op	1
Setup Crew	1
Machines	1
Mach Bdn Rate	.05
Setup Rate	5
Labor Rate	4.5
Labor Burden Rate	0.02
Labor Bdn%	0.01%

Define a Routing or Process Definition

- 3 Use Routing Maintenance (14.13.1) to add a routing code that is the same as the manufactured item number. Key fields to populate are:

Field	Data
Routing Code	01010
Operation	10
Work Center	1005
Machine	<blank>
Description	Assemble Components
Setup Time	0.5 (30 min.)
Run Time	1.0 (60 min.)
Tool Code	<blank>

Accept remaining defaults.

Click Next until the Routing Code field is highlighted.

- 4 Enter the second operation

Field	Data
Operation	20
Work Center	1050
Machine	<blank>
Description	Test Medical Ultrasound
Setup Time	0.5
Run Time	0.2 (12 min.)

Accept remaining defaults.

5 Enter the third operation

Field	Data
Operation	30
Work Center	1060
Machine	<blank>
Description	Pack Medical Ultrasound
Setup Time	0.5
Run Time	0.06 (3.6 minutes)

Accept remaining defaults.

6 Review your routing in Routing Inquiry (14.13.3) and make sure that all operations and the correct setup and run times display.

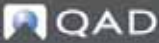
Review

Review

4

Manufacturing


- **Shop calendar**
Calendar Maintenance
- **Departments**
Department Maintenance
- **Work Center**
Work Center Maintenance
- **Routings**
Routing Maintenance

 QAD

CS-2U-460

This chapter describes how key areas of the discrete manufacturing environment are set up:

- Shop calendar, set up in Calendar Maintenance and Holiday Maintenance, indicates what days the plant is open and how many hours are worked each day.
- Departments, set up in Department Maintenance, are used for capacity planning and accounting purposes.
- Work centers and machines, set up in Work Center Maintenance, are used for operation scheduling, capacity requirements planning, and cost determinations for GL transactions.
- Routings, set up in Routing Maintenance, describe the steps required to make the item (operations), where the steps are performed (work center), how long they take, and the expected yield percentage at each operation.

Cost Calculation

This chapter discusses how lower-level manufacturing costs are rolled up by the system and managed in the general ledger.

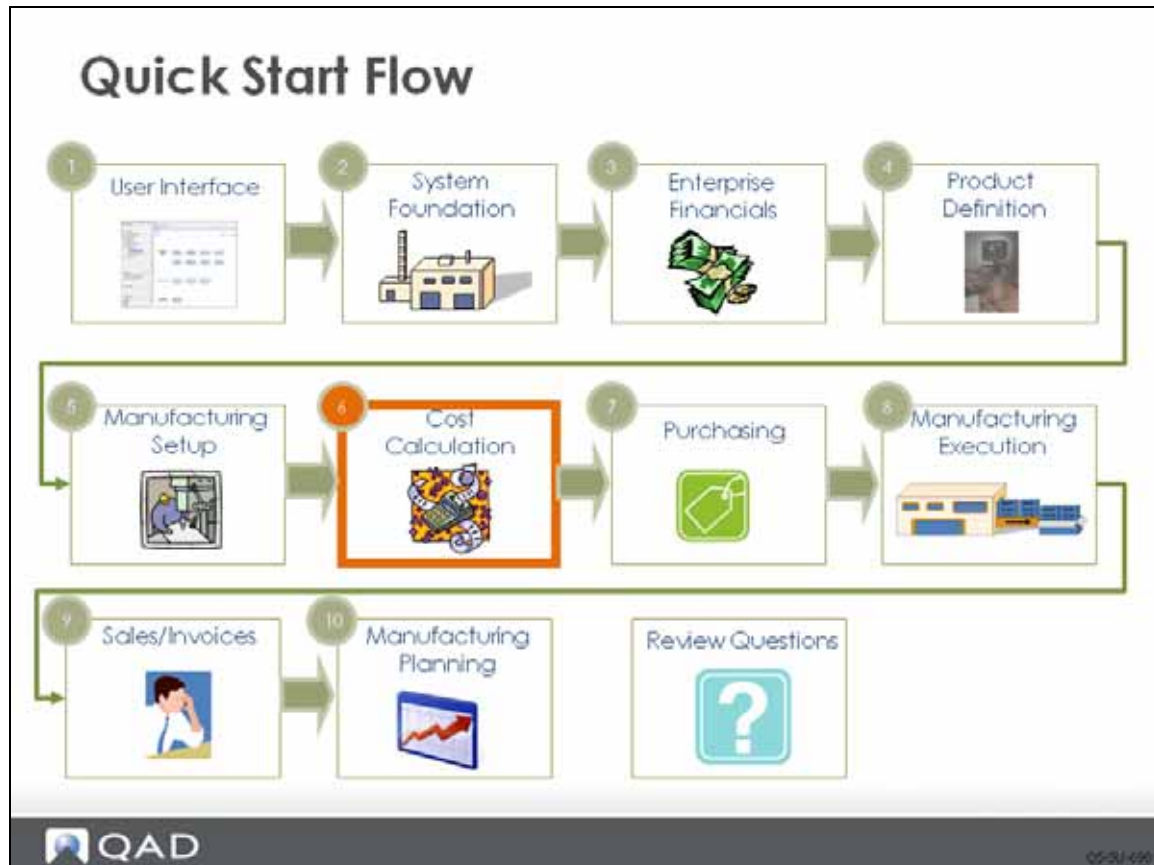
Overview of Cost Calculation

Key Concepts

Example

Review

Overview of Cost Calculation



Based on information set up in product definition and manufacturing, item costs can be calculated. This chapter shows how cost information contained in the routing and product structure is “rolled up” to calculate total cost. It begins with a discussion of routing and product structure cost rollups, followed by discussing the update of the GL cost set from costs collected in the current cost.

Chapter Topics

The topics covered in this chapter include:

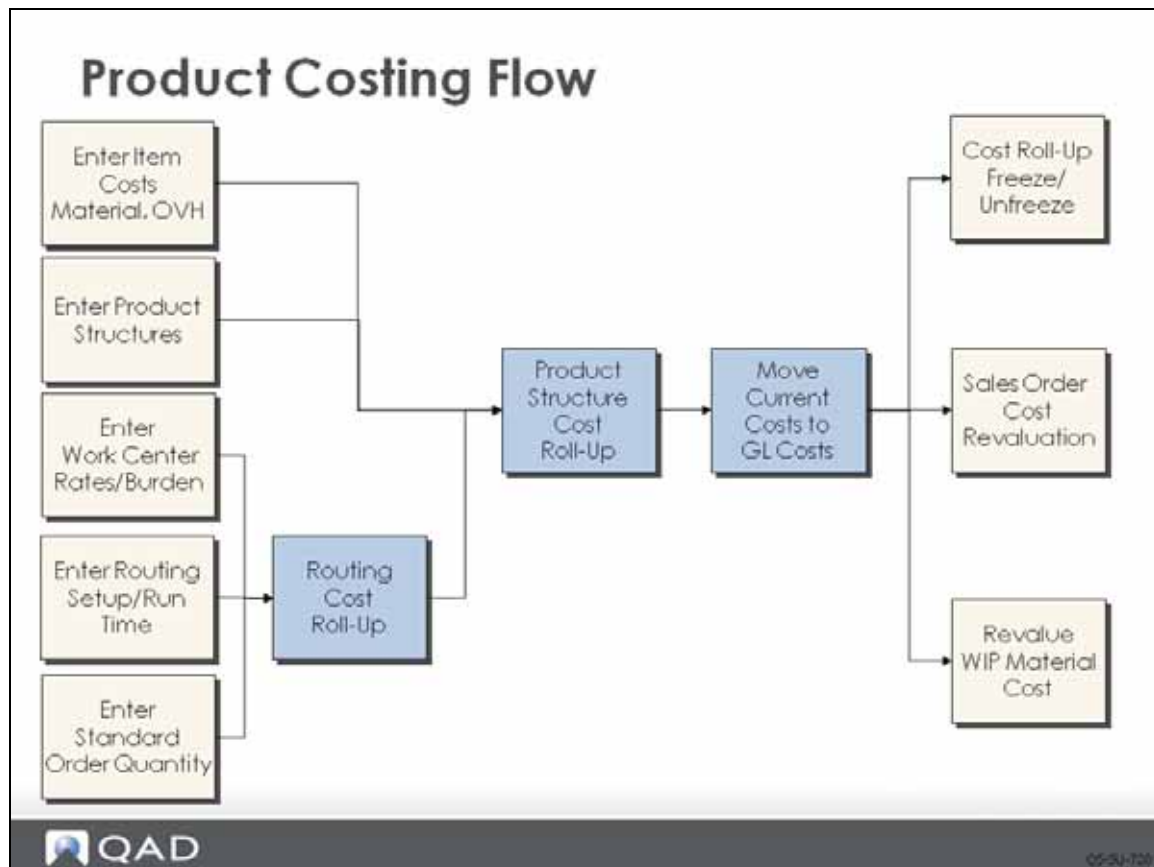
- Key Concepts
 - Routing Cost Rollup
 - Product Structure Cost Rollup
 - Current Cost Set Move to GL Set
- Example
 - Review Standard Order Quantity for Item
 - Roll Up Routing Costs
 - Roll Up Product Structure Costs
 - Move Current Cost Set to GL Set
- Review
- Exercise

Learning Objectives

When you finish this chapter, you should be able to:

- Explain the information captured by a routing cost rollup.
- Explain the information captured by a product structure cost rollup.
- Explain the importance of the Order Quantity field (in Item Planning Maintenance) to the routing cost rollup.
- Roll up routing and product structure costs.
- Copy and move current costs to the GL cost set.

Key Concepts

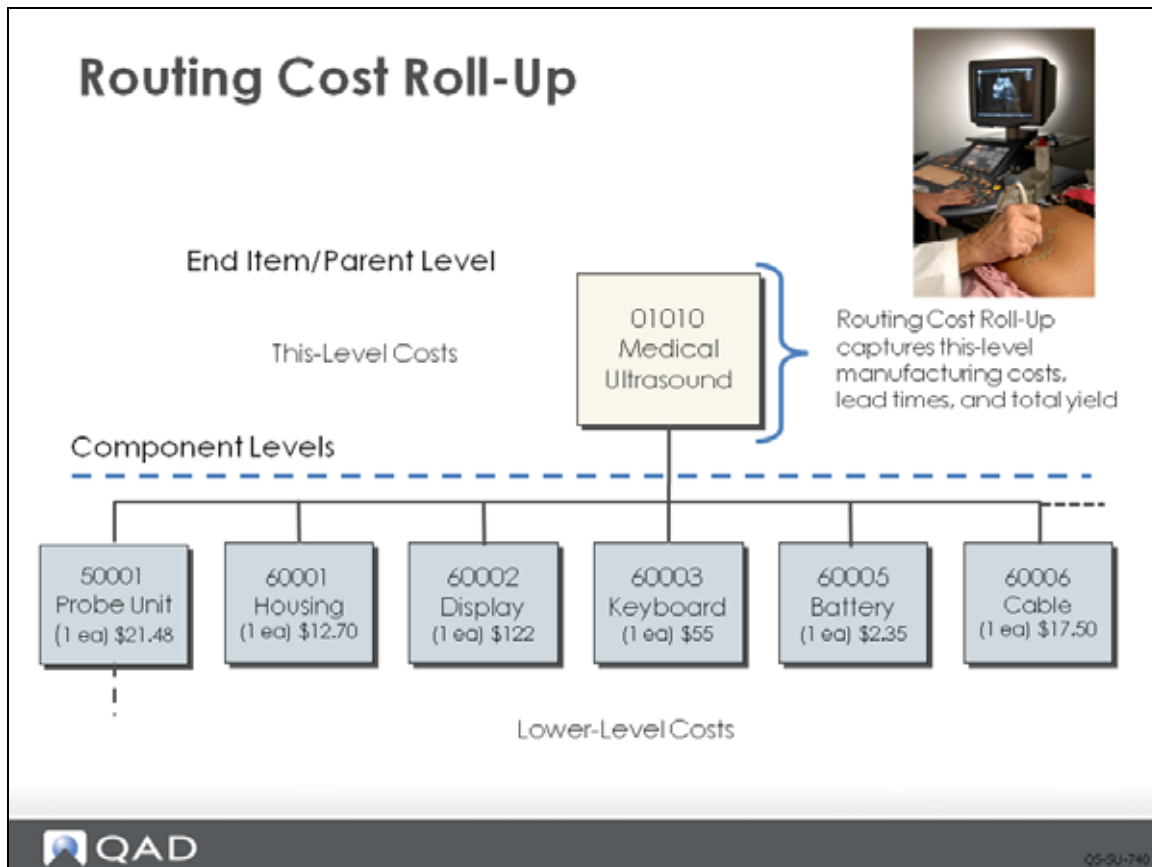


Product cost calculations are based on information from a variety of sources, including:

- Purchased material, overhead, and other costs entered manually in one of the item maintenance programs
- Component quantity per and scrap rates entered in the product structure (BOM)
- Labor and setup rates and variable burden entered for each work center
- Manufacturing setup and run times entered on each routing operation
- Yield at each operation
- Subcontract cost per unit entered for each subcontracted operation
- Item order quantity entered in Item Planning Maintenance
- BOM and routing code entered in Item Planning Maintenance

Most of this information was described in Chapter 5, “Product Definition,” and shown in the previous examples and exercises. The next steps are to roll up the routing and product structure costs, and move the current cost set to the GL cost set. Those three steps—highlighted in blue on the slide—are covered on the following pages.

Routing Cost Roll-Up



Routing Cost Roll-Up calculates the manufacturing costs, lead times, and total yield for one or more items at a particular site. Costs are calculated for each operation after accessing the item master, work center, routing, and standard operation data.

Item Planning Data: Standard Order Quantity

Review Standard Order Quantity

Item Planning Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Item Planning Data

Matl Sched: ☒ Plan Orders: ☒ Time Fence: 0 MRP Required: ☒ Order Policy: POQ Order Qty: 5 Batch Qty: Order Period: 7 Safety Stock: 0 Safety Time: 0 Reorder Point: 0 Item Rev: 0 Issue Policy: ☒

Buyer/Planner: 1-01 Supplier: PO Site: Purchase/Manufacture: M Configuration Type: Inspect: 1.0 Ins LT: 0 Mfg LT: 4 Cum LT: 0 Pur LT: 0 ATP Enforcement: NONE Family ATP: ATP Horizon: 0 Run Seq 1: 2

Phantom: ☐ Minimum Order: 1 Maximum Order: 5 Order Multiple: 1 Op Based Yield: ☐ Yield Percent: 100.00% Run Time: 17.000 Setup Time: 7.500 EMT Type: NON-EMT Auto EMT Processing: ☐ Network Code: Routing Code: U-001 BOM/Formula: Replenishment Method: Orders

QAD CS-3U-796

When manufacturing costs are rolled up in Routing Cost Roll-Up, the setup time is divided by the standard order quantity and each item is assigned its share of the setup cost.

The run times are calculated separately for each item at each operation. However, the total run time, for all the items in the standard order quantity, is used to calculate the lead time for a standard order. Queue, wait, and move times are added to get the total lead time for the item.

The item planning record provides the order quantity value, which is used to amortize setup costs over a standard or normal order size to obtain a realistic cost per unit value.

Note Routing and product structure rollups are initiated by the user. Some businesses have only one or the other and do not need both. However, when you do have both—the normal situation for manufacturers—always roll up the routing first, then the product structure. If the routing includes operation yields, these need to be accounted for before determining the materials required from the product structure.

Work Center Values in Routing Cost Roll-Up

Work Center Values in Routing Cost Roll-Up

Work Center Maintenance
Go To Actions Copy Print Preview Attach

Work Center: 1000
Machine:

Description: General Assembly

Department: 0400 Assembly

Auto Firm: [X]

Last Auto Firm: [v]

Scheduler ID: [X]

Queue Time: 0.25

Wait Time: 0.25

Mach/Op: 1

Setup Crew: 1.00

Run Crew: 1.000

Machines: 1.000

Mach Bdn Rate: 0.05

Setup Rate: 5.00

Labor Rate: 4.50

Labor Burden Rate: 0.02

Labor Bdn %: 0.01%

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Routing cost calculations are based upon work center data for hourly rates for setup and run labor. The work center also provides the burden rates as cost per hour for labor and machine burden, as well as labor burden percent.

Routing Maintenance Cost Calculations

Routing Maintenance Cost Calculations

Routing Maintenance

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Work Center: 1000 Machine:

Routing Code: 01010 Medical Ultrasound

Operation: 10 Start Date: End Date:

Standard Operation:

Work Center: 1000 General Assembly

Machine:

Description: ASSEMBLE COMPONENTS

Machines per Operation: 1

Overlap Units: 0

Queue Time: 0.25

Wait Time: 0.25

Setup Time: 0.5

Run Time: 1.0

Move Time: 0.0

Start Date:

End Date:

Yield Percent: 100.00%

Milestone Operation: ☒

Subcontract LT: 0

Setup Crew: 1.00

Run Crew: 1.00

Tool Code:

Supplier:

Inventory Value: 0.00

Subcontract Cost: 0.00

Comments:

QAD

CS-SU-766

The routing records provide the setup and run times, as well as the machines per operations and operation yield percent. In the case of a subcontract operation, the routing provides the per item cost of the outside processing.

Routing Cost Calculations: Review

Routing Cost Calculations: Review

- Labor cost per operation**

$$\text{Labor Cost} = (\text{Setup Hrs} / \text{Order Quantity} * \text{WC Setup Rate}) + (\text{Run Hrs per Unit} * \text{WC Labor Rate}) / \text{Item Yield\%}$$

- Labor burden cost per operation**

$$\text{Labor Burden Rate} = [(\text{Setup Hrs} / \text{Order Quantity} + \text{Run Hrs}) * \text{WC Labor Burden Rate}] / \text{Item Yield\%}$$

$$\text{Labor Burden Percent} = [(\text{Setup Hrs} / \text{Order Quantity} * \text{WC Setup Rate}) + (\text{Run Hrs} * \text{WC Labor Rate}) * \text{WC Labor Burden\%}] / \text{Item Yield\%}$$

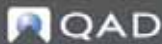
- Machine burden cost per operation**

$$\text{Machine Burden Cost} = (\text{Std. Setup Hrs} / \text{Order Quantity} * \text{No. of Machines} + \text{Std. Run Hrs}) * \text{WC Machine Burden Rate} / \text{Item Yield\%}$$

- This-level labor and burden cost**

$$\text{This Level Labor} = \text{Op 10 Labor} + \text{Op 20 Labor} + \dots$$

$$\text{This Level Burden} = \text{Op 10 Burden} + \text{Op 20 Burden} + \dots$$



Q3 10 745

- Labor cost per operation. The total labor cost is the combined cost of setting up the operation and running it. Since setup time applies to the whole operation rather than per unit, setup time is divided by the item order quantity, then multiplied by the setup rate.

$$\text{Labor Cost} = (\text{Setup Hrs} / \text{Order Quantity} * \text{WC Setup Rate}) + (\text{Run Hrs per Unit} * \text{WC Labor Rate}) / \text{Item Yield\%}$$

- Labor burden cost per operation. Burden costs apply to both setup and run time. Labor burden is calculated as either (or both)
 - Rate per labor hour, commonly used in a high-volume production environment
 - Percentage of total labor, commonly used in a labor-intensive environment

$$\text{Labor Burden Rate} = [(\text{Setup Hrs} / \text{Order Quantity} + \text{Run Hrs}) * \text{WC Labor Burden Rate}] / \text{Item Yield\%}$$

$$\text{Labor Burden Percent} = [(\text{Setup Hrs} / \text{Order Quantity} * \text{WC Setup Rate}) + (\text{Run Hrs} * \text{WC Labor Rate}) * \text{WC Labor Burden\%}] / \text{Item Yield\%}$$

- Machine burden cost per operation. This is calculated based on the number of hours the machine is in use—both while it is being set up and while products are being run.

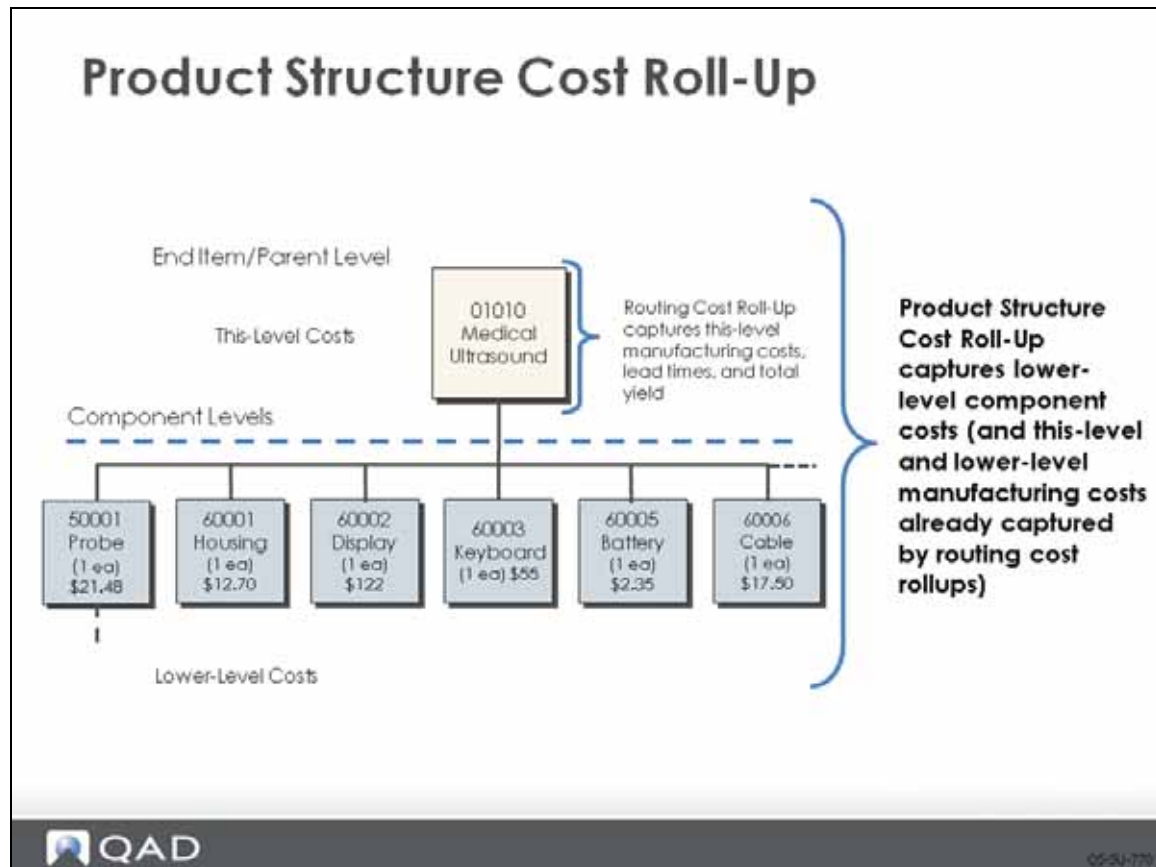
$$\text{Machine Burden Cost} = (\text{Std. Setup Hrs} / \text{Order Quantity} * \text{No. of Machines} + \text{Std. Run Hrs}) * \text{WC Machine Burden Rate} / \text{Item Yield\%}$$

- This-level labor and burden cost. Labor and burden costs for each operation are simply added.

$$\text{This Level Labor} = \text{Op 10 Labor} + \text{Op 20 Labor} + \dots$$

$$\text{This Level Burden} = \text{Op 10 Burden} + \text{Op 20 Burden} + \dots$$

Product Structure Cost Roll-Up



Product Structure Cost Roll-Up (13.12.13) updates the costs of parent items based on the cost of their lower-level components.

Components have information for the quantity required, expected scrap percentage, and the operation where they are required. Purchased items have material and may have overhead costs. Manufactured items also have labor, burden, and subcontract costs. Product Structure Cost Roll-Up uses these costs to calculate total cost by item, and lower-level run and setup times.

Product Structure

Product Structure

Product Structure Inquiry
✕

Go To
Actions
Copy
Print
Preview
Attach

Parent Item/BOM Code:

Rev:

As Of: 5/15/2012

Levels:

PCO Number:

ID:

Domain:

Output:

Level	Component Item	Description	Quantity Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound		EA			
1	50001	Probe Unit - 10 Mhz	1.0	EA			
..2	01001	Standard Connector	1.0	EA			
..3	62050	Beryllium Copper	0.0001	r1			
..3	62050	Discrete PO					
..3	62050	Beryllium Copper	0.0001	r1			
..3	62050	Discrete PO					
..3	90031	Packaging	2.0	EA			
..2	60004	Transducer - 10 Mhz	1.0	EA			
1	60001	Durable Plastic Housing	1.0	EA			
1	60002	Display / Readout	1.0	EA			
1	60003	Keyboard	1.0	EA			
1	60005	Battery	1.0	EA			
1	60006	Monitor Cable	1.0	EA			
1	60007	Movable Cart	1.0	EA			
1	60008	Printer	1.0	EA			
1	60017	Mouse Pad	1.0	EA			
1	60018	Dust Cover	1.0	EA			
1	60050	Base Unit / CPU	1.0	EA			
1	90093	Shipping Carton	1.0	EA			

13.6
Product Structure Inquiry
bmpsiq.p

QAD
CS-SU-771

Product Structure Inquiry (13.6) shows how many of each components are required to make a medical ultrasound.

Item Cost Data

Item Cost Data

Item Cost Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 50001
 Unit of Measure: EA

Description: Probe Unit - 10 MHz

Totals					
Totals:	6.25882	15.22	21.47882	☐	03/17/11

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	15.22	15.22	☒	Material	☐
Labor	6.17	0.00	6.17	☒	Labor	☐
Burden	0.08882	0.00	0.08882	☒	Burden	☐
Overhead	0.00	0.00	0.00	☒	Overhead	☐
Subcontr	0.00	0.00	0.00	☒	Subcontr	☐
				☐		☐

QAD
CS-SU-772

The item cost data displays the material cost of each component of the end item (01010). This cost is multiplied by the quantity per unit and rolled up to the parent-level cost.

Move Current Cost Set to GL Set



By default, the system maintains two cost sets for each item-site:

- Current, which reflects today's cost for an item
- GL, which is used for all general ledger transactions

When costs change, you can update and verify the change in the current cost set first, then use Current Cost Set Move to GL Set (1.4.22) to reflect the change in the GL cost set. Current Cost Set Move to GL Set is typically used only at regular, widely spaced intervals, usually annually.

By convention, QMI does all its work in the current cost set, checking each step when it is completed. When satisfied that the costs are correct, the entire current cost set is moved (copied) to the GL cost set.

Example

The following example shows how QMI accomplishes these steps:

- Set up a standard order quantity of 5 for item 01010 (medical ultrasound).
- Roll up costs for item 01010 based on its routing and view results.
- Roll up costs for item 01010 based on its product structure and verify results.
- Copy costs from the current cost set to the GL cost set for all component items and verify results.
- Enter a price for item 01010 in Item Cost Maintenance.

Review Standard Order Quantity

The screenshot shows the 'Item Planning Maintenance' window for Item Number 01010, Description: Medical Ultrasound, Unit of Measure: EA. The 'Order Qty' field is highlighted with a red box and contains the value 5. Other fields include: Order Policy: POQ, Batch Qty: 7, Order Period: 7, Safety Stock: 0, Safety Time: 0, Reorder Point: 0, Item Rev: 0, Issue Policy: V, Buyer/Planner: 1-01, Supplier: , PO Site: , Purchase/Manufacture: M, Configuration Type: , Inspect: 1.0, Ins LT: 0, Cum LT: 0, Mfg LT: 4, Pur LT: 0, ATP Enforcement: NONE, Family ATP: , ATP Horizon: 0, Run Seq 1: 2, Phantom: , Minimum Order: 1, Maximum Order: 5, Order Multiple: 1, Op Based Yield: , Yield Percent: 100.00%, Run Time: 17.000, Setup Time: 7.500, EMT Type: NON-EMT, Auto EMT Processing: , Network Code: , Routing Code: U-001, BOM Formula: , Replenishment Method: Orders.

QMI has set up a standard order quantity of 5 for its medical ultrasound (01010), which is used to amortize setup costs. This information needs to be entered before rolling up the routing costs. The standard order quantity is entered in Item Planning Maintenance (1.4.7), or the Item Planning Data frame of Item Master Maintenance (1.4.1).

The standard order quantity should be what you will normally produce in a single lot, batch, or work order. In this case, the setup cost is spread over the production of 5 units. The order quantity for each item is usually based on some aspect of production that is important to the company. A multiple of the units produced in an hour or a shift is common.

Some firms with high setup costs will want very large standard order quantities to spread the setup cost over many units of production. A just-in-time (JIT) environment typically invests in dedicated capacity in order to keep the order quantity or kanban very low.

Routing Cost Roll-Up

Routing Cost Roll-Up

Site: 10-100 Ultrasound Mfg Site
 Cost Set: Current
 Default Current Cost Set [LAST / CURR]

Item Number: 01010 To: 01010

Item Type:
 As of Date: 8/2/2012

Roll-up Labor Time: ☒
 Roll-up Setup Time: ☒
 Roll-up Lead Time: ☒
 Roll-up Item Yield: ☒ Include Yield in Cost: ☒
 Roll-up Labor Cost: ☒
 Roll-up Burden Cost: ☒
 Roll-up Subcontract Cost: ☒
 Update Items without Routings: ☒
 Update Items At This Site Only: ☒

Output:
 Batch ID:

QAD CS-31-000

Using Routing Cost Roll-Up (14.13.13), QMI is ready to roll up the routing costs for item 01010 medical ultrasound at site 10-100. The rollup is for the current cost set, not the GL cost set. Notice all the check boxes that can be used to leave out some elements of cost for unique or special purposes. Care should be used when leaving out any element of cost.

You can roll up either current or GL costs. The default is to roll up current costs. Although you can roll up GL costs when they change, it is safer to roll up current costs and then copy them to the GL.

After rolling up the routing costs, it is a good idea to verify that the rollup was successful. This can be verified in Item-Site Cost Inquiry, shown next.

Verify Routing Cost Roll-Up

Verify Routing Cost Roll-Up

Item-Site Cost Inquiry
08/02/12

Item Number: 01010 Medical Ultrasound Output: PAGE

Inv Site: 10-100 UM: EA

Price: 2,500.00 Item Price Data Tax: No Tax Class:

Fiscal Class:

Totals:		Totals		Totals		Totals	
	579.27275		1,226.17882		1,805.45157		06/28/10
GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)							
Element	This Level	Lower Level	Total	Pri	Category	A/O	
Material	0.00	1,219.92	1,219.92	Yes	Material	No	
Labor	577.50	6.17	583.67	Yes	Labor	No	
Burden	1.77275	0.08882	1.86157	Yes	Burden	No	
Overhead	0.00	0.00	0.00	Yes	Overhead	No	
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No	
Totals:		428.83775	1,226.18	1,655.01775			08/02/12

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)

Element	This Level	Lower Level	Total	Pri	Category	A/O	
Material	0.00	1,226.18	1,226.18	Yes	Material	No	
Labor	427.50	0.00	427.50	Yes	Labor	No	
Burden	1.83775	0.00	1.83775	Yes	Burden	No	
Overhead	0.00	0.00	0.00	Yes	Overhead	No	
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No	

1.4.10
Item-Site Cost Inquiry
ppptiq03.p

Using Item-Site Cost Inquiry (1.4.10), QMI verifies that the current cost set routing costs (labor and burden) were rolled up for item 01010 at site 10-100.

The columns on the cost display total up. The total cost for labor and burden at this level—in this example 428.84—is displayed above the column.

Note Since the product structure rollup has not been done, the item has no material costs yet. There are also no GL costs yet.

After completing and verifying the routing cost rollup, the product structure cost rollup can be initiated.

Product Structure Cost Roll-Up

Product Structure Cost Roll-Up

Site: 10-100
Cost Set: Current
Default Current Cost Set [LAST / CURR]

Item Number: 01010 To: 01010

Prod Line: To:
Item Type: To:
Group: To:

As of Date: 8/2/2012

Low Level Material ☒
Low Level Labor ☒
Low Level Burden ☒
Low Level Overhead ☒
Low Level Subcontract ☒
Low Level Labor Time: ☐
Low Level Setup Time: ☐
Print Audit Trail: ☒

Set Cost Update Field for
All/Changed Only: All

Include Yield %: ☒

Output:
Batch ID:

QAD CS-31-020

Using Product Structure Cost Roll-Up (13.12.13), QMI rolls up its product structure costs for item 01010 at site 10-100. This includes the material costs for the lower-level components, such as the material and burden costs at this level.

Again notice that QMI is rolling up the current cost set, not the GL cost set.

Verify Costs

Verify Costs

Item-Site Cost Inquiry
08/02/12

Item Number: 01010 Medical Ultrasound Output: PAGE

Inv Site: 10-100 IM: EA

Price: 2,500.00 Item Price Data Tax: No Tax Class:

Fiscal Class:

Totals:	579.27275	1,326.17882	1,805.45157	06/28/10

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total Pri	Category	A/D
Material	0.00	1,219.92	1,219.92	Yes	Material No
Labor	577.50	6.17	583.67	Yes	Labor No
Burden	1.77275	0.08882	1.86157	Yes	Burden No
Overhead	0.00	0.00	0.00	Yes	Overhead No
Subcontr	0.00	0.00	0.00	Yes	Subcontr No
Totals:	428.83775	1,166.50937	1,595.34712		08/02/12

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)

Element	This Level	Lower Level	Total Pri	Category	A/D
Material	0.00	1,158.82731	1,158.82731	Yes	Material No
Labor	427.50	7.179	434.679	Yes	Labor No
Burden	1.33775	0.10306	1.44081	Yes	Burden No
Overhead	0.00	0.00	0.00	Yes	Overhead No
Subcontr	0.00	0.40	0.40	Yes	Subcontr No

1.4.10
Item-Site Cost Inquiry
ppptiq93.p

Using Item-Site Cost Inquiry (1.4.10) again, QMI verifies that the current cost set product structure costs (lower-level components) were rolled up correctly for item 01010 at site 10-100. Total cost is \$1,595.35 per unit.

Move Current Cost Set to GL

QMI now wants the general ledger to reflect the cost information entered in the current cost set for all of the component items in 01010 at site 10-100, so they are ready to copy and move current costs into the GL using Current Cost Set Move to GL Set (1.4.22).

Note the other selection criteria that could be used and the check boxes for which costs to copy. QMI wants to copy all costs.

Percent Change Allowed

This field restricts the cost movement to items with a GL cost change within the indicated range. To accept the movement of all costs regardless of the difference from the previous GL costs, enter all 9's in the .NET UI interface. (In the terminal view, enter a question mark (?) in this field and its corresponding To field to match all values.)

You can look at the potential consequences before actually moving the current costs to GL costs. To do this, set Pct Change Allowed to 0%. The proposed changes will be displayed on the output device you have chosen, but not copied to the GL costs.

Note When first establishing costs for new items or in a new system, the present GL cost are zero. The percent change from nothing to something is mathematically undefined since it would require division by zero.

Current Cost Set Move to GL Set

Current Cost Set Move to GL Set

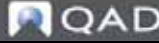


Current Cost Set Move to GL Set

10USA

08/02/1

Item Number	UM	Material	Labor	Burden	Overhead	Subcontract
01010						
1,595.34712	EA Current	1,158.82731	434.679	1.44081	0.00	0.40
Medical Ultrasound	Standard	1,219.92	583.67	1.86157	0.00	0.00
1,805.45157						
1,595.34712	New Cost	1,158.82731	434.679	1.44081	0.00	0.40
-11.6%	% Change	-5.0%	-25.5%	-22.6%	0.0%	100,000+ %
-210.10445	GL Amt Chg	-61.09269	-148.991	-0.42076	0.00	0.40



CS-31-041

Executing Current Cost Set Move to GL Set (1.4.22) produces a report that can be output to Page and should look like the one shown here.

Verify Costs in Current and GL Cost Sets

Verify Cost in Current and GL Cost Sets



Item-Site Cost Inquiry
08/02/12

Item Number: 01010 Medical Ultrasound Output: PAGE

Inv Site: 10-100 UM: EA

Price: 2,500.00 Item Price Data Tax: No Tax Class:

Fiscal Class:

Totals:		Totals		08/02/12	
	428.8377%	1,166.50937	1,595.34712		

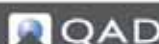
GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)

Element	This Level	Lower Level	Total	Pri	Category	A/Q
Material	0.00	1,158.82731	1,158.82731	Yes	Material	No
Labor	427.50	7.179	434.679	Yes	Labor	No
Burden	1.3377%	0.10306	1.44081	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.40	0.40	Yes	Subcontr	No
Totals:			1,595.34712			08/02/12

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)

Element	This Level	Lower Level	Total	Pri	Category	A/Q
Material	0.00	1,158.82731	1,158.82731	Yes	Material	No
Labor	427.50	7.179	434.679	Yes	Labor	No
Burden	1.3377%	0.10306	1.44081	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.40	0.40	Yes	Subcontr	No

1.4.10
Item-Site Cost Inquiry
pppliq03.p


CS-31-056

QMI can use Item-Site Cost Inquiry (1.4.10) again; this time to verify that the costs for item 01010 now shown in the GL are as expected. That is, the GL costs should be the same as the current costs, and they are.

Enter Item Price in Item Cost Maintenance

Item Cost Maintenance

Item: 01010 Item Number: 01010 Tax Class:

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Item Price Data

Price: 2,500.00 Tax: Tax Class:

Fiscal Class:

GL Cost Data

Element	This Level	Lower Level	Total	Pri	Category	A/D
				☐		☐

QAD CS-31-051

Now that the standard cost of producing a medical ultrasound has been established, QMI can return to Item Cost Maintenance (1.4.9) and add the retail price to be charged for this item. QMI has decided to price this medical ultrasound at \$2,500.00.

Exercise 7-1: Roll Up Costs

Check Standard Order Quantity for Item

- 1 In the Order Qty field of Item Planning Maintenance (1.4.7), add a standard order quantity of 5 to item 01010. This is the number of units that the cost of setup time is spread over.

Calculate Amount of Labor, Burden, and Subcontract Costs for Manufactured Items

Important Manufactured components must be calculated first.

- 2 Use Routing Cost Roll-Up (14.13.13) to roll up the routing cost.

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	50001 to 50001; click Next

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	01010 to 01010; click Next

Use the default settings for all other fields and update.

Note This function does not generate any output.

- 3 Use Item-Site Cost Inquiry (1.4.10) to verify that the standard costs were correctly calculated for labor and burden.

Calculate Amount of Lower-Level Material, Labor, Burden, and Subcontract Costs

Important Manufactured components must be calculated first.

- 4 Use Product Structure Cost Roll-Up (13.12.13) to roll up the product structure. Key fields to populate are:

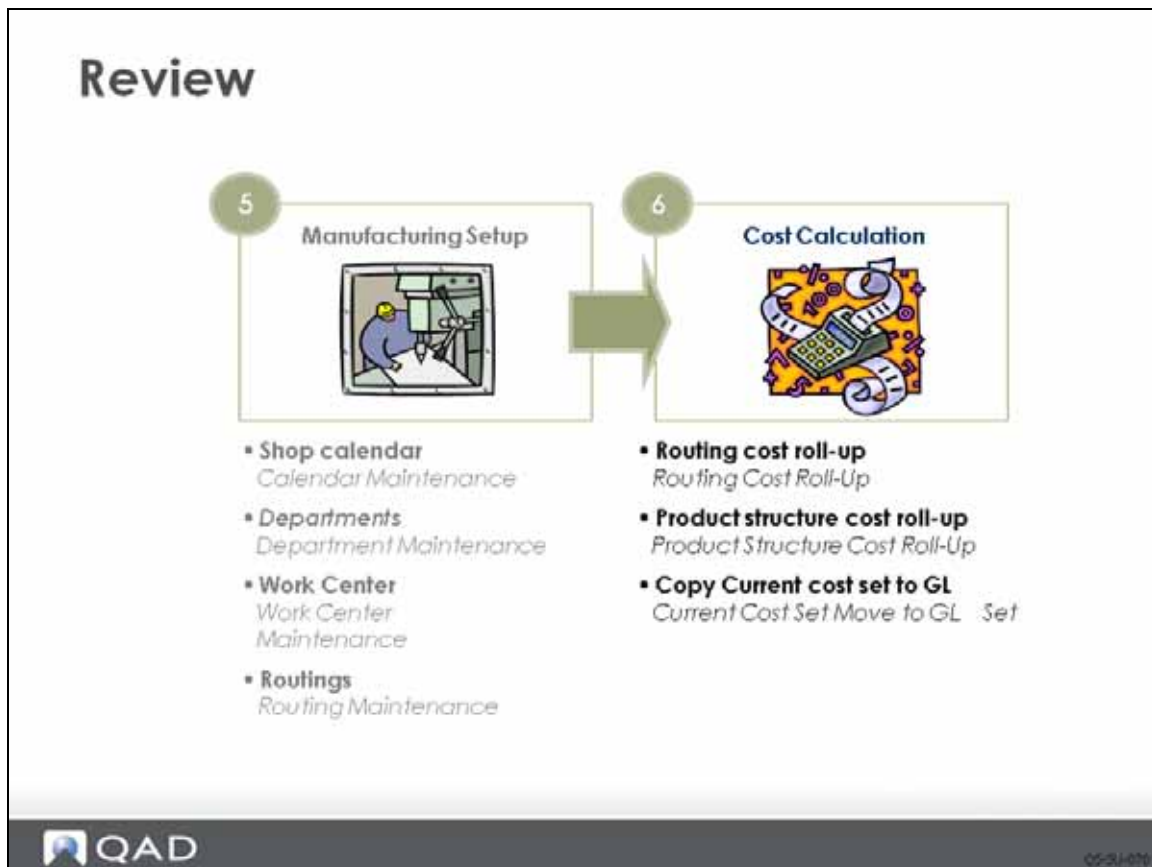
Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	50001 to 50001; click Next

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	01010 to 01010; click Next

Use Item-Site Cost Inquiry (1.4.10) to check to see if your standard costs were correctly calculated for lower-level costs.

Important If your rolled up costs are incorrect, the error has its source in one of the data elements you added. Review your entries in the work center, the product structure, the routing record, and the item planning data. Check these values against the values shown in the example screen shots earlier in this chapter.

Review



This chapter introduced how product costs are developed using:

- Routing cost rollups, which capture this-level manufacturing costs, lead times, and total yield
- Product structure cost rollups, which capture lower-level component costs and all costs previously captured by routing cost rollups

You also saw how up-to-date costs reflected in the current cost set can be moved to the GL cost set to update that cost set as appropriate.

Purchasing

This chapter provides an overview of the QAD Supply Chain suite. It then covers the purchasing process including requisitions, types of purchase orders, order receipt, and supplier invoicing and payment.

Overview of Purchasing

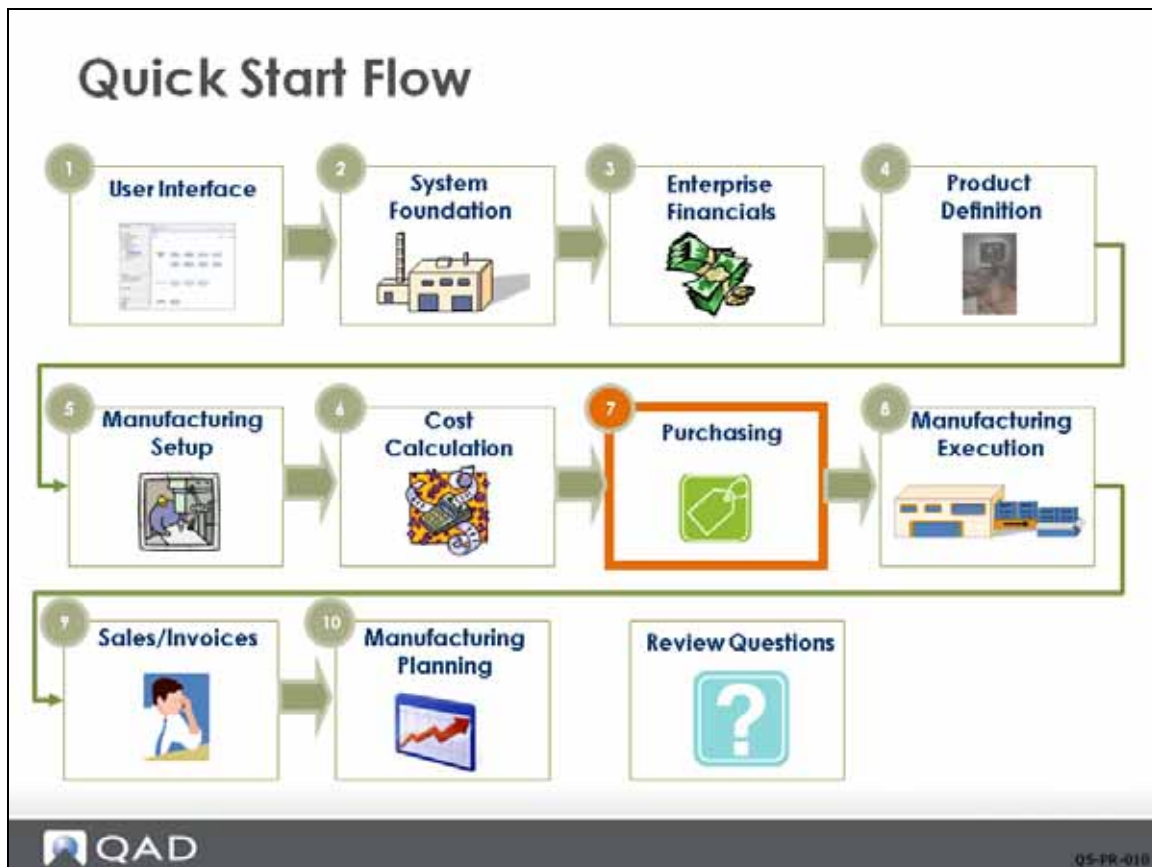
Components of QAD Supply Chain

Key Concepts of Purchasing

Example

Review

Overview of Purchasing



This chapter provides an overview of the components of the QAD Supply Chain suite. It then focuses on the procurement process, from initial requisition to material receipt. Key concepts are discussed, followed by an example that illustrates the purchasing flow, a review, and hands-on exercise.

Chapter Topics

The topics covered in this chapter include:

- Components of Supply Chain
- Key Concepts
 - Supplier
 - Requisitions
 - Types of Purchase Orders
 - Order Receipt
 - Supplier Invoices and AP Payment Processing
- Example
 - Verify Supplier Data
 - Set Up Unit of Measure Conversion
 - Add Supplier Item

Verify Purchasing Control Settings

Create Purchase Order

Exercise

Receive Items and Create Receiver

Post Transactions to the GL

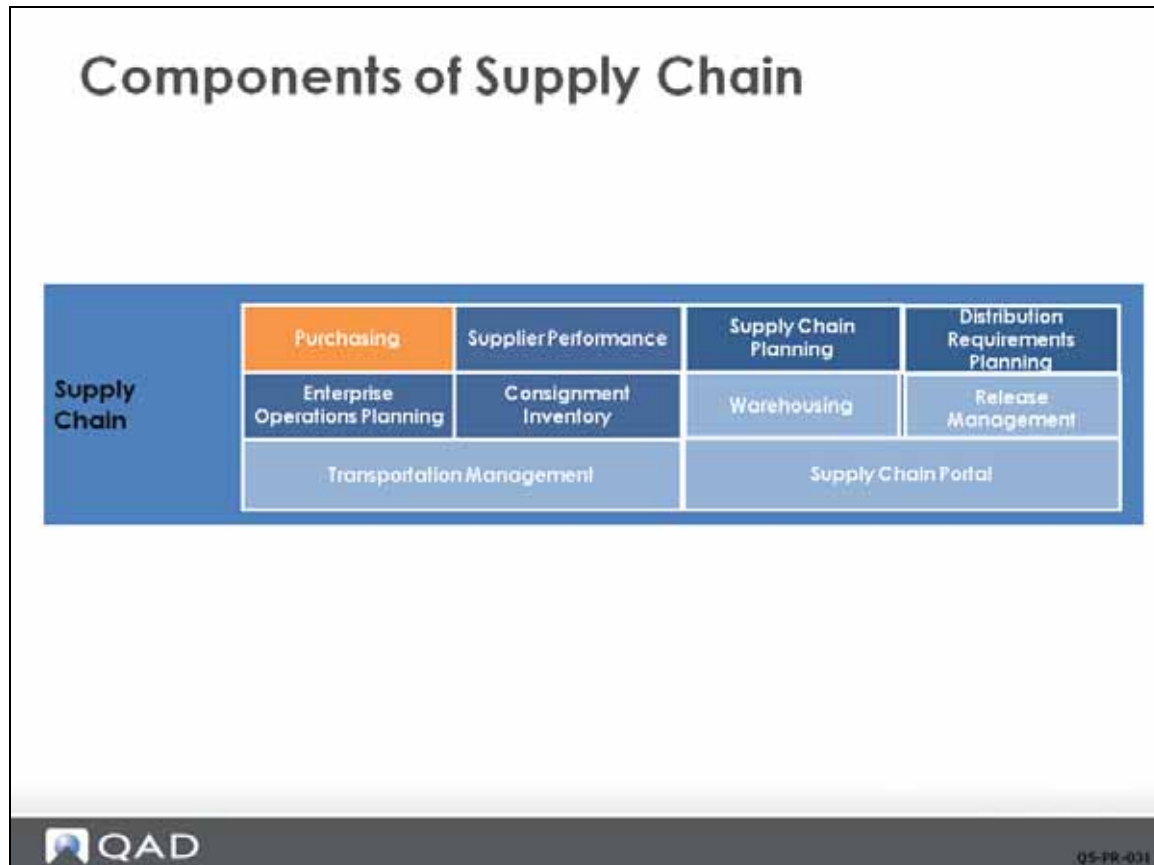
- Review
- Exercise

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the purchasing flow.
- Explain how the system handles the different numbering systems that suppliers and customers use for the same item.
- Explain how the system handles the different units of measure that suppliers and customers use for the same item.
- Describe the purchase requisition flow.
- Describe the three kinds of purchase orders that QAD EE supports.
- Explain how to receive items and the impact of receipt on AP payment processing.

Components of QAD Supply Chain



QAD Supply Chain supports supply networks with the ability to drive margin and cost improvements, reduce lead times, increase inventory turns and meet industry compliance.

The next few slides highlight each of the standard components of QAD Supply Chain. The optional components (shown in lighter blue in the slide) are not covered.

- **Warehousing:** Supports the requirements of organizations with larger or more sophisticated warehouses; provides automated task management, RF based picking, wave management, batch picking, location find/audit, put-away, picking, cross docking, quality control, replenishment, transfers and advanced cycle counting activities.
- **Release Management:** Supports cumulative and requirements-based quantity accounting for customer-scheduled orders and cumulative accounting for supplier-scheduled orders. Supplier schedules combine both planning and shipping requirements or, if QAD PRO/PLUS is installed, support separate supplier planning and shipping schedules
- **Transportation Management:** Provides a complete set of tools to optimize shipments by air, sea, parcel, truckload, or less than truckload; provides international documentation and assists in compliance with denied-party regulations.
- **Supply Chain Portal:** Provides 24x7x365 collaboration to authorized suppliers by logging on to the Web site using a standard Internet connection. Allows users to track the flow of orders and shipments using ASNs; display receipts and monitor supplier performance including quality metrics; receive user-specified alerts of business critical inventory-related events; and review invoices and remittance information.

Purchasing

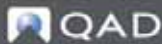
Purchasing

- Manage entire process from requisition to receipt
- Use blanket POs, subcontract POs, and discrete POs
- Create, maintain, and route requisitions for approval
- Access, approve, and reroute requisitions from a mobile device
- Plan repetitive deliveries with supplier schedules

Manage process from requisition to receipt



Supply Chain	Purchasing	Supplier Performance	Supply Chain Planning	Distribution Requirements Planning
	Enterprise Operations Planning	Consignment Inventory	Warehousing	Release Management
	Transportation Management		Supply Chain Portal	



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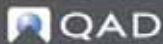
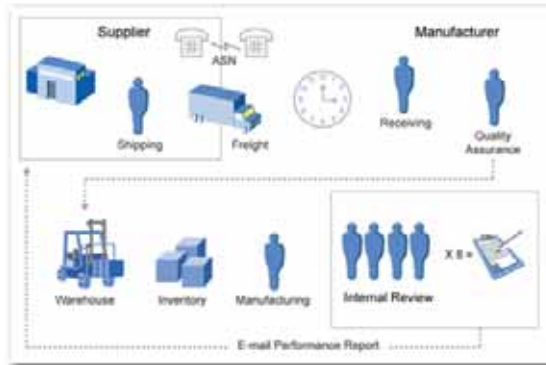
This chapter explores the purchasing process and gives you opportunity to create a purchase order and process a receipt.

Purchasing is a comprehensive procurement and strategic sourcing tool, fully integrated with planning, that provides sophisticated pricing across contracts, individual orders, and blanket orders.

Supplier Performance

- Record, track, evaluate, and rate external suppliers
- Compare supplier events to standards on a report card
- Select preferred performance calculation method
- Monitor performance from multiple shipping functions
- Use automatic or manual event recording

Automate evaluation of suppliers

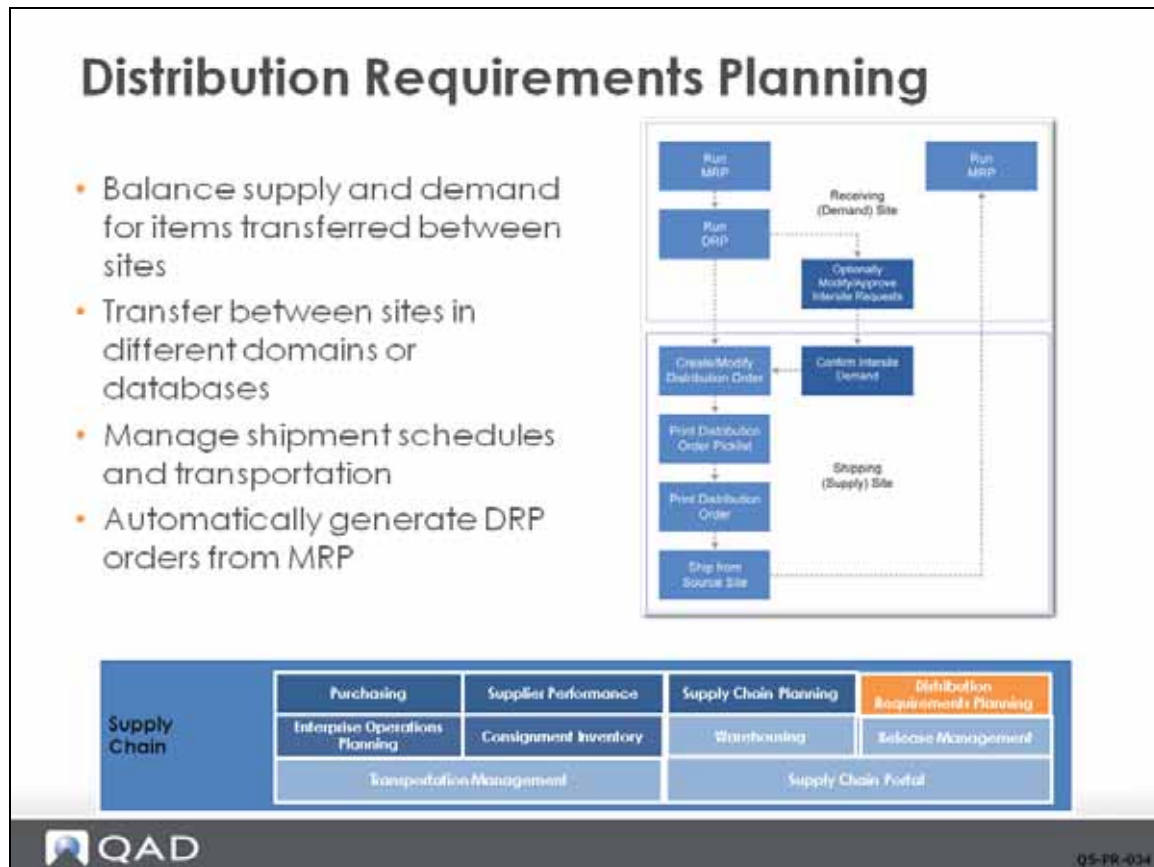


Q5-FR-033

QAD's Supplier Performance monitors and reports supplier performance against defined metrics and key indicators, enabling monitoring and dialog with suppliers about quality and performance. You can:

- Record, track, evaluate, and rate external suppliers.
- Generate report cards comparing supplier events to standards.
- Choose among multiple performance calculation methods.
- Monitor performance from multiple shipping functions.
- Use automatic or manual event recording.

Distribution Requirements Planning



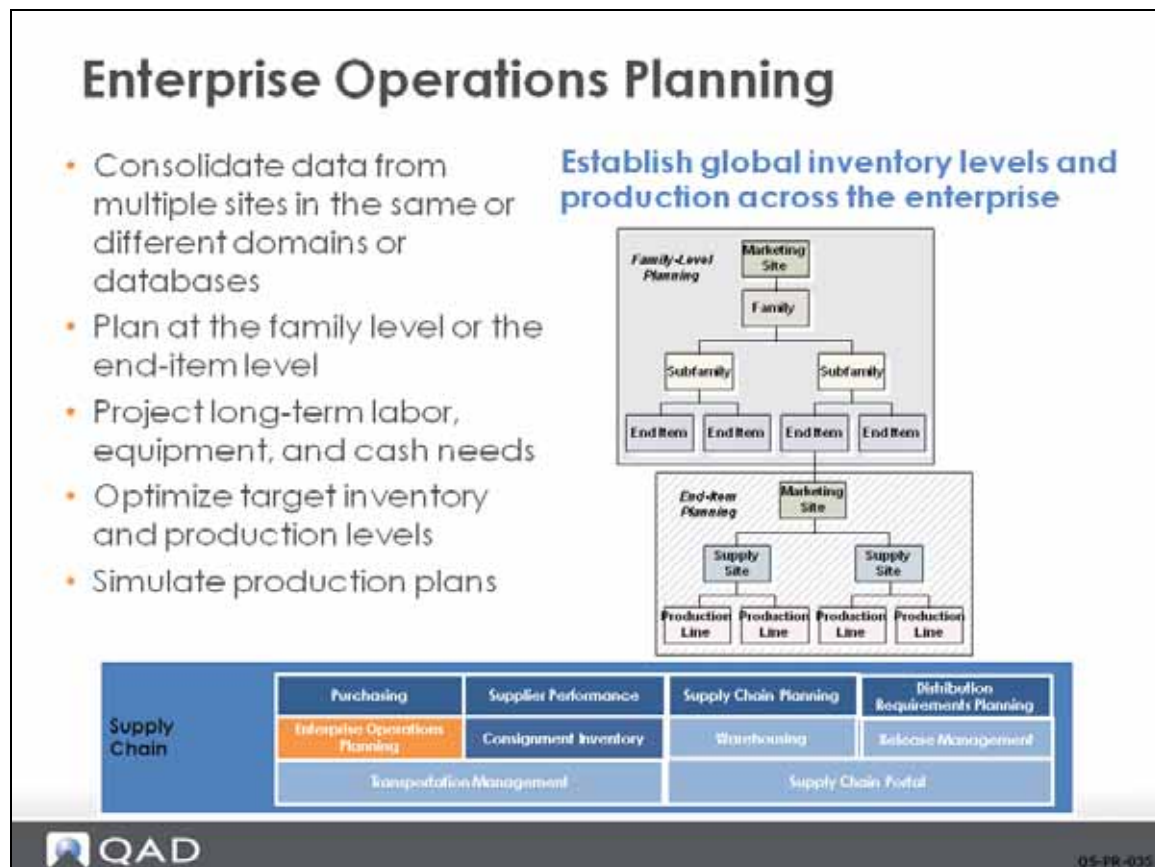
Supply Chain Planning consists of three components:

- Distribution Requirements Planning, shown here.
- Enterprise Operations Planning, shown next.
- Linked-Site Costing, which enables users to link the GL cost of an item procured or held in multiple sites to a primary costing site. Linked-Site Costing allows master cost records to be shared, with only unique cost elements being established at each site.

Distribution Requirements Planning (DRP) lets companies easily plan, manage, track, and record costs associated with the transfer of items between sites. You can:

- Balance supply and demand for items transferred between sites.
- Transfer between sites in different domains or databases.
- Manage shipment schedules and transportation.
- Generate DRP orders automatically from MRP.

Enterprise Operations Planning



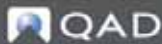
Enterprise Operations Planning (EOP) supports the highest level of sales and operations planning and integrates with planning and scheduling. You can:

- Balance supply and demand by consolidating data from multiple sites in the same or different domains or databases.
- Plan at the family level or the end-item level.
- Project long-term labor, equipment, and cash needs.
- Optimize target inventory and production levels.
- Simulate production plans.

Consignment Inventory

Consignment Inventory

- Defer transfer of ownership
 - **Supplier Consignment:** Your supplier ships to you but the supplier retains ownership until you use the item
 - **Customer Consignment:** You ship to your customer but you retain ownership until the customer uses the item
- Tracking inventory with special transactions, inventory management features, and accounting
- Fully integrated with sales and purchase orders
- Integrates with EDI for electronic notifications



Q5-FR-036

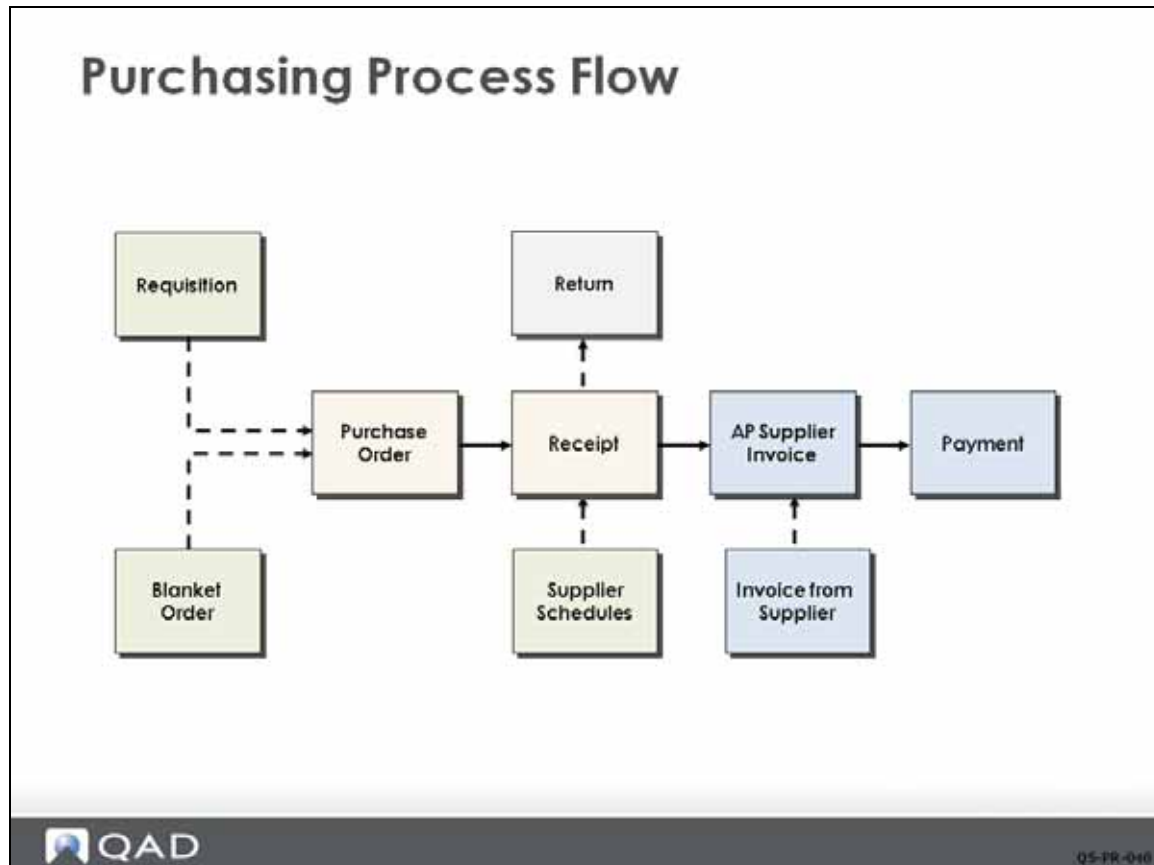
Consignment Inventory manages and tracks consigned inventory sent to customers or received from suppliers in a Vendor Managed Inventory (VMI) model—from receipt to consumption—and creates triggers for payment processing.

- Supplier Consignment: Your supplier ships to you but the supplier retains ownership until you use the item.
- Customer Consignment: You ship to your customer but you retain ownership until the customer uses the item.

Consignment features include:

- Tracking inventory with special transactions, inventory management features, and accounting
- Fully integrated with sales and purchase orders
- Integrates with EDI for electronic notification

Key Concepts of Purchasing



Purchasing lets you manage all aspects of ordering and receiving materials and services, including requisitions, approvals, purchase orders, receipts, and returns. It supports purchasing of products as well as non-product materials and services—such as subcontracting services—and gives you the means to support discrete, process, and just-in-time (JIT) manufacturing.

While purchasing supports the purchase of everything—from office supplies to capital equipment for production—this course limits the example to purchasing direct material for manufacturing.

A purchase involves several steps:

- 1 Often the first step is a requisition, which is the result of demands recognized by material requirements planning (MRP).
- 2 An order is next, either a purchase order, a blanket order, or a supplier schedule.
- 3 When the ordered goods arrive, a record is made called a receiver. If the goods are returned to the supplier, another record is made.
- 4 After goods are received, Accounts Payable receives an invoice from the supplier and matches it with the purchase order and receiving documents generated by the system so that payments can be made.

You will review several of these stages of the purchasing process in more detail on the following pages, but before you can perform purchasing functions, a supplier must exist in the system. So this chapter begins with a review of entering supplier information.

Suppliers

Suppliers		
	QMI	Supplier
Item	6001 Mouse Pad	Bridgefield Industries
UOM	EA	CS

	QMI	Supplier
Item	60018 Dust Cover	Bridgefield Industries
UOM	EA	CS

Prior to using purchasing functions, you need to set up information for each of your suppliers. Supplier Create, located under Accounts Payable in the Finance system, is used to create the supplier record and set up the accounting information needed. QMI's key supplier for purchased components is Bridgeville Industries. The Finance staff of QMI has set up this vendor with supplier code 10S1002.

In addition to setting up accounting data for the supplier, QMI sets up supplier data particular to manufacturing. This is done in Supplier Data Maintenance (2.3.1) under the Addresses menu in Master Data. This data includes contact names and phone numbers, shipping data, and other information of a non-financial nature.

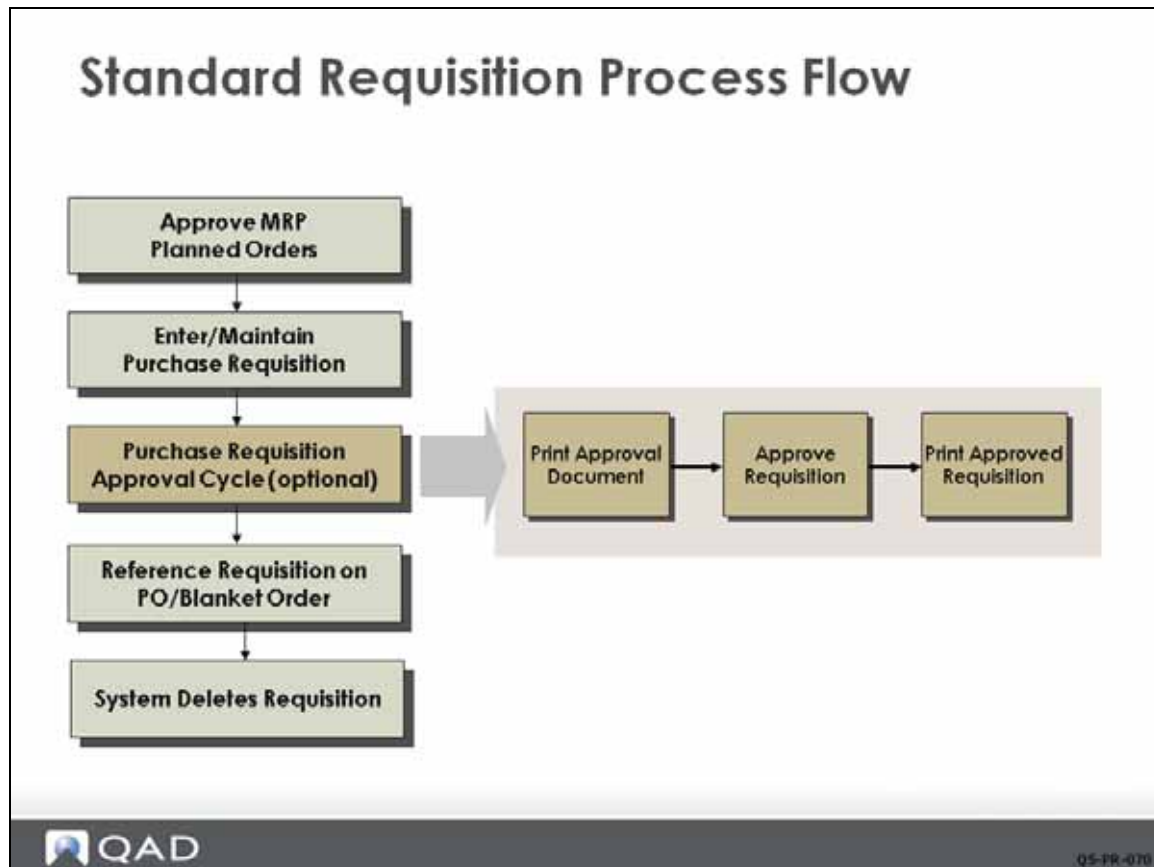
Supplier Items

Supplier items are used to cross-reference your item number with your supplier's item number. Later, you can specify the supplier's item number instead of your own on a purchase order, and the system will find your item number for you.

Unit of Measure

Unit of measure conversions can be set up so that a unit of measure for a purchase order line can be different than the item master unit of measure. Then, when the item is received, it is converted to the item master unit of measure.

Standard Requisition Process Flow



A requisition is a record stating that an item is needed. Requisitions specify quantity, date needed, and place to be delivered. A requisition is often the first step of a purchase, although you can issue a purchase order without it. Requisitions can be created by approving an MRP planned order with Planned Purchase Order Approval (23.11) or created manually. The system provides two ways to manage purchase requisitions.

- Simple requisitions for single items are created using functions on the Purchase Requisition Menu (5.1).
- Multiple-line requisitions with complex approval flows can be created using functions on the Global Requisition menu (5.2).

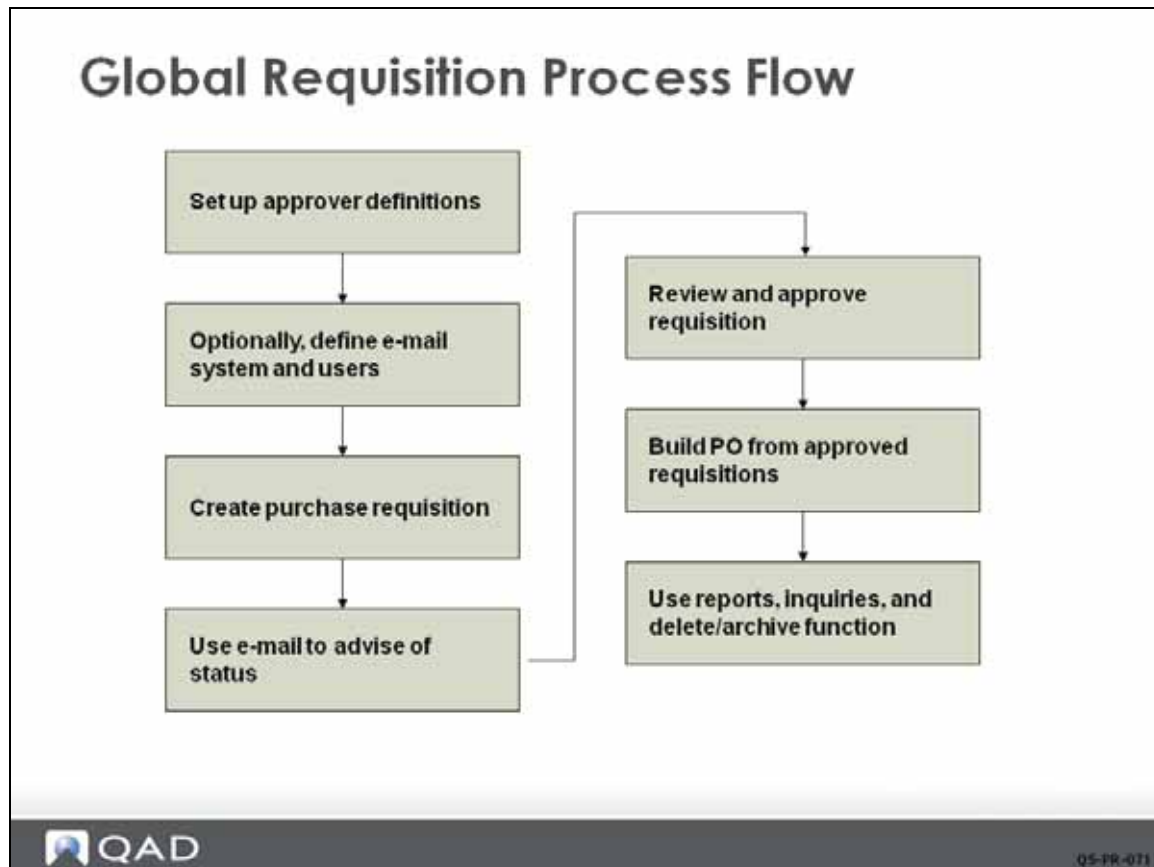
You must decide which type of requisition you want to use; both systems cannot be used at the same time and there are consequences associated with changing. This training assumes you are using standard requisitions.

Some companies also require approvals before requisitions become orders.

With standard requisitions, approval levels are defined by product line, site, requested by, and purchase expense account. Then, when a requisition is created, it is automatically assigned an approval code, based on the cost. The approval level determines the person who must sign off on the requisition before the item can be purchased. Multiple approval levels can be recorded for each requisition.

After requisition information is transferred to a purchase order or a blanket order, it is deleted.

Global Requisition Process Flow



The Global Requisition System (GRS) lets you create multiple-line purchase requisitions and route them through a flexible approval process. Based on the type of purchase, the cost, and the requestor's department, the system determines which individuals are authorized to approve the requisition. Optionally, GRS sends e-mail messages throughout the requisition life cycle to communicate status and required actions to originators, end users, reviewers, approvers, and buyers.

Reviewers and approvers can use the features of GRS to modify, approve, deny, or cancel entire requisitions or individual line items. When a requisition has been approved at the specified final level, a buyer can use approved requisition lines to build purchase orders (POs). Features of GRS

GRS features multiple-line entry. You set up default information, such as the supplier, the requesting site, and the need date, in a header applying to the whole requisition. If you need to change any of this information for a single line item, you can override much of it on a line-by-line basis while you are entering individual requisition items. You can also create a multiple-line requisition by approving a group of MRP planned orders.

GRS reduces repetitive data entry by letting you generate a purchase order directly from approved requisitions. Common data from the requisition header is copied into the purchase order header. You can then copy approved requisition line items to build the detailed line items on the purchase order.

Types of Purchase Orders

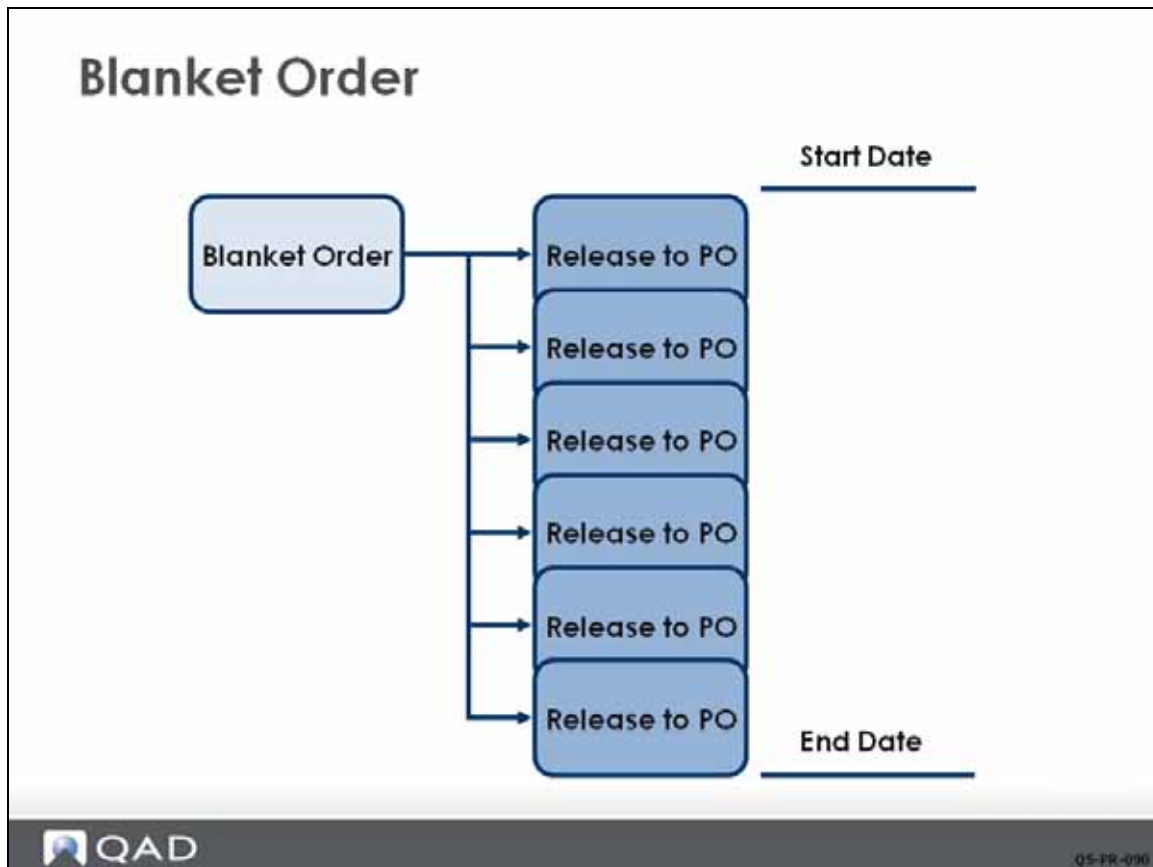


QAD EE supports three kinds of purchase orders:

- Blanket purchase orders
- Supplier schedules
- Discrete purchase orders

Although all three kinds of orders are described in this section, the emphasis is on discrete purchase orders. The Example section is based upon a discrete PO.

Blanket Orders

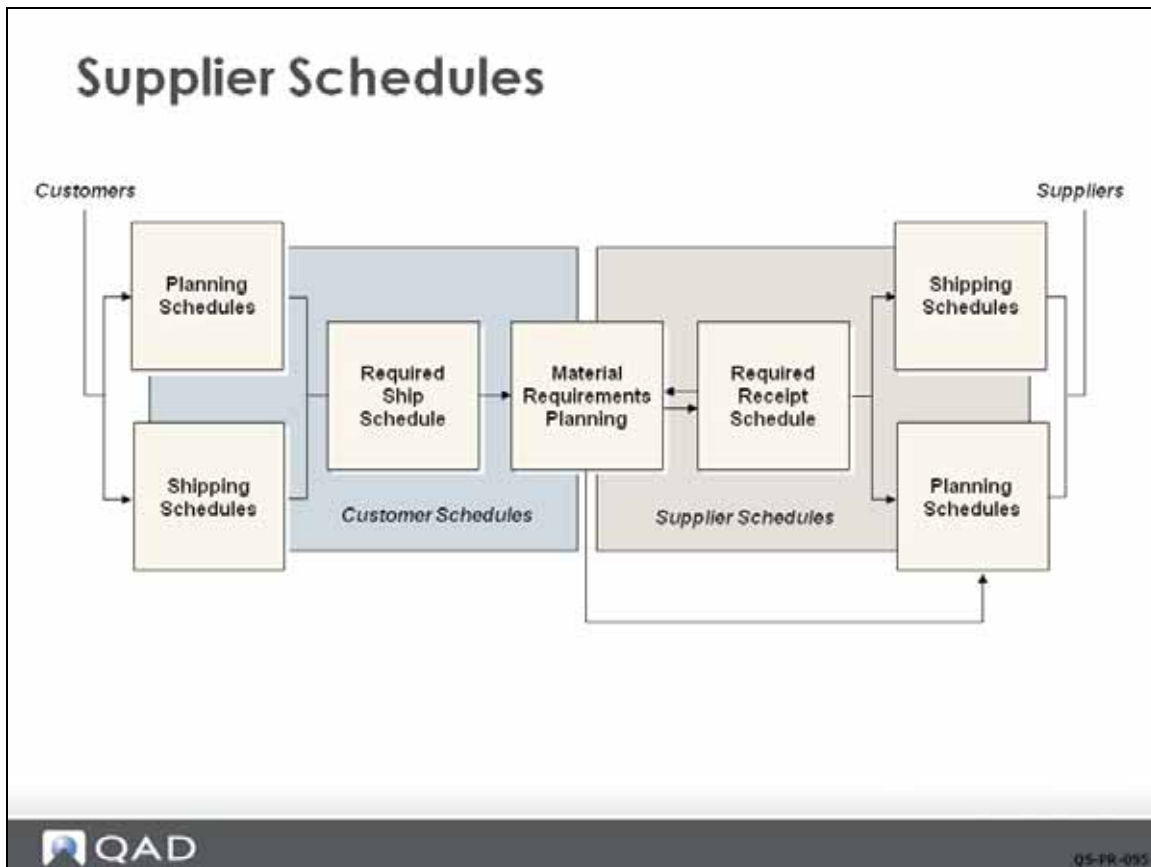


Use blanket orders for multiple deliveries of stock items, where an ongoing relationship with the supplier is assumed, but exact delivery dates are yet to be determined. Quantities and due dates can be entered up to the time when a blanket order becomes a purchase order.

For example, QMI buys all of its components from Bridgeville Industries. Each week, the requirements change and are too small to get quantity discounts. The purchasing manager could negotiate an annual contract with Bridgeville Industries to get better pricing based on the estimated annual usage of purchased items. This pricing could be documented with a blanket order.

Each week a discrete purchase order would be released from the blanket order for the following week's requirement. A weekly release is only one example; the actual release cycle is user defined. The blanket order keeps track of totals ordered to date.

Supplier Schedules



Supplier schedules are part of a larger supply chain process illustrated in this slide.

- Customers send information about the items they need and when they need them as planning or shipping schedules. Based on this information, a required ship schedule is created.
- When material requirements planning (MRP) is run, planned work orders and purchase orders are created to fulfill the required ship schedule. The planned purchase orders can be used to create a schedule for your suppliers, communicating your requirements to them.

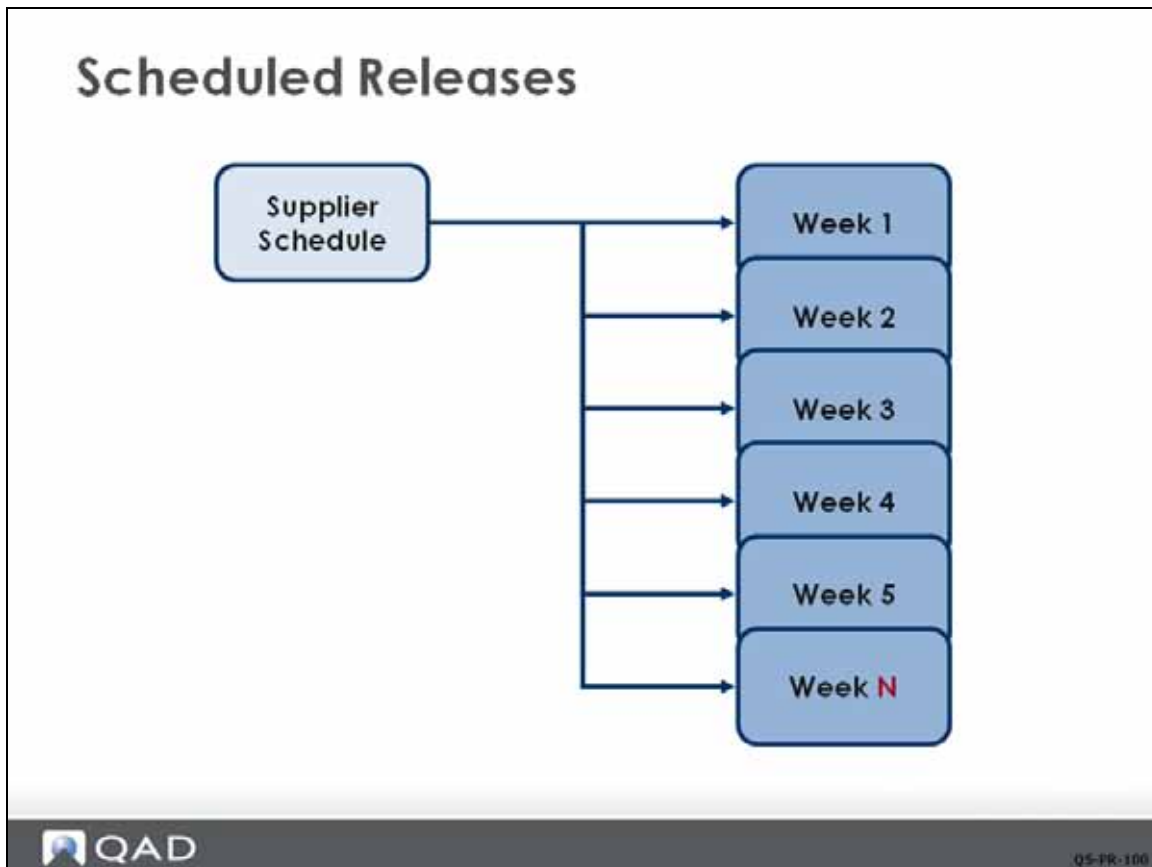
Customer schedules and supplier schedules represent two points of view relative to schedules. The schedules, however, have similar elements.

Shipping Schedules. Shipping schedules are used to coordinate the delivery of materials in the short term, typically one to two weeks. Demand is reported in detail, with quantities specified by date or by date and time. Shipping schedules can be updated frequently to reflect changes in production line schedules.

Planning Schedules. Planning schedules are used for moderate and long-term planning of production, materials, and resources. Demand is summarized and reported in quantities aggregated by day, week, or month. Planning schedules reflect requirements from repetitive schedules, released orders, master schedule orders, and planned orders produced by MRP.

Supplier schedules are designed for use with EDI (Electronic Data Interchange) and as such eliminate most of the paperwork associated with the purchasing process.

Scheduled Releases

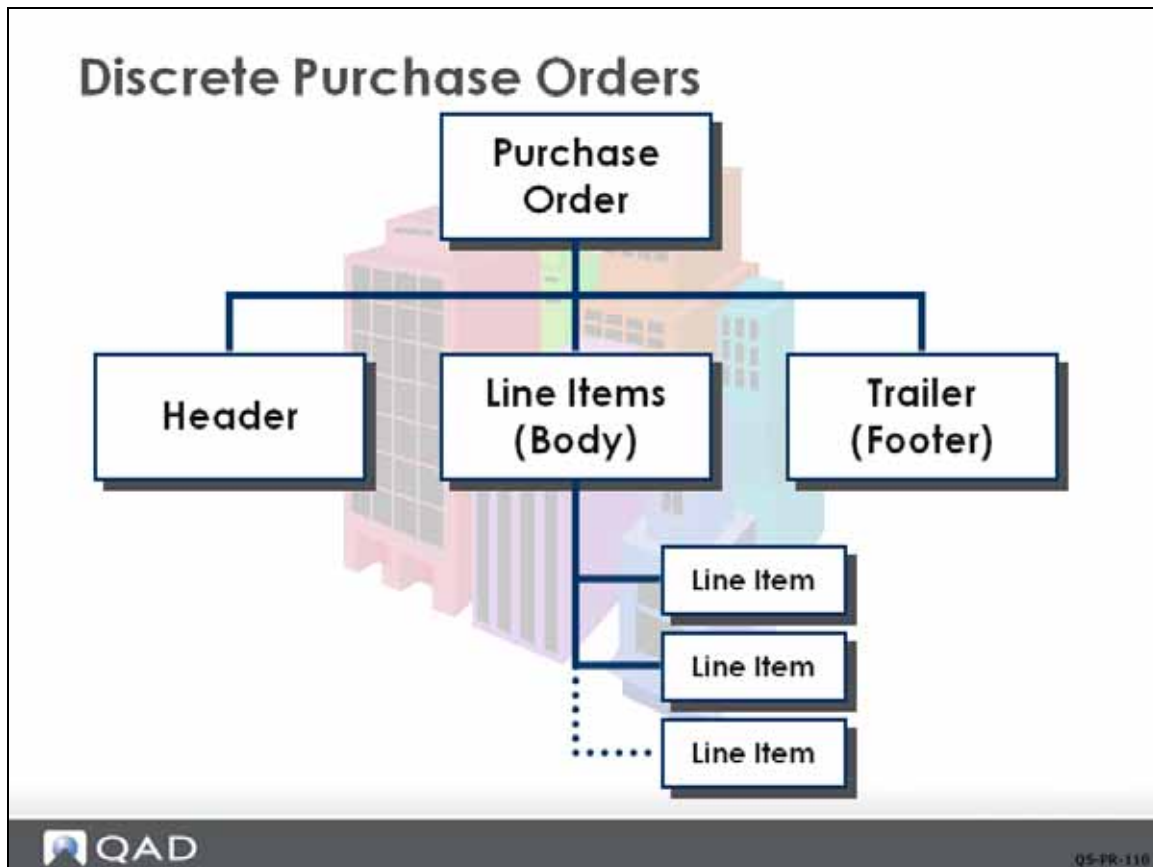


Supplier schedules are cumulative, schedule-driven purchase orders with multiple line items from which releases of requirements and due dates are issued. They are typically used by companies with long-term supplier contracts that require regular weekly or daily deliveries. The schedules specify, for the near term, dates and even hours of deliveries. But they also inform MRP and the supplier about long-term plans.

The header and trailer of a supplier schedule resemble those of a normal purchase order for a single line item with multiple delivery dates. However, the line-item section of a supplier schedule combines information for:

- Short-term shipping schedule with exact quantities and delivery instructions
- Long-term planning schedule that shows upcoming orders and authorizes the supplier to buy raw materials or make subassemblies

Discrete Purchase Orders



Use discrete purchase orders for single transactions with a supplier, where no assumption that further transactions will occur is made. Purchase orders contain a single delivery date for each line item. MRP treats purchase order items as supply and assumes that ordered amounts will be available on the delivery date. Receipts can be processed against these purchase orders. You will see how to process a discrete PO in the Example section.

The diagram shows the three main sections to the purchase order:

- The header contains data that applies to the entire order. This includes the PO number, the supplier, the buyer, and other data.
- The line items detail the specific items being purchased. This includes item numbers and descriptions, quantities, and prices.
- The trailer records the final data applying to the entire order such as taxes and shipping charges.

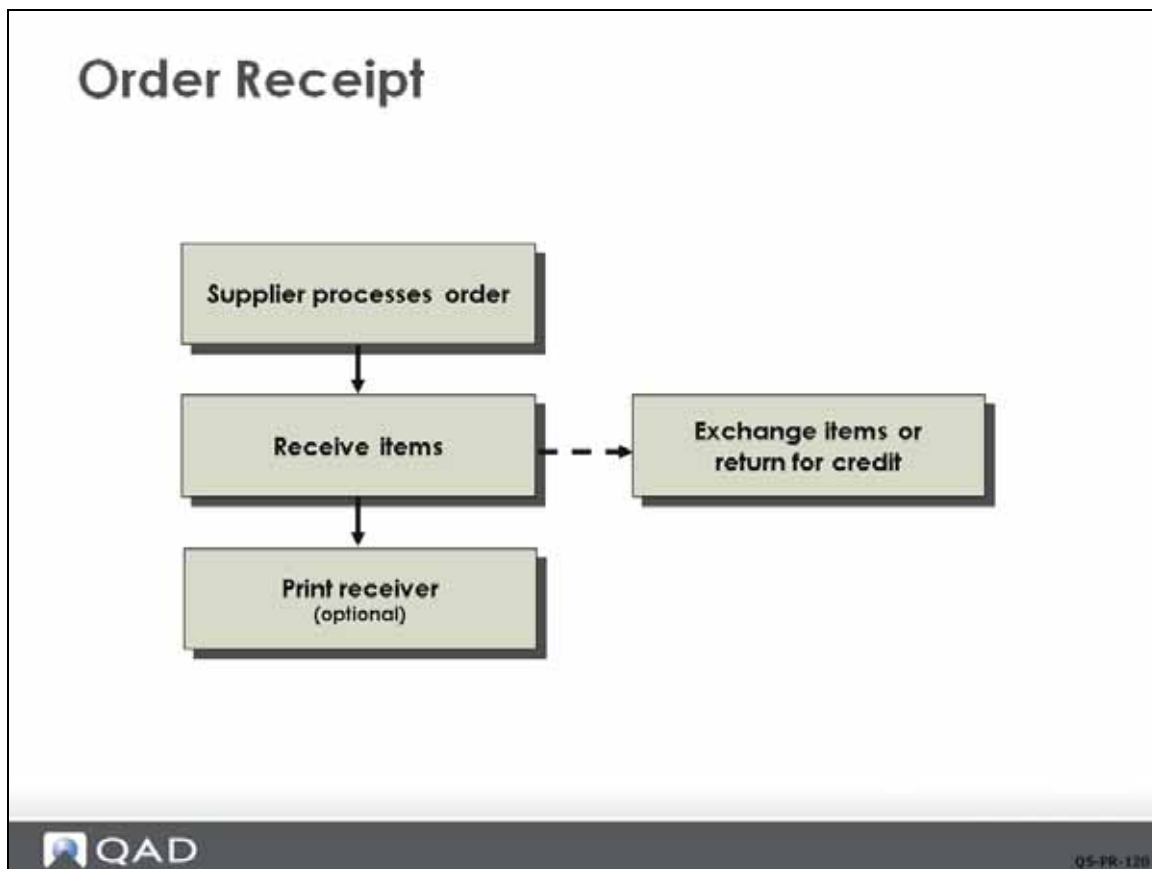
Order Comparison

Order Comparison			
	Purchase Orders	Blanket Orders	Supplier Schedules
Delivery Dates	Single for order/item	Multiple	Multiple
MRP	Yes	No	Yes
Receipts	Yes	No	Yes
Duration	One time	Short/medium	Medium/long term
Elements	Header Line Items Trailer	Header Line Items Trailer POs	Header Planning Schedule Shipping Schedule Trailer

This slide summarizes and compares the attributes of the three types of purchase orders.

- Purchase orders have a single delivery date for each line. They are considered as supply by MRP and you can receive items using them. A PO is created, received, and closed.
- A blanket PO is an order template. It can be released more than once with multiple due dates. It is not considered by MRP until an actual order is created and no receipts can be made against a blanket PO.
- Supplier schedules have multiple delivery dates that are considered by MRP.

Order Receipt



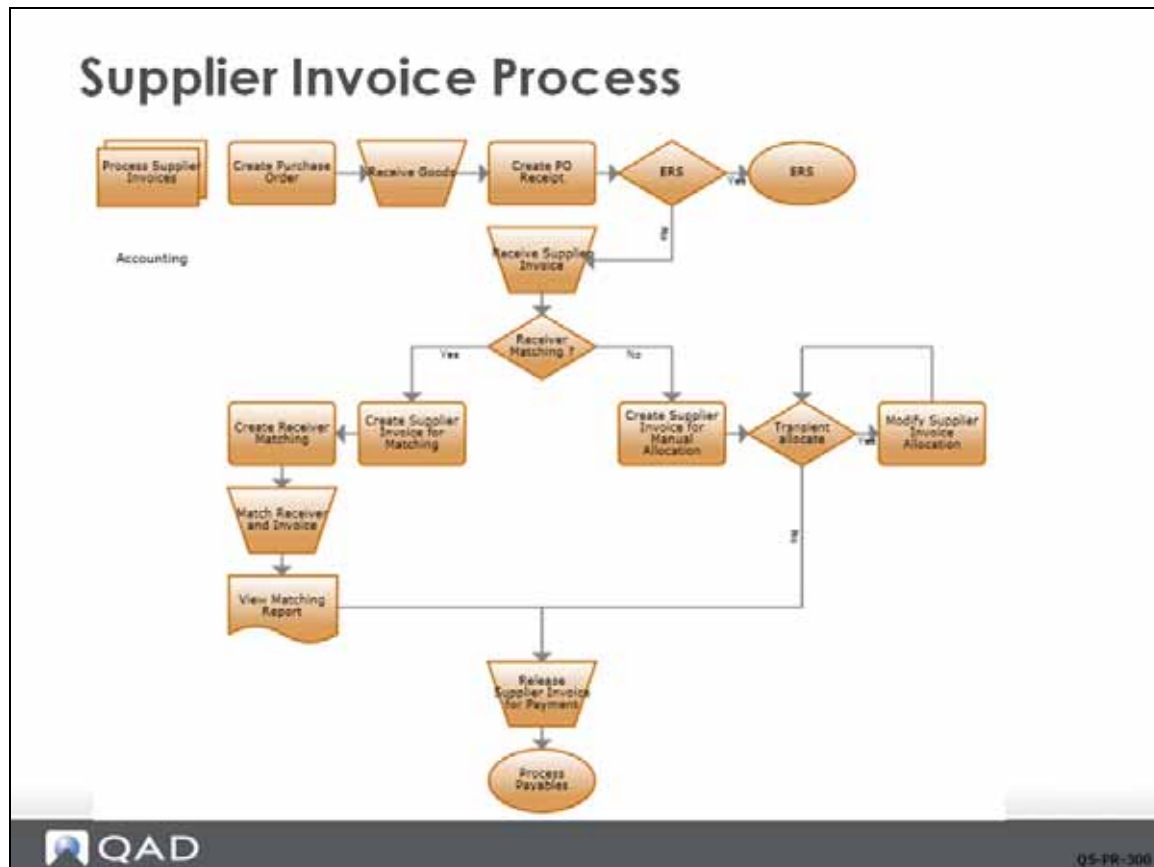
This slide illustrates the order receipt process.

Purchase order receipt transactions are performed when items on an open purchase order are received into inventory. When material is received, inventory is updated as well as the open order quantity on the PO.

All PO receipts and returns generate receivers for matching with supplier invoices in Accounts Payable. A receiver is a record that goods have been received into inventory. Receivers update inventory balances and allow Accounts Payable to verify quantities and prices before paying suppliers. Receiving documents can be printed and attached to the items or routed to the Accounts Payable department.

Note The GL transactions created during PO receipt are not automatically posted to the GL. In order to see the GL effect, you must first run Operational Transaction Post. See “Operational Transaction Flow” on page 113 for details.

Supplier Invoice Process



The Accounts Payable department records amounts owed to suppliers and processes and prints payments for those amounts. Often, an AP department uses supplier invoices to document internal approval and help ensure the accuracy of invoices it receives. When approved, the supplier invoice authorizes payment to the supplier.

The Accounts Payable department uses the Supplier Invoice function (28.1.1) to create, view, modify, and delete supplier invoices and credit notes and:

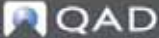
- Create initial invoices to enter supplier documents immediately into the system.
- Match current invoices against original purchase order receipts.
- Prepare invoices for allocation and allocate the invoice.
- Approve invoices.
- Place invoices on payment hold or release invoices for payment that are currently on hold.
- Reverse incorrect invoices and their postings, and optionally replace these with new invoices.

In the diagram, Evaluated Receipts Settlement (ERS) is an optional, streamlined process that bypasses some manual data entry. ERS generates supplier invoices and corresponding receiver matching records automatically based on PO or fiscal receipts using quantities received at the unit price negotiated with the supplier in a purchase agreement. ERS works well when trading partners have close relationships with established prices and shipping information and receipts are recorded accurately.

Process AP Payments

Process AP Payments

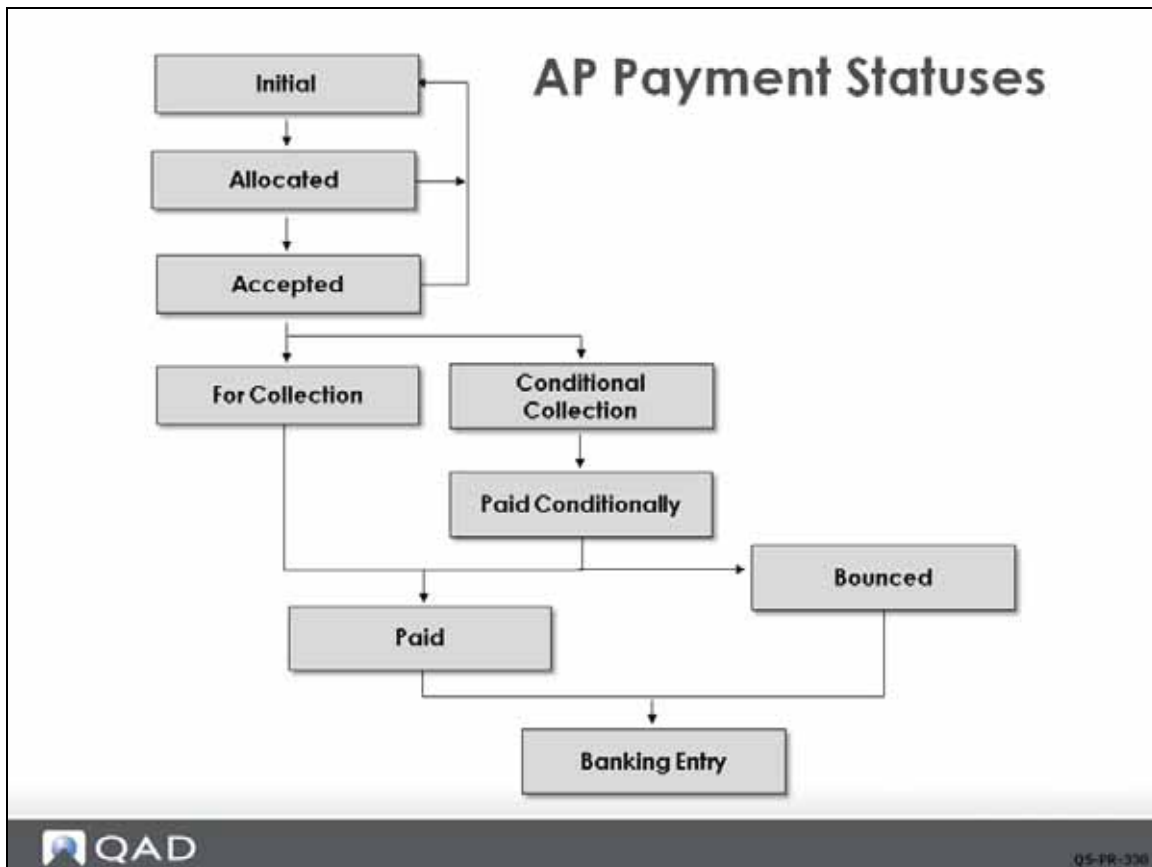
- Electronic Transfer
 - Use Payment Selection Execute
 - Uses EDI for Payment format transformation
- Check Payment
 - Use Supplier Check Print
 - With or without Payment-in-Process (PIP) account; with PIP is recommended
- Other Payment Instruments
 - Drafts, similar to checks
 - Paper transfers, similar to electronic transfer
 - Promissory notes/summary statements, similar to checks
 - Cash, processed directly in Bank/Cash entry


Q5-FR-318

After supplier invoices are approved for payment, the AP department has a range of instruments available for actually paying the suppliers other than check or electronic payment:

- **Draft.** The draft or bill of exchange is a negotiable security signed and dated by its issuer (the bank). It contains an unconditional order or instruction to pay a fixed amount to the supplier on the agreed due date. Once signed, the draft is considered a collection instrument. Its form, content, and legal consequences are governed by law.
- **Paper Transfer.** The transfer payment instrument is an order for payment that you submit to your bank. The bank ensures that the amount is transferred to the supplier's bank account. Transfers are in paper format.
- **Promissory Notes.** The promissory note is a promise to pay the supplier, instead of an unconditional payment order. The promissory note carries more risk for the beneficiary and has fewer legal consequences for the issuer if payment is defaulted summary statements: You send summary statements to the supplier. Factoring companies and banks that provide credit card services use summary statements.

AP Payment Statuses



Payment processing is controlled by payment status codes. Different payment instruments follow different status sequences. The particular flow is determined during financial setup. At a minimum, the Paid and Bounced statuses are used. Typically, a For Collection status is used for payments sent to the bank. The Initial status is for an initial payment registration.

You can define an account for each status through which the payment is processed, or use one GL account to record the transitions. For example, if you are processing a check through the Initial, Allocated, For Collection, and Paid statuses, you can define a GL account of type Supplier Payment for each status. This approach supports detailed reporting requirements.

Each status transition usually generates a posting, which updates the account associated with the status and bank or liability accounts.

All of this processing is managed within Enterprise Financials and is not covered in this class.

Example

The example in this chapter shows the following purchasing activities:

- Review financial and operational supplier data.
- Set up a unit of measure conversion for 60017 (mouse pad), which the supplier only sells in a case with 100 items.
- Add information to map QMI's item 60017 to supplier item SCC62050.
- Verify Purchasing Control settings.
- Create a purchase order to buy enough component items to build 10 medical ultrasound devices.
- Receive the component items into inventory.
- Review the effect on inventory level and the transactions created.
- Post the transactions to the GL.

Supplier Create

Supplier Create

Supplier Code: 1051002 Active: ☒

Business Relation: 1051002

Business Relation: Accounting | Payment | Banking | Defaults | Tax Info | Comments

Name: Bodgeville Industries

Address: 3390 Linco Road

Zip/City: 49127 Stevenerville

Country Code: USA USA - TAX PURPOSE

State: MI Michigan

County:

Telephone:

Fax:

E-Mail:

Internet:

QAD Q5-FR-130

The Finance Department uses the Supplier Activities (28.20.1) to create, view, modify, or delete a supplier. Each supplier references a business relation for address details. See “Business Relation” on page 64 for details.

After a supplier is created, you specify additional operational data in Supplier Data Maintenance (2.3.1). An e-mail is automatically sent to the members of the SupplierNotify role responsible for creating this data when a new supplier is created.

Verify Supplier Data

Verify Supplier Data

Supplier Data Maintenance

Go To Actions Copy Print Preview Attach

Supplier 1051002 Site: Carrier:

Supplier Address

Supplier: 1051002 Business Relation: 10-51002 Active: ☒ Added

Name: Bridgeville Industries

Address: 3390 Linco Road

Address:

Address:

City: Stevensville State: MI Post: 49127 Format:

Country: USA County:

Attention: Elizabeth Clear [2]

Telephone: [2]

Fax: [2]

Supplier Data

Sort Name: Bridgeville Industries Currency: USD

Supplier: RMS Language: us

Ship Via: PER INSTRUCTIONS Daybook Set: 10PURCH

Remarks:

Site:

Carrier: Kanban Supplier: ☐

Purchase Contact: Promotion Group:

QAD QS-FR-140

After the supplier record has been set up by QMI Finance, QMI Purchasing verifies data and adds vendor-specific information that is used during the creation of purchase orders.

The first frame of Supplier Data Maintenance (2.3.1) displays the address information entered by Finance. Purchasing will add contact and shipping information.

Verify Supplier Pricing, EMT, Credit Terms

Verify Supplier Pricing, EMT, Credit Terms

Supplier Pricing Data

Buyer: 302

Price Table:

Discount Table:

Fixed Price: ☒

Enterprise Material Transfer Data

Send SO Price: ☐ SO Price Reduction: 0.00%

Send Credit Held SO: ☐ Use SO Reduction Price: ☐

Auto EMT Processing: ☐

Automatic PO Receipt: ☐

Supplier Terms Data

Cr Terms: 30D Discount Percent: 0.00%

Partial OK: ☒

DB Number: CoC Number:

QAD Q5-FR-141

In the second frame, you can add the buyer code, price, and discount tables if you are using those. When Fixed Price is checked, the same field will also be checked on POs created for this supplier. This indicates that the negotiated prices with this supplier cannot normally be changed.

The third frame is used for Enterprise Material Transfer—also called back-to-back sales orders/purchase orders—a special case situation that is covered in its own training material.

The fourth frame displays the credit terms set up by finance (30D means payable in one month). The Partial OK field is checked, meaning purchase orders do not need to be delivered complete. This is a default for this supplier that can be changed on each PO.

Verify Supplier Accounts

Verify Supplier Accounts

Supplier Accounts Maintenance X

Go To Actions Copy Print Preview Attach

Supplier

Supplier: 10S1002 Active ☒

Name: Bridgeville Industries

Accounts

PO Receipts Acct:

Expensed Item Receipts:

QAD Q5-FR-142

One other aspect of the supplier can be defined using Supplier Accounts Maintenance (2.3.7). Here QMI can set up accounts—PO Receipts and Expensed Item Receipts—required in multinational environments to distinguish between PO receipts received from regular suppliers and those received from any intercompany suppliers. These accounts must be valid, active supplier accounts of type PO Receipts.

These accounts have no default values. If you specify a value, the system always uses it in preference to any other function that generates the related GL transaction.

If you leave the supplier account fields blank, the standard logic for determining account values is used. For inventory items, the system searches for a PO Receipts account, sub-account, and cost center in this order:

- A value defined for the item product line, site, and supplier type in Purchasing Account Maintenance (1.2.5)
- A value defined for the item product line in Product Line Maintenance (1.2.1)
- A value defined for the domain in Domain/Account Control (.24)

For non-inventory items, the system uses the Expensed Item Receipts account from Domain/Account Control.

Set Up UOM Conversion

The screenshot shows a software window titled "Unit of Measure Maintenance". Inside the window, there is a toolbar with buttons for "Go To", "Actions", "Copy", "Print", "Preview", and "Attach". Below the toolbar, the "Item Number" is set to "60017". The "Unit of Measure" is set to "EA" and the "Alternate UM" is set to "CS". The "UM Conversion" field shows the value "100.0000". A "Mouse Pad" label is positioned to the right of the "Item Number" field. The QAD logo is visible in the bottom left corner, and the text "Q5-FR-150" is in the bottom right corner.

QMI's base unit of measure for the mouse pad (item 60017) is each (EA). The supplier, Bridgeville Industries, only sells the mouse pads in a case of 100. The Purchasing Department uses Unit of Measure Maintenance (1.13) to enter a UOM conversion for the mouse pad so the system can convert a case to a specific quantity.

To do this, the buyer defines an item-specific unit of measure of conversion that applies only to item 60017 as shown in the slide above.

To define a generic conversion—such as from Inch to Centimeter—enter IN in Unit of Measure, CM in Alternate UM, leave Item Number blank, and enter 2.54 in the UM conversion field. The system can then convert anything measured in centimeters into inches. If you wanted the system to be able to convert from IN to CM, add another conversion with CM in the Unit of Measure field and IN in the Alternate UM field and 0.394 in the UM conversion field.

Discussion

What does this information from our supplier about order size indicate QMI should do about the item planning data?

Add Supplier Item

Add Supplier Item

Supplier Item Maintenance

Go To Actions Copy Print Preview Attach

Item Number: 60017 Mouse Pad
 Supplier: 1051002 Bridgeville Industries
 Supplier Item: SCC62050

Unit of Measure: EA
 Supplier Lead Time: 0
 Use SO Reduction Price: 0.00%
 Currency: USD
 Quote Price: 0.49
 Quote Date: 4/19/2012
 Quote Qty: 100.0
 Price List:
 Manufacturer:
 Manufacturer Item:
 Comment:

QAD Q5-FR-160

Enter information obtained from the supplier, Bridgeville Industries, about the mouse pads in Supplier Item Maintenance (1.19). Note that the supplier's item number for QMI's item number 60017 is SCC62050.

Typically, suppliers do not use the same numbering scheme that their customers do. By entering the supplier item information in the system, the buyer can use either the supplier's item number or QMI's item number on purchase orders and the system recognizes these as the same item.

Additional Notes

- Note the Quote Price field of 0.49 and the Quote Quantity of 100.
- Supplier lead time is 0 days. This drives the purchase lead time entered in Item Master Maintenance for this item.
- Note also the fields for the manufacturer of an item. Often items are purchased from distributors, but can also be bought directly from the manufacturer.

Important A powerful feature of entering supplier items in the system is that the Supplier Item Browse can search on either item or supplier. This lets you inquire on all the suppliers that could supply an item, or all the items you purchase from each supplier.

Verify Purchasing Control Settings

Verify Purchasing Control Settings

Purchasing Control

Go To Actions Copy Print Preview Attach

Ship-To: 10-100 Inspection Location: 000

PO Prefix: P10

Next Purchase Order: 00010002

Receiver Prefix: R10

Next Receiver: 00010069

Sort PO By: Site

Receive All: ☐

Approval Req for POs: ☐

Inspection Location: 000

Price Table Required: ☐

Discrete Discount Table Req: ☐

Schedule Discount Table Required: ☐

Ln Format S/M: Single

PO Header Comments: ☐

PO Line Comments: ☐

Cancel Backorders: ☐

Keep Booking History: ☒

Receiver Type: 1 Type: 0 - Do not print receivers

Sequential Receiver: ☒

1 - Print for each shipment

2 - Print for each item/shipment

Tolerance Percent: 10.00 (Acceptance Limit For Overshipments)

Tolerance Cost: 100.00 (Acceptance Limit For Overshipments)

QAD Q5-FR-165

The settings in Purchasing Control (5.24) affect the purchase process. The Ship-To field is the default site code where most shipments are received. The site code is linked to QMI's company address record (defined in Company Address Maintenance). This lets the system print the ship-to address on all purchase orders. The ship-to address can be modified on each purchase order line if necessary.

The PO Prefix field is set to P10 and Receiver Prefix to R10. Since Receiver Type is set to 1, printable receivers are created and the system assigns one number to the entire shipment, even when multiple items are received. (Receipt records are always created regardless of this setting.)

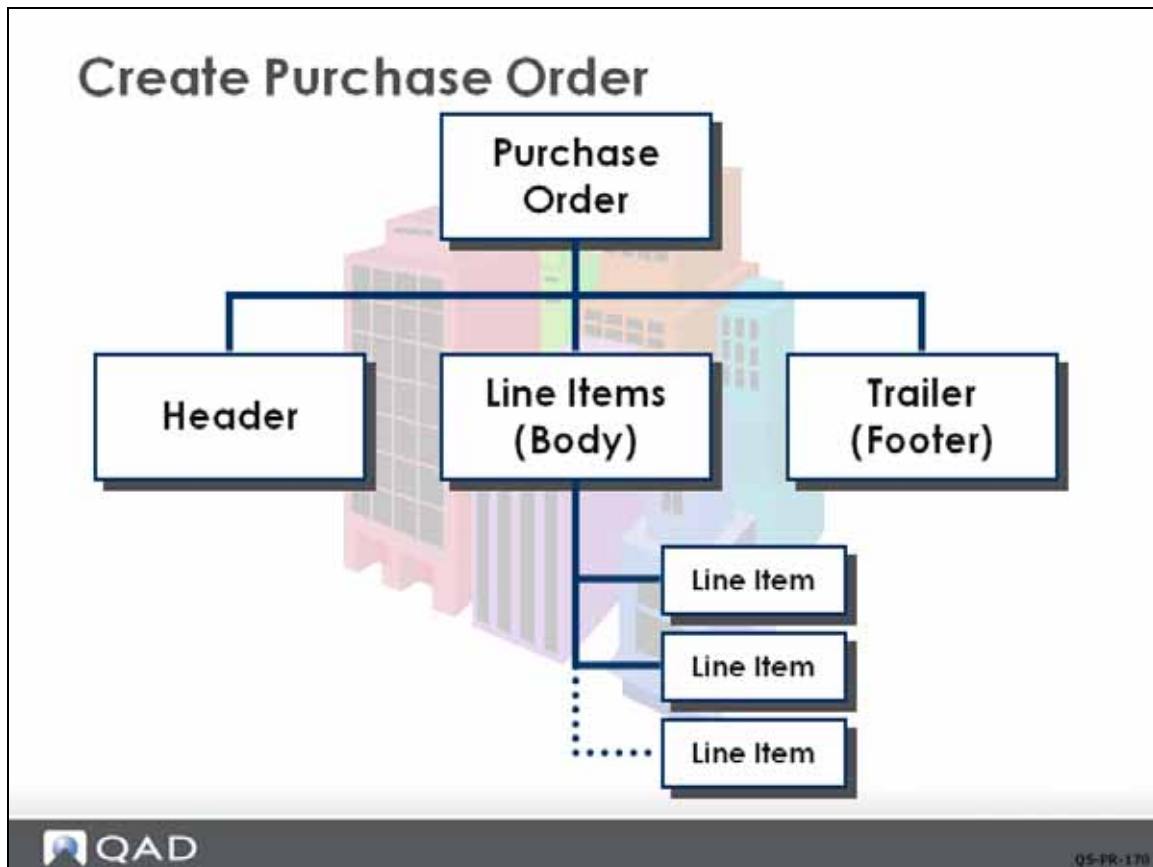
All the fields on the right except Keep Booking History are unchecked.

The tolerance fields set the limits for overshipments. The settings indicate that any item receipt with a count 10% greater than the PO quantity or a value of 100 currency units greater than the PO value will be rejected.

The single entry line format lets you customize due dates, sites, tax statuses, and other information for each line item on a purchase order. Multiple entry lets you enter basic information such as item number, quantity, and price for several lines on a single screen.

PO header and line comments are used when you need to add significant detail to either a purchase order header (referring to the entire order), or to line item detail (applies only to the specific line). The control settings set the default for each new order.

Create Purchase Order



Before beginning to create the PO, remember the three key elements of the purchase order:

- The header contains data that applies to the entire order.
- The line items detail the specific items being purchased.
- The trailer records the final data applying to the entire order such as taxes and shipping charges.

Enter Header Information

Enter Header Information

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Header Details Tax Info Logistics Delivery ERS Consignment Comments

Header

Purchase Order: P1010005 Supplier: 10S1002 Ship-To: 10-100

Supplier

Bridgeville Industries

3390 Linco Road

Stevensville MI 49127

USA - TAX PURPOSE

Ship To

QMI - USA Division

30 Ridgedale Avenue

East Hanover

USA - TAX PURPOSE

Tax Info

Tax Usage:

Tax Environment: USA

Tax Class:

Taxable: ☒

Tax Inv: ☐

Details

Order Date: 5/15/2012 Price Tbl: Disc Tbl: Ln Disc: 0.00

Due Date: 5/15/2012

Buyer: 3-02

Bill To: 10-100

Sales/Job: Daybook Set: 10PURCH

Contract: Project:

Contact:

Remarks:

Confirming: ☒ Currency: USD Language: us

Taxable: ☒ Fixed Price: ☒ Credit Terms: 300

Entered By: mfg

Requested By:

Comments:

QAD

Q5-FR-100

In Purchase Order Maintenance (5.7), QMI's buyer enters a purchase order for the components required to build 10 medical ultrasound units.

The first part of the order has header information such as PO number, assigned by the system based on the prefix and number set up in Purchasing Control; the supplier name, Bridgeville Industries; ship-to address, QMI receiving site 10-100; credit terms; currency; tax information; and order and due dates (both default to today's date). In this example, the system automatically generates the purchase order number; however, you can assign PO numbers manually.

Note Setting the due date on the order header sets the default due date on all line items. If you know all the line items will have different due dates, or if you are using requisitions that have the due date, you can leave the header due date blank.

The tax information pops up in a separate window when you click Next or press Enter after completing the header. This data defaults from Global Tax Management and is not normally modified in Purchase Order Maintenance. Accept the defaults and click Next to advance.

Questions

Some of the information associated with the supplier and defined in Purchasing Control is now seen in the order created:

- What default information came from the supplier record (Supplier Data Maintenance)?
- What effect do the Purchasing Control settings have?

Enter Line 1 Data

For line 1, QMI's buyer enters an order for 1 roll, item 62050. The unit of measure and unit cost information default from the information entered earlier in Item Master Maintenance.

Additional Notes

Each line specifies a particular item being ordered, its order quantity, and price. Line details include any exceptions to header information, such as a delivery date or receiving site, that apply to this line item only and not the whole order.

The format for PO lines was set to single line entry in Purchasing Control. This format shows us one line item at a time with all the detail in the frame below. This lets you verify the data that has defaulted, and modify any data you need to change. Once the four items are set up on the PO, you look at the PO in multi-line format to see what that looks like.

Questions

Look at some of the other default information. Where does the following default information come from?

- Location
- Pur Acct

Enter Line 2 Data

Enter Line 2 Data

Purchase Order Maintenance

Go To - Actions - Copy - Print - Preview - Attach -

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010005 Supplier: 10S1002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
2	10-100		60050	10.0	EA	375.00	0.00

Line Details

Qty Received: 0.0 Due Date: 5/15/2012 CRT Int: 0.00

Qty to Rel: 0.0 Pur Acct: 6610 Mech ADM

Single Lot: ☒ Performance Date: Project:

Location: 107 Need Date: Type:

Item Revision: Sales/Job: Taxable:

Status: Fixed Price: ☒ Inspect Req: ☒ Cmnts:

Supplier Item: UM Conversion: 1.0000

Manufacturer: Stock UM Quantity: 10.0 EA

Description: Base Unit / CPU Update Avg/Last Cost: ☒

Extended Net Cost: 3,750.00

QAD

Q5-PR-200

For line 2, the buyer enters an order for 10 CPUs 60050. Note that the system fills in the unit cost of \$375.00.

The buyer then enters two more lines:

- For line 3, the buyer enters an order for 10 printers, item 60008.
- For line 4, the buyer orders 10 each of the display/readout, item 60002.

To exit line-item entry, the buyer clicks End Lines and then Trailer.

Enter Trailer Information

Enter Trailer Information

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Purchase Order: P1010005 Supplier: 10S1002 Ship-To: 10-100

Trailer

Non-Taxable:	7,660.00	Currency: USD	Line Total:	9,410.00
Taxable:	1,750.00		Total Tax:	131.25
Tax Date: 5/15/2012			Total:	9,541.25

View/Edit Tax Detail: ☐

Trailer Information

Order Revision: 101

Order Rev Date:

Print PO: ☒

EDI PO: ☐

Deliver To:

Amount Prepaid: 0.00

Status:

Close Date:

FOB:

Ship Via: PER INSTRUCTIONS

QAD

Q5-FR-228

The last frame shows the trailer information, which contains tax and order status information for all line items. The 9,541.25 is the total value of the four line items on this order plus tax. Note the order is selected for printing.

If you change the order, the system prompts you to update the revision number. You would normally do this to keep track of how many changes have been made to the order.

Exercise 8-1: Create Purchase Order

Supplier Data

- 1 Use Supplier Data Maintenance (2.3.1) to review supplier contact information and other data for supplier 10S1002.

Click Next at the e-mail pop-up until you reach the Supplier Terms Data frame.

Field	Data
Supplier	10S1002
Name	Bridgeville Industries
Cr Terms	30D (1 month)
Partial OK	Unchecked

Verify that the Partial OK field is unchecked. Click Next until the Supplier field is highlighted, then click Back.

Supplier Items

Supplier items are used to cross-reference your item number with your supplier's item number. You can also document the supplier's quoted price for the item. Later, you can reference the supplier's item number instead of your own on a purchase order, and the system will find your item number for you.

- 2 Use Supplier Item Maintenance (1.19) to create a record that cross-references your item numbers 60017 and 60018 to your supplier's item numbers.

Field	Data
Item Number	60017
Supplier	10S1002
Supplier Item	SCC60017; click Next
Unit of Measure	EA
Supplier Lead Time	5
Currency	USD
Quote Price	0.49
Quote Qty	100

Update and exit the record.

Field	Data
Item Number	60018
Supplier	10S1002
Supplier Item	SCC60018; click Next
Unit of Measure	EA
Supplier Lead Time	5
Currency	USD
Quote Price	2.99
Quote Qty	100

Purchasing Control

- 3 Use Purchasing Control (5.24) and update settings as follows:

Field	Data
Ship To	10-100
PO Prefix	P10
Next PO	System Default
Receiver Prefix	R10
Next Receiver	System Default
Ln Format S/M	Single
PO Header Comments	No (unchecked)
PO Line Comments	No (unchecked)

Let all other fields default. Update and exit.

Create Purchase Orders for Component Items

- 4 Use Purchase Order Maintenance (5.7) to place an order for the components 60017 and 60018; all other components are already in inventory.

Purchase Order = [leave the purchase order number blank to default to the next number from Purchasing Control]

Field	Data
Purchase Order	Record for reference:
Supplier	10S1002; click Next

Order and Due Date will default to today's date

Field	Data
Site	10-100 (used as a default for the line)
Credit Terms	30D (defaults from the supplier record)

Click Next twice.

Go to the line item data.

- 5 In the line item information, set up purchase order lines for each component for the calculated amount. Key fields to populate are:

PO Line	Site	Supplier Item No.	Qty Ordered	UM	Unit Cost
Line 1	10-100	SCC60017	100	EA	0.49
Line 2	10-100	SCC60018	100	EA	2.99

When you click Next after entering the supplier item, notice how the system switches the ordered item to your item number. This is because of the data you previously set up in Supplier Item Maintenance.

Notice the field Update Avg/Last Cost is checked. This indicates that when these items are received, the current cost of the item will be updated to reflect any difference between the last current cost and the prices on this PO. If you do not want this updated, you can uncheck this box and the current cost will not change.

- 6 When Ln 3 is highlighted click End Lines, Trailer, Next twice, then Back.

Receive Purchased Items

Receive Purchased Items

Purchase Order Receipts

Go To: Actions: Copy: Print: Preview:

Order: P1010005 Supplier: 1051002 Status: Effective: 5/15/2012

Packing Slip: 123456

Receiver: Bridgeville Industries

Move to Next Operation: ☒

Receive All: ☒

Comments: ☐

Ship Date:

Line	Item	Unit of Measure	Quantity	Receipt Quantity	Unit of Measure	Date
2	60050	EA	10.0	0.0	EA	5/15/2012
3	60008	EA	10.0	10.0	EA	5/15/2012
4	60002	EA	10.0	10.0	EA	5/15/2012

Line: 2 Unit of Measure: EA Site: 10-100 Loc: 030

Quantity: 10.0 ID: Lot/Ser: Packing Qty: 0.0 OP: 0 Reference: Supplier Lot: Item Number: 60050 Multi Entry: ☒ Chg Attribute: ☐

Supplier Item:

QAD

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Bridgeville Industries, the supplier, includes a packing list with the shipment. This document includes QMI's purchase order number, their sales order number, QMI's ship-to address, their ship-from address, items and quantities ordered, items and quantities shipped, and other information, such as any back orders. This order is marked that it must be shipped complete.

The receiving transaction has a field to include the packing slip number your supplier provides.

Bridgeville Industries has delivered all of the items ordered by QMI. Using Purchase Order Receipts (5.13.1), the Receiving Department records the delivery by first entering the purchase order number, which identifies the line items and the quantity open (ordered but not received), and then by entering the packing slip number.

Since the packing list indicates the order has been shipped complete, receiving personnel can save a few steps by checking Receive All. This prefills the transaction frame with all the information needed to process the receipt.

However, line 2 on the order is for item 620050, which is serial-controlled, so the system cannot automatically process its receipt and the Receipt Quantity defaults to 0. The receiving clerk enters line 2 in the lower frame and checks Multi-Entry to enter serial numbers for each of the 10 items ordered on line 2.

Receive Serialized Items

Receive Serialized Item

Purchase Order Receipts X

Go To • Actions • Copy • Print • Preview • Attach •

Order: P1010001 Supplier: 1051002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	rl	1.0	rl	1.0	rl		10/6/2010	T
2	Receipt Detail - Site: 10-100 Quantity: 10 EA								
3									
4									

Line: 2 Unit of Measure: EA Site: 10-100 Loc: 030
Quantity: 10.0 ID: Lot/Ser:
Packing Qty: 0.0 OP: 0 Reference:

Location	Lot/Serial	Ref	Supplier Lot	Quantity
030	102310			

Q5-PR-240a

The system displays a frame for the Receiving Clerk to enter the serial numbers. In this case, the supplier has shipped 10 items that are in serial number order. The clerk enters the first number, clicks Next, and then enters a quantity of 10 (the number previously ordered on line 2 of the PO).

The system displays a prompt requesting confirmation for creating the serial numbers, and then displays the inventory detail in the middle frame.

When complete, the clerk clicks Back twice to continue the receipt.

The system displays the data from the purchase order. If all the data agrees with the packing slip and receiving inspection, the receipt of all items can be completed by clicking Next. A pop-up window prompts you to view the orders lines.

Confirm Items to Receive

Ln	Item Number	Site	Location Ref	Lot/Serial Supplier Lot	Quantity
1	62050	10-100	200		1.0
2	60050	10-100	030	102410	1.0
2	60050	10-100	030	102411	1.0
2	60050	10-100	030	102412	1.0
2	60050	10-100	030	102413	1.0
2	60050	10-100	030	102414	1.0
2	60050	10-100	030	102415	1.0
2	60050	10-100	030	102416	1.0
2	60050	10-100	030	102417	1.0
2	60050	10-100	030	102418	1.0
2	60050	10-100	030	102419	1.0
1	60008	10-100	020		10.0
4	60002	10-100	020		10.0

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Clicking Yes brings up a frame showing the transactions the system is about to complete. In this case, the clerk must click Next to see all items since each of the serial-controlled items displays on its own line. Clicking Next displays another prompt requesting confirmation for the transaction.

Clicking Yes to the second prompt completes the transaction, which closes the line items on the PO. Since this PO has no other lines, the PO status is also set to closed.

Inventory detail records are updated directly. However, GL transactions created by inventory receipts are stored in an unposted transaction table. This is true for most accounting transactions created during operational transactions, with the exception of those created during sales order invoice post, which directly updates the general ledger.

Before a supplier invoice can be matched with the PO receipt, the Finance Department must run Operational Transaction Post (25.13.7), which is typically run on a daily basis. You can review unposted transactions with Unposted Transaction Inquiry and Register.

During matching, the invoice quantity and price are matched with the PO quantity and price and the receipt quantity (three-way match). Then payment can be issued to the supplier.

Review Inventory Levels

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Ref	Status	Expire
60050	10-100	218.0	1.0	030	102310		N-Y-N	
60050	10-100	218.0	1.0	030	102311		N-Y-N	
60050	10-100	218.0	1.0	030	102312		N-Y-N	
60050	10-100	218.0	1.0	030	102313		N-Y-N	
60050	10-100	218.0	1.0	030	102314		N-Y-N	
60050	10-100	218.0	1.0	030	102315		N-Y-N	
60050	10-100	218.0	1.0	030	102316		N-Y-N	
60050	10-100	218.0	1.0	030	102317		N-Y-N	
60050	10-100	218.0	1.0	030	102318		N-Y-N	
60050	10-100	218.0	1.0	030	102319		N-Y-N	
62050	10-100	1.0	1.0	020			Y-Y-Y	

Concerned about the unit of measure conversion on the beryllium copper? Or any other aspect of the transaction? Use Inventory Detail by Item Browse (3.2) to verify the transactions were completed as expected.

The browse shows the inventory of items just received, all in the correct location, with the correct status and with the correct quantities.

Discussion

The status column displays the inventory status code associated with the location. Can you explain why the items received into the inspection location (030) are set to N-Y-N?

If you need help, see “Inventory Status Codes” on page 68.

Non-Standard Receipt

Non-Standard Receipt

Purchase Order Receipts X

Go To Actions Copy Print Preview

Order: P1010006 Supplier: 1051002 Status: Effective: 5/15/2012

Packing Slip: Receiver: Bridgeville Industries

Move to Next Operation: ☒ **Receive All**

Purchase Order Receipts X

Go To Actions Copy Print Preview Attach

Order: P1010006 Supplier: 1051002 Status: Packing Slip: 32000080

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	F
1	42050	rl	1.0	rl	0.0	rl		5/15/2012	
2	60050	EA	10.0	EA	0.0	EA		5/15/2012	
3	60008	EA	10.0	EA	0.0	EA		5/15/2012	
4	60002	EA	10.0	EA	0.0	EA		5/15/2012	

Line 1 Unit of Measure: rl Site: 10-100 Loc: 200

Quantity: 0.0 ID: OP: 0.0 Reference: Supplier Lot: Multi Entry: Chg Attribute: Cncls

Packing Qty: 0.0 Cancel B/O: ☒

Item Number: 42050 Supplier Item:

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In this example, the PO is the same as the previous one, except for the PO number. The first screen shows Receive All unchecked, which is not the standard way of processing receipts.

This brings up the receipt screen but, because Receive All was unchecked, Receipt Quantity is 0. You use the lower frame to manually enter each line item and the quantity to receive. In subsequent frames, you enter both the actual quantity received for each line (Quantity field) and the quantity indicated on the packing slip (Packing Qty field). This is especially important when a discrepancy exists between the quantity on the packing slip and the actual quantity received. You can also indicate inventory location in the line detail, if it is different than the default.

When you complete one line item data and click Next, the system updates the quantity to be received column in the top frame; then you can proceed to the next line item.

Note the field Cancel Back Order. In some cases, a shipment is short a few items. This field lets you receive the item short and cancel the back order, thus closing the PO line. Of course, you will want to notify your supplier so they do not try to ship the additional items.

In the final frames, the Receiving Department confirms that all information listed is correct and the system processes the order receipt. A trailer frame is displayed to review any taxes.

Questions

- Where did the following default information come from: Supplier, Location, Site
- If this had been a partial order, how would you handle that in QAD EE?

Purchase Receipt Document

Purchase Receipt Document

R E C E I V E R

Supplier: 10S1002
 Bridgeville Industries
 3390 Linco Road
 Stevensville, MI 49127
 USA - TAX PURPOSE

Page: 1

Receiver: R1010469
 Receipt Date: 05/15/12
 Print Date: 05/15/12
 Purchase Order: P1010005
 PO Revision: 0

Packing Slip: 123456 Ship Date: 05/15/12

Remarks:

Ln	Item Number	UM	Pack	Slip Qty	Receipt Qty	Location	Req By
1	62050		r1	1.0	1.0	200	
Beryllium Copper Discrete PO ERS Option: 1							
Req By: _____							
Ln	Item Number	UM	Pack	Slip Qty	Receipt Qty	Location	Req By
2	60050		EA	0.0	10.0		
Base Unit / CPU ERS Option: 1							
Req By: _____							

Site	Location	Lot/Serial	Reference T	Tran Qty
10-100	030	102410		1.0
10-100	030	102411		1.0
10-100	030	102412		1.0
10-100	030	102413		1.0
10-100	030	102414		1.0
10-100	030	102415		1.0
10-100	030	102416		1.0
10-100	030	102417		1.0
10-100	030	102418		1.0
10-100	030	102419		1.0
Loc Total				10.0

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In the final frames, the Receiving Department confirms that all information listed is correct and the system processes the order receipt. You can print a copy of the receiver using Purchase Receipt Document Print (5.13.2), which would look like the image here. Remember Purchasing Control was set to create one receiver for each receipt. QMI has now received enough components to manufacture 10 medical ultrasounds.

Additional Notes

Several settings in Purchasing Control affect purchase receipts:

- The Receiver Type field determines whether receivers are created for each order or for each item on the order or not printed at all.
- Tolerance Percent and Tolerance Cost determine how the system manages receipts that exceed the order quantity.

Review Transactions Detail Inquiry

Transactions Detail Inquiry

Transaction: 190025 Display E-Signature Details: ☐ Output: PAGE

Tran Nbr: 190025	Order: P1010006	R1010470
Trans Type: RCT-PO	Revision: 0	
Date: 5/15/2012	Item Number: 62050	
Time: 19:39	Description: Beryllium Copper	
Effective Date: 5/15/2012	Unit of Measure: rl	
Remarks:	Address: 1051002	
User ID: mlg	Name: Bridgeville Industri	
Program: poporc.p	SO/Job:	
Currency: USD	Ship Type:	
Qty Change: 1.0	Price: 1,750.00	
Shipper Number:	IMC:	
Ship Date: 5/15/2012		

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Using Transactions Detail Inquiry (3.21.1), you can review the detail of the transactions created for the receipt of item 62050, beryllium copper. The output gives the complete detail including inventory, cost, and GL account details.

When you enter this inquiry, the first transaction you see is the last one processed by the system. This first frame gives a high-level overview of the transaction. Use the up arrow on your keyboard to scroll back through the transactions to see the PO receipts just made.

Review Transactions



Transactions Detail Inquiry

05/15/12

Transaction: 198025 Display E-Signature Details: No Output: PAGE

Tran Nbr: 198025 Trans Type: RCT-PO Date: 05/15/12 Time: 19:39 Effective Date: 05/15/12 Remarks: User ID: mfg Program: poporc.p Currency: USD Qty Change: 1.0 Shipper Number: Ship Date: 05/15/12	Order: P1010006 Revision: 0 Item Number: 62050 Description: Beryllium Copper Unit of Measure: r1 Address: 1051002 Name: Bridgeville Industri SO/Job: Ship Type: Price: 1,750.00 DRC:

Site: 10-100
Location: 200
Lot/Serial:
Inv Status: Y-Y-N
Supplier Lot:
Grade/Assay:
Reference:

Inventory Data

Begin Balance: 2.0
Quantity Change: 1.0
Qty Short: 0.0
Begin Loc Bal: 1.0
Loc Qty Change: 1.0
Expire Date:
Batch:

Cost Data

Material: 1,750.00
Labor: 0.00
Burden: 0.00

Overhead: 0.00
Subcontract: 0.00
Cost Total: 1,750.00

RCT-PO

Debit Acct: 1500 Mech
Cr Account: 2520 Mech
Amount: 1,750.00
GL Reference: 2012/RCT-PO000000048

RCT-PO

Debit Acct: 6710 Mech ADM
Cr Account: 2520 Mech
Amount: 131.25
GL Reference: 2012/RCT-PO000000049

Reference ID: IC120515000027
Reference ID: IC120515000028

**Receipt
credits/debits
account for a
full roll**

**IC = Inventory Control
120515 = yymmdd
27 = Sequence #**

In the first GL transaction, the inventory account (1500) is debited and the PO Receipts account (2520) is credited \$1750.00, the total standard cost of the roll of copper.

The reference ID is the number needed to track this transaction in the General Ledger. It includes these elements:

- IC indicates the transaction was generated by Inventory Control.
- Next is a date code 120515.
- The final segment is a sequential number, in this case 27.

The GL Reference shows the year (2012) and daybook (RCT-PO), and a sequence number (19).

Post Transactions to GL

Operational Transaction Post

USA DIVISION

Entity: 10USACO To: 10USACO

Effective Date: 4/9/2012 To: 4/26/2012

Daybook: RCT-PO To: RCT-PO

TYPE:

Number of Postings: 0

Number of Posting Lines: 0 Output

Operational Transaction Post

10USA

Reference ID	Entered Date	Eff Date	Line	Account	Project	Entity	Description
IC120409000001	04/09/12 mfg	04/09/12	1	1500-Mech		10USACO	RCT-PO P1010001
			2	2520-Mech		10USACO	RCT-PO P1010001
IC120409000002	04/09/12 mfg	04/09/12	1	1500-Mech		10USACO	RCT-PO P1010001
			2	2520-Mech		10USACO	RCT-PO P1010001
IC120409000003	04/09/12 mfg	04/09/12	1	1500-Mech		10USACO	RCT-PO P1010001
			2	2520-Mech		10USACO	RCT-PO P1010001

QAD

Q5-FR-271

In order for the AP department to match the supplier invoice with this receipt, the transactions must be posted to the General Ledger. This is done using Operational Transaction Post (25.13.7).

The AP department runs this program regularly to post transactions by entering the daybook RCT-PO.

See “Operational Transaction Flow” on page 113 for details on this program.

Exercise 8-2: Receive Purchased Items

The supplier has sent the material you ordered for your components. Receive the items into inventory.

- 1 Use Purchase Order Receipts (5.13.1). Key fields to populate are:

Field	Data
Order	PO Number or use lookup (starts with P10); click Next
Supplier	Displays from the PO record
Packing Slip	Enter any number you want
Receiver	<blank>
Ship Date	<blank>
Receive All	Yes (Checked; very important for fast simple receipt)

Click Next 3 times and review each screen.

This will bring up a window showing the two line items from the PO. The data should look like this.

Line	Item	UM	Qty Open	Receipt Qty
1	60017	EA	100	100
2	60018	EA	100	100

If all the information is correct click Next.

This brings up a prompt: Display purchase order lines being received. Click Yes.

This brings up a frame with the receipt details that should look like this:

Ln	Item	Site	Location	Quantity
1	60017	10-100	020	100
2	60018	10-100	020	100

All items should be received into inventory location 020.

If all the information is correct, click Next, verify the data is correct when prompted, and clicking Yes completes the receipt transaction.

If you need to go back and fix something, click No, and you will have the opportunity to go back and fix any problems.

The final display is the trailer. Be sure to click Next; otherwise, your receipt will not be saved.

- 2 Use Inventory Detail by Item Browse (3.2) to review the inventory levels for your component items. Enter the following search criteria:

Field	Operator	Data
Item Number	Starts At	60017

This selection criteria will display items beginning with those you received into site 10-100.

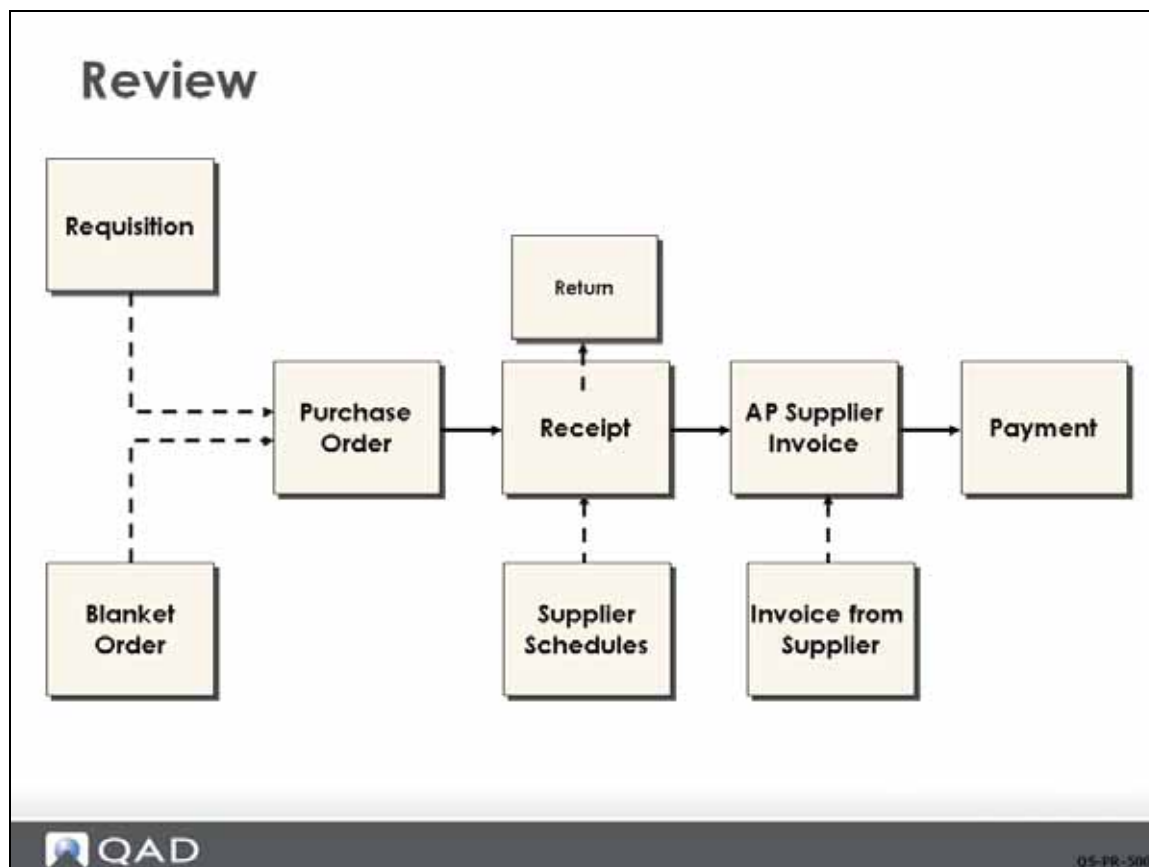
- 3 Use Transactions Detail Inquiry (3.21.1) to review the transactions you created when you did the receipt. The default transaction number that displays is for the last receipt (item 60018).

Scroll through the records you created in these activities by using the up and down arrows on your keyboard in the Transaction Number field. Look at the transaction type to understand what created the transaction.

Look at the GL detail and find the GL transaction number that was created for the last purchase order receipt. What accounts were debited and credited?

- 4 Use Operational Transaction Post (25.13.7) to post the unposted transactions to the GL using daybook RCT-PO and today's date to select transactions to post.
- 5 Verify the result in the GL using Journal Entry View (25.13.1.3). Try changing the columns selected and the order of the columns to tailor the Journal Entry View (25.13.1.3) to your needs.

Review



Here is a review of the highlights of the purchasing and accounts payable flow.

Purchase Order. The starting point for payment processing is the purchase order—a contract that confirms your intent to buy. It lists items, quantities, and prices, along with related charges such as taxes and freight. The order also states your billing and shipping addresses, and the credit terms you have negotiated with the supplier. Purchase orders can originate from requisitions, blanket orders, or can be created directly.

PO Receipt. When the items are delivered to your Receiving Department, a receiving document is recorded (PO receipt). The receiver confirms the received items and quantities against the purchase order. Receipts can also be based on supplier scheduled orders.

Invoice. The supplier sends you an invoice to confirm your liability to pay for the items under the conditions specified on the purchase order.

Supplier Invoice. Before paying the invoice, AP verifies that the items received match the original order and that the prices are correct by recording a supplier invoice in Accounts Payable. The supplier invoice, references the purchase order and the invoice. The system then retrieves receivers associated with the PO so that you can record invoice lines against them. If the invoiced items and quantities match the receiver, the receiver is closed.

Payment. Supplier invoices are then selected for payment and are processed by printing checks, electronic funds transfer, drafts, or other payment instruments. The process is managed through status codes from initial receipt to paid status.

Manufacturing Execution

This chapter covers how work orders drive the manufacturing process, and how to use shop floor control functions to report labor during the process.

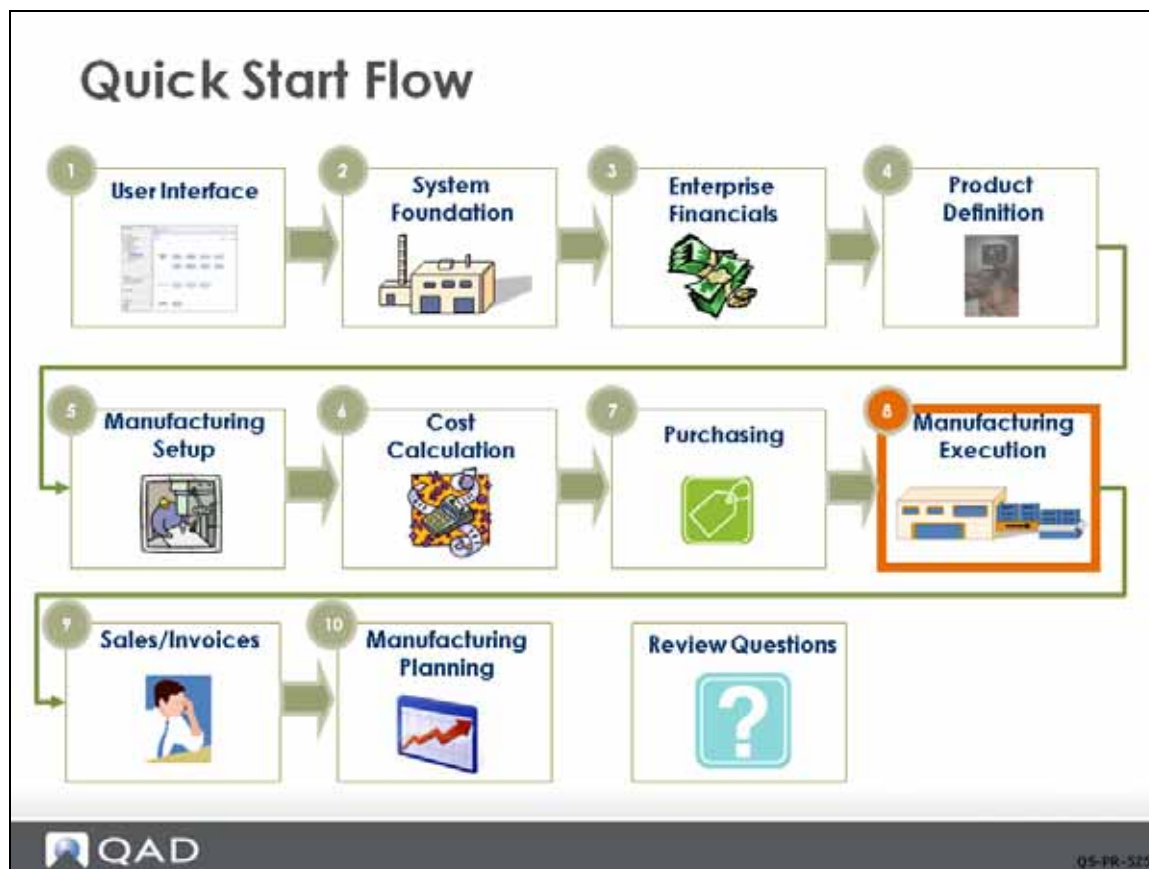
Overview of Manufacturing Execution

Key Concepts

Example

Review

Overview of Manufacturing Execution



A work order is an authorization to produce a specific quantity of an item by a specific date. This chapter further defines what a work order is and reviews typical stages of the work order life cycle. After discussing key concepts, an example covers the work order life cycle from creation to close.

To understand how work orders fit into the broader QAD Manufacturing suite, see Chapter 4, “Manufacturing Overview,” on page 117.

Chapter Topics

The topics covered in this chapter include:

- Key Concepts
 - Manufacturing Overview
 - Work Orders, WO Type, and Status
 - WO Bill of Material and Routing
 - WO Life Cycle
 - WO Release and Component Issue
 - Shop Floor Control
 - WO Receipt and Close
 - Variances

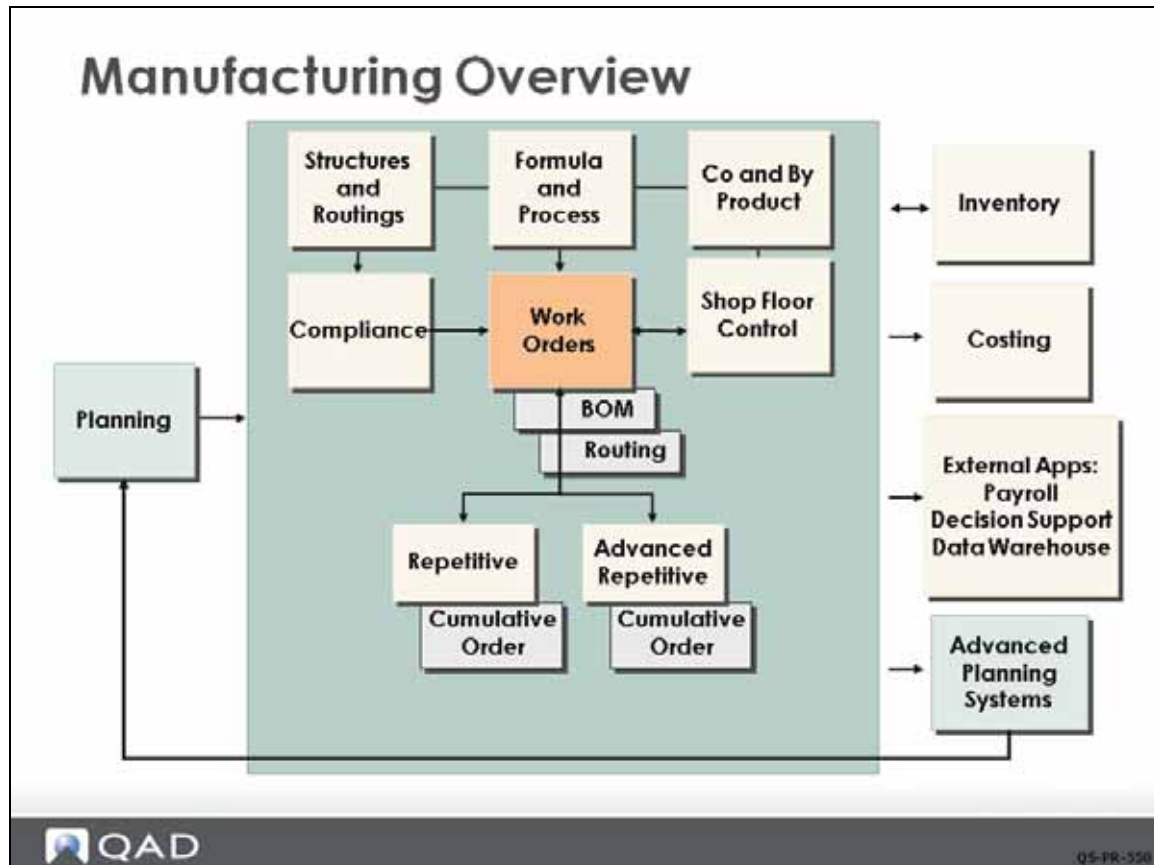
- Example
 - Review Employee
 - Review Work Order Control Settings
 - Create and Release Work Order
 - Exercise
 - Review Picklist, Routing, and Status
 - Issue Components and Review the Effect
 - Report Labor and Review the Effect
 - Receive and Close Work Order
 - Exercise
- Review

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the work order process flow.
- List work order types and status codes.
- Provide examples of rate, usage, and method variances.
- Enter and release a work order.
- Issue components.
- Record labor.
- Receive and close a work order.

Key Concepts



The QAD EE Manufacturing suite handles internal supply and demand. Material is moved out of inventory into production, processed or assembled, and returned to an inventory location. At the center of this activity is Work Orders, as shown here. In the process of using work orders you:

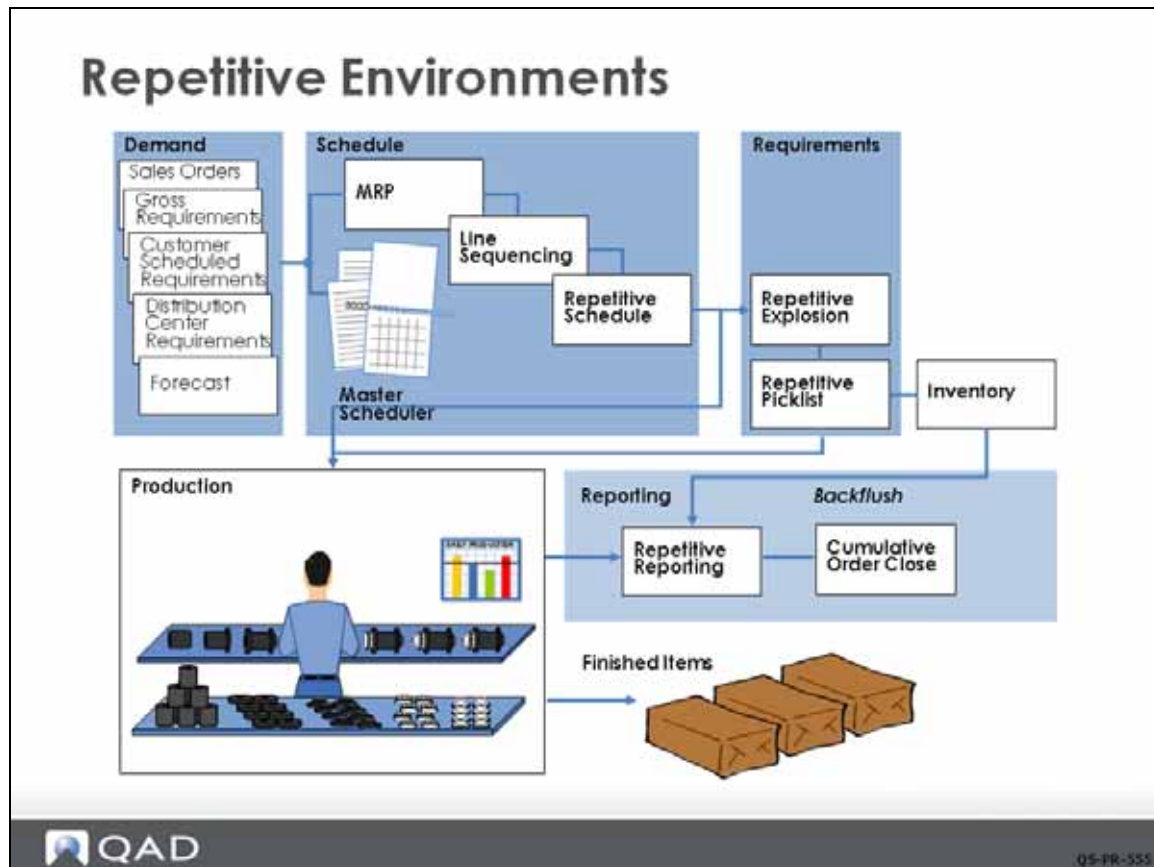
- Define bills of material and product structures in the Product Structures module.
- Define routings and operations in the Routings/Work Centers module.
- Create planned orders to fill demand with Material Requirements Planning.
- Monitor and report on the progress of work orders in the Shop Floor Control module.

QAD EE provides additional features that support different manufacturing environments.

- Work Orders and Shop Floor Control are typically used to manage job shop type manufacturing and low-to-intermediate volume mixed product manufacturing.
- Advanced Repetitive or Repetitive processes manage manufacturing in an assembly line or process flow environment.
- Formula and process routings and structures are used to support formula or recipe-based processes and can also utilize co-product and by-product structures to facilitate disassembly processes or processes that create a main product and related products.
- Lean Manufacturing provides support for Kanban and Flow manufacturing.

These functions are covered in detail in their own training guides. This class focuses on discrete work orders created in the Work Orders module.

Repetitive Environments



QAD has two approaches to repetitive manufacturing environments. The QAD Enterprise Applications Repetitive module works well when one or more of the following is true.

- Manufacturing lead times are relatively short and batches do not overlap.
- All work in process is complete by the end of each day or shift.
- Work-in-process (WIP) costs are either insignificant or fairly constant.
- The routing does not include subcontract operations.

These characteristics are typical of many food and chemical process that are batch oriented.

The Advanced Repetitive module (shown in this slide) supports manufacturing environments where the following apply:

- Manufacturing lead times are relatively long.
- Continuous processing is in use; lines are dedicated to one item for days, weeks, or months.
- WIP costs are variable or high.
- Subcontracting operations are used in a Release Management/JIT environment.
- Batches can overlap and visibility of and control over WIP are necessary.

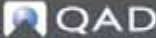
These characteristics are typical of many discreet production processes where work in process is left on the line at the end of the day/shift and continued at the next shift.

Work Order

Work Order

Work Order 123456			
Item	Description	Qty	Date
01010	Medical Ultrasound	1	5/28/XX




Q5-FR-360

A work order is an authorization to produce a specific quantity of an item for a specific date. A work order can represent a manufacturing production order, a repetitive schedule, or a sequenced production line.

Work orders are typically created in response to current or projected demand for an item. Work orders can also be used to build up inventory in anticipation of future demand when there is unused manufacturing capacity.

Each work order is uniquely identified by the combination of the work order number and the work order ID number.

Elements of a Work Order

Important elements of a work order include:

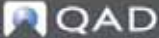
- The *type* identifies the source of the order and indicates how it should be processed.
- The *status* determines where a work order is in its life cycle.
- The *bill of material (BOM)* lists the quantities of components required to fulfill an order.
- The *routing* lists the operations required to complete the order.

These elements are examined on the following pages.

Work Order Type

Work Order Type

- **Blank** = Standard
- **F**inal Assembly
- **R**ework
- **E**xpense
- **S**cheduled
- **C**umulative
- **W** = Flow


Q5-FR-570

The work order type indicates how the work order moves through production and how it affects other modules, especially the financial modules. Most work orders have a blank type, which indicates a normal manufacturing order with a standard product structure and routing. The other types indicate special kinds of work orders. All work order types are similar in terms of planning, inventory, and accounting. They differ in their default bills, routings, and status codes.

Expense (E)—used to track costs for a non-inventory job—and Rework (R) orders—for repair of an existing item—are always created by users. The system generates work order type S, C, F, or W.

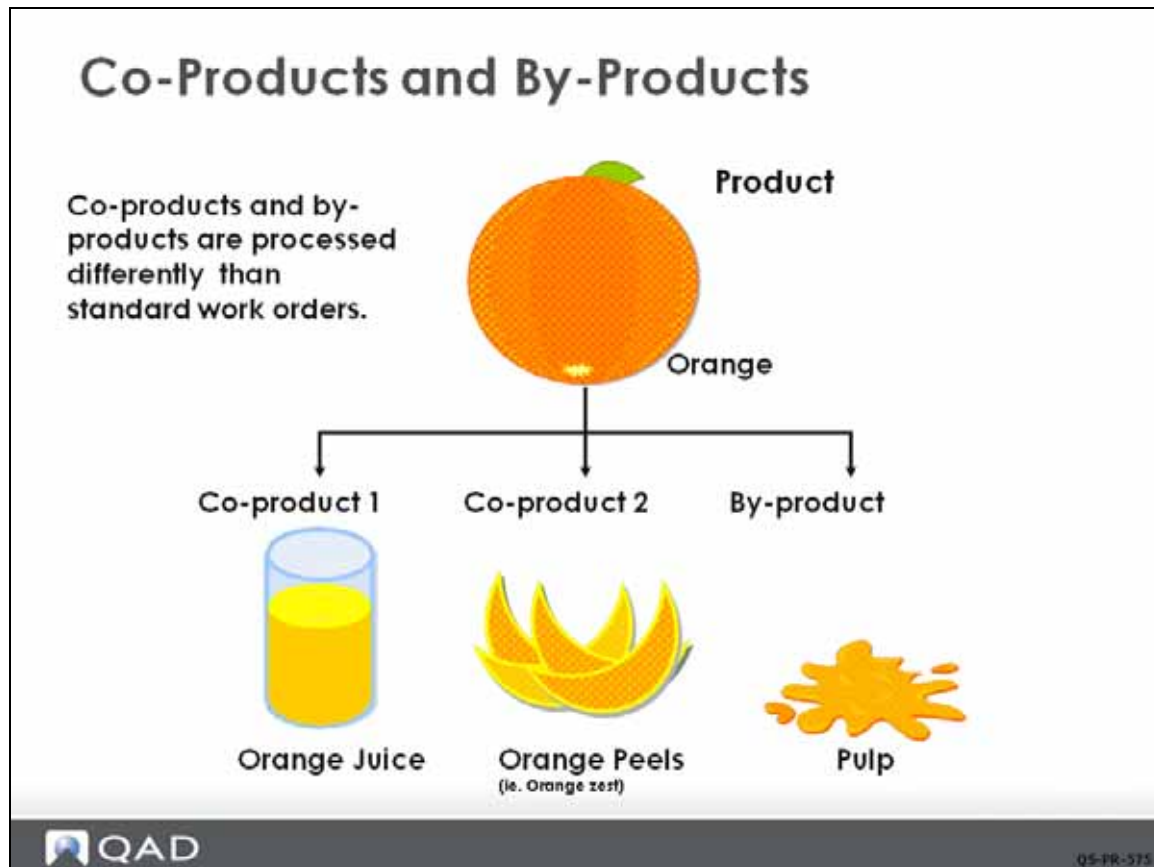
S (Scheduled). Generated by the system when a repetitive schedule is entered. The work order number is the scheduled item number and the work order ID is the unique identifier.

C (Cumulative). Generated by the system to track repetitive production costs associated with regular and sequenced line schedules. These cannot be processed by work order functions.

F (Final Assembly). Generated when a sales order for a configured product is released to manufacturing. The WO number is the sales order number with a decimal followed by the SO line number (SO12345.1). The WO uses the standard item routing, but the product structure contains only items chosen on the SO configuration.

W (Flow). Generated when you use when a flow scheduled order is created that does not reference an existing work order; cannot be processed by work order functions.

Co-Products and By-Products

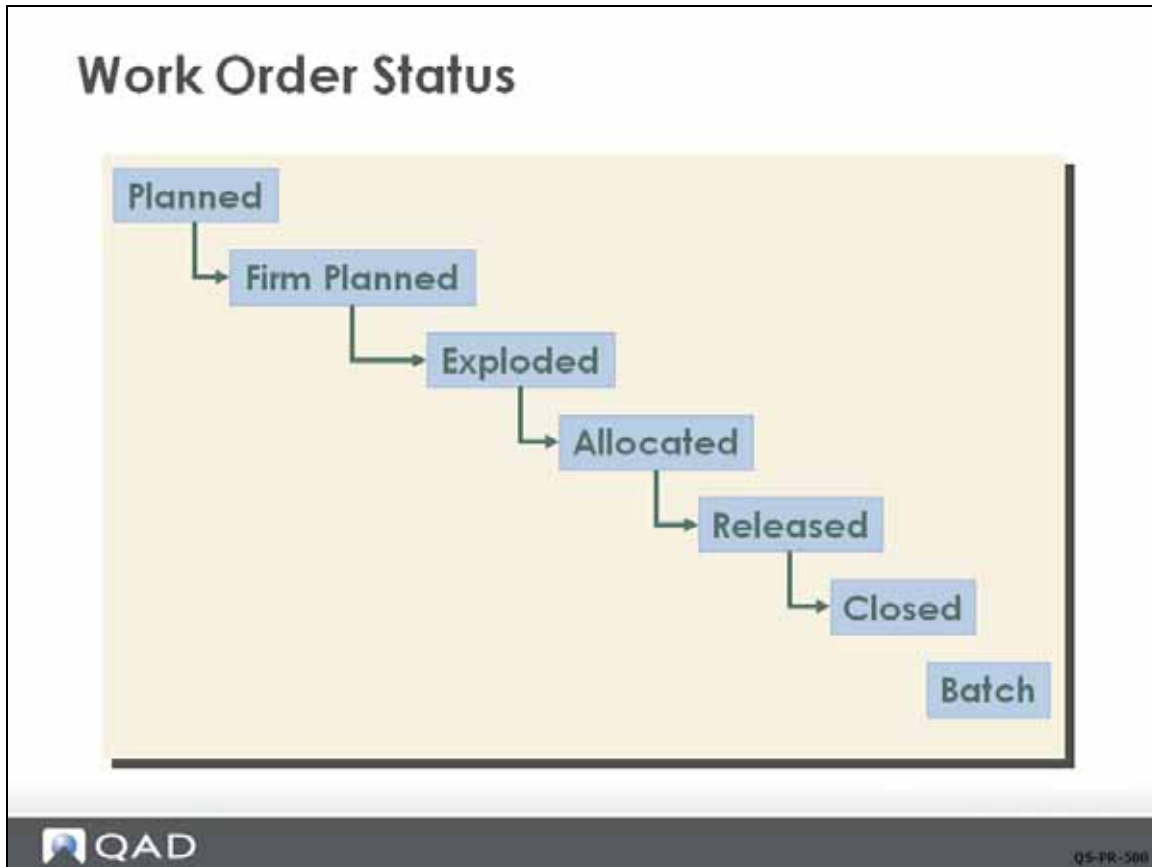


Joint order sets are a special case associated with co/by-product orders. Joint order sets can be created for regular work orders that are type code blank. Topics related to co/by-product costing are covered in their own training guide.

In the joint order set, a work order with a blank type is generated for the base process as well as for each co-product and by-product in the joint order structure. Although the base process is not an item received to stock, the work order for the base process provides a record for accumulating all labor and material costs expended to make the items.

Rework and Expense work orders can share the same work order number as a joint order set, but are not considered part of the joint order set. For example, a work order for co-product or by-product can be reworked using the original work order number.

Work Order Status



Work order status codes correspond to stages in a work order's life cycle and determine the control you have over its bill, routing, inventory allocations, inventory transactions, and labor feedback.

Planned. A standard work order is usually created by MRP, which treats the work order as a source of supply. You cannot make any changes to orders with status Planned. These are managed by MRP.

Firm Planned. The work order was created manually, which automatically assigns it this status, or it is an MRP generated order that has been reviewed and confirmed. You can change dates and quantities as needed, and specify an approved alternate bill or routing.

Exploded. The demand for component items has been calculated. Bills and routings can be modified and alternate ones specified.

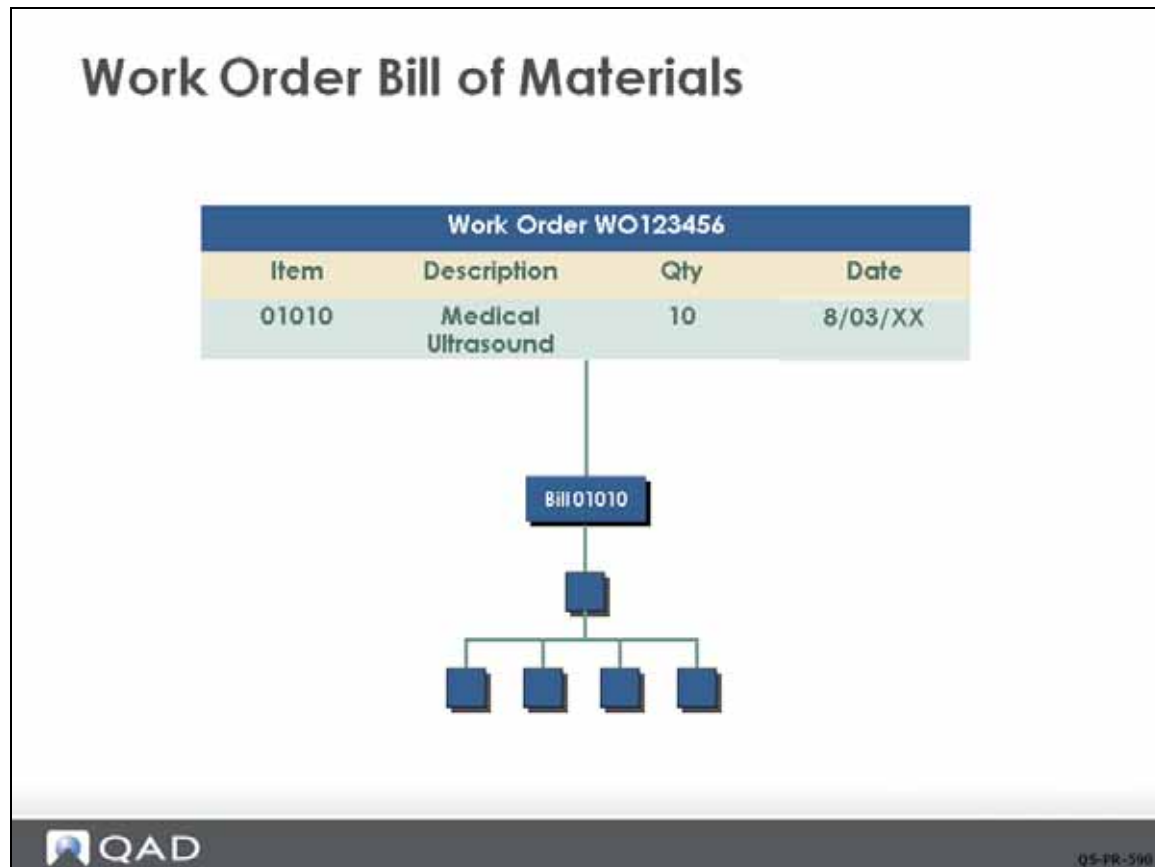
Allocated. Inventory has been set aside for the order. Bills and routings can be modified and alternate ones specified.

Released. Work is ready to begin. Bills and routings can be modified and alternate ones specified.

Closed. Work is finished.

A work order progresses from one status code to the next and, unless prematurely released, does not return to an earlier status. Most orders progress from status firm planned to released in one step using Work Order Release/Print (16.6).

Work Order Bill of Material

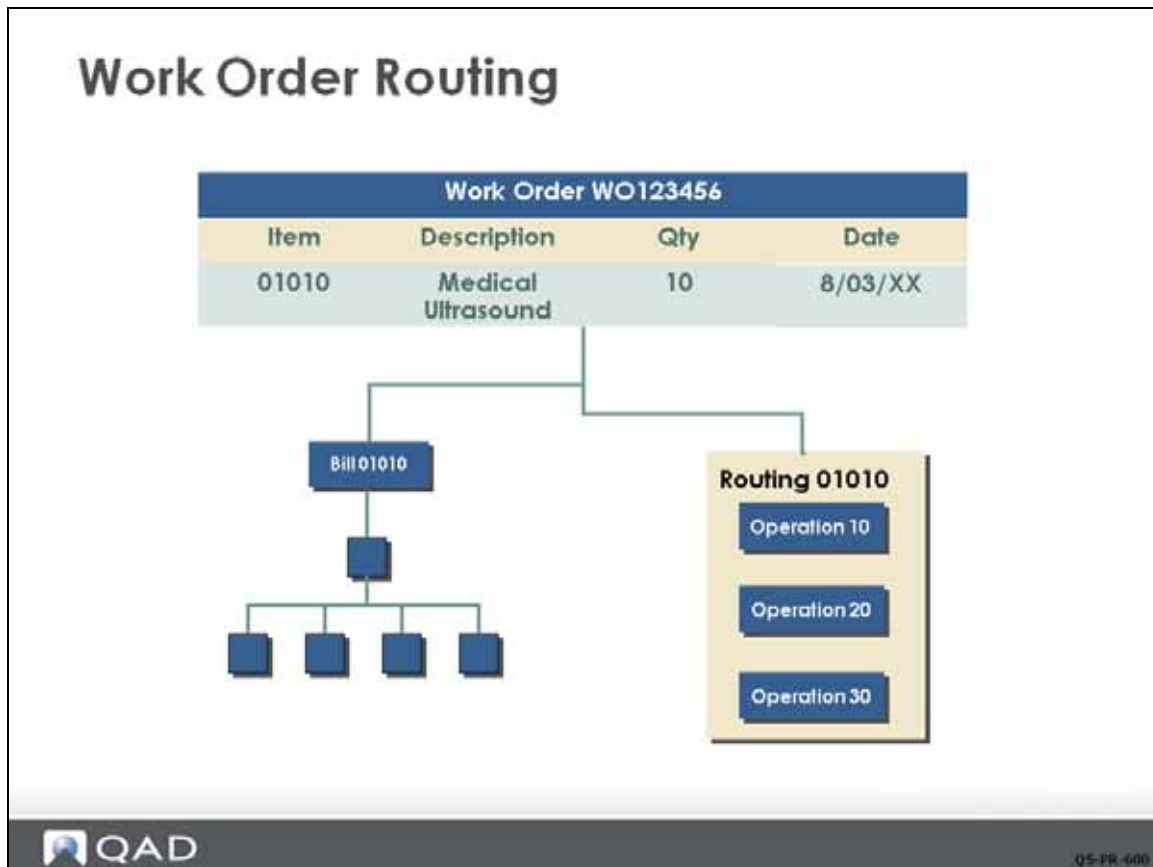


The work order bill of material (BOM) is derived from the item's product structure, defined in Product Structure Maintenance (or Formula Maintenance) and the quantity ordered. Inventory allocations and issues are based on the bill. MRP uses the bill of materials to calculate component demand.

When a work order is created, the product structure for the item is copied into it. This product structure with the order quantity then becomes the work order bill of material and is specific to that work order. As work progresses, required changes can be made to this copy using Work Order Bill Maintenance (16.13.1). This way, what actually happens can be compared to the standard. When many substitute items are available for assembly, this feature supports what is often called “as built” documentation.

Once created, the work order bill of material is not affected by changes to the product structure.

Work Order Routing



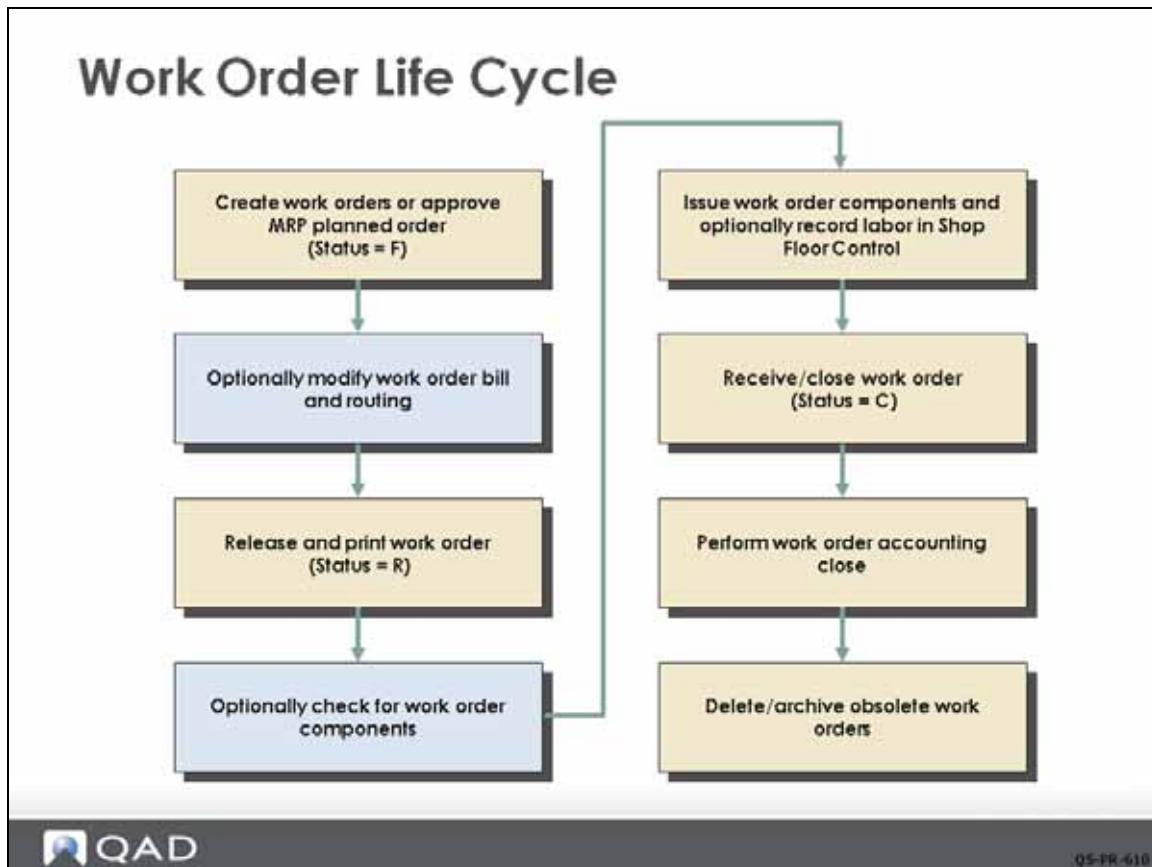
Work order routings, identified by routing codes, specify the operations, or steps, required to manufacture an item. You set up routings and operations using the Routings/Work Centers module. Routings are automatically linked if the item number and routing number are the same. Or, you can manually link them in Item Master Maintenance or Item Planning Maintenance.

When a work order is created, the standard routing is copied into it. As work progresses, required changes can be made to this copy using Work Order Routing Maintenance (16.13.13). This way, what actually happens can be compared to the standard. You can monitor work order operations using the Shop Floor Control module.

Once the work order routing is created, changes to the item routing do not affect the work order.

Together the work order bill and routing let you capture “as built” documentation and otherwise record what actually occurred as opposed to what was planned. This does not prevent manufacturing variances but it does explain them.

Work Order Life Cycle



Work orders are created manually (using Work Order Maintenance) or generated from MRP, repetitive, schedules or configured sales orders. Work orders are also generated when another work order is split, or when one is released that requires a routable component.

In a standard sequence, shown on this slide, after a work order has been created, it is released, materials are issued and received, the work order is closed, and the items are shipped.

Note Manually exploding a work order is a special case usually done to capture the current bill of material before an impending engineering change. Manually allocating a work order is often done to consume the last of a component item that is being phased out. In this case the inventory of the component would be allocated for that specific order.

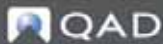
The next few pages examine the following stages in the work order life cycle in detail:

- Release
- Issue of components
- Receipt
- Close

Release Work Order

Release Work Order

- Inventory can only be issued or received against a released work order
- You can release orders:
 - One at a time using Work Order Release/Print
 - At the same time using Multiple Work Order Release/Print
 - In Work Order Maintenance by changing the status to Released
- Releasing a work order has the following effects:
 - Items not previously allocated are detail allocated
 - Picklist is printed
 - First operation is moved to queue status (if Move First Op is Yes)



Q5-FR-620

Creating Picklists

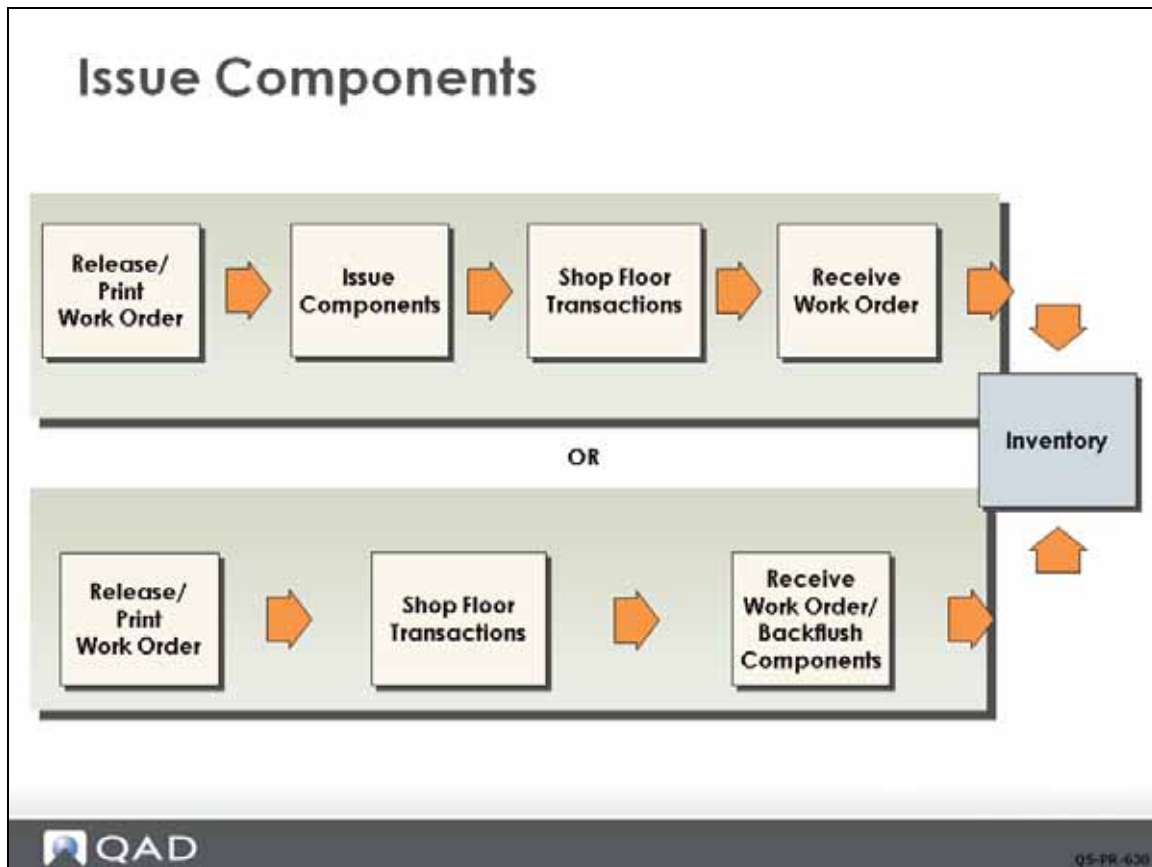
After you release a work order, you can print its picklist, which lists the component requirements and the sites, locations, lot/serial numbers, and reference numbers for the items to be issued. The system creates detail allocations when an order is released, regardless of whether or not you print a picklist. Detail allocations reserve specific quantities in inventory for a work order.

Printing the Routing Sheet

At the time of release you can also print the routing for the work order, which is the detailed list of operations and work centers the work order must be processed through. The combination of the work order, the picklist, and the routing sheet is often referred to as the shop or job packet.

You can release an order without printing a picklist and routing, but you cannot print a picklist for an order without releasing it.

Issue Components



Work order operations begin when a work order is released and its components issued.

You can issue inventory to a work order in three ways:

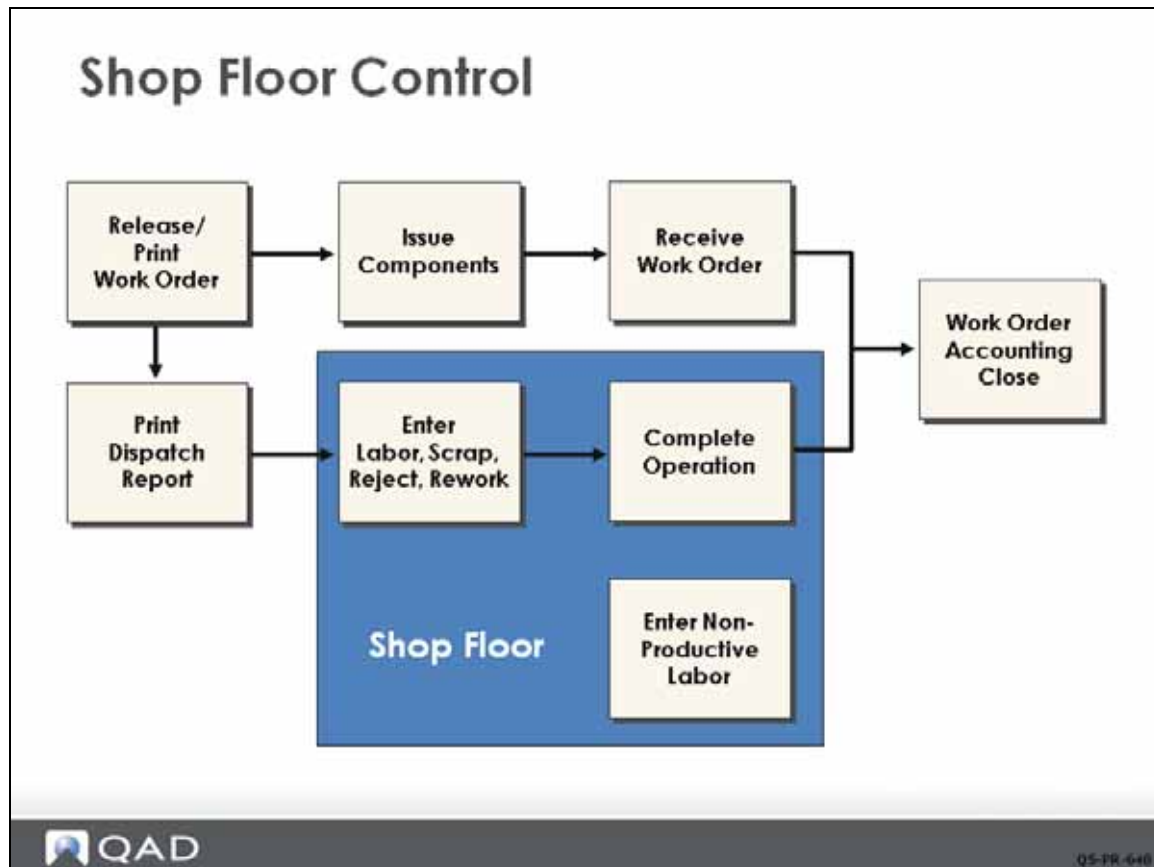
- Directly with Work Order Component Issue (16.10), illustrated in the top row of the graphic
- When completed products are received with Work Order Receipt Backflush (16.12), illustrated by the bottom row of the graphic
- Issue inventory, report labor, and receive items with Work Order Operation Backflush (16.19), also illustrated by the bottom row of the graphic

Inventory transactions occur at different points depending on the method you use. Component quantity on-hand is reduced at a later time using the backflush method.

Work Order Receipt Backflush combines the functions of Work Order Component Issue and Work Order Receipt. Either method keeps track of the inventory transactions used to issue components to a work order and excludes floor stock, which is issued using an unplanned issue transaction.

You can monitor work order operations using the Shop Floor Control module.

Shop Floor Control



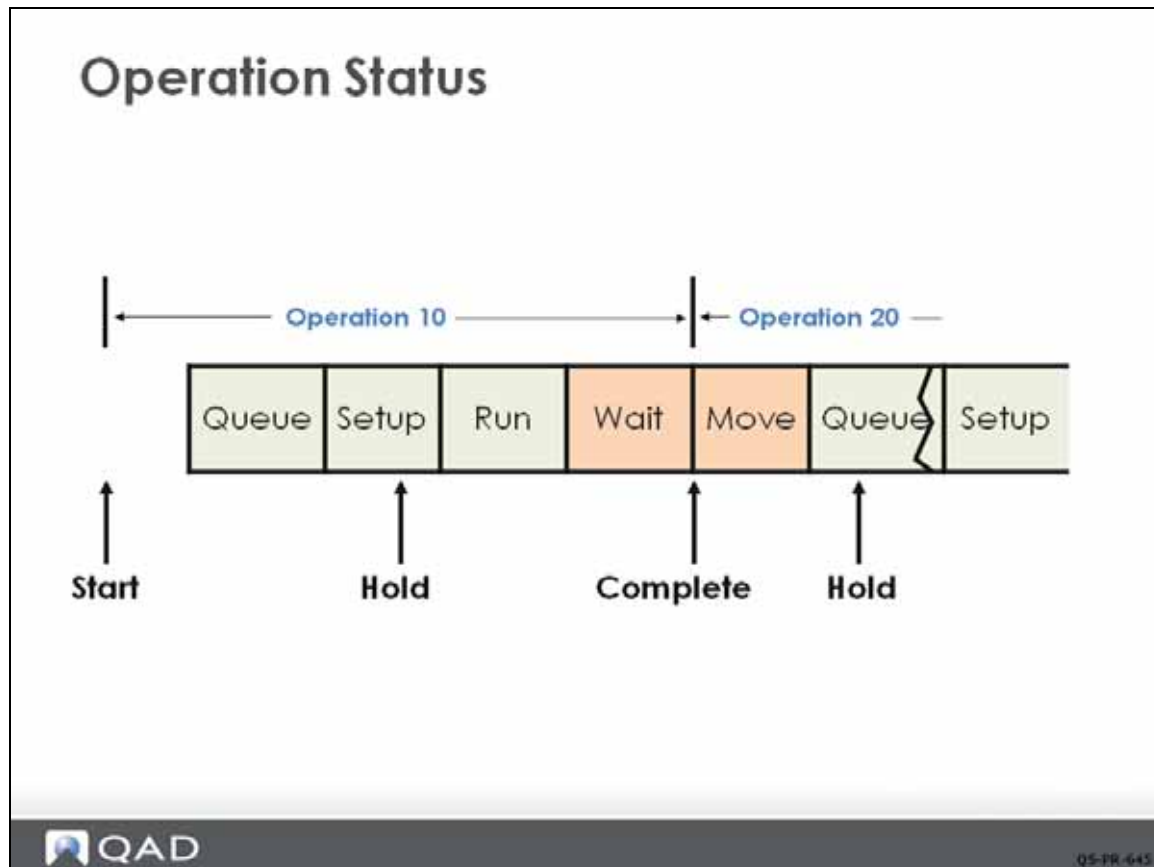
Once a work order is released, shop floor functions track its progress to record labor and to record material usage and completions. Shop floor requires that at least one employee is set up. The slide shows the relationship between shop floor reporting and the work order process flow.

Operation Status. Labor feedback is done by work order, employee, or work center/machine. In all cases you must identify a released work order. When labor is recorded, operation status is updated to either Setup, Run, or Complete. When work moves to the next operation, its status changes to Queue.

Labor Reporting. If labor is reported only at a few key operations, called milestones, the Operation Complete Transaction (16.20.5) can be used to complete the current operation and the ones that have come before it. If no labor has been reported against these previous operations, actual labor is set to the labor that should have occurred to make the quantity reported complete, referred to as earned labor.

Nonproductive Time. In order to account for all work hours, nonproductive time can also be recorded. This is time not spent working on a specific manufacturing order, such as cleanup time, downtime, meetings, breaks, or time spent waiting for work.

Operation Status



Operation status codes are used to indicate the detailed status of an individual operation. The status codes can be entered manually using Work Order Routing Maintenance (16.13.13) or automatically set when the Shop Floor Control labor feedback transactions are used. The system uses the following status codes:

Queue (Q). The first operation can be set to Queue automatically upon releasing the work order if Move Next Operation is Yes in Shop Floor Control (16.20.24). Succeeding operations can be set to Queue automatically when the previous operation is reported Complete.

Setup (S). If setup time is reported, the status is changed to Setup.

Run (R). When run time is reported the status is updated to Run.

Complete (C). The operation status is Complete when all work at that operation is finished.

Hold (H). An order can be manually placed on hold at any time. This is usually done when work is stopped for some reason, such as running out of material or equipment malfunctions, or because the worker is reassigned to another task.

Not all operations use all lead-time elements, nor do all status codes need to be reported. A very short operation can be at status Queue and then reported complete, with any setup and or run time reported at that moment. The wait and move times are not status codes but elements of lead time. They are referred to as inter-operation times since they have no labor content but do require time that must be scheduled. Examples are paint drying time or transport time between operations in different buildings.

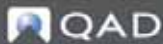
Receiving Work Orders

Receiving Work Orders



When a work order is received:

- **Inventory increases by amount of receipt**
- **Open order quantity decreases**
- **Reject quantity written off to Scrap**



Q5-FR-658

When a work order is completed on the shop floor, the items are typically sent to the stockroom.

- Use Work Order Receipt (16.11) to receive items, close the order, and backflush components of final assembly work orders.
- If you did not issue items previously, issue them when completed products are received with Work Order Receipt Backflush (16.12).
- Use Work Order Operation Backflush (16.19) to issue items, report labor, and receive completed items at an operation.

If you use the Shop Floor Control module, you can enter labor feedback and test results at receipt, and report individual operations as completed.

When a work order is received:

- Inventory increases by the amount of the receipt.
- The open order quantity decreases by the amount of the receipt.
- Any reject quantity is written off to the Scrap account and not placed in inventory.

After the work order has been received, it is ready to close.

Close Work Order

Close Work Order

Work Order WO123456		
Item	Description	Date
01010		8/03/XX

CLOSED

Issues and Receipts

...but labor reporting is okay until operation is closed in SFC or until Work Order Accounting Closed is run

QAD Q5-FR-660

Work orders are typically closed when all the items are received, ending the life cycle. If a partial receipt is made, the work order can be left open to receive the balance of the items at a later time. To close a work order:

- Change the order status to Closed by setting Close to Yes when completed units are received using Work Order Receipt or by using Work Order Maintenance. This action does not manage the accounting aspect of the close function.
- Run Work Order Accounting Close to post variances, clear WIP, and close outstanding operations. Execute this program regularly, at least at the end of each fiscal month, for completed orders.

The system prevents component issues and work order receipts for a closed work order. However, additional labor can be reported until either the operations are closed in Shop Floor Control, or Work Order Accounting Close is executed. To process inventory for a closed work order, you must change its status back to Released.

Executing Work Order Accounting Close:

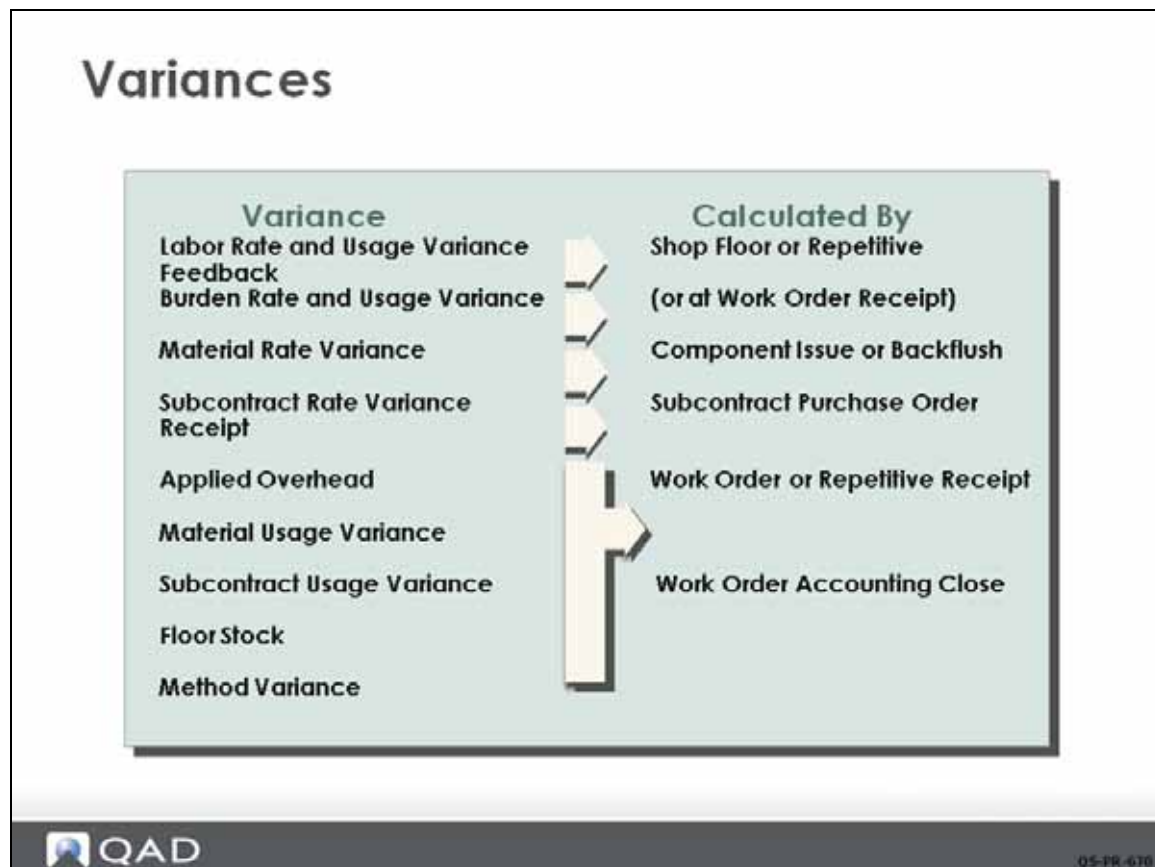
- Completes open work order operations.
- Calculates and posts work order variances for material, labor, burden, and subcontract costs.
- Calculates and posts usage variances when the labor quantity used differs from the standard. For example, if an operation scheduled for 5 hours took 6, a 1 hour labor usage variance is posted.

- Calculates and posts rate variances for material and subcontract when cost used differs from standard cost. If pay rates are defined in Actual Pay Rate Maintenance, rate variances are also calculated for labor. For example, when the standard subcontract cost is \$10 and the PO cost is \$12, the subcontract rate variance is \$2.
- Reconciles the WIP account for closed work orders by calculating and posting method change variances for any residual variances. WIP balances cannot be changed after the work order variances are posted.
- Updates current labor and subcontract costs.
- Posts floor stock amounts.

Work Order Accounting Close is normally an accounting or finance function done in conjunction with the period end close. It should be carefully coordinated with other period end accounting processes and controlled by internal procedures.

Note Accounting close does not actually update the GL because operational transactions are not posted to the GL automatically. The Finance Department uses Operational Transaction Post (25.13.7) to post verified transactions. You can select transactions for posting by entity, date, or assigned daybook. See “Operational Transaction Flow” on page 113 for details.

Variances



Managing cost is an important aspect of the manufacturing process. In a standard cost system, each item has a standard cost calculated based on the standard bill and routing. But each time the item is made, the cost may be somewhat different. These differences are tracked as variances and are calculated and posted automatically throughout the manufacturing process as shown in the slide.

Rate Variance. This reflects a difference between the standard cost and the price actually paid. The employee who did the work is paid more or less than the standard work center rate, the subcontractor charged more or less, or the material used had a different GL cost than the item listed on the work order bill. This last cause of variance may mean that a substitute item was used, or that materials were issued from another site with a different cost. It could also mean that the GL cost has changed since the work order bill was created.

Usage Variance. Usage variance reflects a difference between the standard quantity and the quantity actually used—more or fewer hours or more or less material. Both are calculated based on the quantity of inputs that should have been used to get the quantity reported as received, referred to as earned hours or earned materials.

Method Variance. When a work order is completed, Work Order Accounting Close is run to clear out any balance remaining in WIP. After all other sources of costs and variances have been accounted for, any remaining amount in WIP is posted as a method variance.

Example

The example covers the following manufacturing activities:

- Review an employee record.
- Review settings in Work Order Control.
- Create a work order to build 5 medical ultrasounds (item 01010) in Work Order Maintenance.
- Release the work order and generate a picklist and routing using Work Order Release/Print.
- Review the work order status after it is released.
- Issue the components needed to build 5 medical ultrasound devices using Work Order Component Issue.
- Record labor used to complete the 3 operations needed to assemble the medical ultrasound units using Labor Feedback by Work Order.
- Review the labor transactions and operation status.
- Receive and close the work order using Work Order Receipt.

Review Employee Record

Review Employee Record

Employee Modify

Go To Actions Tools Print Preview Attach

Employee Code: 11-EMP01 Active: ☒

Name: Angela Patens

Employee Business Relation

External Employee ☐

Supplier Code

Registration Currency

User

Login

Start Date: 01/01/2008

End Date:

Job Title: Supervisor

Department Code: 0100

Default Project

QAD Q5-FR-600

The employee record for Angela Patens has been set up by Finance/Human Resources. She has been assigned to the manufacturing department (0100) and has employee code 11-EMP01, which will be used for labor reporting.

Shop floor transactions must be recorded by an employee. Some firms who are not interested in tracking labor times and charges will create an administrative employee for reporting purposes only. This code is then used by everyone doing shop floor transactions. Another approach is to have the supervisor use their employee code to report labor for the entire department or work center.

Define Control Settings



QMI's Production Manager has configured Work Order Control (16.24) settings so that:

- Work order ID numbers are automatically generated by the system.
- The next number generated will be 1000.
- Routing comments is checked.
- The work order release function sets the status of the first operation to Queue (Move First Operation selected).

Move First Operation

This field is typically set to Yes. The released order then appears on the dispatch list for the specified work center and the Queue status indicates it is waiting to be started. If a lengthy picking effort is required, the work order may not be ready as soon as it is released. In that case, this field would be set to No. Operation Move Transaction (16.20.6) can be used to change the status later.

Work Order and Routing Comments

During work order processing, you can enter comments as needed. The selection here, if checked, sets the default for every work order. This is useful if internal procedures require the use of comments. If comments are only used occasionally, set the default to No.

Create Work Order

Create Work Order

Work Order Maintenance

Go To Actions Copy Print Preview Attach

Work Order: 1002 ID: 2309487

Item Number: 01010 Medical Ultrasound

Type:

Site: 10-100

Production Line:

Quantity Ordered: 5.0 Order Date: 3/25/2011

Quantity Completed: 0.0 Release Date: 3/25/2011

Qty Rejected: 0.0 Due Date: 3/31/2011

Sequence: 0.0

Shift:

Work Order Status: F Site: 10-100

Sales/Job: Routing Code: U-001

Supplier: BOM/Formula Code:

Yield Percent: 100.00%

Remarks:

Comments: Post variances at SFC

QAD Q5-FR-700

A work order created in Work Order Maintenance (16.1) is uniquely identified by the combination of two numbers:

- Work Order Number, which defaults from the next number managed in Work Order Control when Auto W/O Numbers is selected in the control settings
- Lot ID, which is always filled in by the system when left blank

The same work order number can be used with different lot IDs. This feature enhances the flexibility of the system to manage complex processing, such as:

- Managing multiple work orders that are part of a joint order set for co-product and by-product manufacturing
- Splitting work orders, useful if part of the work is delayed waiting for a missing component
- Managing rework, allowing the rework to be done under the same work order number but with a different lot ID
- Managing subcontract orders associated with cumulative orders in repetitive manufacturing

Create Work Order

Create Work Order

Work Order Maintenance

Go To Actions Copy Print Preview Attach

Work Order: 1002 ID: 2309487
Item Number: 01010 Medical Ultrasound

Type: Site: 10-100
Production Line:

Quantity Ordered: 5.0 Order Date: 3/25/2011
Quantity Completed: 0.0 Release Date: 3/25/2011
Qty Rejected: 0.0 Due Date: 3/31/2011
Sequence: 0.0
Shift:
Work Order Status: F Site: 10-100
Sales/Job: Routing Code: U-001
Supplier: BOM/Formula Code:
Yield Percent: 100.00%
Remarks:
Comments: ☐ Post variances at SFC: ☒

QAD Q5-FR-705

Type. The work order type is blank, which means that this is a normal manufacturing order with a standard product structure and routing.

Work Order Status. This work order has a status of F (Firm Planned), so this order has been reviewed and confirmed, or manually created.

Due Date. The order date and the release date default to the system date (today). The system has calculated the due date based on the lead time calculated from the standard times in the routing, multiplied by the order quantity. If you leave Release Date blank and enter a due date, the system calculates the release date.

Routing Code. The routing U-001 has been specified. This code was defined in Routing Maintenance. If an alternate route is needed for this work order, specify it here.

BOM/Formula Code. The BOM field is blank, so the system accesses the BOM code that matches the item number on the work order. If an alternate bill is needed for this work order, specify it here.

Post Variances at SFC. This defaults from the same setting in Work Order Accounting Control (.11). When checked, variances are posted when shop floor transactions are processed rather than when Work Order Accounting Close is run.

Several additional frames display when you click Next, used for special cases beyond the scope of this course. Accept the defaults and continue to click Next until the cursor returns to the first field.

Release Work Order

Release Work Order

Work Order Release/Print

Go To • Actions • Copy • Print • Preview • Attach

Work Order: 1001 ID: 2280904

Work Order: 1001

ID: 2280904

Batch:

Print Picklist: ☐

Print Routing: ☐

Print Co/By-Products: ☐

Item Number: 01010

Medical Ultrasound

Quantity Ordered: 5.0

Quantity Completed: 0.0

Sales/Job:

Remarks:

Deliver To:

Print Bar Code: ☐

Operation: ☐

Release Date: 5/27/2010

Include zero required: ☒

Include zero open: ☐

Reprint picked quantities: ☐

Print floor stock items: ☒

Print Co/By-Products as First or Last Doc: First

QAD

Q5-FR-710

Using Work Order Release/Print (16.6), QMI's Production Manager releases the work order for 5 medical ultrasound units. Based on the selections above, a picklist of required component items and a route sheet listing operations are printed. If you have a printer, you can direct the output to the printer and get a hard copy of the picklist and routing sheet. Otherwise, direct the output to Page to view the picklist and routing on your monitor.

The secondary pop-up window shown here is used in special case situations. Accept the defaults and click Next to complete the request.

Completing Work Order Release/Print changes the status of the order from F (firm planned) to R (released). During this process, the work order has been exploded and allocated, then released in one step. The release function generates a document with two parts that can be printed or viewed on your monitor:

- A picklist for selecting component items from inventory
- A routing sheet listing the operations and work centers

Review Picklist

Review Picklist



Work Order Release/Print
10USA

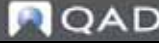
04/10/12 17:30:13
Page:1

Work Order Picklist

Work Order: 1001
ID: 2326383
Batch:
Item Number: 01010
Remarks: Medical Ultrasound
Qty Ordered: 5.0 EA

Issue Date: 04/10/12
Revi D
Work Order Due Date: 04/16/12
Sales/Job:
Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
50001	AA	10-100		5.0	EA	
Probe Unit - 10 Mhz						
		020	50001-0911-10	1.0	(	)
		020	50001-0911-11	1.0	(	)
		020	50001-0911-12	1.0	(	)
		020	50001-0911-13	1.0	(	)
		020	50001-0911-14	1.0	(	)
60001		10-100		5.0	EA	
Durable Plastic Housing						
		020		5.0	(	)
60002		10-100		5.0	EA	
Display / Readout						
		020		5.0	(	)


Q5-FR-720

The printed picklist lists the medical ultrasound component items, the quantities to issue and the site (10-100) and location (020) to pick from. Note the parentheses, which can be used by the issuing stock clerk to initial the picklist to indicate which items have been issued.

Review Routing

Review Routing



Work Order Release/Print
10USA

04/10/12 17:30:13
Page:3

Work Order Routing

Work Order: 1001
ID: 2326383
Batch:
Item Number: 01010
Remarks: Medical Ultrasound
Qty Ordered: 5.0 EA

Rev: D Work Order Due Date: 04/16/12
Sales/Job:
Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000 Mach: 1001 General Assembly-Ultra			5.0			()
	ASSEMBLE COMPONENTS			50.0			()
20	1050 Mach: 1001 Product Test-Ultra			2.0			()
	TEST FINISHED UNIT			25.0			()
30	1060 Mach: 1001 Packaging -Ultra			0.5			()
	PACK FOR SHIPPING			10.0			()

16.6
Work Order Release/Print
woworl.p

Q5-FR-720

The printed routing sheet lists the operations 10-20-30, and standard setup and run times to manufacture 5 units. The route specifies which work center the work should be done in and the short description of the task.

Review Work Order Status

Item Number	Site	Work Order	ID	Quantity Open	Due Date	Sales/Job	Work Order Status
01010	10-100	1000	2280902	5.0	05/28/2010		F
01010	10-100	1001	2280904	5.0	05/28/2010		R
01010	10-100	1002	2280921	5.0	05/28/2010		R
02001	10-200		2280899	1,000.0	05/31/2010		R
70050	10-500	QADDEM0-70050	2280900	10,000.0	05/13/2010		F

The Work Order Browse (16.2) shows that the status of work order 1001 has indeed changed from F (firm planned) to R (released).

In the process of releasing the order, the work order bill of material was exploded and allocated. This background processing changed its status from Firm to Exploded to Allocated to Released in what was for the user just one step.

Since Move First Operation was selected in Work Order Control, the first operation has been changed to status Queue.

Exercise 9-1: Create Work Order

In the following exercise you will:

- Review an employee record.
- Define control settings.
- Manually add and release a work order.

Note Remember, if you are uncertain about a given transaction and how to fill in the data fields, refer back to the appropriate section of the example.

Review Employee Record

- 1 Use Employee View (36.1.7.3) to review the record for employee 10-EMP01. An employee is required for shop floor reporting.

Define Control Settings

- 2 Select Work Order Control (16.24) and make sure that the settings are as follows:

Field	Data
Auto W/O Numbers	Yes
Next W/O Nbr	[default] or a setting of your choice
Work Order Comments	No (unchecked)
Routing Comments	No (unchecked)
Move First Operation	Yes (checked)

Manually Add and Release a Work Order

- 3 Use Work Order Maintenance (16.1) to add a new work order record.
 - a Let the next work order number and ID number default from the control program. Record the number here for reference: _____
 - b Specify item 01010 at site 10-100 and quantity ordered 20. Work order status is F (firm planned).
 - c Let the other field values default. Click Next until the Work Order field is highlighted, then click Back.
- 4 Use Work Order Release/Print (16.6) to release the work order you created. This function will also print the work order picklist and routing, also known as the shop paper.
 - a Use the lookup function to find your work order (recorded in previous step).
 - b Accept all other default values.
 - c Review picklist and routing.

Note If you have a printer available, you may want to print your work order picklist and routing. If you do not have a printer, direct output to Page to view the documents on your monitor and keep the results open until you complete the labor reporting step.

- 5 Find the new status of the order using Work Order Browse (16.2). What is it?

Work Order Component Issue

Work Order Component Issue

Work Order: 1001 ID: 2326383 Op: Effective: 4/10/2012
 Item Number: 01010 ST: R Issue Alloc: ☐
 Medical Ultrasound Issue Picked: ☒
 Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/D
50001	5.0	0.0	5.0	5.0	0.0
50001	5.0	0.0	5.0	5.0	0.0
50002	5.0	0.0	5.0	5.0	0.0

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: UM: Reference:
 Substitute ☐ Cancel B/D ☐ Multi Entry ☐
 Document:

QAD QS-FR-745

The released work order is now in the stock room to have the components issued. QMI stock room personnel will use Work Order Component Issue (16.10) to do this using the work order number as shown here. Since this will be a standard component issue, check the Issue Picked box. The system then uses the work order bill to retrieve the detail item allocation information generated when the work order was released.

In this example, all components were picked from the locations printed on the work order picklist, so they can be issued automatically by setting Issue Picked to Yes. This reduces manual entry because it sets the default sites, locations, lot/serial numbers, references, and quantities from the detail allocations on the picklist. To proceed with the transaction, click Next.

When prompted to review the issue transaction, click Yes.

Work Order Component Issue

Work Order: 1001
ID: 2326383
Op:
Effective: 4/10/2012

Item Number: 01010
ST: R
Issue Alloc: ☐

Medical Ultrasound
Issue Picked: ☒

Document:

Item Number	Site	Location	Lot/Serial	Ref	Quantity
50001	10-100	020	50001-0911-10		1.0
50001	10-100	020	50001-0911-11		1.0
50001	10-100	020	50001-0911-12		1.0
50001	10-100	020	50001-0911-13		1.0
50001	10-100	020	50001-0911-14		1.0
60001	10-100	020			5.0
60002	10-100	020			5.0
60003	10-100	020			5.0
60005	10-100	020			5.0
60006	10-100	020			5.0

Q5-PR-752

This screen shows the actual inventory transactions that are about to be made, including item number, site, location, lot/serial, and quantity. If all is correct, click Next to bring up a final verification.

If all is correct, click Yes and the inventory transactions are updated.

Click No to return to the transaction frame to make corrections. Completing this transaction removes the components from the inventory location and issues them to Work in Process (WIP) at the GL standard cost. The work order and the component items are now delivered to the first work center on the route for assembly to begin.

Non-Standard Component Issue

Non-Standard Component Issue

Work Order Component Issue

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2326383 Op: Effective: 4/10/2012
 Item Number: 01010 ST: R Issue Alloc: ☐
 Medical Ultrasound Issue Picked: ☐
 Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	5.0	0.0	5.0	5.0	0.0
60001	5.0	0.0	5.0	5.0	0.0
60002	5.0	0.0	5.0	5.0	0.0

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: UM: Reference:
 Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐
 Document:

QAD Q5-FR-739

When you need to issue a non-standard item, you use the lower frame of the issue screen to manually enter the correct data. Examples of when this is used include issuing an approved substitute item in place of the standard item or issuing material from a different location. Another common situation occurs when you need to issue material from two or more locations to get the full quantity of the item.

After filling in the data in the lower frame, click Next and the transaction proceeds as normal.

Review Inventory

Review Inventory

Inventory Detail by Item Browse

Actions • Print • Add to Favorites • Chart Designer • Refresh • New • Edit • Edit

Search [1]

Item Number: 50001 starts at: 50001 Search Clear All

Viewing 1 - 100 of 406 Records per page: 100

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status	Expire Date
50001	10-100	109.0	1.0 020	50001-0710-24	YYY			
50001	10-100	109.0	1.0 020	50001-0710-25	YYY			
50001	10-100	109.0	1.0 020	50001-0710-3	YYY			
50001	10-100	109.0	1.0 020	50001-0710-4	YYY			
50001	10-100	109.0	1.0 020	50001-0710-5	YYY			
50001	10-100	109.0	1.0 020	50001-0710-6	YYY			
50001	10-100	109.0	1.0 020	50001-0710-7	YYY			
50001	10-100	109.0	1.0 020	50001-0710-8	YYY			

QAD Q5-PR-765

Review the on-hand inventory using Inventory Detail by Item Browse (3.2). You can see you still have enough components to build additional ultrasound units. A partial list is shown above.

Record Labor

Record Labor

Labor Feedback by Work Order

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2326383
 Operation: 10 ASSEMBLE COMPONENTS Op Status: QUEUE
 Document:
 Employee: 11-emp01 Angela Patens Pay Code:
 Department: 0400 Work Center: 1000 Time Ind: Hours Minutes
 Shift: Machine: 1001 Project:

Quantity Completed: 5.0 Effective Date: 4/10/2012
 Rejects: ☐ Operation Complete: ☒
 Rework: ☐ Move to Next Operation: ☒
 Previous Ops Complete: ☒
 Start Setup: 01:00:00 Elapsed Setup: 0.000
 Elapsed/Stop Setup: 01:30:00
 Start Run: 01:30:00 Elapsed Run: 0.000
 Elapsed/Stop Run: 06:30:00
 Comment:
 Down Time: 00:00:00 Down Time Reason:

QAD Q5-FR-760

Now that the work order is released to production, its status can be updated using shop floor transactions, posted against the work order and operation. They must be entered with a valid employee code. In this simplified example, all of the shop floor reporting will be done by the senior assembler, Angela Patens, employee 11-EMP01.

When the route for the medical ultrasound was set up, each operation was defined as a milestone. This indicates that each operation is to be reported when it is complete.

Angela Patens uses Labor Feedback by Work Order (16.20.1) to record labor for operation 10 on the work order. In addition to the employee ID, other required information is the work order number, operation, and work center. After you enter the work order and operation, the department and work center associated with the routing and operation display. These can be changed if the work is done in a non-standard work center.

Based on the quantity of units completed (5) and routing details for operation 10 (entered in Routing Maintenance), the setup time should be 1 hour and run time 5 hours (5 units $\times$ 1.0 hr/unit). If actual setup or run time varied from the standard times, usage variances are generated. Depending on how you organize your shop floor reporting, you can use either the elapsed time for the operation, or enter the start and stop time for the operation.

If you are reporting labor before the completion of the operation—for example, at the end of a shift—but the work is not complete, then Operation Complete is left unchecked, and only the units complete are reported.

When check box for Move Next Operation is selected, the system changes the status of the next operation to Queue and moves the quantity complete from this operation into WIP at the next operation.

When the check box for Previous Operations Completed is selected, the processing of this transaction closes all previous operations.

Operations 20 and 30 are reported in the same manner. This example uses standard times for each operation.

Questions

What information is provided by the department?

GL accounts for manufacturing costs are attached to the department in Department Maintenance.

What information is provided by the work center?

Rates are specified at the work center level. These include the standard labor rates per hour for setup and run operations, and the variable burden rates that apply to all work done in the work center.

Review Labor Transactions

Review Labor Transactions



Operation Transaction Detail

Inq

04/10/12

Tran Nbr: 30501

Display E-Signature Details: No

Output: PAGE

Type: LABOR

Transaction Date: 04/10/12 18:16:07

Work Order: 1001

Effective Date: 04/10/12 Shift:

ID: 2326383 Op: 10

Employee: 11-emp01 Angela Patens

Item Number: 01010

Quantity Completed: 5.0

Qty Rejected: 0.0

Site: Medical Ultrasound

Line:

Reject Reason:

Work Center: 1000

Machine: 1001

Qty Rework: 0.0

Department: 0400

Rework Reason:

Qty Scrapped: 0.0

Std Setup Time: 0.5

Actual Setup Time: 0.5

Std Run Time: 10.0

Actual Run Time: 5.0

Labor Cost Std: 1,262.50

Labor Cost: 137.50

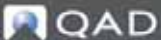
Burden Cost Std: 3.67

Burden Cost: 0.40

Subcontract Std: 0.00

Subcontract Cost: 0.00

L Reference	G/L Transactions				Project
	Amount	DR Acct	Sub-Acct	CC	
Reference ID	12.50	1550	Mech		Project
0012/SYS-DB0000000001		5120	Mech	mfg	
0012/SYS-DB0000000002	125.00	1550	Mech	mfg	
0012/SYS-DB0000000003	1,125.00	1550	Mech	mfg	
0012/SYS-DB0000000004	0.04	1550	Mech	mfg	
0012/SYS-DB0000000005	0.36	1550	Mech	mfg	
0012/SYS-DB0000000006	3.26	1550	Mech	mfg	



Q5-PR-77

The labor transactions created when labor was reported can be reviewed in Operation Transaction Detail Inquiry (16.20.13.9). This shows standard and actual setup and run times and the GL effects.

Accounts affected are Work in Process, Labor Absorbed, and Burden Absorbed.

Review Operation Status

Review Operation Status

Work Order: 1001 ID: 2326383
 Item Number: 01010 Medical Ultrasound
 Operation: 10

Standard Operation:
 Operation Description: ASSEMBLY COMPONENTS
 Work Center: 1000 Machine: 1001 General Assembly-Ultra

Qty Ordered: 5.0	Std Setup Time: 5.0	Act Setup Time: 0.5
Qty WIP: 0.0	Std Run Time: 10.0	Act Run: 5.0
Run Complete: 5.0	Std Move Time: 0.0	Machines per Op: 1
Sub Complete: 0.0	Queue: 0.25	Op Status: C
Qty Reject: 0.0	Wait Time: 0.25	Tool Code:
Qty Rework: 0.0	Subcontract Cost: 0.00	Supplier:
Start Date: 3/30/2012	Setup Crew: 1.00	Yield%: 100.00%
Due Date: 4/10/2012	Run Crew: 4.00	Comments:
	Overlap Units: 0	
	Subcontract LT: 0	

QAD Q5-FR-700

When the Production Manager created work order 1001 in Work Order Maintenance, the system automatically generated a work order routing. This routing tracks the status of each operation and the quantities recorded complete at each operation. It also shows the actual setup and run times.

This screen shows that Operation 10 is complete (Op Status = C). No units of 01010 are in process at this operation (Qty WIP = 0.0), and 5 have been completed (Run Complete = 5.0).

If you reviewed operation 20, you would see that its status has been changed to Q (Queue).

If additional changes to operation 10 reporting are needed, you can use Work Order Routing Maintenance to change the operation status from C (Complete) to R (Run), allowing additional labor reporting to be done.

Receive and Close Work Order

Work Order Receipt

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2326383 Effective: 4/10/2012

Remarks:

Item Number: 01010 Lot/Serial Control: S UOM: EA

Description: Medical Ultrasound W/O Stat: R

Open Quantity: 5.0 Automatic Lot Numbers: ☐

Document:

Quantity: 0.0 Site: 10-100

UOM: EA Location: 010

Conversion: 1.0000 Lot/Serial:

Scrapped Qty: 0.0 Reference:

UOM: EA Multi Entry: ☒

UOM Conversion: 1.0000 Set Attributes: ☒

Total Units: 0.0

QAD Q5-FR-790

Using Work Order Receipt (16.11), QMI receives the 5 medical ultrasound units into its finished goods location (010) and closes the order.

A dialog box prompts if the information is correct. Responding Yes, displays the inventory transaction that is about to occur. Another pop-up window displays the transaction about to be processed and asks for confirmation that all is correct. Clicking Yes completes the work order close and the inventory update.

This increases (debits) the Inventory account and decreases (credits) the WIP account for the total standard GL cost.

Note The receipt does not actually update the GL because operational transactions are not posted to the GL automatically. The Finance Department uses Operational Transaction Post (25.13.7) to post verified transactions. You can select transactions for posting by entity, date, or assigned daybook. See “Operational Transaction Flow” on page 113 for details.

Additional Notes

Work Order Accounting Close is an additional step in the work order life cycle that is usually taken at the end of each GL calendar period as part of the period-end closing process.

Exercise 9-2: WO Issue, Report, Receive, and Close

In the following exercise you will:

- Issue components to a work order.
- Report labor to a work order.
- Receive and close a work order

Note Remember, if you are uncertain about a given transaction and how to fill in the data fields, refer back to the appropriate section of the example.

Issue Work Order Components

- 1 Use Work Order Component Issue (16.10) to issue components from your inventory to your work order. Select Issue Picked to make your transaction more automatic. The work order number was recorded on page 290.

Note By overriding the data in the transaction frame, you can change the quantity issued or the location from which the items are issued. In this exercise you should accept the default values since no inventory should exist in any other locations.

- 2 Update and exit.

Report Labor to a Work Order

- 3 Manually calculate how much labor for setup and run time you need to complete all 20 units at each operation. These numbers are on the routing that was printed for the work order. If you do not have the routing data available, it should look something like this.



Work Order Release/Print
10USA

08/06/12 13:05:52
Page:5

Work Order Routing

Work Order: 1000
ID: 2336668
Batch:
Item Number: 01010
Remarks: Medical Ultrasound
Qty Ordered: 20.0 EA

Rev: D
Work Order Due Date: 08/10/12
Sales/Job:
Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000 Mach: 1001 General Assembly-Ultra ASSEMBLE COMPONENTS			5.0	200.0	()	()
20	1050 Mach: 1001 Product Test-Ultra TEST FINISHED UNIT			2.0	100.0	()	()
30	1060 Mach: 1001 Packaging -Ultra PACK FOR SHIPPING			0.5	40.0	()	()

16.6
Work Order Release/Print
woworl.p

- 4 Assume the shop has now built the units. Use Labor Feedback by Work Order (16.20.1) to report labor and units completed at each operation on your routing, based on your calculation above. Use employee 10-EMP01.
 - a At each operation (10, 20, and 30) report the units completed and the elapsed setup and run times.
 - b Change Time Ind field to Decimal Hours.
 - c In Operation Transaction Detail Inquiry (16.20.13.9), you could look at the transactions created when you reported labor.
- 5 Use Work Order Routing Maintenance (16.13.13) to review your work order routing. Check how many units have been completed at each operation and how much labor was used for each operation.

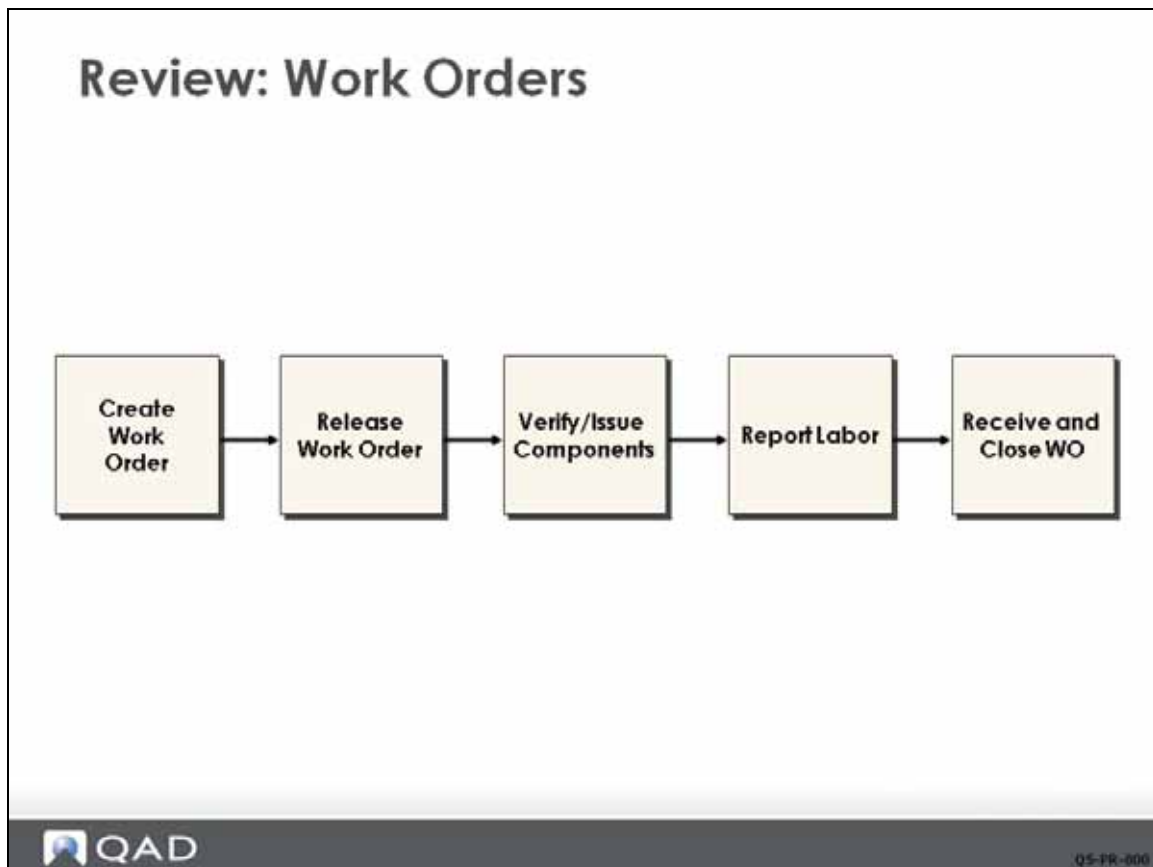
Receive and Close a Work Order

- 6 Use Work Order Receipt (16.11) to receive all 20 medical ultrasounds from the work order into inventory at site 10-100, location 010.

Field	Data
Quantity	20
Lot/Serial	MDF950001
Multi Entry	Yes
Close	Yes

- a Click Next until you are prompted: Create List of Serial Numbers? Click Yes.
- b Click Next until you see MDF950020.
- c Click Back until you are prompted: Display Items and Lot/Serial Detail? Click Yes.
- d When prompted Is all information correct?, click Yes.

Review



This chapter discussed work order types and status codes, and explained the variances that can occur in the work order cycle. You then saw how work orders flow through the system and learned that they are:

- Created in Work Order Maintenance
- Released in Work Order Release/Print
- Issued components by Work Order Component Issue
- Reported in Labor Feedback by Work Order
- Received and closed in Work Order Receipt

For more detail on work orders and how special situations are managed, see the training guide for work orders.

Sales Orders/Invoices

This chapter provides an overview of the components of the QAD Customer Management suite. It then describes the Sales Orders/Invoicing module from how to create sales orders, allocate inventory, print picklists, ship orders, to invoicing and processing AR payments.

Overview of Sales Orders/Invoices

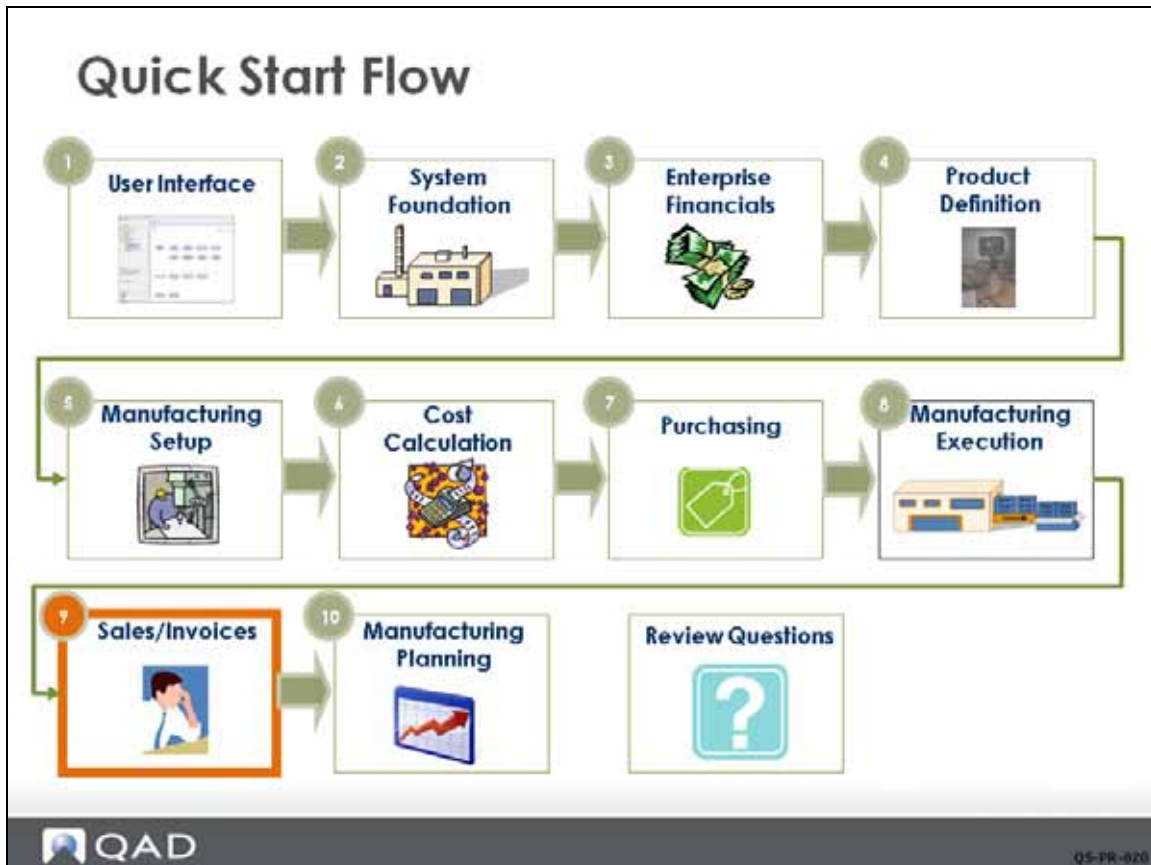
Components of Customer Management

Key Concepts of Sales Orders

Example

Review

Overview of Sales Orders/Invoices



This chapter provides an overview of the components of the QAD Customer Management suite. It then focuses on the various activities associated with managing sales orders. While this is only one part of the full customer management suite, it is an essential part of the management of supply and demand that is the core of QAD applications.

Typically the sales department is responsible for recording orders, processing shipments, and invoicing. Each of these activities is discussed, followed by an example to illustrate the process.

Chapter Topics

The topics covered in this chapter include:

- Components of Customer Management
- Key Concepts
 - Sales Order Process Flow
 - Sales Order Document Layout
 - Allocation of Inventory
 - Picklists
 - Shipment
 - Invoice Management
 - AR Payment Processing

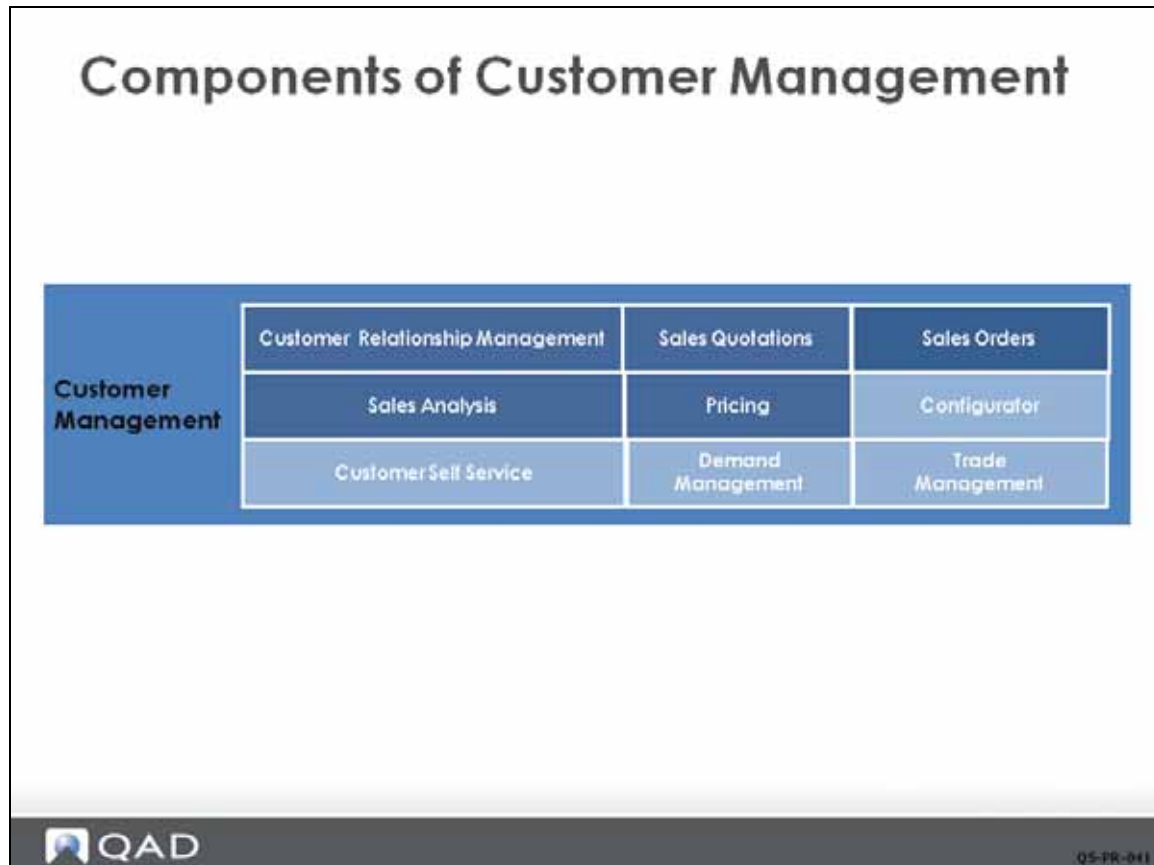
- Example
 - Review Customer Record
 - Define Control Settings
 - Enter Sales Order and Print Sales Order
 - Exercise
 - Print Packing List and Ship Sales Order
 - Review Inventory Detail
 - Review Pending Invoice and Post and Print Invoice
 - Exercise
- Review

Learning Objectives

When you finish this chapter, you should be able to:

- Describe the basic sales order process flow.
- Explain the different types of information contained in a sales order document header, line item, and trailer sections.
- Explain the differences between general and detail allocations.
- Enter, print and ship a sales order.
- Describe the basic invoice process flow.
- Post and print an invoice.
- Describe the basic payment process flow.

Components of Customer Management



The QAD comprehensive suite of customer management solutions supports all phases of the customer life cycle—from acquiring customers, through managing orders, pricing, and fulfillment.

The next few slides highlight each of the standard components of QAD Customer Management. The optional components (shown in lighter blue in the slide) are not covered.

- *Configurator*: A complete rules-based product configuration suite that supports the entire product life cycle from quoting and order entry to after-sale service and support.
- *Customer Self Service (CSS)*: A Web storefront for self-service sales transactions and inquiries. CSS is fully integrated with the QAD Configurator product so that you can add configured products to your shopping cart and select features and options based on Configurator setup.
- *Demand Management*: Provides tools to build and manage forecasts, either collaboratively or individually, based on mathematical models that utilize demand history.
- *Trade Management*: Manages product promotion events with key retailers to ensure that spending generates appropriate sales, and manages rebates and chargebacks.

Customer Relationship Management

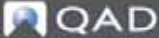
Customer Relationship Management

- Use Customer Console to view complete customer data
- View KPIs on Sales Dashboard
- Maintain prospect and customer profiles
- Manage opportunities, develop leads and pipelines
- Manage sales activities—meetings, calendars, e-mails
- Monitor campaigns and costs

A 360-degree view of customers and sales activity



Customer Management	Customer Relationship Management	Sales Quotations	Sales Orders
	Sales Analysis	Pricing	Configurator
	Customer Self Service	Demand Management	Trade Management


Q5-FR-042

Increasing profits by improving customer acquisition and retention, Customer Relationship Management (CRM) provides a 360-degree view of your customer, integrating customer information at every touch point. Key features include:

- Use a Customer Console for access to complete customer information in a single screen, including quotes, orders, invoices, Accounts Receivable, sales history, installed products, and service calls.
- View a graphical Sales Dashboard offering four predefined sales key performance indicators (KPIs) of sales performance, sales funnel, and past-due sales activities.
- Maintain prospect and customer profiles including lists of contacts, business characteristics, locations, financial information, past sales history, existing opportunities, installed base equipment owned by the company.
- Manage opportunities, develop leads, build pipelines.
- Manage all activities related to the sales cycle, such as meetings, phone calls, e-mail messages, and product demonstrations.
- Manage campaigns, monitor costs, stages and activities, develop target audience, media options and analyze campaign performance.

Sales Quotations

Sales Quotations

- Respond to customer requests for quotes
- Create one-time quotes or recurring quotes for repeat business
- Release a quote to an order, copying relevant data
- Maintain quote history by item and customer
- Analyze expired quotes by reason lost

Respond to RFQs and easily convert to orders

Customer Management	Customer Relationship Management	Sales Quotations	Sales Orders
	Sales Analysis	Pricing	Configurator
	Customer Self Service	Demand Management	Trade Management

Q5-FR-043

QAD's Sales Quotation is the first step in acquiring necessary customer data and ensuring that a customer has the most up-to-date pricing information, with all possible discounts and promotions factored in. An effective quote system provides a history that enables reporting on quote activity to reveal trends, such as conversions to orders.

- Respond to a customer's request for a quote.
- Create two types of sales quotes:
 - A one-time quote is for a single sale and after the customer agrees to the quote, is released to an order.
 - Recurring quotes are for repeat business when a customer orders on a regular cycle. The quote cycle code lets you release groups of quotes together.
- Easily release a quote to an order, copying relevant data.
- View potential gross margin contribution and quote history by item number or customer.
- Generate reports on expired quotes that did not result in customer orders.
- Easily reprice quotes with automatic best pricing, and perform credit limit checks when required.
- Delete and archive quotes on a user-defined schedule.

Sales Orders

Sales Orders

- Manage entire process from quote to invoice
- Process freight charges
- Reprice orders as needed
- Print orders, picklists, and process shipments
- Process invoices, make invoice corrections, and process credit invoices
- Manage cross-sell, up-sell and item replacement

Manage sales from order to invoice

Customer Management	Customer Relationship Management	Sales Quotations	Sales Orders
	Sales Analysis	Pricing	Configurator
	Customer Self Service	Demand Management	Trade Management

Q5-FR-044

Sales Orders and Invoicing provides a variety of methods for order creation, credit verification, confirming orders, inventory allocation, picking and shipping products, processing invoices and handling returns. Sales Orders and Invoicing also provides the foundation for optional features such as Container and Line Charges, Enterprise Material Transfer, and QAD Service and Support Management.

- Create sales orders and confirm orders.
- Determine available to promise (ATP) quantities by due date, allocate inventory as needed.
- Process freight charges.
- Reprice sales orders as needed.
- Print sales orders and picklists and process shipments.
- Manage containers and shippers.
- Process invoices and returns and post invoices to appropriate accounts.
- Make invoice corrections and issue credit invoices for returns.
- Generate reports on sales orders and fulfillment activities.
- Sell alternate items, complementary items (cross-sell), and items with added features or higher price (up-sell), meaning higher revenue with minimal effort.

Sales Analysis

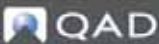
Sales Analysis

- Generate critical reports and graphs
- Measure salesperson performance
- Report sales by item, product line, site, or customer
- Rank items by sales, margin, or quantity
- Integrate with sales orders and invoicing

Make better sales decisions based on accurate information



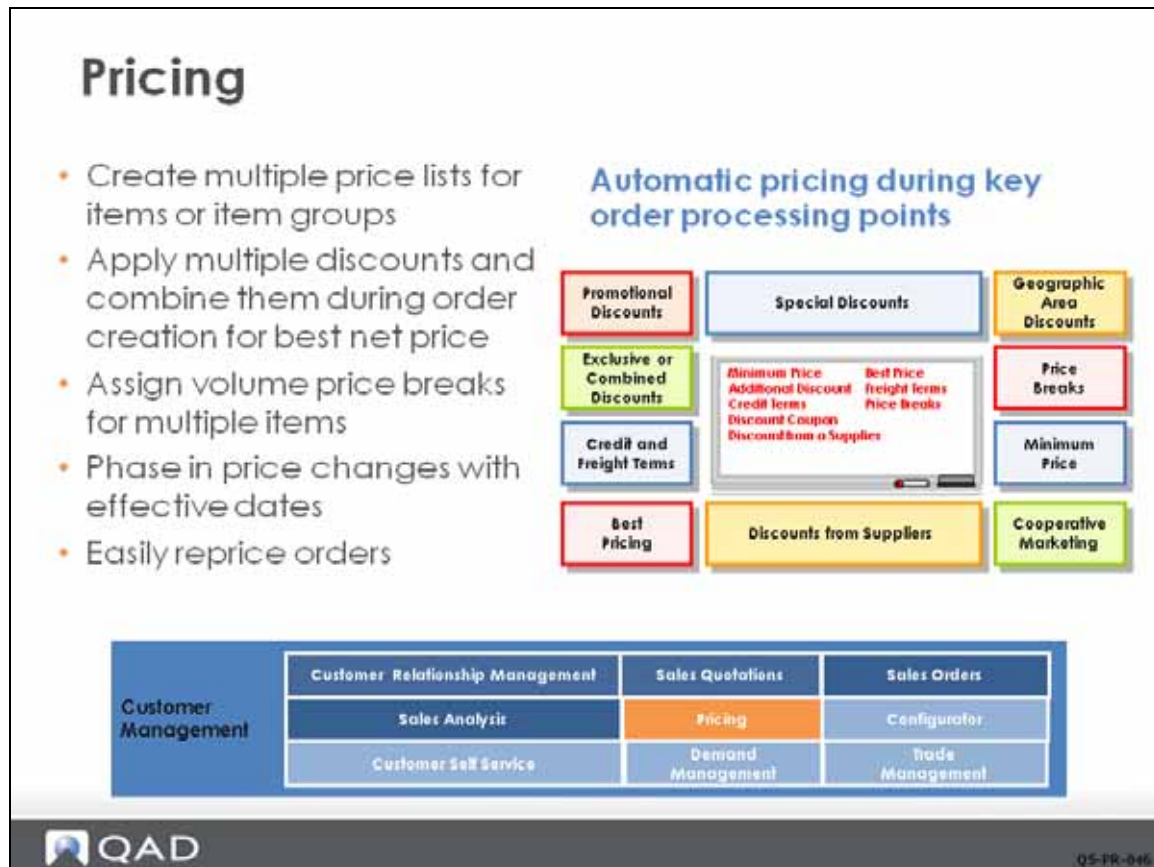
Customer Management	Customer Relationship Management	Sales Quotations	Sales Orders
	Sales Analysis	Pricing	Configurator
	Customer Self Service	Demand Management	Trade Management


Q5-FR-045

Sales Analysis, which is fully integrated with sales orders, provides intelligent metrics on sales activity such as measuring the cost of sales, determining the most profitable customers, or changing salesperson quotas.

- Monitor salesperson productivity and company effectiveness in maintaining margins.
- Report sales by product, item, site or customer.
- View ranking of items by sales, margin, or quantity.

Pricing



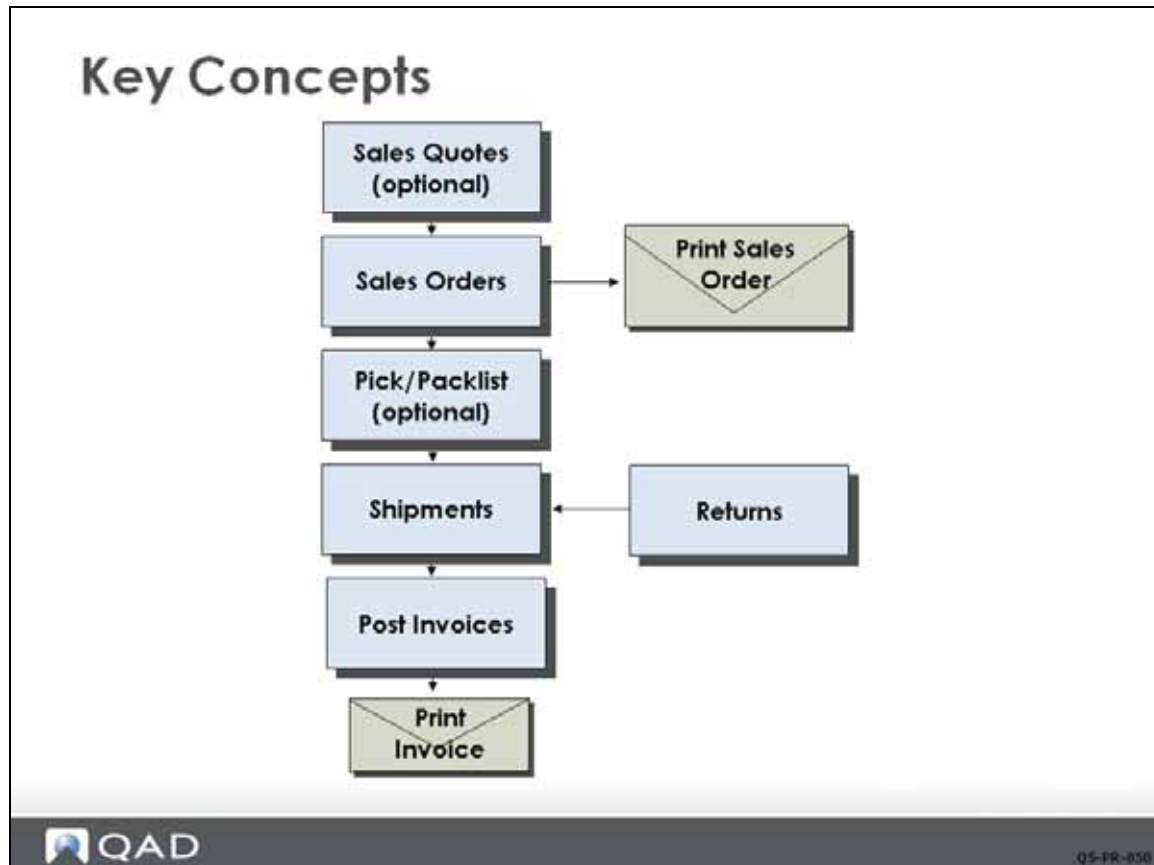
The Pricing functionality within QAD Enterprise Applications supports automatic pricing during key order transactions such as in creating sales quotations, releasing quotes to orders, and repricing items or orders as required.

For flexibility, QAD Enterprise Applications offers two pricing models: best pricing and list/discount table pricing. The best pricing model supports sales orders, sales quotes, and issue lines on QAD Service and Support Management return material authorizations. The list/discount table model supports automatic pricing related to purchase orders, scheduled sales orders, supplier scheduled orders, and SSM returns to suppliers and RMA receipt lines.

With Sales Order Pricing, you can:

- Create price lists that accommodate a wide range of pricing situations using flexible categories of items and customers.
- Apply multiple discounts and combine discounts to determine the best possible net price for a line item.
- Assign volume price breaks for multiple items.
- Reprice sales orders and perform credit checks and update the order's credit action status based on the newly calculated prices.

Key Concepts of Sales Orders

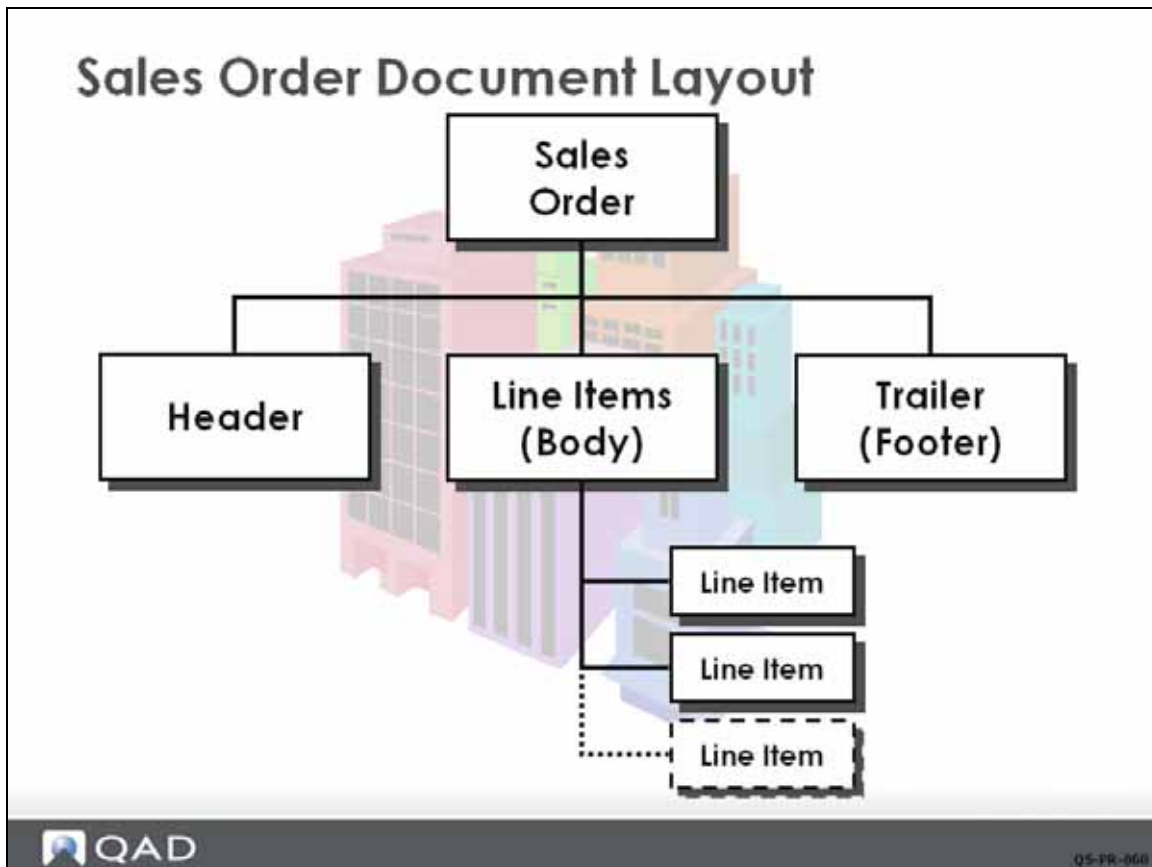


- 1 A customer sale can begin as a sales order or a sales quote. Both represent offers to sell the customer certain items at a certain price at a certain time. The sales order also represents a commitment from the customer to purchase the items, but a sales quote does not. Consequently, sales quotes are not considered by MRP.

Note A third type of sales order can be generated using the optional Customer Schedules module, which is part of Release Management (not shown here). Unlike discrete sales orders, customer scheduled orders are processed using a set of scheduled shipment dates and quantities and have both short-term firm quantities and long-term planning quantities.

- 2 A hard-copy document of the order can be printed and sent to the customer.
- 3 After a sales order has been entered and is ready to be shipped, a picklist can be printed. When the picklist is generated, any allocated quantities on the order are incremented as picked. The picklist document can be placed inside the shipping box as a packing list. Inventory is not decremented until items are actually shipped.
- 4 The shipment transaction creates a pending invoice that does not increment Sales until the invoice is posted to Accounts Receivable.
- 5 Posting the invoice assigns the invoice number based on financial setup and generates the documents that can be printed and sent to the customer.
- 6 Once invoices are posted, financial processing continues with accounts receivable functions.

Sales Order Document Layout



In QAD EE, a sales order document has three main parts, entered and printed in sequence:

Header. Contains the general terms of the order and default values for line items. Comments may follow, describing in more detail the terms or instructions associated with this order.

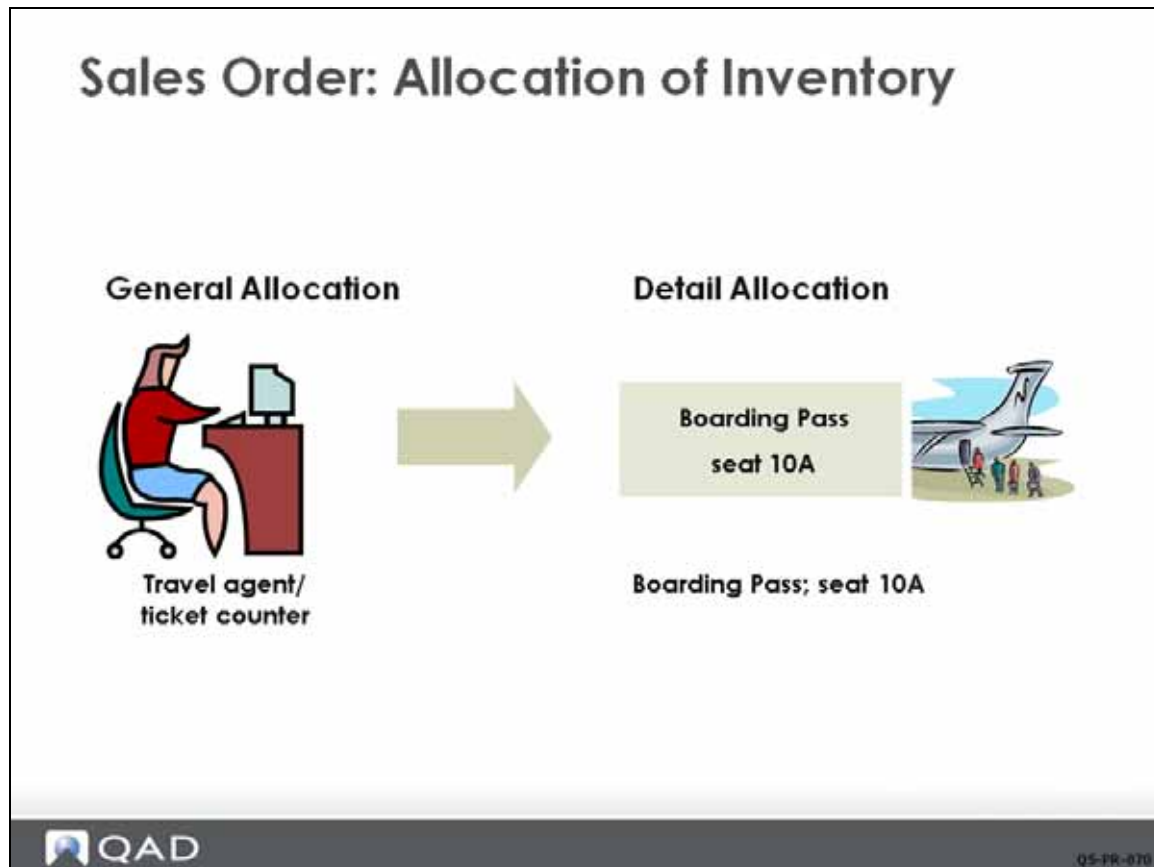
Line Items. Specifies a particular item being ordered, its order quantity, and price. Lists any exceptions to header information, such as a date or address that applies to only the line item and not the whole order. Comments may follow each line item, describing in more detail the item, its specifications, or packaging instructions. Each order can have many line items.

Trailer. Contains tax, shipping, and order status information for all line items. Freight can be calculated automatically on a bulk or unit basis. These charges are not subject to commission or discount, and may or may not be taxable.

Comments can be entered manually on quotes and orders or copied from preexisting master comments and modified as needed. Master comments are useful for storing standard information such as:

- Item specifications and quality requirements
- Item descriptions in other languages
- Export documentation and packaging instructions

Allocation of Inventory



QAD EE uses allocations to reserve inventory. Particular quantities can be set aside or allocated to specific sales orders, ensuring that inventory is available when it is needed. Allocations also enable the sales department to determine which items are shipped for specific orders and prevents you from promising the same item to two or more customers.

The system distinguishes between a general allocation and a detail allocation.

- General allocations reserve inventory at a particular site, but does not specify a specific location or lot/serial numbers. This is similar to when you buy an airline ticket. The airline allocates a seat for you but you do not know which one. General allocations can be created during order entry, depending upon the setting in Sales Order Control.
- Detail allocations enable you to reserve exact items of inventory at a specific location by specifying lot and/or serial numbers, expiration dates, sites, and/or locations. Detail allocation is normally done automatically when the picklist is prepared, but it can be done manually during the order-entry process. In the airline example, detail allocation happens when you get a boarding pass—now you know what seat you are in.

Like the airline boarding pass example, most errors occur when humans try to manipulate the system and override the system allocations.

Printing Picklists

Printing Picklists

Sales Order Packing List - 4/11/12 X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950
USA - TAX PURPOSE

P A C K I N G L I S T
Order Number: 1051002 Page: 1
Order Date: 04/10/12
Print Date: 04/11/12

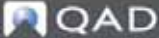
Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Ship To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Salespersons: 10SP01
Credit Terms: 2M
Remarks: 2 months after month end of invoice date

Purchase Order:
Ship Via: FEDEX
FOB Point:

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	Open UM	Due Shipped
1	01010 Revision: D Medical Ultrasound	10-100		5.0	EA	04/17/12
		010	01010-1211-12	1.0	(	)
		010	01010-1211-2	1.0	(	)
		010	01010-1211-3	1.0	(	)
		010	01010-1211-4	1.0	(	)
		010	01010-1211-5	1.0	(	)

 QAD

Q5-FR-000

Once customer-ordered items have been completed or when stock items are available for shipment, sales personnel can initiate picklist printing for the sales order.

The picklist shows what items to pick to fill an order and what site or location to pick them from. If you created detailed allocations in Sales Order Maintenance—including lot/serial numbers and lot reference numbers—this information appears on the picklist. If you performed a general allocation for the sales order, the system automatically converts the general allocation to a detail allocation when it prints the picklist.

To print a picklist for a sales order, use Sales Order Packing List (7.9.13). You can only print picklists for sales orders not on credit hold. A sample picklist is shown here.

After printing the picklist, the system updates the values displayed in Sales Order Maintenance for the quantity allocated and quantity picked.

Note The terms picklist and packing list are used interchangeably.

Shipment



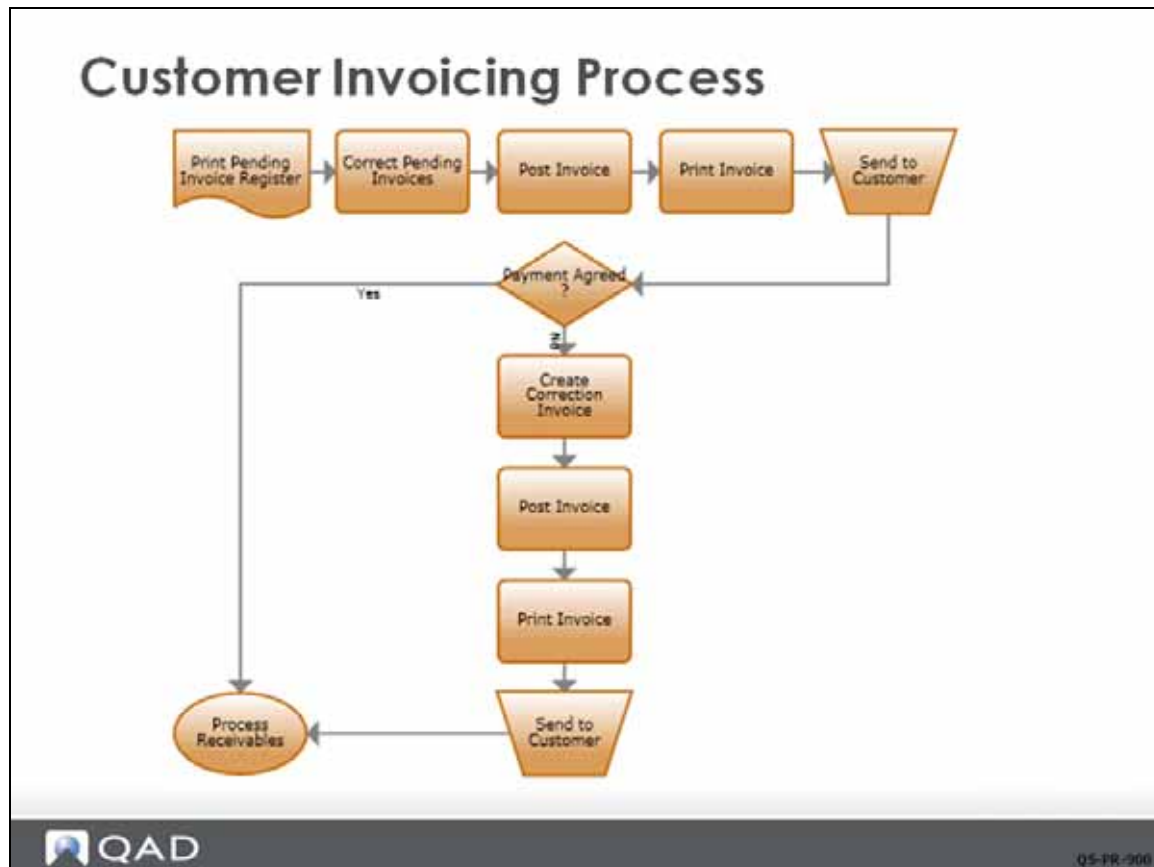
After the items listed on the sales order picklist have been picked, they are packed and shipping paperwork is prepared. Following actual shipment, the shipping transaction can be processed.

Processing the transaction physically decreases the quantity on hand for each of the items that was shipped and generates a GL transaction to decrease (credit) Inventory and increase (debit) Cost of Sales accounts.

Note These transactions are maintained in an unposted transaction table and periodically (typically daily) posted to the GL using Operational Transaction Post. See “Operational Transaction Flow” on page 113 for details.

Shipping a sales order automatically marks it as ready for invoicing.

Customer Invoicing Process



A sales order shipment automatically creates a pending invoice. While in the pending status, changes can be made to fields such as credit terms, commission percentage, price, and discount.

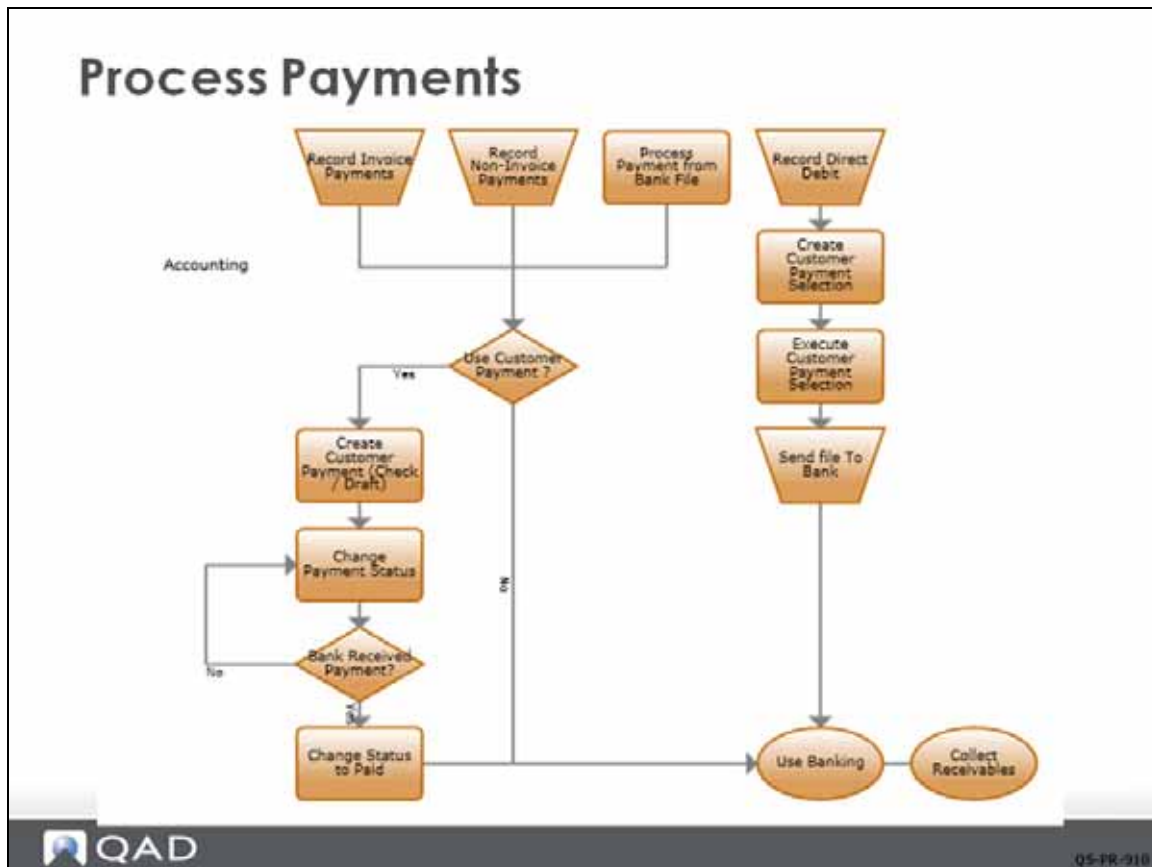
After a pending invoice is reviewed, it can be posted and printed. Post and print are combined in QAD EE; only a posted invoice can be printed. However, a preview function lets you see what the invoice looks like before you print it. You can select invoices to process by specific sales order number or range of numbers, or by a shipping date or range of dates. You can also consolidate multiple orders into one invoice. The date on the invoice is the system date unless you change it.

Posting assigns a number to the invoice based on daybooks and daybook sets defined during financial setup. Daybooks support assigning different invoice sequence numbers for each site, and different numbers for sales invoices and strictly financial invoices.

The post function updates the customer's open account balance and also updates GL account balances for Sales and AR, salesperson quota and commission history, sales tax journals and sales analysis history. Posting deletes complete sales orders. However, you can use invoice history to reviewing problems, configured product information, or reprinting invoices.

If the customer disagrees with any aspect of the invoice, a correction invoice can be created, which is linked to the original invoice, and then printed and posted to correct account balances and maintain an audit trail of changes.

Process Payments



The AR features of QAD Enterprise Financials handle all types of payment instrument including checks, drafts, credit card, promissory note, and direct debits, and both paper and electronic payment formats.

For payment instruments other than direct transfer, you typically use Customer Payment and Customer Payment Selection functions to complete the payment process. These functions let you process a payment through a series of statuses, with postings to payment accounts for each status change. In this way, the payment is fully recorded in the AR sub-ledger, from allocation of the payment to an invoice to acknowledgement from the bank that the payment amount has been transferred to your bank account.

Direct debit (transfer) payments can be processed entirely electronically with bank files. You use banking functions to record the payments in your bank account and allocate the payment to invoices.

See the training guides for Enterprise Financials for further details on AR payments.

Example

In the following example, QMI's Sales Department follows these steps:

- Review settings for customer Pacific Health Care Systems.
- Define settings in Sales Order Control.
- Enter a sales order for 5 medical ultrasound units sold to Pacific Health Care Systems at \$2500.00 per unit.
- Print the sales order and packing list.
- Ship 5 medical ultrasound units to Pacific Health Care Systems.
- Review the inventory detail and transactions created.

The Accounts Receivable Department then:

- Review the pending invoice from the sale; then post and print it.

Review Customer Record

Review Customer Record

Customer Data Maintenance X

Go To • Actions • Copy • Print • Preview • Attach •

Customer Address

Customer: 10C1003 Business Relation: 10-C1003
 Name: Pacific Health Care Systems Active: ☒
 Address: 600 Calle de Los Caminos Added: 2/8/2010
 Address:
 Address:
 City: Los Angeles State: CA Post: 90212 Format: After
 Country: USA - TAX PURPOSE USA County: Los Angeles
 Attention: Casey Hohman [?]
 Telephone: [?]
 Fax: [?]

Customer Data

Sort Name: Pacific Health Care Systems Type: DIST
 Salesperson: 1005103 Multiple: ☐ Region: 15
 Ship Via: FEDX
 Resale:
 Remarks:

Customer Data

Partial OK: ☒
 Discount To:
 Fixed Price: ☒
 Daybook Set: 10SALES
 Class: DIST
 SIC:
 Invoice by Authorization:
 RSS Calendar Option: 1 Customer/Shop
 Non-Sales Order Price List:

QAD Q5-FR-320

Before QMI's Customer Service Representative (CSR) can enter a sales order, a customer record must exist in the system. The Finance Department has already set up the basic customer data as it relates to accounting. Now the CSR reviews the data in Customer Data Maintenance (2.1.1) and adds sales or service specific information such as contact names and phone numbers and region or type codes if needed. The CSR can also specify default sales persons and the site code from which QMI normally ship to this customer.

Several additional frames exist in Customer Data Maintenance that let you set defaults for sales order processing. For example, you can indicate that this customer accepts partial shipments and whether fixed pricing is to be used. Since these are default settings, each sales order can be changed as required.

Review Customer Record

Customer Credit Data

Disc Pct: Terms: 2M Last Sale:

PD Required: ☐ Bill To:

Address Tax Data

Taxable: ☐

Tax Zone: USA-CALA

Tax Class:

Tax Usage:

Tax In: ☐

Tax ID - Federal:

State/VAT ID:

Customer Freight Data

Freight List:

Min Frt Wt: KG

Freight Terms:

Enterprise Material Transfer Data

EMT Type:

Customer Shipping LT:

Confirmed EMT SO:

EMT Credit Flow:

Q5-PR-930

When you click Next, a tax information window pops up. Tax data is set up by Finance and rarely changed during sales order processing.

QMI Finance has entered customer credit data for Pacific Health Care Systems with terms of 2M (payment is due in two months). You can also see that the bill-to address code is the same as the customer sold-to address code.

If QMI used predefined freight rate tables and freight lists and or freight terms, they would enter the data in this frame for this customer. Freight lists are covered in detail in the training guide on sales order management.

The last frame in Customer Data Maintenance is for setting up Enterprise Material Transfer (EMT), also called back-to-back orders. This functionality is also covered in detail in its own training course.

Define Control Settings

Define Control Settings

Sales Order Control

Go To Actions Copy Print Preview

Use Which Calc for Qty Available to Allocate: 1

Allocate Sales Order Lines Due in Days: 10 (0 for no allocations)

Limit Allocate to Avail Only: ☒ Detail Allocations: ☐

ATP Enforcement Enabled: ☐ ATP Horizon: 15

Family ATP Calculation: 1 Calculate Promise Date: ☒

Pick Only Allocated Lines: ☒ Sales Order Prefix: 10S

Are Sales Orders Printed: ☒ Next Sales Order: 10000

Keep Booking History: ☒ Integrate with SA: ☒

Shipping Lead Time: 1 Integrate with T&M: ☐

Sales Order Header Comments: ☐ Confirmed Orders: ☒

Sales Order Line Comments: ☐ Fiscal Start Month: 1

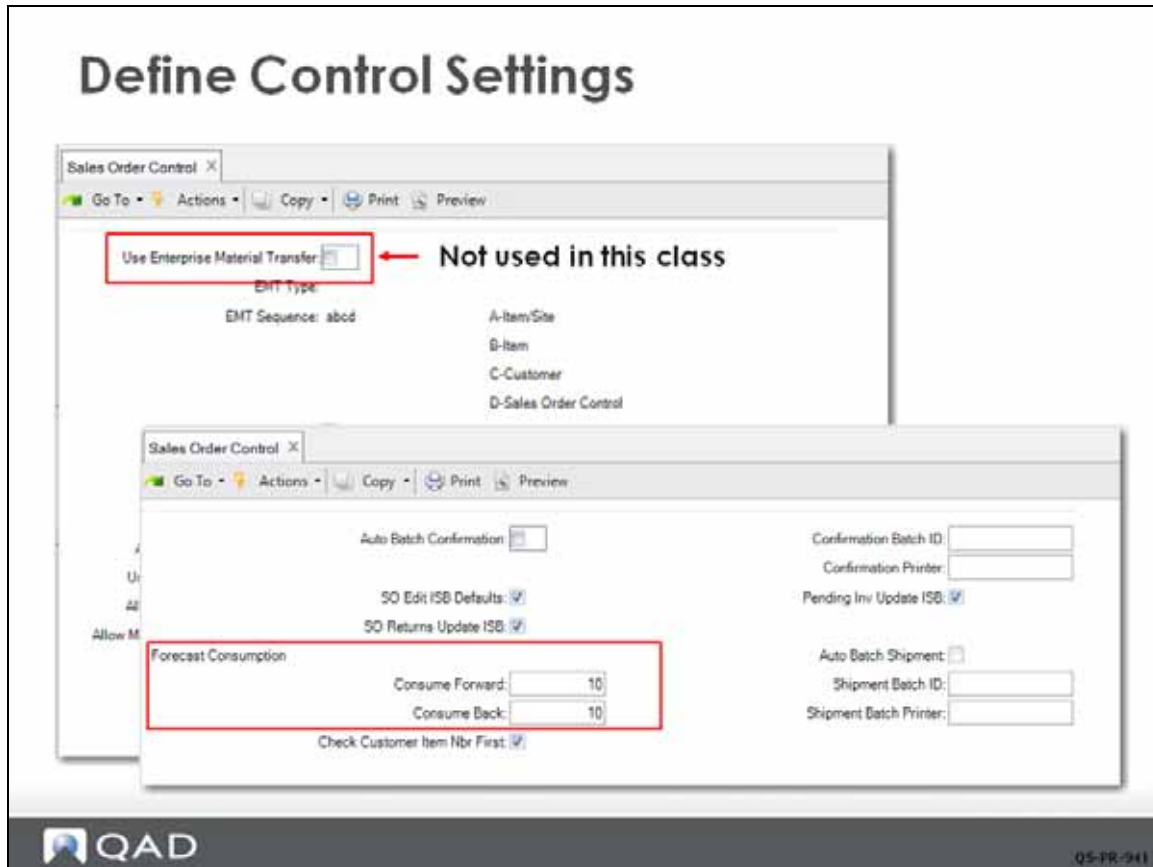
Default to Primary Ship-To: ☐ Ln Format S/M: Single

Next Batch: 00000326 FOB:

QAD QS-FR-346

In Sales Order Control (7.1.24), QMI has specified several standards and default settings pertaining to its sales orders:

- The default value for allocations in Sales Order Maintenance is general, since Detail Allocations is not selected.
- Sales orders have a prefix of 10S and the next number to be issued is 10000. (Your database may have a different starting number.)
- Sales order data is integrated with the Sales Analysis (SA) module because Integrate with SA is selected.
- On new sales orders, the default value will be confirmed for shipment since Confirmed Orders is selected.
- The default format for sales order line-item entry is Single (instead of Multiple), which lets QMI customize due dates, sites, tax status, and other information for each line item.



The next frame in Sales Order Control is used to complete the setup for Enterprise Material Transfer, which is covered in a separate training course.

In the final frame of Sales Order Control, QMI has set forecast consumption to consume forward 10 periods and back 10 periods. How this is used by the system is discussed in “End-Item Planning: Forecast Consumption” on page 354.

Enter Sales Order Header

QMI's CSR enters a sales order for Pacific Health Care Systems (10C1003) in Sales Order Maintenance (7.1.1).

The CSR lets the system generate the sales order ID, which has a prefix of S10 based on the Sales Order Control setting. Other information defaults from the Sales Order Control also, such as site 10-100 and Confirmed for shipment (checked). The credit terms default from the customer record set up by Finance in Customer Create.

Some header elements, such as some date fields, Site, and Confirmed, become default values for line items; these can be changed during line-item entry. The system uses six date fields:

Order Date. The date an order is created; by defaults the system date but can be changed.

Required Date. The date the customer wants the items.

Promise Date. The date you say the customer can have the items.

Due Date. The real due date. In the case of a late order, the due date will be later than the promise date.

Perform Date. The date you will be held to for shipping performance. This is normally the same as promise date. This can change if the customer changes required date.

Pricing Date. Normally the order date, could be the due date. Used by date range based price lists to price items based on the price on a given date.

Enter Sales Order Freight Data

Enter Sales Order Freight Data

Freight Data

Salesperson 1: 10SP01

Multiple: ☐

Commission 1: 5.00%

Freight List: 10FRT KG

Frt Min Wgt: 1

Freight Terms: ADD

Calculate Freight: ☐

Display Weights: ☒

Entered By: mfg

Consignment: ☐

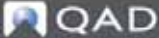
Consume Forecast: ☒

Detail Allocations: ☐

Allocate Days: 10

Comments: ☐

Import/Export: ☐

 QAD

Q5-FR-361

Clicking Next to advance through the sale order displays the pop-up for taxes, then the screen for freight and other defaults from Sales Order Control. Here you can change Consume Forecast, Detail Allocations, and Allocate Days if necessary.

Enter Sales Order Line

Enter Sales Order Line

Sales Order Maintenance X

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Header

Order: 10S1003 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	5.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound

Loc: 110 Site: 10-100

USD Cost: 1,805.45157

Lot/Serial:

Qty Allocated: 5.0

Qty Picked: 0.0

Qty Shipped: 0.0

Qty to Invoice: 0.0

Salesperson 1: 10SP01

Commission 1: 5.00%

Category:

Fixed Price: ☒

Sales Acct: 4010 mech ADM

Disc Acct: 4200 Mech

Confirmed: ☒

Required: 4/17/2012

Promised: 4/17/2012

Due Date: 4/17/2012

Perform Date:

Pricing Date: 4/10/2012

Multiple: ☐

Credit Terms Int: 0.00

Ship Type:

UM Conversion: 1.0000

Consume Fcst: ☒

Detail Alloc: ☐

Taxable: ☐

Freight List: 10FRT

Comments:

QAD

Q5-FR-370

The CSR has entered an order for medical ultrasound units (item 01010); the list price of \$2500.00 defaults from information entered in the cost frames of Item Master Maintenance. The remaining information defaults from values previously entered in the sales order header, Sales Order Control, or Item Master Maintenance.

After completing line 1, the system automatically goes to line 2. Since only one line is needed for this order, the CSR exits the next line by clicking End Lines, and then clicking Trailer to display the trailer frame.

Enter Sales Order Trailer

Enter Sales Order Trailer

Sales Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Order: 1051002 Sold-To: 10C1003 Bill To: 10C1003 Ship-To: 10C1003

Trailer

Non-Taxable:	12,520.53	Currency: USD	Line Total:	12,500.00
Taxable:	0.00		Discount:	0.00
Tax Date:		Freight	20	20.53
Containers:	0.00	Freight	20	0.00
Line Charges:	0.00	Special	30	0.00
View/Edit Tax Detail			Total Tax:	0.00
			Total:	12,520.53

Trailer Information

Print Sales Order: ☒

Print Pack List: ☒

Print Inv Hist: ☒

EDI Inv Hist: ☐

Partial OK: ☒

Prepaid: 0.00

FOB Point:

Ship Via: FEDX

SOL:

QAD

Q5-FR-300

The trailer frame is where the system calculates taxes and freight when these features are being used. You can also add any special service or other charges that apply to the entire order rather than a line item.

Note Three trailer codes can be displayed on the trailer. The codes are set up in Trailer Code Maintenance (2.19.13) where they are linked to the appropriate GL accounts. You can set up as many trailer codes as you need but only three can be displayed at a time.

In this example, you can see that a freight charge has been added to the order total.

The lower frame of the trailer record has check boxes to print the sales order and the packing list. You can also maintain the revision level of the sales order to keep track of customer changes to the order. If Finance puts the customer on credit hold, the Action Status field will have a value such as H for hold.

Print Sales Order

Print Sales Order

Sales Order Print

Go To Actions Copy Print Preview Attach

Sales Order: 10S1002 To: 10S1002

Sold-To: 10C1003 To: 10C1003

Order Date: To:

Language ID: US To:

Print Features and Options: ☐

Entity Code: 10-100

Form Code: 1

Print Sales Order Trailer: ☐

Discount Detail: None

Discount Summary: None

Increment Order Revision: ☒

Print Additional Line Charges: ☐

Update: ☒

Output: PAGE

Batch ID:

QAD QS-FR-290

Because the CSR selected Print Sales Order in Sales Order Maintenance, the sales order is available to print in Sales Order Print (7.1.3). As you can see from the slide, you can select sales orders for printing based on a wide selection criteria.

In this example, by specifying one sales order number in both the From and To fields, only the order just created is selected.

You can also direct the output to Page, which lets you view the sales order on your monitor.

Sales Order Print

Sales Order Print

Sales Order Print - 4/11/2012 8:...
X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950
USA - TAX PURPOSE

Sold-To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Attention: Casey Hohman
Telephone:

Salesperson(s): 10SP01

Credit Terms: 2M
2 months after month end of invoice date
Resale:
Remarks:

SALES ORDER

Order Number: 1051002 Revision: 0
Order Date: 04/10/12 Page: 1
Print Date: 04/11/12

Ship-To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Attention: Casey Hohman
Telephone:

Purchase Order:
Ship Via: FEDEX
FOB Point:

Ln	Item Number	Due Date	Qty	Open UM	Price	Extended Price
1	01010 Medical Ultrasound	04/17/12	5.0	EA	2,500.00	12,500.00
USD Total:						12,500.00

Q5-PR-1000

A copy of the sales order is shown in this example.

After printing the sales order, the system sets Print Sales Order in Sales Order Maintenance to No. To reprint the order, set Print Sales Order to Yes and reprint using Sales Order Print.

Exercise 10-1: Create a Sales Order

In the following exercise, you:

- Review a customer record.
- Modify Sales Order Control.
- Add a sales order record.

Review a Customer Record

- 1 Use Customer Data Maintenance (2.1.1) to review the customer record for Pacific Health Care Systems (10C1003).

Information entered includes site code (10-100) and credit terms of 2M.

Modify Sales Order Control

- 2 Use Sales Order Control (7.1.24) and set the following fields:

Field	Data
Found in First Frame	
Detail Allocations	No (unchecked)
Sales Order Header Comments	No (unchecked)
Sales Order Line Comments	No (unchecked)
Line Format	Single
Sales Order Prefix	System Default
Next Sales Order Number	System Default
Integrate with SA	Yes (checked)
Integrate with TrM	No (unchecked)
Confirmed Orders	Yes (checked)
Found in Third Frame	
SO Edit ISB Defaults	No (unchecked)

Accept other defaults.

Click Next to save changes.

Add a Sales Order Record

- 3 Use Sales Order Maintenance (7.1.1) to add a sales order.

Header information:

Field	Data
Order	<blank>; click Next
Order:	Record the number for your reference
Sold-To	10C1003; click Next
Bill-To and Ship-To	Use default; click Next
Order Date	Default, today's date

Field	Data
Credit Terms	2M (defaults from customer record)
Site	10-100

Accept remaining default values.

Line 1 information:

Field	Data
Item	01010
Site	10-100 (defaults from header)
Quantity Ordered	5
List Price	2,500.00 (defaults from item master)

Accept remaining default values and click Next through the several frames. Continue to click Next and respond Yes when prompted to confirm update.

The system is now ready for you to enter information for line 2. You are not entering a second line. Click End Lines then click Trailer.

Trailer information:

Field	Data
Print Sales Order	Yes

Accept remaining default values.

- 4 Use Sales Order Print (7.1.3). Enter your sales order number in the Sales Order and To fields and direct the output to Page. Review your sales order. Is this what you expect?

Print Sales Order Packing List

Print Sales Order Packing List

Sales Order Packing List X

Go To Actions Copy Print Preview

Due Date: To:

Sales Order: 1051002 To: 1051002

Ship-To: To:

Language ID: To:

Site: To:

Entity Code: 10-100

Print Only Lines to Pick: ☒

Override Partial OK Flag: ☐

Print Features and Options: ☐

Print Negative Quantities: ☐

Form Code: 1

Update: ☒

Note: Only orders with an action status of blank will print

QAD Q5-PR-1018

To print the packing list, the CSR uses Sales Order Packing List (7.9.13).

Note QAD EE uses the terms packing list and picklist interchangeably.

The shipping clerk can use the picklist to pick the items from inventory for shipment and it can then be included with the shipment as a packing list. Alternatively, two copies of the packing list can be used if you need to keep a hard copy for internal purposes.

Because the CSR has selected Update, after printing the picklist, the system updates the values displayed in Sales Order Maintenance for the quantity allocated and quantity picked.

Set Update to No to print a simulated picklist for review without updating the sales order record.

Sales Order Packing List Print

Sales Order Packing List Print

Sales Order Packing List - 4/11_ X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950
USA - TAX PURPOSE

Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Salespersons: 10SP01
Credit Terms: 2M
2 months after month end of invoice date
Remarks:

PACKING LIST

Order Number: 10S1002 Page: 1
Order Date: 04/10/12
Print Date: 04/11/12

Ship To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Purchase Order:
Ship Via: FEDEX
FOB Point:

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	Open UM	Due Shipped
1	01010 Revision: 0 Medical Ultrasound	10-100		5.0	EA	04/17/12
		010	01010-1211-12	1.0	()	
		010	01010-1211-2	1.0	()	
		010	01010-1211-3	1.0	()	
		010	01010-1211-4	1.0	()	
		010	01010-1211-5	1.0	()	

Q5-PR-1020

The picklist shows what items to pick to fill an order and what site or location to pick them from.

- If you created detailed allocations in Sales Order Maintenance—including lot/serial numbers and lot reference numbers—this information appears on the picklist.
- If you performed a general allocation for the sales order, the system automatically converts the general allocation to a detail allocation when it prints the picklist.

Since the medical ultrasound is a serial-controlled product, the system has detail allocated the specific serial numbers to be picked for this order.

Ship Sales Order

Ship Sales Order

Sales Order Shipments

Go To Actions Copy Print Preview

Order: 10S1002 Ship Allocated: ☐ Sold-To: 10C1003 Site:
 Effective: 4/11/2012 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Sales Order Line Items

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder Site
1	01010		0.0	5.0	5.0	0.0 10-100

Line: Cancel B/O ☐ Site: Loc:
 Quantity: Lot/Serial:
 Item Number: UM: Reference: Multi Entry: ☐
 Description:

QAD QS-PR-1030

To record the shipment of the order, approve the order for invoicing, and reduce the quantity on hand for the 5 medical ultrasound units shipped, the CSR uses Sales Order Shipments (7.9.15). Because QMI used a picklist to generate detail allocations for this order, the CSR accepts the default for Ship Picked (Yes).

The middle frame (Sales Order Line Items) shows the open lines on this sales order ready for shipment. This order has one line for a quantity of 5. If necessary, modifications can be made to this line in the bottom frame. For example, if the location has changed, the new location can be entered here.

All items are picked and ready to ship in this example. Clicking Next displays a prompt asking if you want to see the inventory transaction. Click Yes and the system displays the complete inventory transaction.

Ship Sales Order: Review Lines

Ln	Item Number	Site	Location	Lot/Serial	Quantity UM
1	01010	10-100	010	01010-1211-12	1.0 EA
1	01010	10-100	010	01010-1211-2	1.0 EA
1	01010	10-100	010	01010-1211-3	1.0 EA
1	01010	10-100	010	01010-1211-4	1.0 EA
1	01010	10-100	010	01010-1211-5	1.0 EA

The system displays the items to be shipped for final review. Notice that these are the serial numbers that displayed on the packing list.

Click Next and a dialog box displays asking if all information is correct.

If the information is not correct, click No and the system returns to the previous frame where you can make corrections. Click Yes to advance to the trailer frame.

Ship Sales Order: Trailer

Ship Sales Order: Trailer

Sales Order Shipments: X

Go To Actions Copy Print Preview

Order: 10S1002 Ship Allocated: ☐ Sold-To: 10C1003 Site:
 Effective: 4/11/2012 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Non-Taxable:	12,520.53	Currency: USD	Line Total:	12,500.00
Taxable:	0.00	0.00%	Discount:	0.00
Tax Date: 4/11/2012		Freight	20	20.53
Containers: 0.00		Freight	20	0.00
Line Charges: 0.00		Special	30	0.00
		Total Tax:		0.00
		Total:		12,520.53

View/Edit Tax Detail: ☐

Ship Via: 2500 Daybook Set: 10-SALES
 Ship Date: 4/11/2012 ☒ Ready to Invoice
 BOL:
 Remarks:

QAD QS-PR-1050

When you exit the line-items frame, the system brings up the trailer frame for taxes, freight, or other charges that apply to the entire order. These are the same values that displayed in Sales Order Maintenance.

The CSR selects Ready to Invoice and clicks Next, which completes the sales order shipment process.

Review Inventory Detail

Review Inventory Detail

Inventory Detail by Item Browse

Actions: Print Add to Favorites Chart Chart Designer Refresh New Edit Edit

Search (1)

Item Number starts at 01010 Search Clear All

Viewing 1 - 57 of 57 Records per page: 100

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status
01010	10-100	12.0	1.0	010	1234		YYN
01010	10-100	12.0	1.0	010	1235		YYN
01010	10-100	12.0	1.0	010	1236		YYN
01010	10-100	12.0	1.0	010	1237		YYN
01010	10-100	12.0	1.0	010	1238		YYN
01010	10-100	12.0	1.0	010	1239		YYN
01010	10-100	12.0	1.0	010	1240		YYN
01010	10-100	12.0	1.0	010	1241		YYN
01010	10-100	12.0	1.0	010	1242		YYN
01010	10-100	12.0	1.0	010	1243		YYN

QAD QS-PR-1068

Use Inventory Detail by Item Browse (3.2) to see how many medical ultrasound units are remaining in inventory. This shows 12 units left in the 010 location at site 10-100.

Transactions Detail Inquiry

Transactions Detail Inquiry

Transaction: 197889 Display E-Signature Details: ☐ Output: [PAGE](#)

Tran Nbr: 197889	Order: 10S1002	2326385
Trans Type: ISS-SO	Revision: 1	
Date: 4/11/2012	Item Number: 01010	
Time: 12:08	Description: Medical Ultrasound	
Effective Date: 4/11/2012	Unit of Measure: EA	
Remarks:	Address: 10C1003	
User ID: mfg	Name: Pacific Health Care	
Program: sosoia.p	SO/Job: 10S1002	
Currency: USD	Ship Type:	
Qty Change: -1.0	Price: 2,500.00	
Shipper Number:	IMC:	
Ship Date: 4/11/2012		

QAD QS-PR-1070

Transaction Detail Inquiry (3.21.1) provides information on the transaction number and type (ISS-SO), the program that created the transaction (sosoia.p), the user who created this transaction, and the source of the transaction (10S10008). Other key information is shown, such as site and location and inventory data.

The most recent transaction displays by default. Notice that the Qty Change displayed is –1. Because the items shipped were serial-controlled, individual transactions were created for each item, rather than one transaction for a quantity of 5.

Click Next to review additional detail including the GL transactions.

Transactions Detail Inquiry: GL Effects

Transactions Detail: GL Effects


Transactions Detail Inquiry

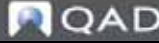
04/11/12

Transaction: 197889 Display E-Signature Details: No Output: PAGE

Tran Nbr: 197889	Order: 1051002	2326385
Trans Type: ISS-SO	Revision: 1	
Date: 04/11/12	Item Number: 01010	
Time: 12:08	Description: Medical Ultrasound	
Effective Date: 04/11/12	Unit of Measure: EA	
Remarks:	Address: 10C1003	
User ID: mfg	Name: Doreen, Muelich, C...	
Program: sosois.p	SD/Job	ISS-SO
Currency: USD	Ship Type	Debit Acct: 5300 Mech
Qty Change: -1.0	Price	Cr Account: 1500 Mech
Shipper Number:	Amount: 0.00	
Ship Date: 04/11/12	GL Reference:	Reference ID:

Site: 10-100 Location: 010 Lot/Serial: 01010-1211-4 Inv Status: Y-Y-N Supplier Lot: Grade/Assay:	Inventory Data Begin B... Quantity C... Qty Begin L... Loc Qty C... Expire	Cost Data Material: 1.219.92 Labor: 583.67 Burden: 1.86157

Debit Acct: 5400 Mech Cr Account: 1500 Mech Amount: 0.00 GL Reference:	ISS-SO Reference ID:
Debit Acct: 5010 Mech Cr Account: 1500 Mech Amount: 1.219.92 GL Reference: 2012/ISS-SO000000010	ISS-SO Reference ID: IC120411000010
Debit Acct: 5100 Mech Cr Account: 1500 Mech Amount: 583.67 GL Reference: 2012/ISS-SO000000011	ISS-SO Reference ID: IC120411000011
Debit Acct: 5200 Mech Cr Account: 1500 Mech Amount: 1.86 GL Reference: 2012/ISS-SO000000012	ISS-SO Reference ID: IC120411000012



QS-PR-1000

The GL effects of the sales order shipment are shown in the Transactions Detail Inquiry output. Notice that each of the GL transaction numbers starts with the letters IC. This indicates that these are inventory transactions. Additional transactions are generated when the invoice is posted.

This information is similar to what displayed earlier when a purchase order was received (see page 255).

The reference ID is the number needed to track this transaction in the General Ledger.

- IC indicates the transaction was generated by Inventory Control.
- Next is a date code 120411.
- The final segment is a sequential number, in this case 11.

The GL Reference shows the year (2012) and daybook (ISS-SO) plus sequence number.

Note These GL transactions created for the inventory issues are maintained in an unposted transaction table and periodically (typically daily) posted to the GL using Operational Transaction Post. See “Operational Transaction Flow” on page 113 for details. Invoice Post and Print directly updates the AR sub-ledger.

Review Pending Invoice

Review Pending Invoice

Pending Invoice Register 04/11/12 12:23:37 Page:1

10USA

Invoice Number: Name: Bill To: Name: Sold-To:
 Salespsn: Pacific Health Care Systems Pacific Health Care Systems
 10SP01 10C1003 10C1003

Tax Environment: US/NJ Tax Usage:

Sales Order: 1051002 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 04/10/12 PO:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Backorder	TaxUsage	Price	Extended Price	Extended Margin
1	01010	EA	4010	mech	ACM	1.0	no	2,500.00	12,500.00	3,472.74
Medical Ultrasound										
Lot/Serial Numbers Shipped: Qty Expire Reference										
01010-1211-12 1.0										
01010-1211-2 1.0										
01010-1211-3 1.0										
01010-1211-4 1.0										
01010-1211-5 1.0										
Non-Taxable: 12,520.53 Currency: USD Line Total: 12,500.00										
Taxable: 0.00 0.00% Discounts: 0.00										
Tax Date: 04/11/12 Freight 20 : 20.53										
Containers: 0.00 Freight 20 : 0.00										
Line Charges: 0.00 Special 30 : 0.00										
Total Tax: 0.00										
Total: 12,520.53										
USD Report Totals: 12,520.53 12,500.00 3,472.74										

QAD QS-PR-1090

Shipping a sales order automatically generates the information required for an invoice, referred to as a pending invoice. Use Pending Invoice Register (7.13.2) to produce a list of pending invoices, based on selection criteria such as a range of sales orders, ship-to addresses, bill-to addresses, or ship dates. This list shows the detail of what will appear on the invoice.

This example shows the pending invoice for the sales order just shipped. Notice that the invoice number in the listing is blank. That is because it is assigned when the invoice is posted and printed.

You can use Preview Invoice Print (7.13.3) to see an exact image—with the exception of a blank invoice number—of what the printed copy of the invoice will look like when you print and send a document to the customer.

Additional Notes

The Extended Margin of 11,303.76, is the unit margin multiplied by the quantity shipped (2260.752×5 units shipped). The unit margin (2260.752) is the price (2500.00) less manufacturing cost (239.248).

The invoice total of 12,520.53 is calculated by multiplying the price per medical ultrasound (2500.00) by the total quantity (5) and adding the freight and trailer charges, if any.

Invoice Post and Print

The company's customer service supervisor or Accounts Receivable (AR) administrator uses Invoice Post and Print (7.13.4) to produce an actual invoice from the pending invoice and post the transaction to the general ledger. The invoice number is assigned by the print function.

The first frame of the selection screen lets you select sales orders by the usual range of values. Be sure to check the Print Invoice box when you are ready to print hard-copy invoices. Several other frames display additional print options.

Notice the two printer choices for the two types of output from this function:

- The invoice post output is a report that could be sent to a printer with normal paper in the AR department.
- The invoice print output (the actual invoices) could be sent to a printer with letterhead or preprinted invoice paper.

You can also choose Page to direct the output to your monitor.

Invoice Post and Print Sample

Invoice Post and Print
10USA
04/11/12 12:41:36
Page:1

Sales Journal Reference: 2012/CINV000000001 AR Batch: 653

Invoice Number	Bill To Name	Sold-To Name	Slipps
2012/CINV000000001	10C1001 Pacific Health Care Systems	10C1001 Pacific Health Care Systems	10SP01

Sales Order: 10S1002 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 04/10/12 PO:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced Backorder	Tax	Price	Extended Price	Extended Margin
1	01010	EA	4010	mech	ADH	5.0	No	2,500.00	12,500.00	3,472.74
Medical Ultrasound										

Non-Taxable: 12,520.53
Taxable: 0.00
Tax Date: 04/11/12
Containers: 0.00
Line Charges: 0.00

Currency: USD
0.00% Discount: 0.00
Freight 20 : 20.53
Freight 20 : 0.00
Special 30 : 0.00
Total Tax: 0.00
Total: 12,520.53

Invoice Post and Print
10USA
04/11/12 12:41:36
Page:2

Sales Journal Reference: 2012/CINV000000001 AR Batch: 653

				Consolidated Dr	Consolidated Cr	
10USACO	1300	Gserv		04/11/12	12,520.53	.00 Invoice 2012/CINV000000001
10USACO	4010	mech	ADH	04/11/12	.00	12,500.00 Invoice 2012/CINV000000001
10USACO	4691			04/11/12	.00	20.53 Invoice 2012/CINV000000001
					12,520.53	
					12,520.53	
					12,520.53	

QAD QS-PR-1130

The output of the invoice post transaction is shown here. Note the invoice number has now been assigned by the system based on criteria set up in the finance system.

The other details in this output are the same as those displayed in the pending invoice register.

If you print the invoice, it will look the same as the draft invoice seen earlier, but with the invoice number added.

Invoice Print or Reprint

Invoice Print or Reprint

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950

USA - TAX PURPOSE

Bill To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Sales Order: 10S1002
Order Date: 04/10/12
Salesperson(s): 10SP01

Credit Terms: 2M
2 months after month end of invoice date

Resale:
Remarks:

I N V O I C E

Invoice: 2012/CINV000000001

Invoice Date: 04/11/12 Revision: 1
Print Date: 04/11/12 Page: 1

Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Ship Date: 04/11/12
Purchase Order:
Ship To: 10C1003
Ship Via: FEDX
BOL:
FOB Point:

Item Number	UM	Shipped	Qty	B/O Tax	Price	Extended Price
01010	EA	5.0	0.0	No	2,500.00	12,500.00
Medical Ultrasound						

*** DUPLICATE ***

Non-Taxable: 12,520.53	Currency: USD	Line Total:	12,500.00
Taxable: 0.00	0.00%	Discount:	0.00
Tax Date: 04/11/12		Freight 20 :	20.53
Containers: 0.00		Freight 20 :	0.00
Line Charges: 0.00		Special 30 :	0.00
		Total Tax:	0.00
		Rounding Trailer Amount:	0.00
		Total:	12,520.53

QS-PR-1135

Note The invoice format used by Invoice Print or Reprint (7.13.12) shown here is the standard provided with the system. Most companies create a custom format or use preprinted forms with the company logo or letterhead.

Since the invoice for the sales order in this example was already printed during invoice post, the system adds the comment DUPLICATE to this printed version.

Posting the invoice has these effects:

- Generates transactions in the Accounts Receivable module and updates the customer's open account balance
- Updates GL account balances for Sales and AR
- Updates salesperson quota and commission history
- Updates sales tax journals
- Updates sales analysis history

At this point responsibility for the collection of the payment is transferred to Accounts Receivable.

Exercise 10-2: Ship and Invoice Sales Order

In the following exercise, you:

- Print a packing list and ship the sales order.
- Review customer balance.
- Post and review the invoice.

Print a Packing List and Ship the Sales Order

- 1 Use Sales Order Packing List (7.9.13) to print a packing list for your sales order. Select Update.

- 2 Use Sales Order Shipments (7.9.15) to record the shipment of the sales order.

When Ship Picked is Yes, the system automatically updates the quantity to ship. You can then modify the quantity that is actually being shipped and the location from where the items were taken.

Field	Data
Line	1
Quantity	5
Site	10-100
Loc	010

Confirm that all information is correct.

- Respond Yes when prompted: Display sales order lines being shipped?
- Respond Yes when prompted: Is all information correct?

Field	Data
Ready to Invoice	Yes

Click Next until the Order field is highlighted, click Back.

- 3 Use Inventory Detail by Item Browse (3.2) to review your inventory. You should see that the inventory has decreased by the amount of the shipment.
- 4 Use Transactions Detail Inquiry (3.21.1) to review the inventory transaction and see which accounts were credited and debited when you shipped the sales order.

Review Pending Invoices and Print an Invoice for the Shipment

- 5 Use Pending Invoice Register (7.13.2) to review the pending invoices outstanding.

This report displays invoices that have not yet been printed and posted. You can also change the selection criteria to show invoices that have printed but not yet posted.

- 6 Use Preview Invoice Print (7.13.3) to review the invoice for your sales order.

Direct the output to Page. This will let you review the invoice without actually printing a hard-copy document that is normally sent to your customer.

Post the Invoice to Accounts Receivable

- 7 Post the invoice using Invoice Post and Print (7.13.4), updating the customer account balance, generating unposted GL transactions, debiting Sales, and updating sales and invoice history.

Field	Data
Print Invoice	Yes
Print Lot/Serial Numbers	Yes

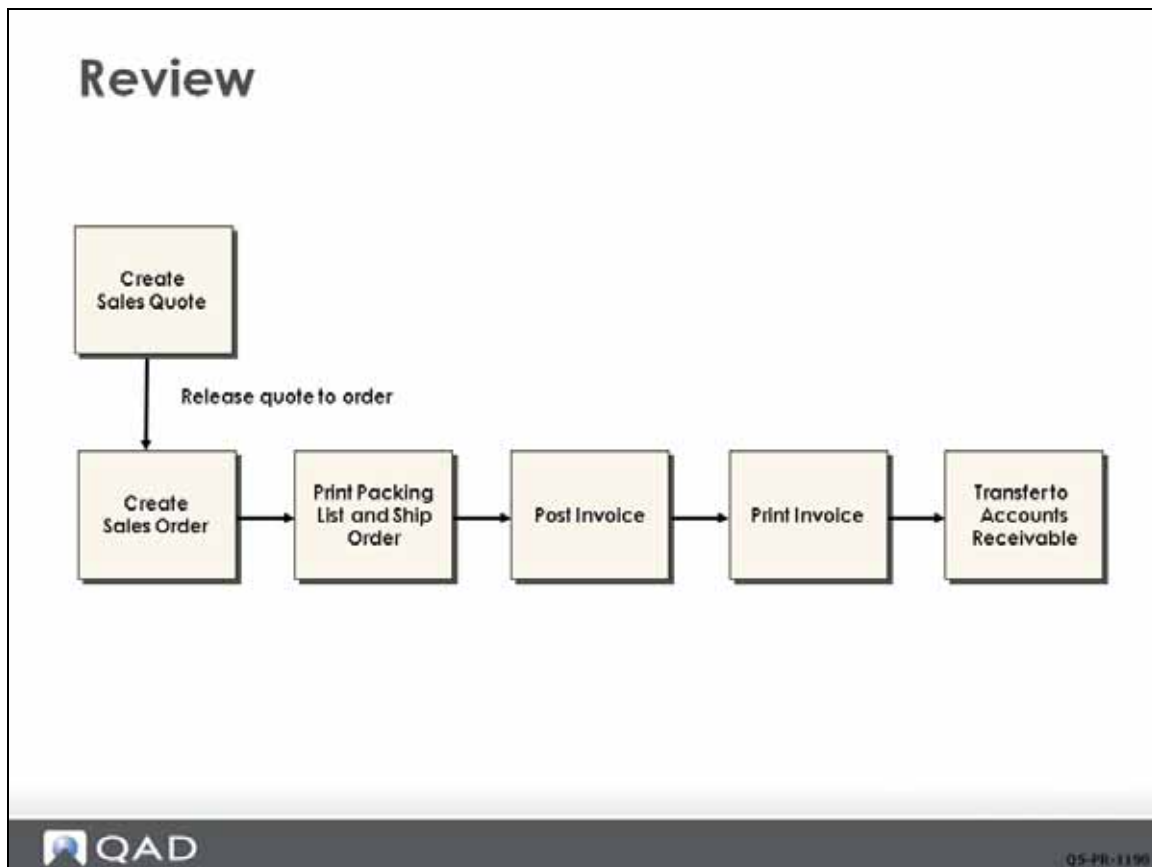
Review a Customer Account (Optional)

To view the updated customer balance in the AR module may require some setup:

- The balance daemon must be running. This is a background process that monitors operational transactions that affect customer balances and updates them in the financial records. You can start it using Balance Daemon Start (36.14.16.2.4) in the System Administration menu.
 - The Crystal Reports runtime must be installed on your computer. If it is not, you will be prompted to install it before the report runs.
- 8 Use Customer Account Activity Report (27.17.3) to see customer's 10C1003 open account balance.

Notice the type is I for invoice and the reference is the invoice number.

Review



This chapter showed how a sales order records the customer's intent to buy, listing the items, quantities, price, sales tax, and other charges, and the shipping destination. For Accounts Receivable purposes, the order also records the remit-to address, credit terms, and whether the customer is approved for shipment.

Once the customer order is shipped, a sales invoice is generated. In QAD EE, an order that is marked as ready for invoicing is called a pending invoice. The invoice communicates the customer's obligation to pay and is sent to the bill-to address on the sales order. Usually, the pending invoice register is reviewed and corrections are made before the invoices are posted and then printed and sent to customers. Invoices are posted on a regular basis.

Manufacturing Planning

This chapter provides a in-depth picture of the end-to-end manufacturing planning process, from plan to perform, and shows how the concepts introduced in the previous chapters are all used together.

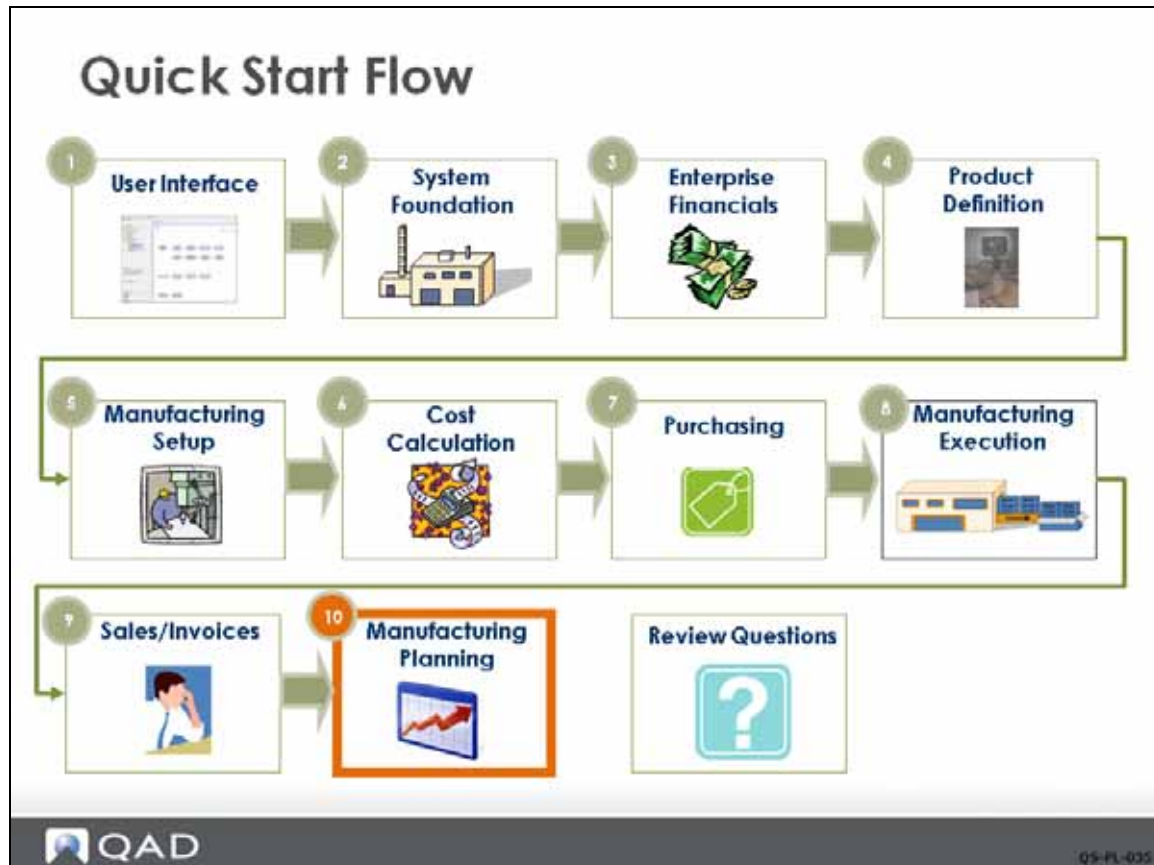
Overview of Manufacturing Planning

Key Concepts

Example

Review

Overview of Manufacturing Planning



Planning ensures the timely, efficient and economic movement of material to the marketplace. Material is probably the most visible element that is planned, but material plans need to be linked to plans for sales, manufacturing, and distribution operations, personnel, plant and equipment. When they are linked, all of these planning elements contribute to the balancing of supply, demand, and resources.

This chapter reviews the interaction of some of these planning elements in the Example section, especially those among purchasing, manufacturing, and sales. Here you will see how the activities you performed in earlier chapters come together and interact in one process from planning, to making the items to shipping the item on a sales order.

Planning is one component of the full QAD Manufacturing suite, which is described in Chapter 4, “Manufacturing Overview,” on page 117.

Chapter Topics

First, the primary components of the planning system are introduced in the Key Concepts section.

- Key Concepts
 - Production Planning
 - Forecasting
 - Master Schedule

MRP and Action Messages

Item Planning Parameters

Planned Orders

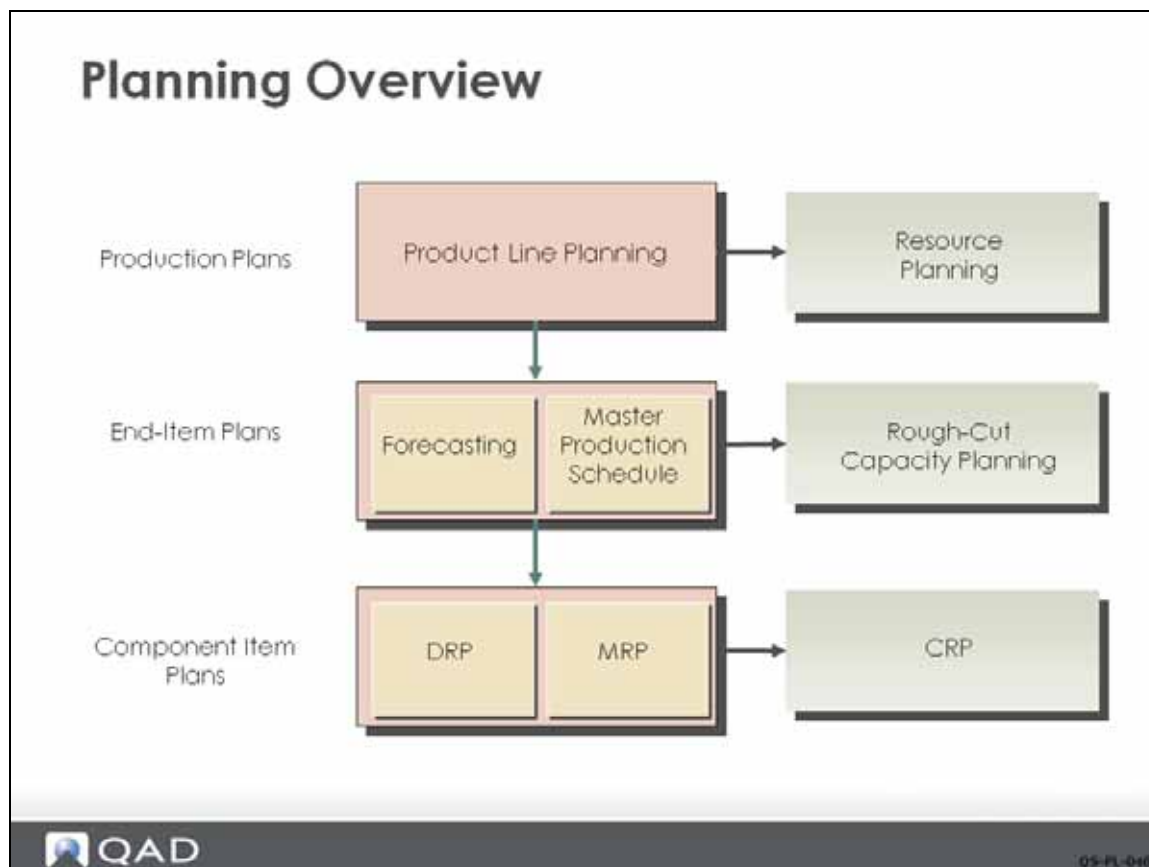
- Example
 - Enter Forecast
 - Exercise
 - Create Sales Order
 - Regenerate MRP
 - Exercise
 - Process Purchase Order (approve planned orders)
 - Process Work Order (approve planned orders)
 - Ship Items on Sales Order and Post Transactions
 - Exercise
- Review

Learning Objectives

When you finish this chapter, you should be able to:

- Provide examples of production plans, end-item plans, and component-item plans.
- Identify the sources of demand that drive the planning process.
- Name the key input to the Master Schedule.
- Explain forecast consumption.
- Describe forward and backward consumption.
- Define the term Time Fence.
- Explain how Order Policy and Order Period are related.
- Enter a forecast.
- Read Master Schedule Summary and Detail Inquiries.
- Read MRP Summary and Detail Inquiries.
- Approve planned purchase and work orders.

Key Concepts



Within a corporation, planning is done at many levels by many different people. QAD EE provides an integrated set of planning tools that are useful at most of these levels. The primary components of the planning system are production planning, end-item planning, and component item planning.

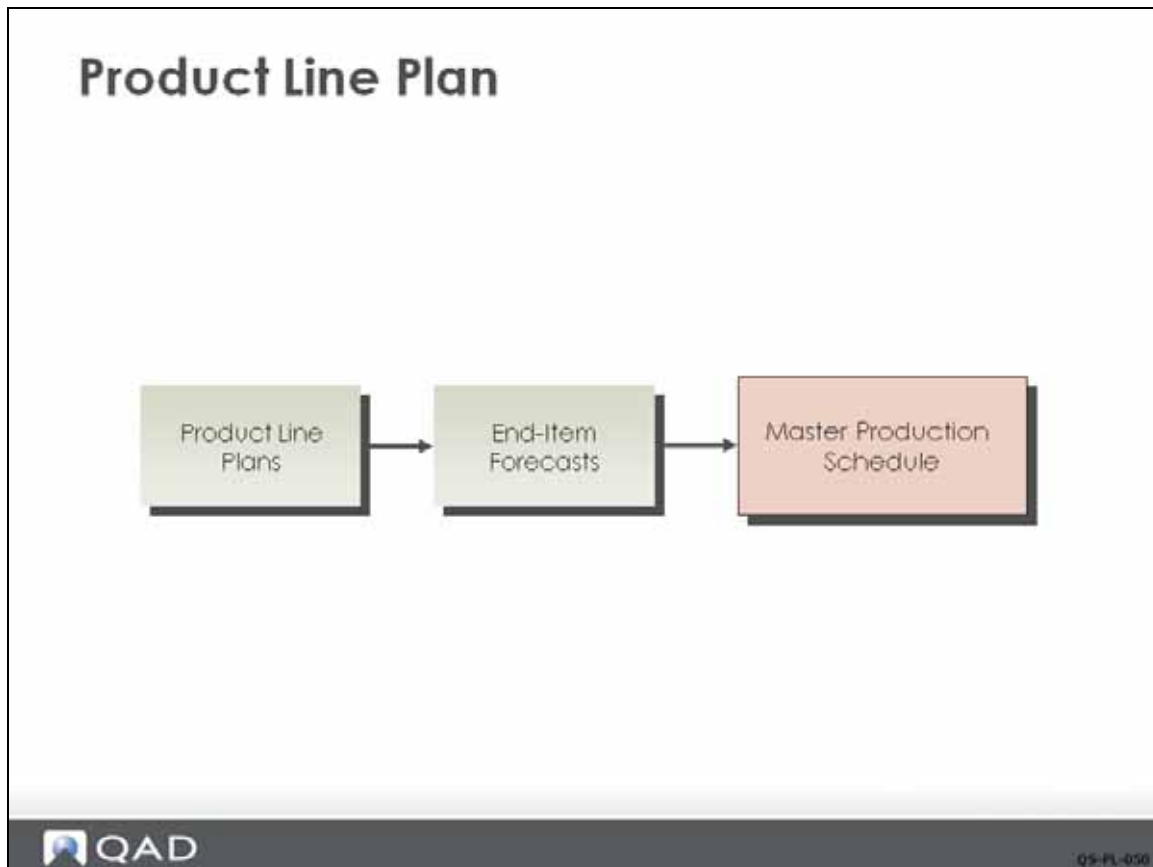
Production Planning. At this level, product line planning functions are used to balance sales forecasts, production forecasts, and income forecasts for an entire product line, while meeting the profit goals established in the strategic plan. Often, these plans are created by different people and product line planning brings them together. Resource planning is used to determine whether you have the resources to meet the plans.

End-Item Planning. Once established, the product line plan is broken down into individual item forecasts. Both actual and forecast demands are reviewed by the Master Scheduler, who sets production levels in response to these demands. Rough-Cut Capacity Planning (RCCP) determines whether you have enough critical resources to meet the master schedule.

Component Item Planning. Material Requirements Planning (MRP) and Distribution Requirements Planning (DRP) both calculate the quantity of raw materials and components needed to support the master schedule. DRP generates planned orders for items to be transferred from another site. MRP generates planned orders for purchased and manufactured items. Capacity Requirements Planning (CRP) determines fairly precisely how this plan loads production resources at your site.

QAD's Planning and Scheduling Workbenches provide access to all of these functions in one place, letting planners easily see the effects of schedule and planning changes.

Production Planning: Product Line Plan

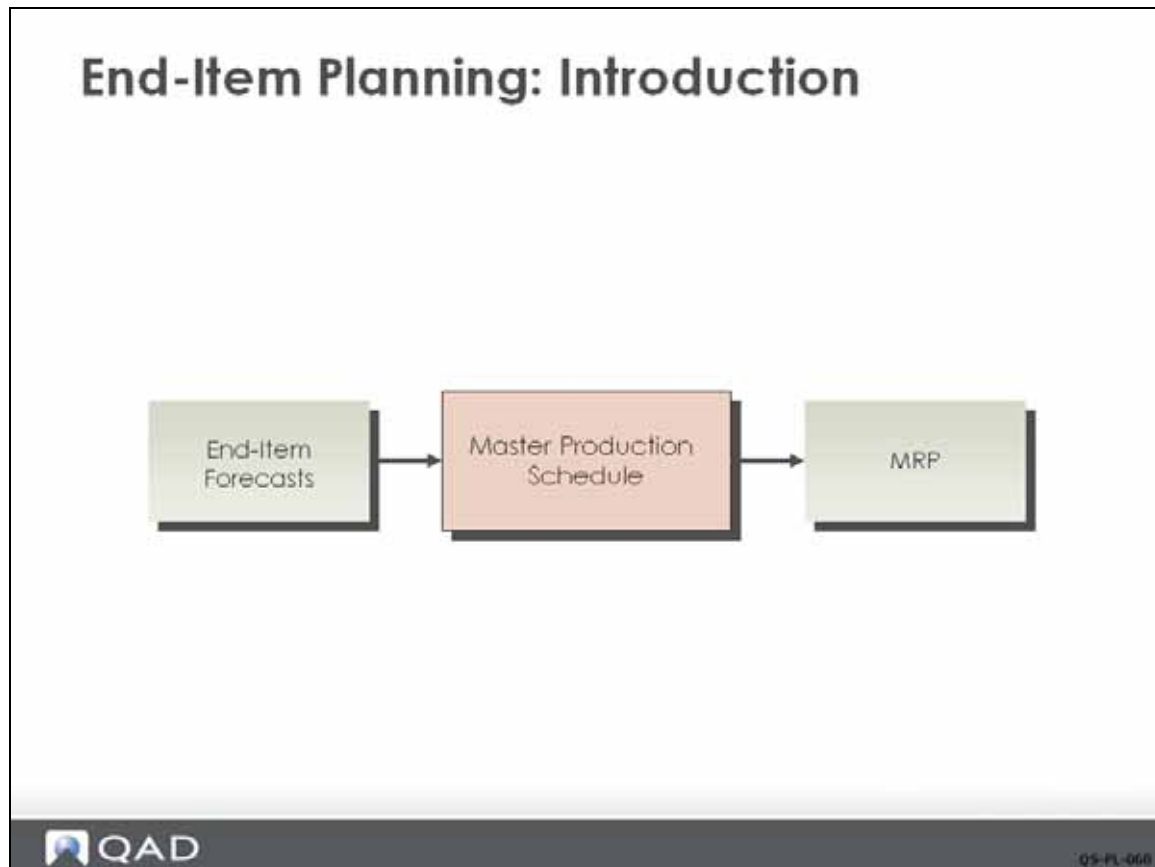


Product line plans generally cover 1 to 3 years, usually shown by months or quarters. They are composed of aggregate forecasts that are converted into end-item forecasts. These detailed forecasts provide input that the master scheduler uses to create a statement of production.

The purpose of a product line plan is to:

- Aggregate forecasts.
- Establish aggregate production goals (aligned to corporate goals).
- Plan efficient and cost effective use of production resources, such as machines and manpower.
- Outline the level of planned manufacturing output and its cost.
- Provide input to a master schedule and rough-cut capacity plan.
- Balance sales forecasts, production forecasts, and income forecasts for an entire product line.
- Determine whether there are enough resources, in aggregate, to meet the plan.

End-Item Planning: Introduction



In QAD EE, end-item planning is done in the Forecast/Master Plan module. It begins with the master scheduler, who estimates the demand for a product and determines how many to produce. The planning horizon should be at least as long as the longest cumulative lead time in the system. Many companies like to plan and forecast 12 to 18 months into the future to ensure adequate resource planning and coverage for seasonal products.

Inputs. The primary inputs to the master scheduling process are actual and forecast demands. Forecast demands are derived from the product line plans but are much more detailed. Unlike product line plans, which express forecasts in terms of thousands of dollars of production for a complete line of items by month, forecasts are expressed in terms of quantities for a specific item and site by week. Products subject to seasonal demand can have forecasts that fluctuate widely from week to week. Seasonal build schedules are used to smooth these requirements, increasing production in advance of anticipated spikes in demand.

Output. The output of the master scheduling process is a detailed plan of the number of end items and the schedule for their production. The check on this plan is the availability of critical resources. If you want to make 50 items next week but your fabricator only makes 25 in a week, you cannot fulfill the plan. Detailed resource planning is done at this stage, looking at the actual schedule and its demands on resources as specified in item resource bills. In many cases, only bottleneck resources are reviewed.

End-Item Planning: Forecasting



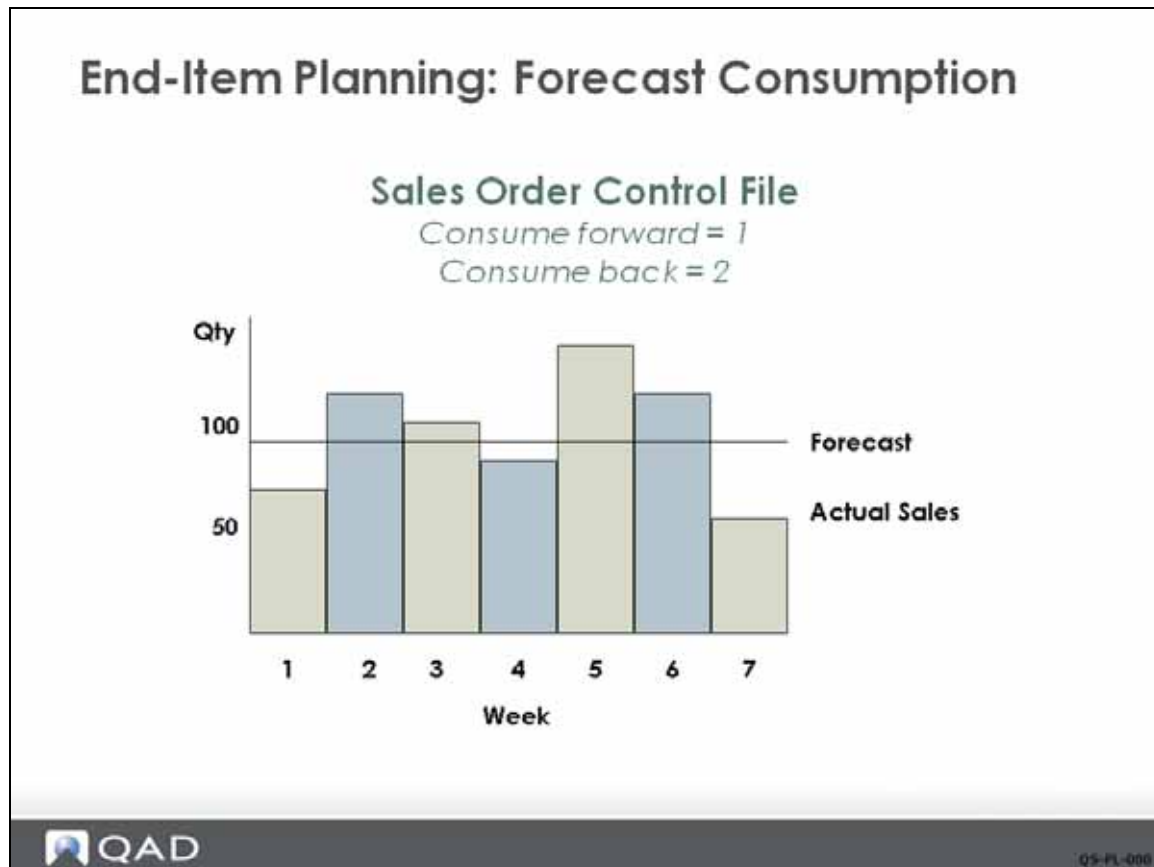
Forecast is an estimate of future demand for an item at a particular site, stated in terms of quantity per week. Forecasts can be an integral part of master scheduling and represent one point of input to the master schedule. QAD EE defines a shipment forecast—the quantity of an item to be shipped (not ordered) that week. Forecasts are normally entered for items subject to independent demand, from sales orders or spares; these include end items, critical subassemblies, and service parts. Dependent demand—for components and raw materials—is calculated from this. The system keeps a running total of the actual quantity to be shipped each week, determined by the due date on the sales order line item or customer schedule.

Abnormal Sales Demand. Some sales order demand cannot be anticipated by the forecast and is considered abnormal. This demand could be generated by major new accounts or windfall orders, such as orders for roofing materials after a hurricane. Since abnormal sales demand was not anticipated by the forecast, it should not consume the forecast. This effectively adds abnormal sales order demand directly on top of the net forecast. A sales order demand is classified as abnormal by using the Consume Forecast option in Sales Order Maintenance.

Net Forecast. Net forecast is the amount of the forecast not sold in any given week. MRP always plans to make enough product to match actual orders (regular sales and abnormal), but it also plans to satisfy any remaining forecast, since orders for this amount may still occur.

Production Forecast. Production forecast is calculated by the system based on the forecast of sales of another product. For example, sales of disk drives are based on the forecast of computer sales. These are also planned by MRP.

End-Item Planning: Forecast Consumption



Incoming orders and scheduled customer deliveries are netted against the forecast. The remaining forecast is calculated as the original forecast less quantity sold, except abnormal sales. Planning sees total demand as actual sales (normal and abnormal), net forecast, and production forecast.

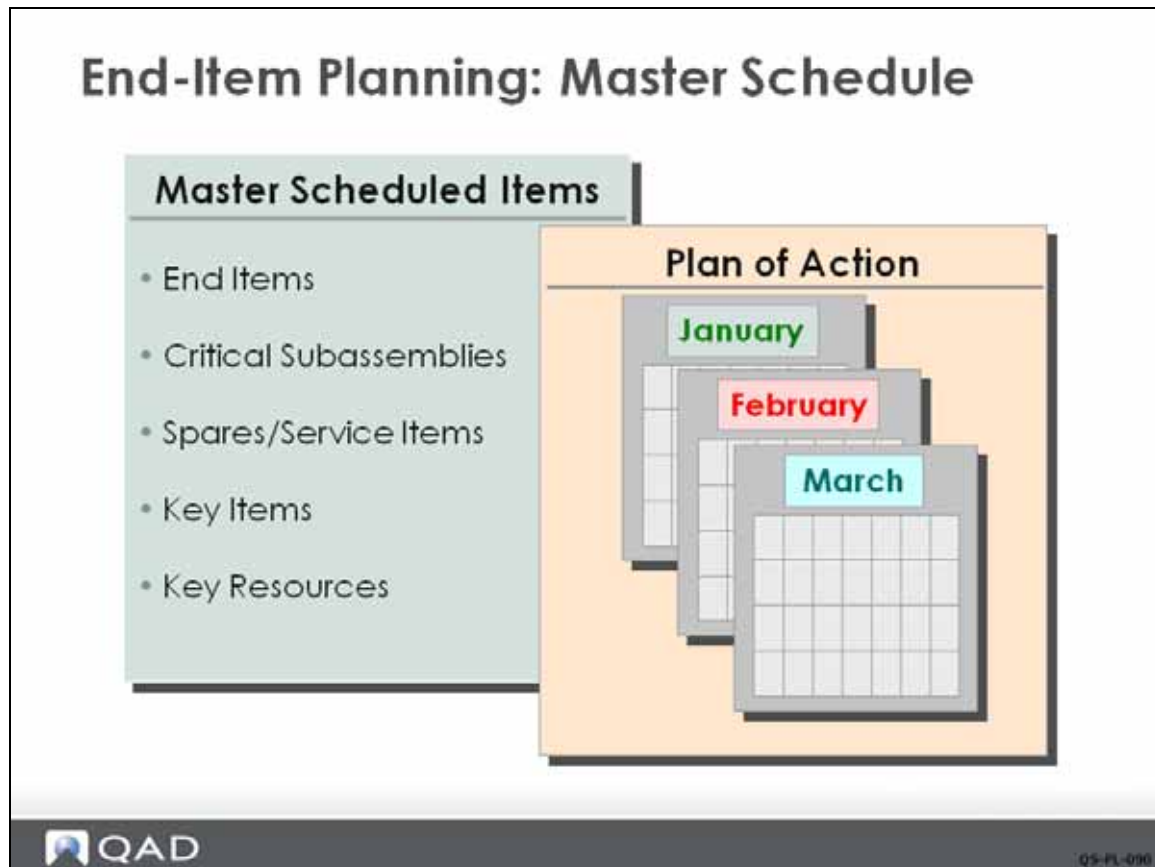
The process of netting sales order quantities from the forecast is called forecast consumption. As a rule, forecasts are more accurate in the long term rather than the short term. Since forecasts are entered for one-week periods, actual shipments seldom correspond to the forecast for a single one-week period. Shipments are often predicted with more accuracy over a month or a quarter.

One method of managing this type of fluctuation is to expand the forecast window by using forward and backward consumption. When sales orders are booked, they consume the forecast in the week they are due. But if that week has no unconsumed forecast, the system looks for unconsumed forecast in a specified number of weeks before and /or after the due week. This method recognizes that unsold forecast may exist in other weeks that should be consumed. The rules for forecast consumption are set up in Sales Order Control. Most companies choose to consume unconsumed forecast from prior periods before taking consumption from future periods.

Forecasts are often done monthly (as in Forecast Simulation), then arithmetically spread to weeks.

- Using a forecast consumption value of forward one week and backward two weeks, plus the current week a sales order is booked in, gives a four week period for the actual sales to equal the original month forecast.
- Forward two weeks and backward one week, or backward three weeks and forward none, gives the same effect.

End-Item Planning: Master Schedule



Developed by site and item, a master schedule is the key plan that provides primary input to MRP. A master schedule is a statement of production determining which items to schedule, when orders are needed, and how much to produce. Master scheduling can be done to both to anticipate sales entered in the system and to control production when no sales orders are used such as in inventory replenishment or build-to-stock environments.

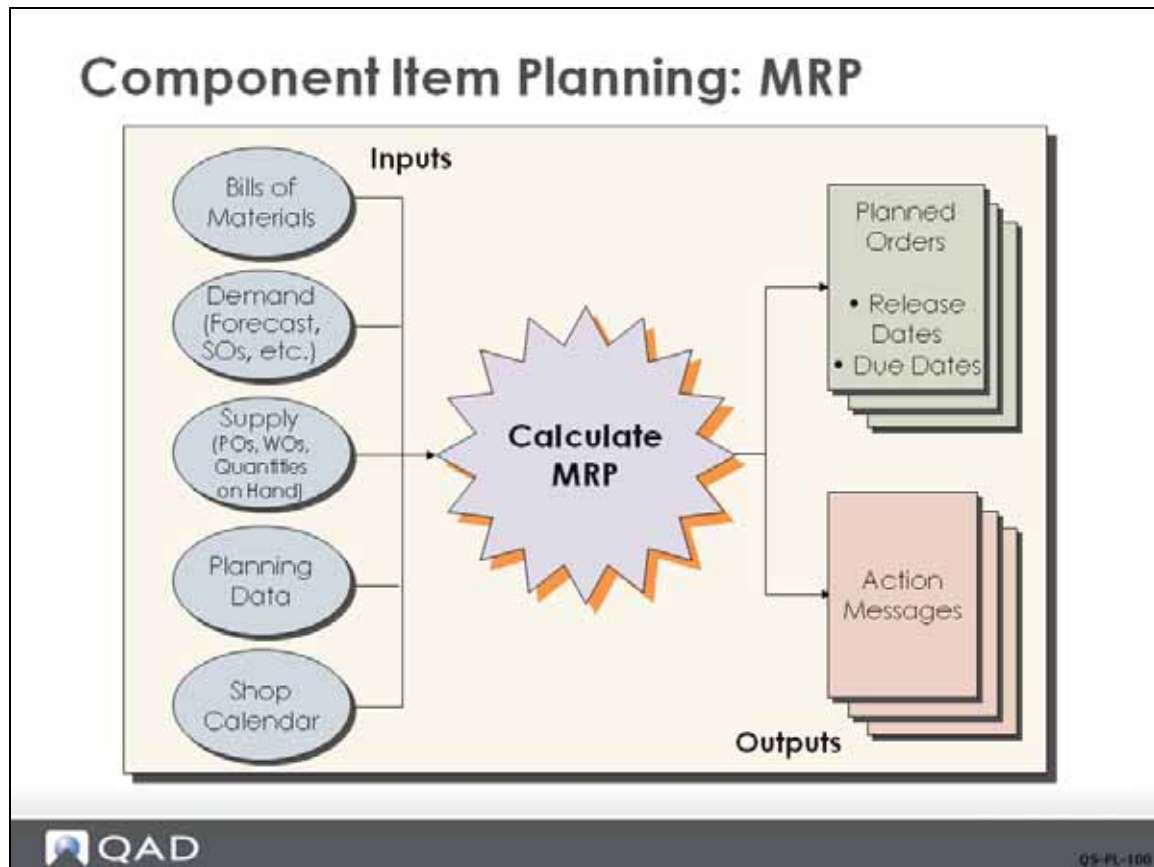
Using master scheduling and MRP is an effective method to set production levels in response to actual and forecast demand over a period roughly equivalent to the cumulative lead time, and determine in a rough way whether critical resources will constrain supply. The master schedule drives the entire production resources of a site. Producing the master schedule requires manpower, materials, manufacturing capability (capacity), cash flow, and management resources. The scheduling process should be controlled by internal procedures with management commitment.

Rough-Cut Capacity Planning (RCCP)

RCCP provides a high-level planning process for key resources that may constrain the execution of the manufacturing plan. The rough-cut capacity plan provides a tool for:

- Careful evaluation of changes to the master schedule and the impact on material and capacity.
- Rough evaluation of potential capacity problems.
- Proper balancing of customer needs and manufacturing needs.
- Effective stabilization of MRP.

Component Item Planning: MRP



The master schedule is a detailed schedule of production, but production can be achieved only if the component materials are available. MRP and DRP explode the master schedule to calculate the demand for components based on the bills of material (BOM). These components can be purchased, manufactured, or acquired internally from another site.

Input to MRP includes:

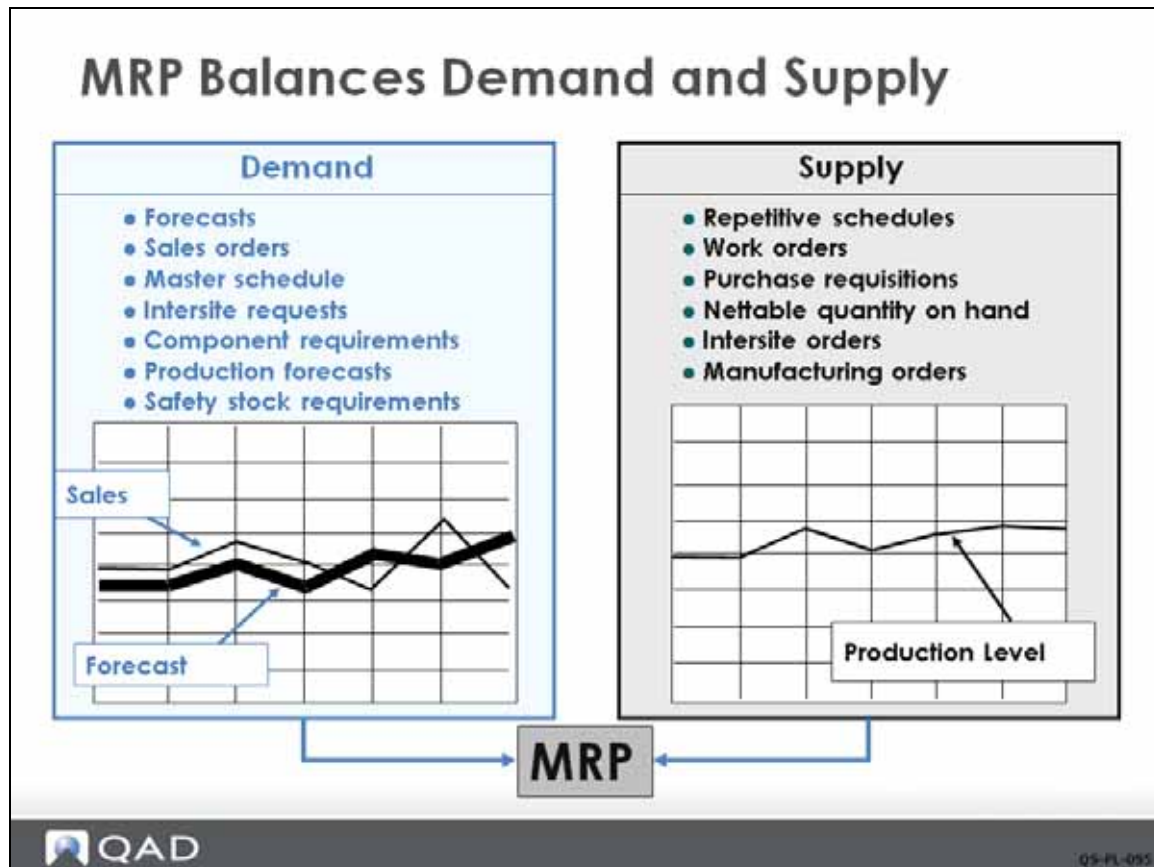
- Sources of demand (forecast, production forecast, sales orders, gross requirements, seasonal build, safety stock)
- Sources of supply (nettable quantity on hand, purchase orders, work orders, repetitive schedules, quality orders)
- Item planning data, lead times, order policy, whether the item is manufactured or purchased
- Product structures/formulas
- Shop calendar

Output from MRP includes:

- Planned orders, which are generated outside of the item's time fence. Usually the planner reviews and approves MRP planned orders as either work orders or purchase requisitions.
- Action messages. Within the time fence, only action messages are created.

See "Component Item Planning: Time Periods" on page 360 for a description of time fence.

MRP Balances Demand and Supply



MRP is a time-phased priority planning system that calculates material requirements. Supply is rescheduled to meet changing demand and maintain valid due dates using three methods:

Net Change. Net change MRP replans items for all selected sites that have changed since the last MRP run. The primary advantage of net change MRP is that it often takes less time to process than regenerative. A net change MRP run processed after correctly acting on action messages should yield the same result as a regenerative MRP.

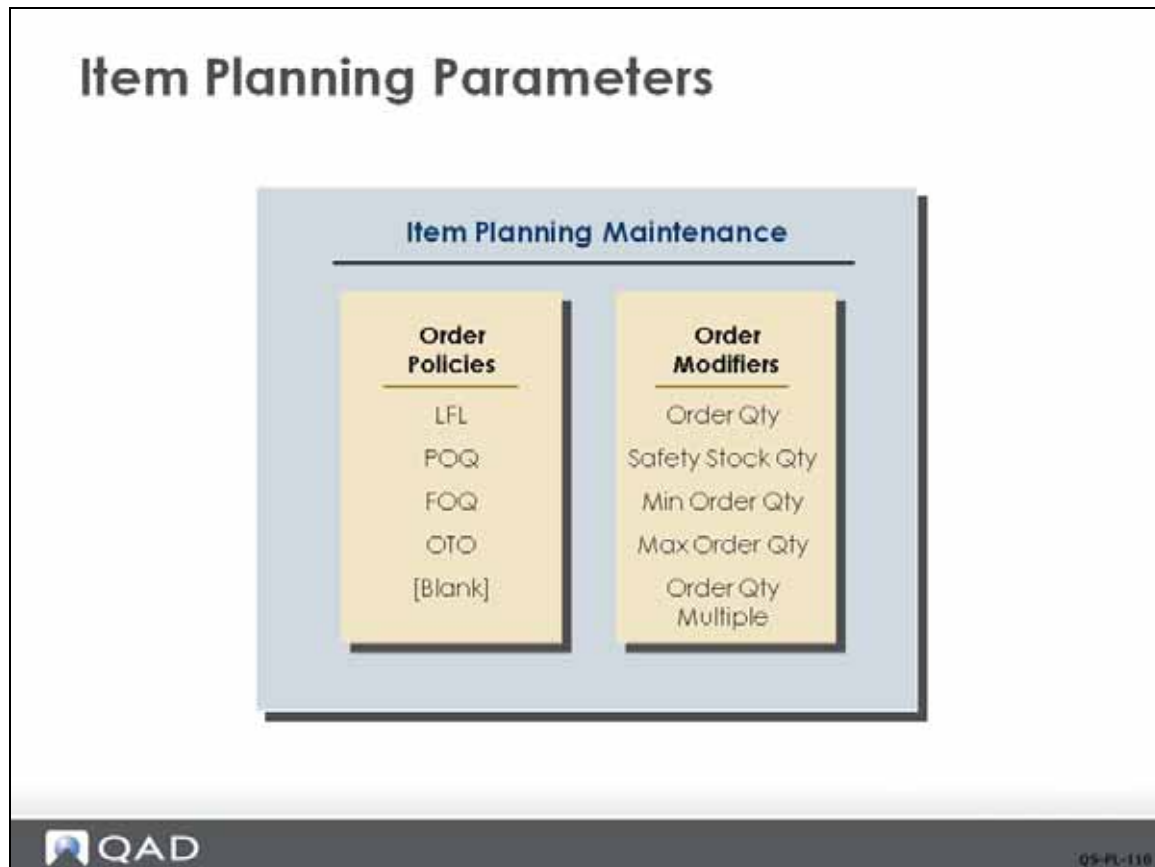
Regenerative MRP. Regenerative MRP creates a completely new material plan for all selected sites starting at the top level, exploding new requirements, and continuing to lower-level components. (Remember each site is a separate MRP plan. Only DRP passes requirements between sites.) One advantage of regenerative MRP is that it guarantees that all plans are in complete synchronization and that all due dates are valid.

Selective MRP. Selective MRP is a special case situation and processes a limited set of user defined items, and could be used for what-if analysis.

Capacity Requirements Planning (CRP)

MRP component planning is checked against the capacity requirements plan (CRP). CRP determines how much labor and how many machine resources are required for production, and it calculates workload for a department, work center, or machine. It is used for short to medium-range capacity management to determine and provide the resources required to meet MRP's detailed item schedules.

Component Item Planning: Item Planning Parameters



QAD uses item planning parameters to determine how items are planned by MRP. General item planning parameters can be defined in either Item Master Maintenance (1.4.1) or Item Planning Maintenance (1.4.7). Site-specific parameters are entered in Item-Site Planning Maintenance (1.4.17). Any parameters not entered in Item-Site Planning Maintenance default from Item Master Maintenance or Item Planning Maintenance.

Order Policies

Order policy determines the rules for planning orders. Order policies are used together with order modifiers to determine order quantities. There are four types of policies:

Lot for Lot (LFL). A lot sizing technique where MRP plans a separate supply order for each demand order. For example, sales orders exist for the same item with quantities of 5, 10, 15, and 20. MRP will plan four orders for 5, 10, 15, and 20 units.

Period Order Quantity (POQ). A lot sizing technique where lot size is equal to net requirements for a given time period expressed in days (Order Period field); for example, a 30-day order period would create one planned order for all requirements for the next 30 days. The calculation of the period begins on the first statement of demand. For example, if MRP is run today for an item with a 30-day period but the first demand is 5 days in the future, the planning period would start in 5 days and end in 35 days from today.

Fixed Order Quantity (FOQ). A demand rate lot sizing rule where a fixed quantity (Order Quantity field) must be ordered. For example FOQ is 100 and demand is 105. MRP will plan two orders for 100.

One Time Only (OTO). A lot-sizing technique that produces an order only once, based on the due date of the first item required. This is typically used for projects such as creating an engineering drawing that occur only once in the manufacturing of a product.

Order Policy Blank. A blank order policy is used to prevent MRP from planning an item.

Note An order policy that is not recognized by the system (EOQ for example) defaults to LFL.

Two other parameters are used with order policy:

Order Quantity. This specified quantity is used in conjunction with the Fixed Order Quantity (FOQ) order policy. It is also used for all item cost and lead time calculations as the standard order quantity.

Safety Stock Quantity. This specified quantity is used as inventory reserve to compensate for unexpected demand and to maintain established service levels. This applies to all order policies, including a blank.

Order Modifiers

Order modifiers change planned order quantities. Minimum, maximum and multiple are order modifiers.

Minimum Order Quantity. This is the smallest order quantity planned. Minimum quantities should be used only for items that have continuing demand, since the minimum order quantity could exceed the actual current demand. Items that have decimal demand values from yield or scrap calculations can be forced to whole numbers by setting this to 1 or to any whole number. For purchased items, the minimum quantity is often a supplier requirement.

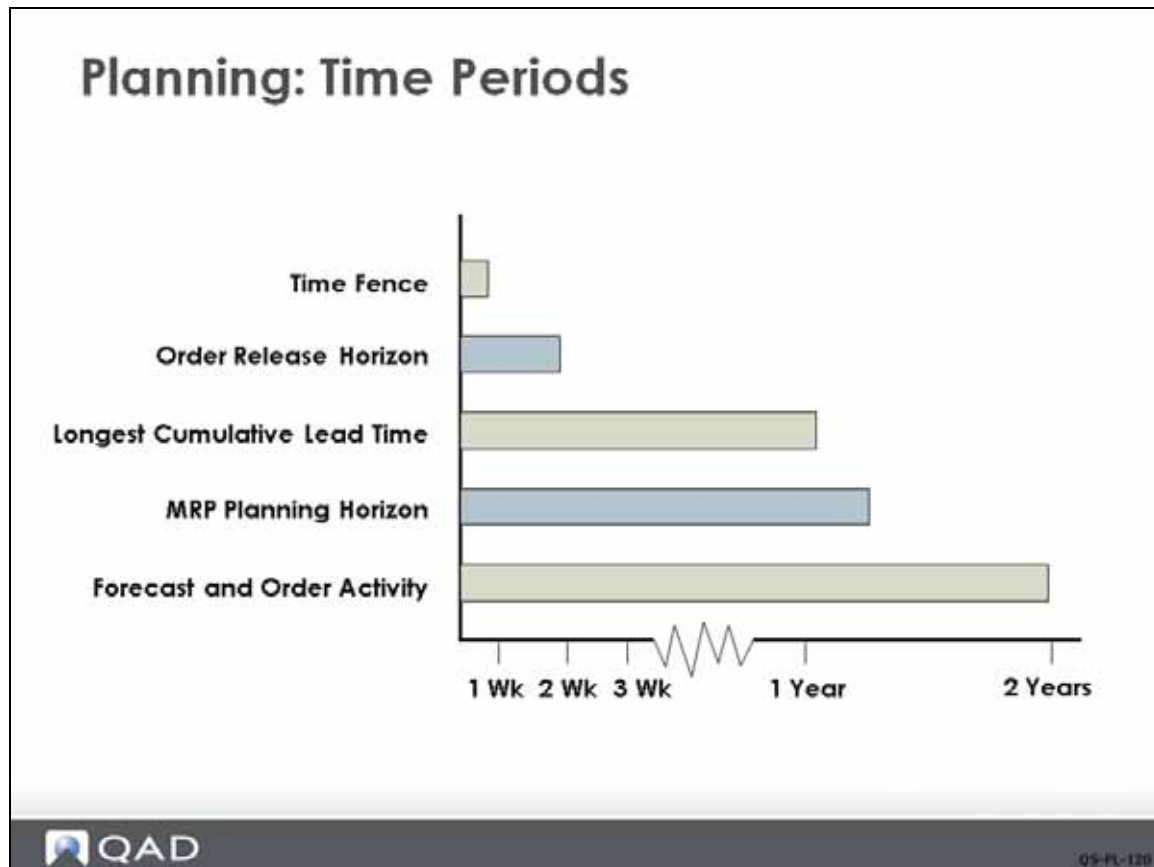
Maximum Order Quantity. MRP generates a warning message when a planned order quantity is larger than the specified maximum order quantity. Excessively large lot sizes may tie up a resource so that other orders are delayed unnecessarily. Further, setting a quantity limit can uncover data entry errors (for example, entry of 1,000 instead of 100).

Order Quantity Multiple. Planned orders are created in multiples of this quantity. That is, if the order multiple is 100, planned orders are created only for quantities of 100, 200, 300, and so on.

Lead Time

Lead times determine when orders should be released to be available on their due date. Manufacturing lead time is for manufactured items; purchasing lead time plus inspection lead time is for purchased items. Safety lead time can be added to both. Lead time is calculated by the system using the operation times in the route and the standard order quantity for manufactured items. The lead time for purchased items is entered by the planner.

Component Item Planning: Time Periods



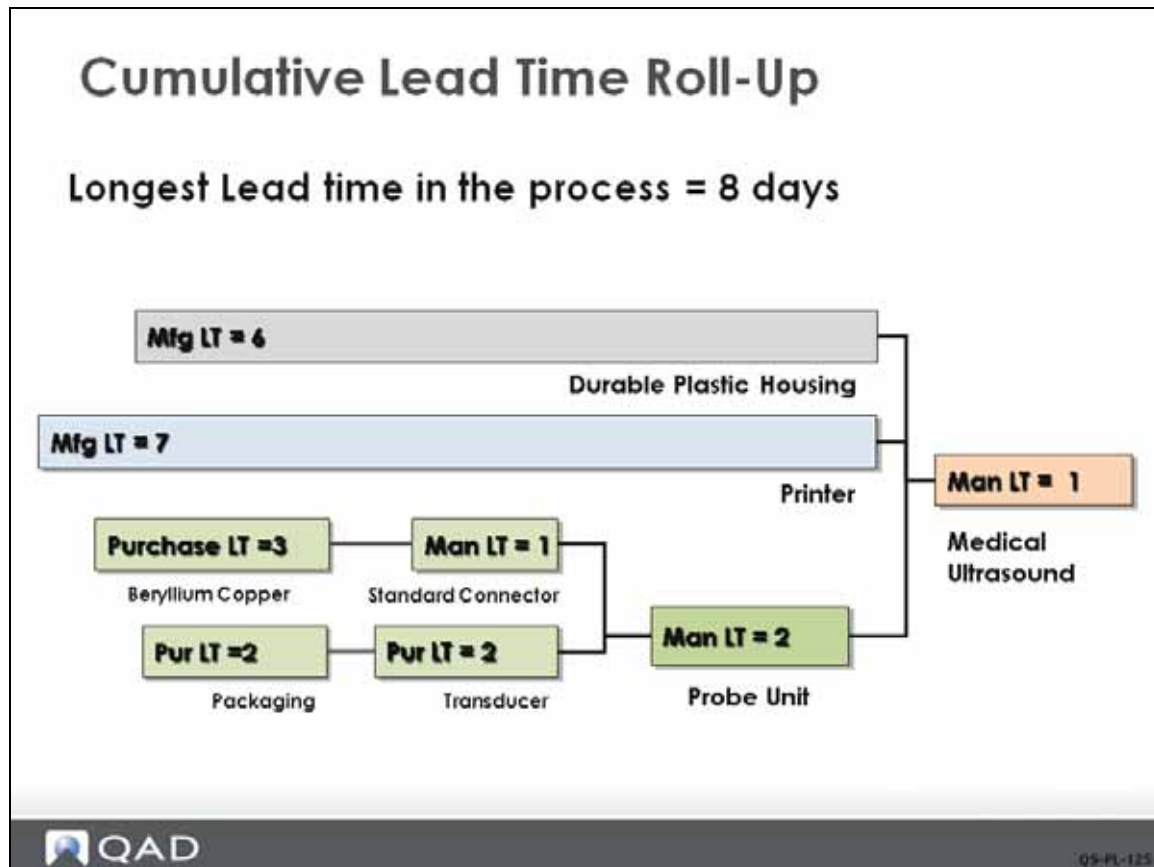
Time Fence. Time fence is a policy or guideline for when change should be restricted. For example, changes to the master schedule are relatively easy beyond the cumulative lead time, but become increasingly difficult within it. The time fence—defined in Item Planning Data Maintenance (1.4.7)—specifies the number of days within which the system should provide action messages suggesting changes to the planner, rather than changing any planned orders.

Order Release Horizon. To provide visibility over the orders due to be released, MRP generates Release Due action messages. Typically, you want to see these in advance, not just on the day the order is due for release. You can set the release horizon for any number of days. MRP generates Release Due messages only for orders due to be released within this number of days from today's date.

Cumulative Lead Time. Cumulative lead time represents the longest planned length of time to obtain an item, assuming that neither it nor any of its components (if any) are in stock. For a manufactured item, this includes the time it takes to acquire raw materials, inspect them, make any subassemblies or components, and assemble and inspect the finished product. These times are entered in Item Planning Maintenance in the fields Mfg LT, Pur LT, and Ins LT.

MRP Planning Horizon. Before you run MRP, you set the MRP planning horizon. This specifies the number of calendar days over which MRP is to plan. MRP only processes material requirements within this horizon. The longer this horizon, the longer it takes MRP to plan. The planning horizon should be at least as long as the longest cumulative lead time, plus any associated preparation times. Usually, the master schedule covers the same time frame.

Cumulative Lead Time



Planning uses the cumulative lead time calculated by Cumulative Lead Time Roll-Up (13.12.14) to determine the minimum planning horizon for the master schedule and material requirements planning. Cumulative lead time is defined as the longest time required to produce an item without raw materials or sub-assemblies in stock.

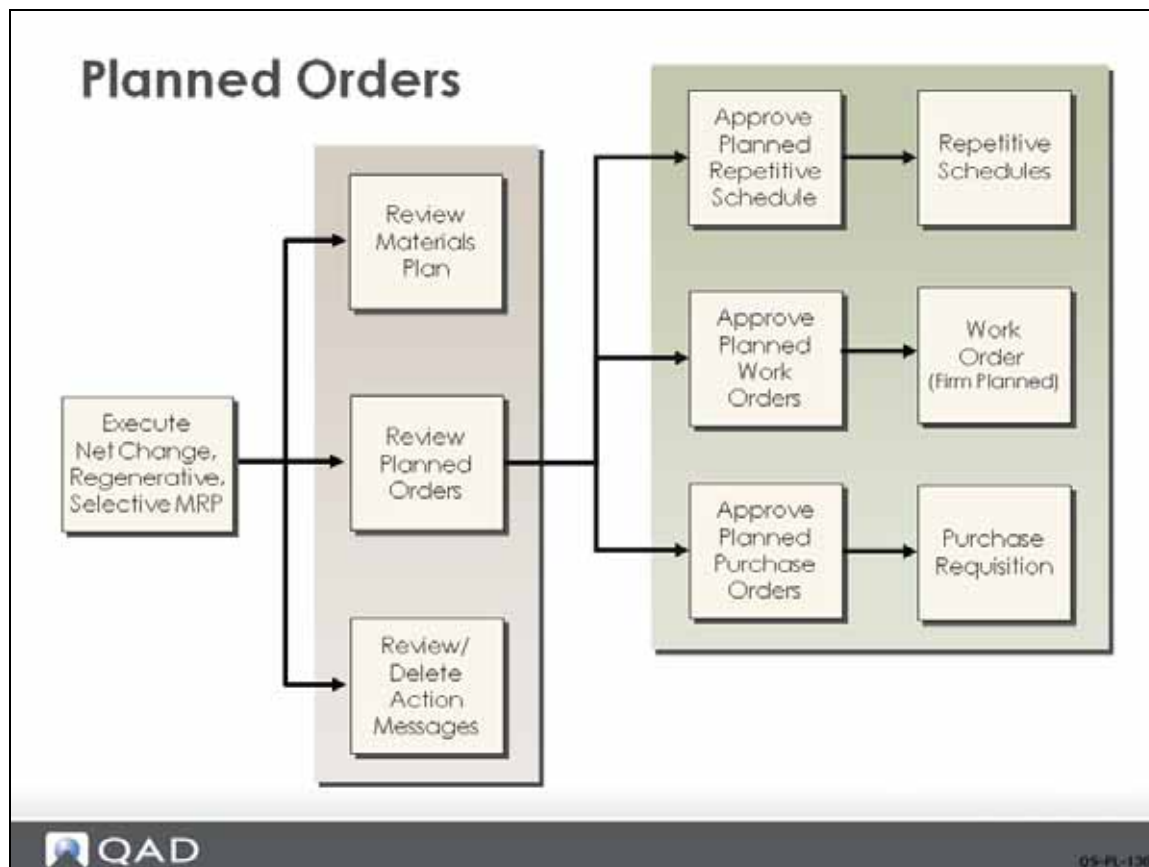
Cumulative lead time is calculated by first determining the composite lead times for the product and each of the lowest level components. The longest of these composite lead times determines the critical path and sets the cumulative lead time. The calculation considers:

- Pur LT and Ins LT for purchased items
- Mfg LT for DRP and manufactured items

Lower-level lead times are calculated first. At the parent level, any value specified for LT Offset in Product Structure Maintenance for a component is added (negative offset) or subtracted (positive offset). The longest resulting component lead time is rolled into the lead time for the parent.

Safety time is not included in the cumulative lead time calculation. After order release dates are calculated, MRP adds safety time to the release date.

Component Item Planning: Planned Orders



MRP creates planned orders to satisfy net requirements if the parameter for order policy is not blank, and Plan Orders is set to Yes in Item Master Maintenance. The system creates either planned work orders or planned purchase orders, based on the Pur/Mfg code.

Internally, both planned work orders and planned purchase orders are stored as work orders with status Planned. The primary difference between them is that orders for purchased items are created without work order bills.

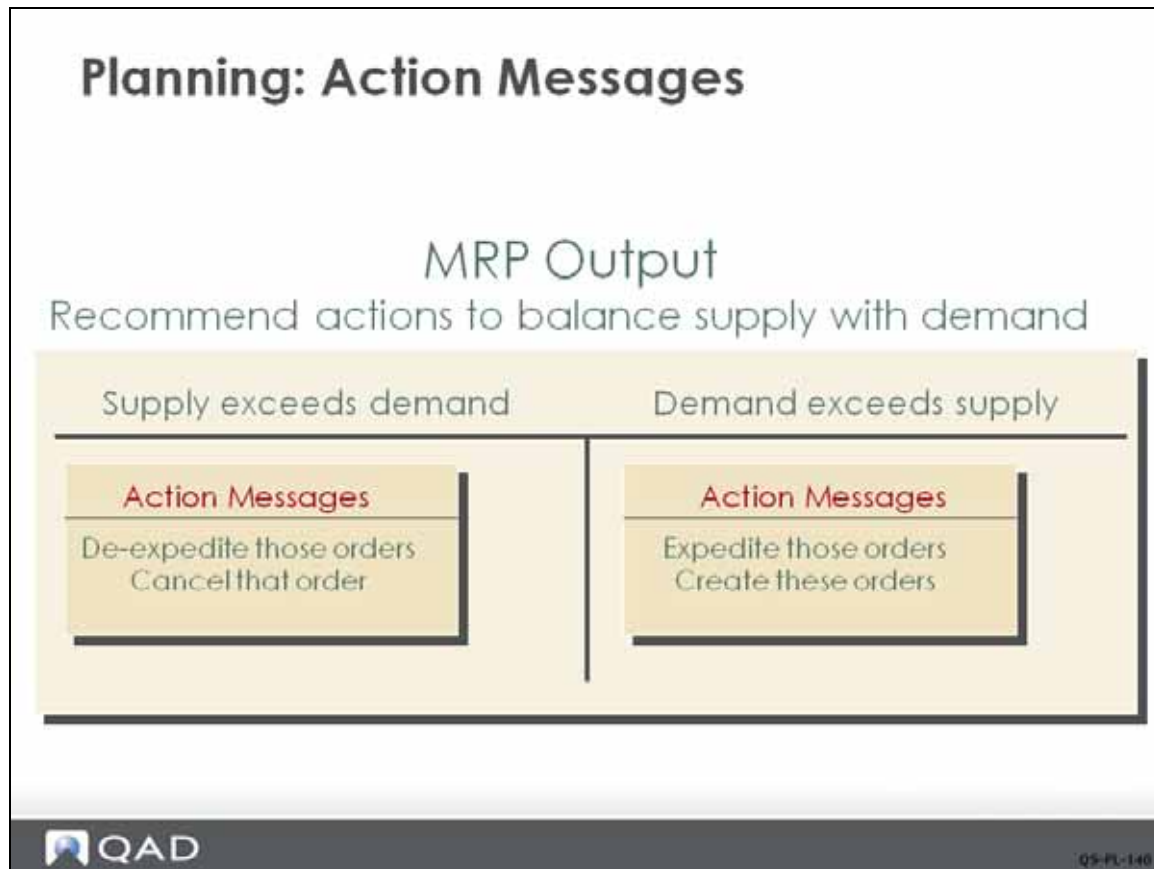
Note Only MRP can create planned orders; they cannot be created directly.

Planned Order Approval

The process of approving planned work orders changes the status of work orders from Planned to Firm Planned. While planned orders can be modified or deleted by each successive MRP run, firm planned orders have due dates and quantities that are fixed with respect to the MRP planning process. The due dates and quantities for firm planned orders can be changed manually in Work Order Maintenance.

Approving a planned purchase order deletes it and creates a purchase requisition, which can be reviewed by buyers or purchasing agents and filled by purchase orders. When the purchase order is released, it becomes supply for the item at that site.

Component Item Planning: Action Messages



To project inventory balances and calculate net requirements, MRP reschedules purchase orders, work orders, and repetitive schedules and plans all activity based on the revised schedule. When it does this, it also generates action messages to alert planners to actions that should be taken to execute the plan, such as rescheduling, canceling, and releasing orders.

Usually the first thing the planner does after running MRP is to look at the action messages. Action messages can be reviewed online and deleted when the required action is taken. They can also be printed along with the detailed plan.

Note When schedulers are using QAD's Planning and Scheduling Workbenches, they can review and act on action messages directly from the workbench.

Here are a few of the messages that may be generated.

Message	Meaning
Beginning Quantity Less Than Zero	The initial nettable quantity on hand is negative.
Beginning Available Less Than Zero	The quantity on hand less safety stock is negative.
Create	A supply order should be created to satisfy a negative projected on-hand balance. This message is only generated if Plan Orders is No or if a new requirement appears within the time fence.
De-Expedite	A scheduled supply order is due before it is needed and should be delayed, or demand rescheduled to an earlier date.
Expedite	A scheduled supply order is due after it is needed and should be rescheduled to an earlier date, or demand rescheduled to a later date.

Message	Meaning
Cancel	A scheduled supply order is no longer needed and should be deleted.
Release Due For	A supply order should be released. You can release both planned and firm-planned orders. Approving the order changes its status to firm planned.
Release Past Due For	A supply order was not released when it was due. It now needs to be released and expedited, or the demand must be rescheduled for a later date.
Quantity Less than Minimum	A supply order was created for a quantity less than the minimum quantity set in the item planning data.
Quantity Exceeds Maximum	A supply order was created for a quantity greater than the maximum quantity set in the item planning data.
Past Due	Scheduled supply order receipt is past the due date.
Time Fence Conflict	Unsatisfied material requirement exists inside the planning time fence for the item. MRP will not create planned orders within the time fence. You should either manually schedule and expedite orders to fill this demand or delay fulfillment of the requirement that created the demand.
Shipment Due	A shipment for an intersite request item is due. Action should be taken at the source site to ensure that the order is received on time.
Shipment Past Due	A shipment for an intersite request item is past due. You should either delay the orders that created the requirement for the item or expedite them when the item does arrive.
No Source Of Supply	A valid source network is not available for the date a DRP item is required. Either the item or item-site planning data does not reference a source network, or the source network is not effective on that date.
Planned Order Count Exceeds Maximum	An item/site combination generated the maximum number of planned orders. MRP currently cuts off the creation of orders for an item/site combination at 1000. Calculation for other items continues. This prevents runaway calculations caused by, for example, an incorrect item order quantity.

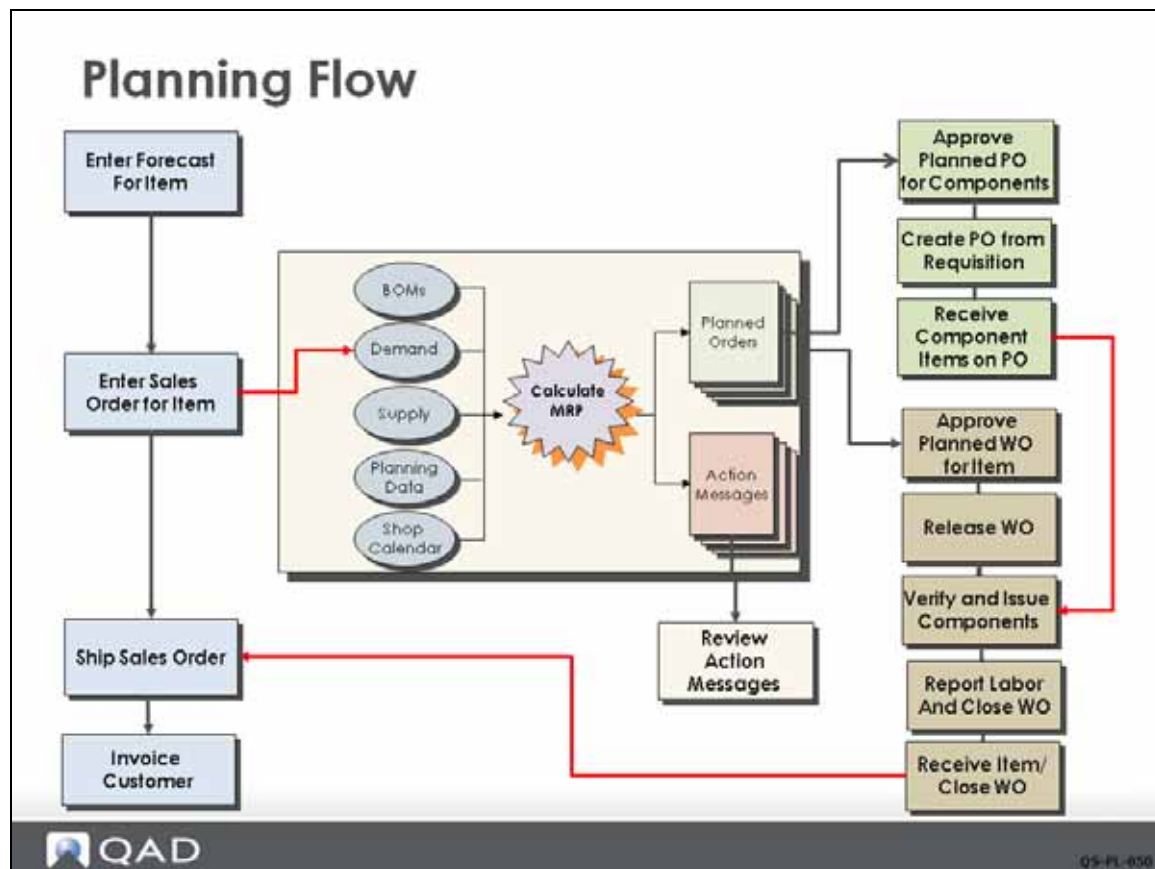
Example

This section provides an example of how the planning process works from entering a forecast to shipping items. In this example, QMI completes these steps:

- Enter a forecast for medical ultrasound units.
- Define forecast consumption in Sales Order Control.
- Enter a sales order that creates demand:
 - Line 1: normal SO (consumes forecast), quantity = 5, due in two weeks
 - Line 2: abnormal SO (does not consume forecast,) quantity = 5, due in five weeks
- Review item planning data and forecasts used by MRP.
- Review MRP control settings.
- Run Regenerate Materials Plan.
- Review planned orders, action messages, and planning inquiries.
- Approve planned purchase orders and review requisitions.
- Create a purchase order using MRP requisitions for the component items.
- Receive the purchase order and review the effect.
- Approve a planned work order.
- Verify availability of components and release the work order.
- Issue work order components.
- Report labor and receive and close the work order.
- Review the effect on the MRP Summary.
- Ship a sales order for the items built on the work order and post and print the invoice.

In the process of reviewing the production schedule and MRP reports, you will see the effect of lead times on release dates for the purchase orders and work orders in the example.

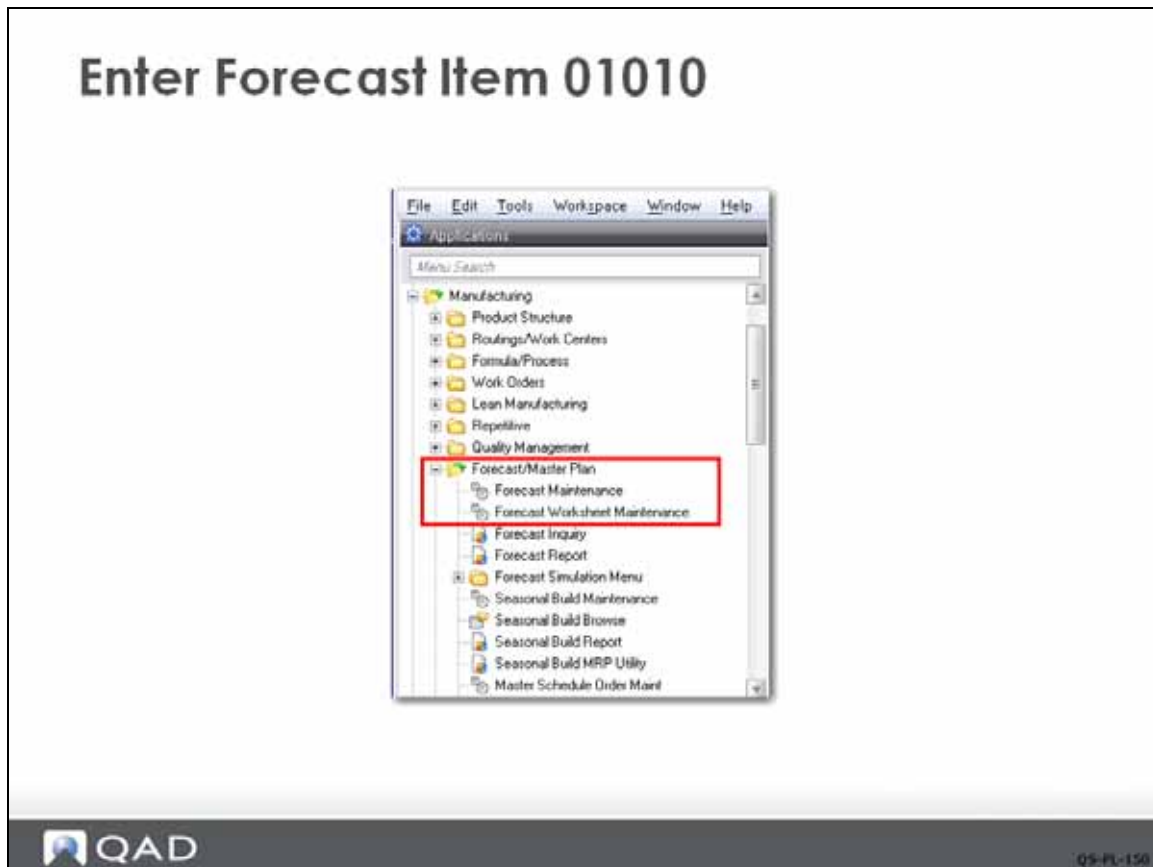
Example Planning Flow



This slide illustrates the activities that QMI follows in this example and the way demand flows through the system.

- MRP calculates dependent demand from the sales order and forecast, generating planned orders and action messages.
- When approved, the planned purchase order becomes a requisition for the components needed to manufacture the item on the sales order.
- When approved, the planned work order becomes a work order for creating the items from the components received on the purchase order.
- When the order is complete, the sales order can be shipped, generating an invoice, which completes the cycle.

Enter Forecast Item 01010



QAD Enterprise Applications offers two ways to enter forecast data:

- Forecast Maintenance (22.1)
- Forecast Worksheet Maintenance (22.2)

Forecast Maintenance

Forecast Maintenance

Forecast Maintenance
X

Go To Actions Copy Print Preview Attach

Item Number: 01010 Site: 10-100 Year: 2012

Week	Forecast	Week	Forecast	Week	Forecast	Week	Forecast
1/2/2012	5	4/2/2012	5	7/2/2012	5	10/1/2012	5
1/9/2012	5	4/9/2012	5	7/9/2012	5	10/8/2012	5
1/16/2012	5	4/16/2012	5	7/16/2012	5	10/15/2012	5
1/23/2012	5	4/23/2012	5	7/23/2012	5	10/22/2012	5
1/30/2012	5	4/30/2012	10	7/30/2012	5	10/29/2012	5
2/6/2012	5	5/7/2012	10	8/6/2012	5	11/5/2012	5
2/13/2012	5	5/14/2012	10	8/13/2012	5	11/12/2012	5
2/20/2012	5	5/21/2012	10	8/20/2012	5	11/19/2012	5
2/27/2012	5	5/28/2012	10	8/27/2012	5	11/26/2012	5
3/5/2012	5	6/4/2012	5	9/3/2012	5	12/3/2012	5
3/12/2012	5	6/11/2012	5	9/10/2012	5	12/10/2012	5
3/19/2012	5	6/18/2012	5	9/17/2012	5	12/17/2012	5
3/26/2012	5	6/25/2012	5	9/24/2012	5	12/24/2012	5
Total	65	Total	90	Total	65	Total	65

Q9-PL-135

Forecast Maintenance (22.1) provides 52 weekly buckets, so an entire year's forecast for a given item and site can be entered in one place. If you are using forecast simulation, this function can also be populated automatically with data from the forecast simulation calculation.

Forecast Worksheet Maintenance

Review Forecast Worksheet: Item 01010

Forecast Worksheet Maintena... x
Go To ▾
Actions ▾
Copy ▾
Print
Preview
Attach ▾

Item Number: 01010 Site: 10-100 Year: 2012

Week	Forecast	Sales	Abnormal	Prod Fcst	Net Forecast
14 4/2/2012	5	0	0	0	1
15 4/9/2012	5	5	0	0	0
16 4/16/2012	5	5	0	0	0
17 4/23/2012	5	12	0	0	0
18 4/30/2012	10	0	0	0	3
19 5/7/2012	10	0	0	0	10
20 5/14/2012	10	0	0	0	0
21 5/21/2012	10	24	0	0	0
22 5/28/2012	10	0	0	0	6
23 6/4/2012	5	0	0	0	5
24 6/11/2012	5	0	0	0	5
25 6/18/2012	5	0	0	0	0
26 6/25/2012	5	12	0	0	0
Totals	90	58	0	0	30

Q9-PL-168

In Forecast Worksheet Maintenance (22.2), the system displays 13 weeks of forecast buckets at a time. Clicking Next advances to successive calendar quarters. In addition, you can also see actual sales orders, abnormal sales orders, production forecasts, and net forecast.

Using Forecast Worksheet Maintenance, the QMI planner has entered forecasts for the number of medical ultrasound units that they expect to ship each week for the next few months, starting with April 5. Some orders already exist in the system. The planner has noted an increase in orders because of a special spring promotion, so he increases the forecast for five weeks from 5 to 10.

Discussion

If it takes one person 1 day to assemble 5 units and the forecast for 30 on each five day week is reasonable, what action is necessary?

Exercise 11-1: Create Forecast

Balance and Order Quantity Values

- 1 Use the table below to determine in which periods orders are required and for what quantities. Assume no on-hand inventory exists. For example, looking at period 1 and its demand, the correct entry for LFL is 25. Looking at POQ 2 Periods, the correct entry is 55.

Order Policy and Modifier

Period	1	2	3	4	5	6	7	8	9	10
Demand	25	30	20	35	25	30	25	35	30	25
LFL	25									
FOQ = 35										
POQ 2 Periods	55									
POQ 2 Periods Min Qty = 60										
POQ 2 Periods Multi Qty = 25										

See page 424 for a table with answers for this exercise.

Enter a Forecast for Parent Item

Note This exercise uses different quantities than the prior examples provided in the text.

- 2 Use Forecast Worksheet Maintenance (22.2) to enter a forecast for parent item 01010 at site 10-100 for the next five weeks.

Field	Data
Item Number	01010
Site	10-100
Year	Current year

- a Click Next until you the current week displays. Only 13 weeks are displayed at a time. The next few frames contain weeks 14 through 26, weeks 27 through 39, and weeks 40 through 52.
- b Enter a weekly forecast of 20 for each of the next five weeks.

Define Control Settings: Forecast Consumption

Forecast Consumption

Sales Order Control
Go To Actions Copy Print Preview

Auto Batch Confirmation: ☐

SO Edit ISB Defaults: ☒

SO Returns Update ISB: ☒

Forecast Consumption

Consume Forward:

Consume Back:

Check Customer Item Nbr First: ☒

Confirmation Batch ID:

Confirmation Printer:

Pending Inv Update ISB: ☒

Auto Batch Shipment: ☐

Shipment Batch ID:

Shipment Batch Printer:

Q9-PL-170

In Sales Order Control (7.1.24), the QMI planner has set up rules for forecast consumption. In this example, whenever sales exceed forecast in a period, the system consumes the forecast, first by going back, then forward one period from the original forecast in the period the sales order is due. The system then continues to search backward and forward until the specified number of previous periods (2) and future periods (1) have been examined, or the entire sales order quantity has been applied.

Enter Sales Order Line: Consume Forecast

Enter Sales Order Line: Consume Forecast

Sales Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Header

Order: 10S10001 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	15.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound

Loc: 1010 Site: 10-100

USD Cost: 1,805.45157

Lot/Serial:

Qty Allocated: 15.0

Qty Picked: 0.0

Qty Shipped: 0.0

Qty to Invoice: 0.0

Salesperson 1: 10SP01

Commission 1: 5.00%

Category:

Fixed Price

Sales Acct: 4010 mech ADM

Disc Acct: 4200 Mech

Confirmed: ☒

Required:

Promised: 4/12/2012

Due Date: 4/12/2012

Perform Date:

Pricing Date: 4/11/2012

Multiple:

Credit Terms Int: 0.00

Ship Type:

UM Conversion: 1.0000

Consume Forecast: ☒

Detail Alloc:

Taxable:

Freight List: 10FRT

Comments:

QAD QS-PL-100

In Sales Order Maintenance (7.1.1), the QMI customer service representative (CSR) has entered two sales order lines for its medical ultrasound (item 01010).

- Line 1 (shown above) is for an order of 15 units due in two weeks. This order, once confirmed, will consume forecast because the Consume Forecast check box is selected.
- Line 2 is shown on the next page.

Enter Sales Order Line: Do Not Consume Forecast

Enter SO Line: Do Not Consume Forecast

Sales Order Maintenance X

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Header

Order: 10510001 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
2	01010	15.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound

Loc: 10-100 Site: 10-100

USD Cost: 1,805.45157

Lot/Serial:

Qty Allocated: 4.0

Qty Picked: 0.0

Qty Shipped: 0.0

Qty to Invoice: 0.0

Salesperson 1: 10SP01

Commission 1: 5.00%

Category:

Fixed Price: ☒

Sales Acct: 4010 Disc Acct: 4200

Confirmed: ☒ Mech

Required: 5/19/2012

Promised: 5/19/2012

Due Date: 5/19/2012

Perform Date: 5/19/2012

Pricing Date: 4/11/2012

Multiple: ☐

Credit Terms Int: 0.00

Ship Type:

UM Conversion: 1.0000

Consume Fcst: ☐

Detail Alloc: ☐

Taxable: ☐

Freight List: 10FRT

Comments:

QAD QS-PL-196

Line 2 is for an order of 15 ultrasound units due in five weeks. This order will not consume forecast because the Consume Forecast check box is not selected.

Additional Notes

Consume Forecast is not selected (unchecked) when the order quantity is considered abnormal and is planned in addition to the forecast. Perhaps the best definition of abnormal sales are those that were not anticipated in the forecast. This may be sales to new customers, new markets, or a current customer significantly increasing their volume. Businesses should establish their own rules and guidelines for sales order entry to determine when an order is considered abnormal.

Discussion

What is the impact of an order for 30 medical ultrasound units due in two weeks on the QMI production department?

Review Forecast Worksheet: Item 01010

Week	Forecast	Sales	Abnormal	Prod Fcst	Net Forecast
14 4/2/2012	15	0	0	0	0
15 4/9/2012	5	20	0	0	0
16 4/16/2012	5	5	0	0	0
17 4/23/2012	5	12	0	0	0
18 4/30/2012	10	0	0	0	3
19 5/7/2012	10	0	0	0	10
20 5/14/2012	10	0	15	0	0
21 5/21/2012	10	24	0	0	0
22 5/28/2012	10	0	0	0	6
23 6/4/2012	5	0	0	0	5
24 6/11/2012	5	0	0	0	5
25 6/18/2012	5	0	0	0	0
26 6/25/2012	5	12	0	0	0
Totals	90	73	15	0	29

Forecast Worksheet Maintenance (22.2) shows the effect of the new sales order on the net forecast:

- Line 1 for 15 units in week 15 consumes forecast. Sales for that week now shows 20 (previously it was 5).
- Line 2 for 15 units in week 20 does not consume forecast so the quantity of 15 displays in the Abnormal column.

The effect of the setting of Forecast Consumption in Sales Order Control (2 periods back and 1 forward) can be seen most clearly with the order for 24 units on week 21. This is 14 more than was forecast for this week.

- The system consumes the 10 for week 20.
- Then it consumes the 10 for week 19 (not consumed by the abnormal demand).
- and then consumes 4 in week 21, leaving a net forecast of 6 remaining for that week.

Note MRP will always plan for the total demand, even when it exceeds forecast.

Master Schedule Summary: Item 01010

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012
Production Forecast	0	0	0	0	0
Forecasts	0	0	0	0	3
Sales Orders	80	20	0	12	0
Gross Requirements	0	0	0	0	0
Master Schedule	54	0	17	0	0
Projected QOH	18	-2	15	3	0
Available to Promise	0	-15	0	0	0
Cumulative ATP	0	-15	-15	-15	-15

Master Schedule Summary Inquiry (22.18) shows the QMI master scheduler the planning data for the item at this site, such as lead times, order policy, order period, order quantity, whether the item is purchased or manufactured, and the current quantity on hand. Most importantly, though, this inquiry shows a summary of the master schedule demands for an item. This example shows item 01010 and the current plan to satisfy its demand.

The net forecast is provided in the Forecast row, and the total of the sales order quantities are shown in the Sales Orders row. Each row can be expanded to show the details by clicking on the + sign on the right. The report can also be sent to Excel for further ease of data manipulation.

The Projected QOH (quantity on hand) is the calculated on-hand balance at the end of each period. In this example, there are 18 units in stock or on hand from past production, so demand in the first week makes the Projected QOH number negative. In week beginning 4/9, the sales order demand for 20 means that the Projected QOH is -2 (QOH - demand; 18 - 20 = -2).

The real key to the inquiry is the MRP Required field, highlighted in red, which is checked. This simply means something has changed since MRP was last run and that the displayed data is no longer accurate. MRP must be run again.

In this example, there is no inventory Available to Promise.

You will see the effect of running MRP when the QMI planner runs MRP later in this example.

Master Schedule Summary Inquiry

Master Schedule Summary Inquiry

Master Schedule Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 01010
Site: 15-100
Display Negative ATP: ☐
Start Date: 4/5/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 8

Item Number:	01010	Medical Ultrasound	Mfg LT:	1	Plan Orders:	Yes	Required:	Yes
Site:	15-100		Purchase LT:	0	Order Quantity:	\$	Minimum Order:	1
Qty on Hand:	30.0 EA		Safety Stock:	0	Yield Percent:	100.00%	Maximum Order:	5
Order Policy:	POQ		Safety Time:	0	Time Fence:	0	Order Multiple:	1

Q9-PL-215

In Master Schedule Summary Inquiry (22.18), the display defaults to a period length of a week. In the input selection frame, you can select period lengths of days (D), weeks (W), or months (M).

You can also display multiple periods in each column by putting a number in the Per Column field. Specify a start date and end date to look at specific ranges of data.

For example, if your business worked 4, ten-hour days per week, you might choose to make the period Days and display 4 periods per column.

Item Planning Data

Item Planning Data: Item 01010

Item Planning Maintenance X
Go To Actions Copy Print Preview Attach
Item: 01010 Item Number: 01010 Supplier:

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒
Plan Orders: ☒
Time Fence: 0
MRP Required: ☐
Order Policy: POQ
Order Qty: 5
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 0
Item Rev: 0
Issue Policy: ☒

Buyer/Planner: 1-01
Supplier:
PO Site:
Purchase/Manufacture: M
Configuration Type:
Inspect:
Ins LT: 0
Mfg LT: 1
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Plan Seq 1:
2:

Phantom:
Minimum Order: 1
Maximum Order: 5
Order Multiple: 1
Op Based Yield:
Yield Percent: 100.00%
Run Time: 1.260
Setup Time: 1.500
EMT Type: NON-EMT
Auto EMT Processing:
Network Code:
Routing Code: U-001
BOM/Formula:


Q9-PL-228

The next few pages review some of the key planning-related settings that the QMI planner has set up in Item Planning Maintenance (1.4.7) for the medical ultrasound units and its components.

Mstr Sched and Plan Orders. Since item 01010 is the end item subject to independent demand, it is master scheduled and the planner wants the system to plan orders. Both Mstr Sched and Plan Orders are enabled (checked). This means that this item will be master scheduled (forecasted in our example), and planned orders created by MRP.

MRP processes requirements the same whether the Mstr Sched box is checked or not. However, most reports and inquiries in the system can be selected for master scheduled items only. This is very useful for master schedulers since they can select only their items for review.

Order Policy. The Order Policy of POQ (Period Order Quantity) instructs MRP to calculate demand for this item over the number of calendar days specified as the Order Period (in the example, 7) and creates one order to satisfy this demand.

Purchase/Manufacture. Item 01010 is a manufactured item, as indicated by an M in this field. It has a manufacturing lead time of 1 day, shown in the Mfg LT field. The lead time is based on the order quantity of 5. Because it is a manufactured item, the system displays the setup and run times for reference. Since 01010 is manufactured, no purchasing lead time is specified.

Item Planning Data: Item 50001

Review Planning Data: Item 60005

Item Planning Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 60005 Description: Battery
Unit of Measure: EA

Item Planning Data
Master Sched: ☐
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 0
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 25
Item Rev:
Issue Policy: ☒

Buyer/Planner: 1-02
Supplier:
PO Site:
Purchase/Manufacture: P
Configuration Type:
Inspect: ☐
1.0 Ins LT: 0
Mfg LT: 0
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1:
2:

Phantom: ☐
Minimum Order: 25
Maximum Order: 2,000
Order Multiple: 5
Op Based Yield: ☐
Yield Percent: 100.00%
Run Time: 0.000
Setup Time: 0.000
EMT Type: NON-EMT
Auto EMT Processing: ☐
Network Code:
Routing Code:
BOM Formula:
Replenishment Method: Orders

QAD

Q9-PL-246

Item 60005, the battery, is a purchased component required to assemble item 01010.

The Purchase/Manufacture field in this case is set to P. Most purchased component also have purchase lead times. Based on the planning information, the planner has indicated to MRP that these materials should be ordered in quantities to cover demand during an order period of 7 days, and that a purchase order for the component item should be released 3 days before the item is needed (Pur LT). Purchased items do not have setup or run time.

The field to note here is Order Multiple. Some purchased items must be ordered in multiples. In this case, the vendor has told us to purchase in multiples of 5.

Discussion

Based on this overview and the discussion of forecast consumption, do you see that QMI may have an upcoming problem meeting demand? It currently takes 5 working days to make 25 units. How can QMI address the issue of increasing capacity?

Note For more detailed information on planning data and MRP, refer the courses on MRP and CRP and on Master Scheduling and RCCP.

Item Planning Data: Item 02003

Item Planning Data: Item 02003

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item 02003
Item Number: 02003
Supplier: 1051002

Item Number: 02003
Description: Standard Connector
Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 10
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 0
Item Rev:
Issue Policy: ☒

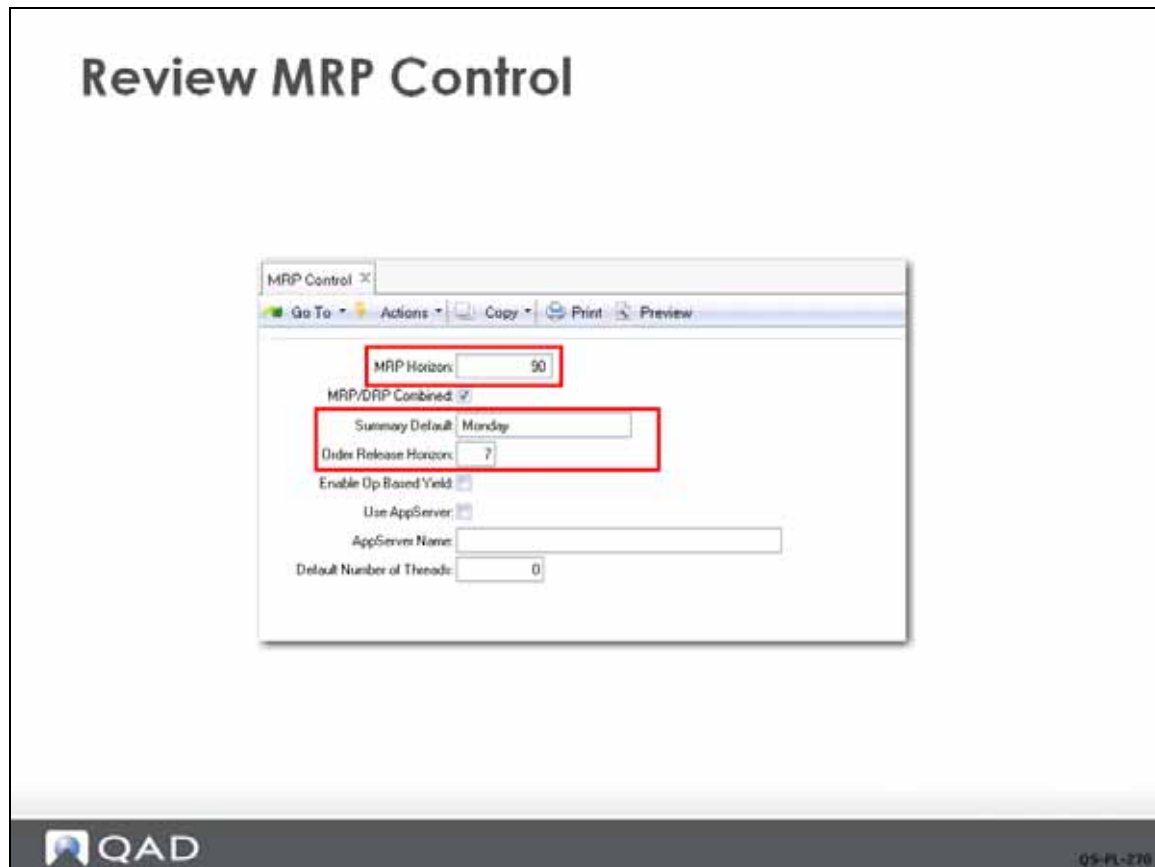
Buyer/Planner: 201
Supplier: 1051002
PO Site:
Purchase/Manufacture: P
Configuration Type:
Inspect:
Ins LT: 0
Cum LT: 0
Mfg LT:
Pur LT: 3
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1: 2

Phantom: ☒
Minimum Order: 10
Maximum Order: 0
Order Multiple: 2
Op Based Yield:
Yield Percent: 100.00%
Run Time: 0.002
Setup Time: 0.200
EMT Type: NON-EMT
Auto EMT Processing:
Network Code:
Routing Code: 02001
BOM/Formula:

In this example, the planning data for the Standard Connector (item 02003) has been set to normally buy enough for 10 units: Order quantity 10, minimum order of 10, and a multiple of 2. Note the purchasing lead time of 3 days.

QAD

Review MRP Control



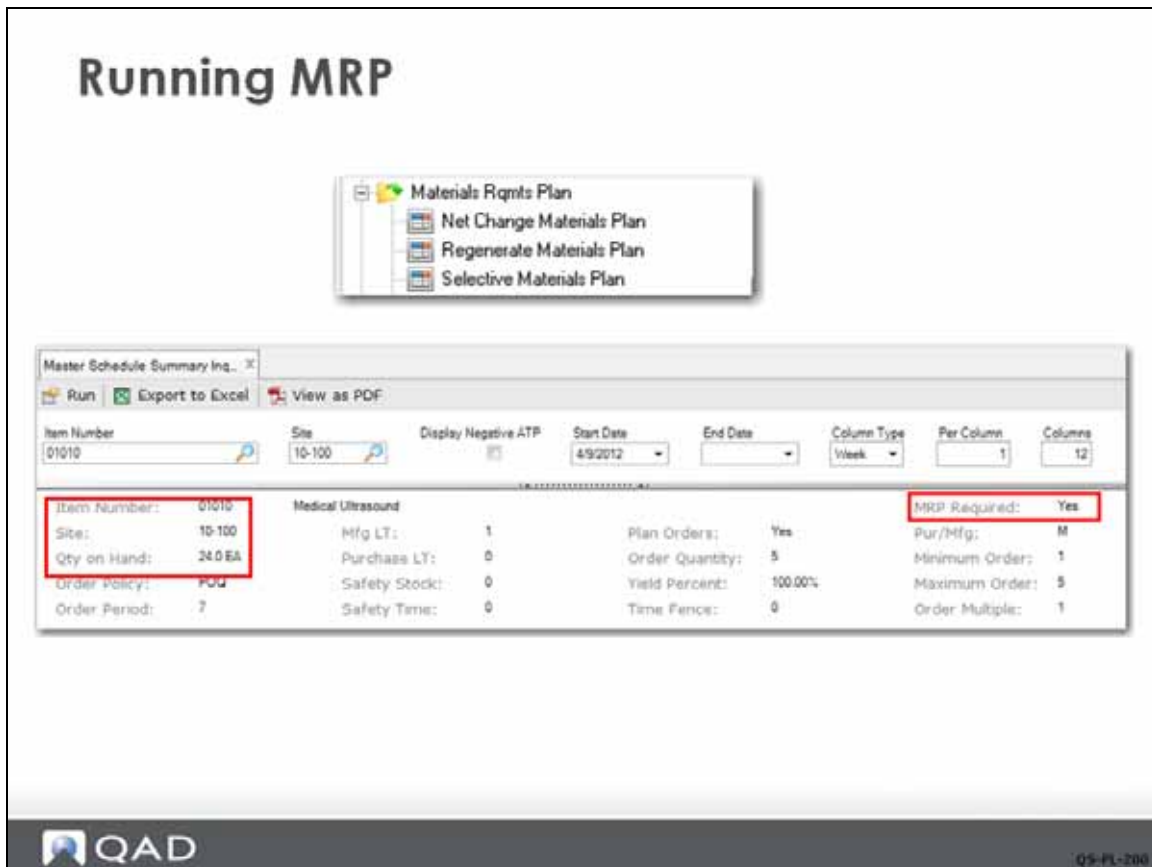
MRP Control (23.24) has important settings that affect MRP processing.

MRP Horizon. This is the number of days into the future MRP will plan and should be at least one day longer than the longest cumulative lead time in your system. For purposes of this course, 90 days is more than enough. In general, a planner would want to err on the side of planning too far into the future rather than not far enough.

Summary Default. Determines on which day of the week MRP and MPS summary inquires begin displaying data. This can be set to any day of the week, or Today. Typically, companies want the columns to be consistent and always display a week beginning with their normal start day. Setting the field to Today changes the start day of the display every day.

Order Release Horizon. Indicates the number of days into the future the system should look to find an order release date. This is very important for MRP action messages. For example, when set to 7, the system marks all planned orders due to be released in the next 7 days as due for release. If you have many planned orders and review them daily, you may want this set to one or two days. For purposes of this course, 7 days will work fine.

Running MRP



The menu at the top of this slide shows the three ways to run MRP.

- Regenerate Materials Plan (23.2) is generally run the first time planning is done during an implementation or at key change points.
- Net Change Materials Plan (23.1) is the most common, daily method used to keep requirements up-to-date.
- Selective Materials Plan (23.3) provides additional options for focusing on specific items.

You can see that it is necessary to run MRP for item 01010 by the value of MRP Required in the Master Schedule Summary Inquiry (22.18), as seen here.

Net Change Materials Plan

The screenshot shows a software window titled "Net Change Materials Plan". The window has a menu bar with "Go To", "Actions", "Copy", "Print", "Preview", and "Attach". Below the menu bar, there are two input fields labeled "Site:" and "To:". Underneath these, there is a checkbox for "Synchronized Calculation:" which is checked. Below the checkbox, there is a text input field for "Synchronization Code:". To the left of the "Synchronization Code:" field, there is a label "Number of AppServer Threads:" followed by a text input field containing the value "0". To the right of the "Synchronization Code:" field, there is a label "Output:" followed by a text input field containing the value "Batch ID:". The QAD logo is visible in the bottom left corner of the window, and the text "Q9-PL-281" is visible in the bottom right corner.

The normal method used on a routine daily or weekly basis is net change MRP (23.1), which selects all the items at one or more sites with the MRP Required field set to Yes.

When Regenerate Materials Plan (23.2) is first run, MRP Required is set to No for all items. In the normal course of business, almost any transaction for an item resets this field, indicating that MRP should be run again to recalculate the demand and supply for the item. Issues and receipts are obvious changes in inventory. Less obvious are changes in forecast or safety stock, or changes in item planning data, these also reset the field to Yes.

Selective Materials Plan

Selective Materials Plan

Item Number: 01010 To: 01010

Site: 10-100 To: 10-100

Master Scheduled Items: ☒

Non Master Scheduled Items: ☒

MRP Items: ☒

DRP Items: ☒

Required Items Only: ☒

Resolve Low Level Codes: ☒

Synchronized Calculation: ☒

Synchronization Code:

Number of AppServer Threads: 0

Buyer/Planner:

Product Line:

Group:

Item Type:

Supplier:

Purchasing:

Output:

Batch ID:

QAD Q9-PL-290

Selective Materials Plan (23.3) lets the planner select specific items or groups or ranges of items. As can be seen in the selection screen above, there are many ways to limit the number of items that will be processed by this MRP method. While this is a powerful planning tool, you should remember that items excluded from the process may have an impact on items included in the process.

Regenerate Materials Plan

Regenerate Materials Plan

Go To Actions Copy Print Preview Attach

Site: 10-100 To: 10-100

Synchronized Calculation: ☒

Synchronization Code:

Number of AppServer Threads:

Output:
Batch ID:

QAD Q9-PL-300

Regenerate MRP runs against all items at a site and may take much longer than net change MRP, depending on how many inactive or obsolete items you have. This is the method often used when running MRP for the first time.

For both net change and regenerate, the only user selection is the site or range of sites. MRP is always calculated by site. If you have several sites in your database and run MRP for all the sites, each site has its own MRP output, completely separate from the others.

To recalculate demand and plan supply for all items at its site 10-100, the company's planner runs Regenerate Materials Plan (23.2). The site code, or range of site codes, is the only selection the planner uses. The other fields are technical settings used in multiple processor environments.

Review Planned Orders

Item Number	Site	Work Order ID	ID	Buyer/Planner	Purchase/Manufacture	Qty Ordered	UOM	Rel Date
01010	10-100	04110002	2326386	1-01	M	22.0	EA	5/24/2012
01010	10-100	04110003	2326387	1-01	M	5.0	EA	6/1/2012
01010	10-100	04110004	2326388	1-01	M	5.0	EA	6/5/2012
01010	10-100	04110005	2326389	1-01	M	12.0	EA	6/22/2012
01010	10-100	04110006	2326390	1-01	M	3.0	EA	6/29/2012
01010	10-100	04110007	2326391	1-01	M	5.0	EA	7/6/2012
01013	10-100	04110037	2326404	1-03	P	1,000.0	BOX	6/22/2012
01020	10-100	04110008	2326392	1-01	M	9.0	EA	6/6/2012
01030	10-100	08020029	2286330	1-01	M	50.0	EA	4/9/2012
01030	10-100	08020030	2286331	1-01	M	25.0	EA	4/26/2012

QAD QS-PL-318

Planned Order Browse (23.9) shows the planned orders created by MRP based on the net forecast and sales orders for the end item 01010 and its components. MRP used the product structure and other planning data to create these orders.

The display shows the MRP planned order number, the work order ID, and the release date, as well as the purchase/manufacture code (M or P). The first planned order shows a release date of 05/24/2012.

Review MRP Action Messages

Review MRP Action Messages

Action Message Browse X

Actions Setup Cancel Add to Favorites

Search (2)

Item Number starts at Search Clear All

Date starts at 4/11/2012 Search Clear All

Viewing 1 - 448 of 448 Records per page: All

Item Number	Description	Date	Message Detail	Order	LineID	Ac	Buyer/Planner
60010	Prepared Layered Mat	4/12/2012	Expedite Purchase Order	PO051218	2	5,100.0	1-02
80002	Biquanide Compound	4/12/2012	De-expedite Purchase Order	PO011212	2	500.0	3-02
80031	Ethanol Liquid	4/13/2012	De-expedite Purchase Order	PO021212	3	950.0	3-02
80041	Caromer 980 Powder/Thickening Agent	4/13/2012	Expedite Purchase Order	PO061204	5	650.0	3-02
80036	Benzyl Alcohol Liquid	4/13/2012	De-expedite Purchase Order	PO021212	5	55.0	3-02
80003	Phenolic	4/13/2012	Expedite Purchase Order	PO041220	1	1,000.0	3-02
80040	Lidocaine Liquid	4/13/2012	De-expedite Purchase Order	PO041212	8	425.0	3-02
50011	Ultrasound Array	4/15/2012	Release due for Work Order	W0412002	2322939	13.0	1-02
80060	Simethicone	4/16/2012	De-expedite Purchase Order	PO041204	8	500.0	5-02
80053	Preservative	4/16/2012	De-expedite Purchase Order	PO041217	1	6,250.0	4-02
90015	15 ml Tube	4/16/2012	De-expedite Purchase Order	PO041216	1	125.05	3-02
50020	Industrial Housing	4/16/2012	Release due for Planned Order	00020087	2286375	15.0	1-02
60001	Probe Unit - 10 Mhz	4/16/2012	De-expedite Work Order	W0312020	2319027	25.0	1-02
60003	Keyboard	4/17/2012	Expedite Purchase Order	PO051205	1	25.0	1-02
50001	Probe Unit - 10 Mhz	4/17/2012	Release due for Work Order	W0412020	2322956	13.0	1-02

QAD QS-PL-328

The QMI planner reviews the Action Message Browse (23.6), shown here. It is important to review action messages first as the MRP planned orders only make sense if the actions required by the messages are actually implemented.

The recommended order in which to read this report is:

- Check the action message.
- Check the date column. This is the date associated with the action message.
- Check whether the item is a manufactured or purchased item. This indicates whether you need to approve a planned order as a work order or purchase requisition.
- Check the due date.

In this example, a number of messages indicate orders should be expedited and de-expedited. These messages indicate that orders are due either after they are needed—and should be expedited—or before they are needed—and should be de-expedited by changing the due date.

For some orders, a “Release due” message displays, indicating that these orders should be approved.

Review Inquiries: Master Schedule Detail

Master Schedule Detail: Item 01010						
 Master Schedule Detail Inquiry 04/11/12						
Item Number: 01010 Site: 10-100 Start Date: 04/11/12 Output: PAGE Medical Ultrasound						
Item Number: 01010 Qty on Hand: 24.0 Site: 10-100 Medical Ultrasound UM: EA Pur/Mfg: M Buyer/Planner: 1-01 Order Policy: POQ Min Order: 1 Mfg LT: 1 Mstr Sched: Yes Order Period: 7 Max Order: 5 Pur LT: 0 MRP Required: No Time Fence: 0 Ord Mult: 1 Ins LT: 0 Plan Orders: Yes Safety Time: 0 Order Qty: 5 Inspect: No Issue Policy: Yes Safety Stock: 0 Yield Percent: 100.00% Cum LT: 0						
Due Date	Gross Reqs	Mstr Sched	Proj QOH	Plan	Ords	Details
			24			Beginning Available
04/12/12	5		13			SO: 10510000 Line: 1
04/12/12	15		-2			SO: 10510001 Line: 1
04/16/12		5	3			W/O: 1001 ID: 2326383
04/20/12			15		12	W/O: W0412028 ID: 2322964
04/25/12	2		13			Release Date 04/19/12
04/25/12	2		11			SO: S0041204 Line: 1
04/25/12	1		10			SO: S0041207 Line: 1
04/25/12	1		9			SO: S0041210 Line: 1
04/25/12	1		8			SO: S0041210 Line: 5
04/25/12	1		8			SO: S0041213 Line: 1
04/25/12	1		7			SO: S0041213 Line: 5
04/25/12	2		5			SO: S0041217 Line: 1
04/25/12	2		3			SO: S0041217 Line: 3
04/30/12	3		0			Forecast
05/07/12	10		-10			Forecast
05/19/12	15		-25			SO: 10510001 Line: 2
05/20/12			-4		21	W/O: W0512028 ID: 2324188 Release Date 05/19/12

The Master Schedule Detail Inquiry (22.21) provides more detail than the summary browse and the organization of data is different.

In the summary, the information is organized in general buckets of days, weeks, or months. In the detail, the information is organized chronologically by specific due dates, showing only dates that have a transaction.

The Master Schedule Detail Inquiry shows sources of demand—sales orders and forecasts in this example—and the MRP planned order to satisfy that demand along with the order's release date.

In this example, the system has an initial quantity on hand of 24 items (Proj QOH column). This quantity covers initial requirements (5 and 15), so the system does not plan to release an MRP planned order until 04/19/2012. The items created on that work order will be used to fill sales orders over the next week.

Another work order is due to release on 05/19/12 to cover forecasted need and additional sales orders.

MRP Summary Inquiry

MRP Summary Inquiry: Item 01010

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 01010
Site: 10-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number: 01010 Medical Ultrasound

Qty on Hand: 24.0 EA Pur/Mfg: M Site: 10-100

Buyer/Planner: 1-01 Order Policy: POQ Mfg LT: 1 Minimum Order: 1

Master Schedule: Yes Order Period: 7 Purchase LT: 0 Maximum Order: 5

MRP Required: No Time Fence: 0 Inspect LT: 0 Order Multiple: 1

Plan Orders: Yes Safety Time: 0 Inspect Req: No Order Quantity: 5

Issue Policy: Yes Safety Stock: 0 Cumulative LT: 0 Yield Percent: 100.00%

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012	5/14/2012
Gross Requirements	60	20	0	12	3	10	
Sched Receipts	0	0	5	0	0	0	
Projected QOH	18	-2	15	3	0	-10	
Plan Ord Due	54	0	12	0	0	0	
Plan Ord Rel	54	0	12	0	0	0	

QAD

Q9-PL-346

The information in MRP Summary Inquiry (23.13) is similar to that shown in Master Schedule Summary Inquiry, but the MRP summary includes details about planned orders, which are MRP calculated. In general:

- The Master Schedule Summary Inquiry deals in more detail with demand, forecasts, and sales orders, and displays one row of supply: the Master Schedule.
- The MRP Summary Inquiry deals more with the supply orders, showing only one line of demand as Gross Requirements. It then gives detail of when planned orders are due, must be released, and are scheduled for receipt.

Planned Orders Due are calculated to satisfy demand from sales orders, forecasts, and so on.

Planned Orders Release indicates when the planned orders should be released to meet the due date. MRP calculates by backward scheduling from the due date, using the lead time and shop calendar information.

Once a planned order is released, it becomes a scheduled receipt and no longer appears on the Plan Ord Rel line but rather on the Sched Receipt line.

MRP Detail Inquiry: Item 01010

MRP Detail Inquiry: Item 01010



MRP Detail Inquiry
04/11/12

Item Number: 01010
 Medical Ultrasound

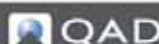
Site: 10-100 Start Date: 04/11/12
 Output: PAGE

Item Number: 01010
 Medical Ultrasound
 Buyer/Planner: 1-01
 MRP Required: No
 Issue Policy: Yes

Qty on Hand: 24.0
 UM: EA
 Ord Pol: POQ
 Time Fence: 0
 Safety Time: 0
 Safety Stock: 0

Site: 10-100
 Pur/Mfg: M
 Wfg LT: 1
 Pur LT: 0
 Ins LT: 0
 Inspect: No
 Cum LT: 0

Due Date	Gross Rqqs	Sched Rcpt	Proj QOH	Plan Grds Details
			24	Beginning Available
04/12/12	5		13	SO: 10510000 Line: 1
04/12/12	15		-2	SO: 10510001 Line: 1
04/18/12		5	3	W/O: 1001 ID: 2326383
04/20/12			15	12 W/O: W0412028 ID: 2322964
04/25/12	2		13	Release Date 04/19/12 SO: S0041204 Line: 1
04/25/12	2		11	SO: S0041207 Line: 1
04/25/12	1		10	SO: S0041210 Line: 1
04/25/12	1		9	SO: S0041210 Line: 5
04/25/12	1		8	SO: S0041213 Line: 1
04/25/12	1		7	SO: S0041213 Line: 5
04/25/12	2		5	SO: S0041217 Line: 1
04/25/12	2		3	SO: S0041217 Line: 3
04/30/12	3		0	Forecast
05/07/12	10		-10	Forecast
05/19/12	15		-25	SO: 10510001 Line: 2
05/20/12			-4	21 W/O: W0512028 ID: 2324188 Release Date 05/19/12


Q9-PL-350

The MRP Detail Inquiry (23.16) shows information in the same format as the Master Schedule Detail Inquiry, only it shows scheduled receipts instead of master scheduled quantities.

Forecasts are done in weekly buckets. Because the system makes no assumption about when in the week the demand occurs, all orders to satisfy forecast are due on the first work day of the week.

MRP Summary Inquiry: Item 50001

MRP Summary Inquiry: Item 50001

MRP Summary Inquiry X
Run Export to Excel View as PDF

Item Number: 50001 Size: 15-100 Start Date: 4/9/2012 End Date: Column Type: Week Per Column: 1 Columns: 12

Item Number: 50001 Probe Unit - 10 MHz Site: 10-100
Qty on Hand: 88-8EA Pur/Mfg: M
Buyer/Planner: 1-02 Order Policy: POQ Mfg LT: 0 Minimum Order: 0
Master Schedule: No Order Period: 7 Purchase LT: 0 Maximum Order: 0
MRP Required: No Time Fence: 0 Inspect LT: 0 Order Multiple: 0
Plan Orders: Yes Safety Time: 0 Inspect Req: No Order Quantity: 0
Issue Policy: Yes Safety Stock: 0 Cumulative LT: 0 Yield Percent: 100.00%

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	100	15	27	15	15	15
Sched Receipts	0	0	0	0	0	0
Projected QOH	52	37	23	8	-7	-22
Plan Order Due	63	0	13	0	0	0
Plan Order Rel	63	0	13	0	0	0

Q3-PL-368

This slide shows the MRP Summary Inquiry (23.13) for component 50001 (Probe Unit).

Discussion

Why does QMI need 27 probes in week 04/16? Do you remember when the sales order line was due on the order created earlier?

The MRP Detail Inquiry may provide an answer.

MRP Detail Inquiry: Item 50001

MRP Detail Inquiry: Item 50001



MRP Detail Inquiry
04/11/12

Item Number: 50001
 Probe Unit - 10 Mhz

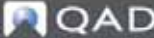
Site: 10-100 Start Date: 04/10/12
 Output: PAGE1000

Item Number: 50001
 Probe Unit - 10 Mhz
 Buyer/Planner: 1-02 Ord Pol: POQ
 Mstr Sched: No Order Period: 7
 MRP Required: No Time Fence: 0
 Plan Orders: Yes Safety Time: 0
 Issue Policy: Yes Safety Stock: 0

Qty on Hand: 89.0
 UM: EA
 Min Order: 0
 Max Order: 0
 Ord Mult: 0
 Order Qty: 0
 Yield%: 100.00%

Site: 10-100
 Pur/Mfg: M
 Mfg LT: 0
 Pur LT: 0
 Ins LT: 0
 Inspect: No
 Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
04/10/12			52		Beginning Available
04/10/12	15		37		W/O: 10120003 ID: 2288626 Assem: 01040
04/17/12	15		22		W/O: 10250002 ID: 2296208 Assem: 01040
04/18/12			35	13	W/O: W0412020 ID: 2322956
04/19/12	12		23		Release Date 04/17/12 W/O: W0412028 ID: 2322964 Assem: 01040
04/24/12	15		8		W/O: 12130002 ID: 2299610 Assem: 01040
05/01/12	15		-7		W/O: 12130003 ID: 2299611 Assem: 01040
05/08/12	15		-22		W/O: 12130004 ID: 2299612 Assem: 01040
05/15/12	15		-37		W/O: 12130005 ID: 2299613 Assem: 01040


Q9-PL-370

The MRP Detail Inquiry (23.16) for item 5001 shows the impact of new requirements for the parent end-item (01010). The system is planning work orders to assemble the probes for the orders that QMI created.

More orders for a component may become due for release earlier and for larger quantities than you expect because of a combination of factors:

- Sales orders are due in the middle of the week.
- Forecasts are due on Mondays.
- The lead time offset for assembly and purchase of components is combined.
- Demands must be combined on one planed order because of the POQ policy.

MRP Summary Inquiry: Item 02003

MRP Summary Inquiry: Item 02003

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 02003
Site: 10-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number: 02003 Standard Connector Site: 10-100

Qty on Hand: 0.0 EA Pur/Mfg: 0 Minimum Order: 100

Buyer/Planner: 1-02 Order Policy: FOG Mfg LT: 0 Maximum Order: 2,000

Master Schedule: No Order Period: 0 Purchase LT: 0 Order Multiple: 100

MRP Required: No Time Fence: 0 Inspect LT: 0 Order Quantity: 1,000

Plan Orders: Yes Safety Time: 0 Inspect Req: No Yield Percent: 100.00%

Issue Policy: Yes Safety Stock: 100 Cum LT: 0

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	159	30	43	30	30	30
Sched Receipts	0	0	0	0	0	0
Projected QOH	-159	311	708	738	708	678
Plan Ords Due	0	1000	0	0	0	0
Plan Ords Pld	0	1000	0	0	0	0

Q9-PL-390

This MRP Summary Inquiry (23.13) shows the requirements and order schedule for the standard connector (item 02003).

The requirement to buy in cartons of 1000 makes it more difficult to see the connections between the lower-level component and the higher-level demand.

This is one reason it is so important to get good planning data, plan well ahead of lead time requirements, and trust the system.

MRP Detail Inquiry: Item 02003

MRP Detail Inquiry: Item 02003



MRP Detail Inquiry

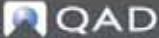
04/11/12

Item Number: 02003 Site: 10-100 Start Date: 04/11/12
Standard Connector Output: PAGE1000

Item Number: 02003 Qty on Hand: 0.0 Site: 10-100
Standard Connector UM: EA Pur/Mfg: 0

Buyer/Planner: 1-02 Ord Pol: F00 Min Order: 100 Mfg LT: 0
Mstr Sched: No Order Period: 0 Max Order: 2,000 Pur LT: 0
MRP Required: No Time Fence: 0 Ord Mult: 100 Ins LT: 0
Plan Orders: Yes Safety Time: 0 Order Qty: 1,000 Inspect: No
Issue Policy: Yes Safety Stock: 100 Yield%: 100.00% Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
04/11/12			-189		Beginning Available
04/11/12			811	1,000	I/S: 08020077 Site: 10-200 Release Date: 04/10/12
04/17/12	30		781		W/O: 10350002 ID: 2296208 Assem: 01040
04/17/12	13		768		W/O: W0412020 ID: 2322956 Assem: 50001
04/24/12	30		738		W/O: 12130002 ID: 2299610 Assem: 01040
05/01/12	30		708		W/O: 12130003 ID: 2299611 Assem: 01040
05/08/12	30		678		W/O: 12130004 ID: 2299612 Assem: 01040



Q9-PL-390

MRP Detail Inquiry (23.16) for item 02003 shows the higher-level work orders for the medical ultrasound assembly that are creating the demand for the connectors and the effect of the order multiple of 1000.

MRP Summary Inquiry: Item 60003

MRP Summary Inquiry: Item 60003

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 60003
Site: 10-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number:	60003	Keyboard	Site:	10-100			
Qty on Hand:	46.0 EA		Pur/Mfg:	P			
Buyer/Planner:	T-02	Order Policy:	POQ	Mfg LT:	1	Minimum Order:	20
Master Schedule:	Yes	Order Period:	7	Purchase LT:	5	Maximum Order:	1,000
MRP Required:	No	Time Fence:	0	Inspect LT:	0	Order Multiple:	1
Plan Orders:	Yes	Safety Time:	0	Inspect Req:	No	Order Quantity:	0
Issue Policy:	Yes	Safety Stock:	0	Cumulative LT:	0	Yield Percent:	100.00%

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	102	15	27	15	15	15
Sched Receipts	63	13	0	0	0	0
Projected QOH	7	5	-22	-37	-32	-27
Plan Ords Due	0	0	0	0	20	20
Plan Ords Rat	0	0	0	20	20	25

Q3-PL-400

The MRP Summary Inquiry (23.13) for item 60003 (keyboard) shows an initial quantity on hand of 46. Since the keyboard is a purchased component, the detail inquiry shows a purchase order as a source of supply.

MRP Detail Inquiry: Item 60003

MRP Detail Inquiry: Item 60003

MRP Detail Inquiry

04/11/12

Item Number: 60003 Site: 10-100 Start Date: 04/11/12
Keyboard Output: PAGE

Item Number: 60003 Qty on Hand: 46.0 Site: 10-100
Keyboard IM: EA Pur/Mfg: P

Buyer/Planner: 1-02 Ord Pol: POQ Min Order: 20 Mfg LT: 1
Mstr Sched: Yes Order Period: 7 Max Order: 1,000 Pur LT: 5
MRP Required: No Time Fence: 0 Ord Mult: 1 Ins LT: 0
Plan Orders: Yes Safety Time: 0 Order Qty: 0 Inspect: No
Issue Policy: Yes Safety Stock: 0 Yield%: 100.00% Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
04/11/12			-8		Beginning Available
04/14/12		13	5		PO: P0041205 Line: 1
04/17/12	15		-10		W/O: 20250002 ID: 2296208 Assem: 01040
04/19/12	12		-22		W/O: W0412078 ID: 2322964 Assem: 01010
04/24/12	15		-37		W/O: 12130002 ID: 2299610 Assem: 01040
05/01/12	15		-52		W/O: 12130003 ID: 2299611 Assem: 01040
05/01/12			-32	20	W/O: 08020111 ID: 2286399 Release Date 04/26/12
05/08/12	15		-47		W/O: 12130004 ID: 2299612 Assem: 01040

Q9-PL-410

MRP Detail Inquiry (23.16) for item 60003 shows a purchase order receipt scheduled this week for a quantity of 5.

Exercise 11-2: Effect of Sales Order Demand

In this exercise, you:

- Define forecast consumption in Sales Order Control.
- Enter a sales order that creates demand:
 - Line 1: normal SO (consumes forecast), quantity = 5, due in two weeks
 - Line 2: abnormal SO (does not consume forecast,) quantity = 5, due in five weeks
- Review item planning data and forecasts used by MRP.
- Run Regenerate Materials Plan and review the results.

Define Control Setting for Forward/Back Forecast Consumption

- 1 Use Sales Order Control (7.1.24) to enter values that affect forecast consumption.

Accept all defaults, click Next until you reach:

Field	Data
Consume Forward	10
Consume Back	10

Also make sure SO Edit ISB Defaults to No (unchecked) to avoid unnecessary pop-ups in Sales Order Maintenance.

Enter a Sales Order

- 2 Use Sales Order Maintenance (7.1.1) to enter a sales order with three lines.

Write down the order number here for later reference: _____

In the header, accept all defaults except for the following:

Field	Data
Sold-To	10C1003
Bill-To	10C1003
Ship-To	10C1003

Line 1

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	7 days from today
Consume Forecast	Yes

Line 2

Field	Data
Item	01010
Site	10-100
Quantity	20

Field	Data
Due Date	14 days from today
Consume Forecast	No

Line 3

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	21 days from today
Consume Forecast	Yes

- 3 At line 4 click End Lines. Click Trailer. Click Next. Enter your initials in CR Initials. Click Next, then Back.

Review Forecast

- 4 Use Forecast Worksheet Maintenance (22.2) to review forecast for item 01010. Notice that sales of the first 20 consumes forecast. Sales of second 20 does not consume any forecast.

Review Master Schedule Summary

- 5 Use Master Schedule Summary Inquiry (22.18) to review item 01010 at site 10-100.

Field	Data
Item	01010
Site	10-100
Start Date	Monday of the current week
Column Type	W (weekly)
Per Column	1

Click Run.

The display has two sections. In the top section, locate the following fields and record the values:

QOH (quantity on hand): _____

MRP Required: Yes/No _____

Plan Orders: Yes/No _____

Order Policy: _____

Review the bottom frame. Notice forecast amounts, sales order amounts, projected QOH, available to promise (ATP), and cumulative ATP.

Review Planning Data and Run Regenerate MRP

- 6 Use Item Planning Maintenance (1.4.7) to review planning data for item 01010, and add the following data if necessary:

Field	Data
Order Policy	POQ
Order Period	7
Order Quantity	20
Manufacturing Lead Time	System calculation
Order Multiple	1

- 7 Use Regenerate Materials Plan (23.2) for site 10-100.

Note You cannot direct output to Page in this program, so enter your initials in the printer field; there is no output you need to review. A warning, which you can ignore, displays that this device is not a defined printer.

- 8 Use Master Schedule Summary Inquiry (22.18) to review item 01010 at site 10-100. Make sure the master schedule meets the forecast demand of parent item 01010.
- 9 Use Master Schedule Detail Inquiry (22.21) to review. What information does it provide that the Master Schedule Summary Inquiry did not provide?

Approve Planned Purchase Orders

The QMI planner uses Planned Purchase Order Approval (23.11) to approve MRP planned purchase orders.

Approving the MRP planned purchase orders converts them into purchase requisitions. The planner:

- Selected a range of item numbers that includes only the components of the medical ultrasound and only for the local site.
- Selected a range of dates that will include any past due orders, but only look a short time into the future. This will limit the number of orders selected.
- Set Default Approve to Yes so all planned orders will be selected for approval. If you do the selection by release date—for example all orders due to be released today, a common way to use this function—checking Default Approve minimizes data entry.

If you are unsure, you can leave Default Approve unchecked and approve the orders individually. When there are many planners, orders are usually selected by buyer/planner code.

A review screen displays next.

Approve Planned Orders

Ln	Req	Item Number	Qty Ordered	Rel Date	Due Date	Appr
1	08020111	60003	20.0	4/26/2012	5/1/2012	☒
2	08020112	60003	20.0	5/3/2012	5/8/2012	☒
3	08020113	60003	25.0	5/10/2012	5/15/2012	☒
4	04110038	60003	37.0	5/17/2012	5/22/2012	☒
5	04110039	60003	20.0	5/24/2012	5/29/2012	☒
6	04110040	60003	20.0	5/31/2012	6/5/2012	☒
7	04110041	60003	20.0	6/7/2012	6/12/2012	☒
8	04110042	60003	34.0	6/14/2012	6/19/2012	☒
9	04110043	60003	20.0	6/21/2012	6/26/2012	☒
10	04110044	60003	20.0	6/28/2012	7/3/2012	☒

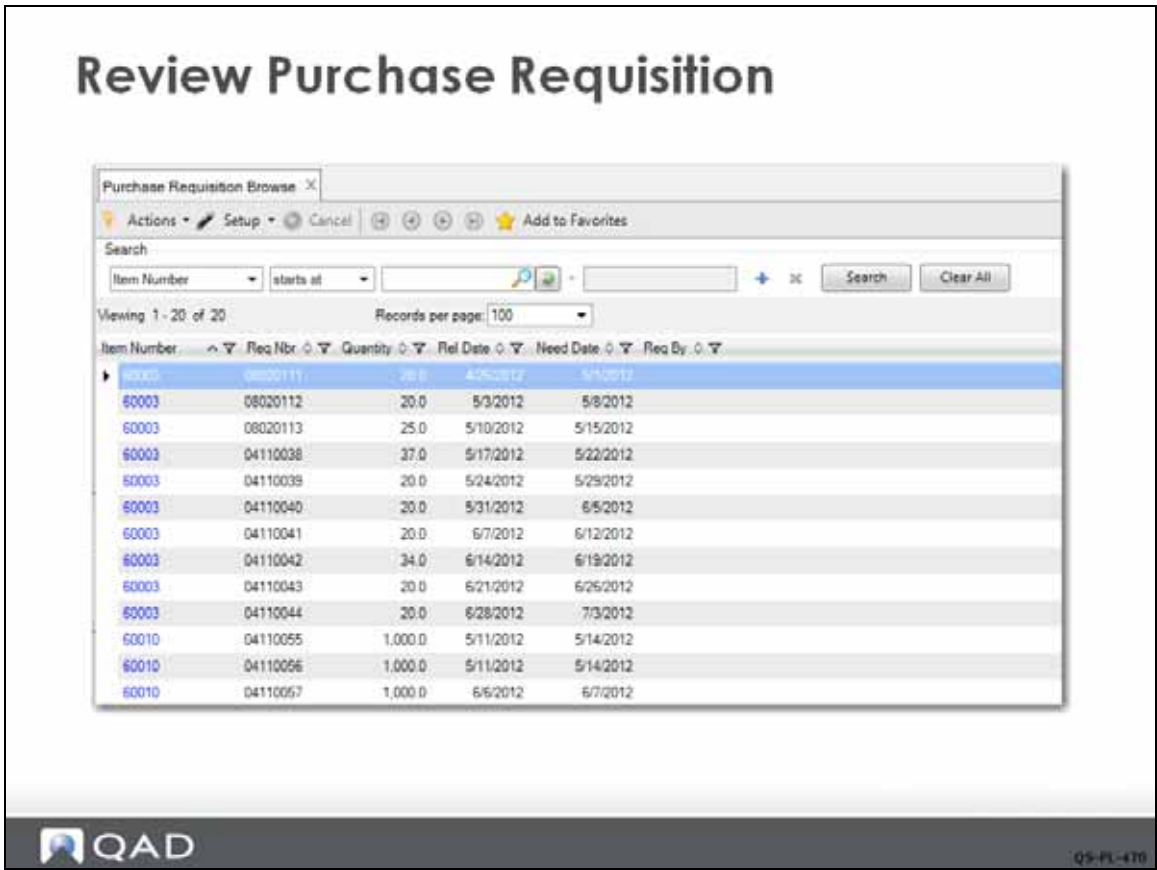
Ln	Req	Item Number	Qty Ordered	Rel Date	Due Date	Appr
0						☐

The Appr box is already checked because Default Approved was selected in the previous screen. Clicking Next brings up a verification window for confirmation. Clicking Yes approves all orders, converting them into purchase requisitions. They are no longer planned orders.

If more orders need approval than will fit on one screen, clicking Next brings up the next ten orders for review. The system cycles through as many screens as necessary to display all the orders included with your selection criteria.

If you are manually selecting orders for approval, or if you need to change a particular order's selection, use the lower frame. Enter the line number of the order you want to change, then click Next to the Approval check box and either check it or uncheck it, then click Next again.

Review Purchase Requisition



Purchase Requisition Browse

Actions Setup Cancel Add to Favorites

Search

Item Number starts at Search Clear All

Viewing 1 - 20 of 20 Records per page: 100

Item Number	Req Nbr	Quantity	Rel Date	Need Date	Req By
60003	08020111	38.0	4/26/2012	5/1/2012	
60003	08020112	20.0	5/3/2012	5/8/2012	
60003	08020113	25.0	5/10/2012	5/15/2012	
60003	04110038	37.0	5/17/2012	5/22/2012	
60003	04110039	20.0	5/24/2012	5/29/2012	
60003	04110040	20.0	5/31/2012	6/5/2012	
60003	04110041	20.0	6/7/2012	6/12/2012	
60003	04110042	34.0	6/14/2012	6/19/2012	
60003	04110043	20.0	6/21/2012	6/26/2012	
60003	04110044	20.0	6/28/2012	7/3/2012	
60010	04110055	1,000.0	5/11/2012	5/14/2012	
60010	04110056	1,000.0	5/11/2012	5/14/2012	
60010	04110057	1,000.0	6/5/2012	6/7/2012	

QAD QS-PL-470

In Purchase Requisition Browse (5.1.5), you can see that the system has converted the planned purchase orders into purchase requisitions. Notice the Release Date and Need Date.

The Release Date is when the purchase order should to be created and released to the vendor to ensure that the material will arrive when it is needed (Need Date). The Release Date takes into account the purchase lead time and any internal purchase inspection lead time. The purchase lead time is determined in consultation with the vendor and makes allowance for transport time.

Create Purchase Order

Create Purchase Order

Purchase Order Maintenance

Go To - Actions - Copy - Print - Preview - Attach -

Header Lines Trailer

Header Details Tax Info Logistics Delivery ERS Consignment Comments

Header

Purchase Order: P1010004 Supplier: 1051002 Ship-To: 10-100

Supplier: Bridgeville Industries
3390 Linco Road
Stevenville MI 49127
USA - TAX PURPOSE

Ship To: QMI-USA Division
30 Ridgedale Avenue
East Hanover NJ 07950
USA - TAX PURPOSE

Details

Order Date: 4/15/12 Price Tbl: Disc Tbl: Confirming: ☒ Imp Exp: ☐

Due Date: 4/11/2012 Buyer: 3-02 Ln Disc: 0.00 Currency: USD Language: us

Bill To: 10-100 Site: Taxable: ☒ Fixed Price: ☒ Consign: ☐

Sales/Job: Daybook Set: 10PURCH Credit Terms: 300 Entered By: mlg

Contract: Project: Requested By:

Contact: Comments:

Remarks:

QAD Q9-PL-400

The QMI buyer now creates a purchase order to buy the required components based on the requisitions created from the MRP planned orders.

The purchase order is created in Purchase Order Maintenance (5.7) using the same basic procedure that was shown in Chapter 8, “Purchasing,” on page 211. However, in this case, the line items are created from requisitions rather than entered manually, which requires a few adjustments to the process.

When creating a PO from requisitions, leave the Due Date field on the PO header blank. This ensures that the line item due dates default from the requisition due date, not the PO header due date. This means each line item can have a different due date, based on the requisition need date.

Add Purchase Order: Line 1 (60003)

Add Purchase Order: Line 1 (60003)

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010004 Supplier: 1051002 Ln Format S/M: Single

Ln	Site	Req	Item	Qty Ordered	UM	Unit Cost	Disc%
1	10-100			0.0		0.00	0.00

Line Details

Qty Received: Due Date: CRT Int:

Qty to Rel: Per Acct:

Single Lot ☐ Performance Date: Project:

Location: Need Date: Type:

Item Revision: Sales/Job: Taxable ☐

Status: Fixed Price ☐ Inspect Req ☐ Comments:

Supplier Item: UM Conversion:

Manufacturer: Stock UM Quantity:

Description: Update Avg/Last Cost ☐

Extended Net Cost:

QAD QS-PL-496

To create a line, the buyer only needs to enter the requisition number for the item (using the lookup) and the remaining fields are filled in based on the requisition. Using the requisition lookup, double-click the requisition number to add it to the PO. Then click Next until you cycle back to the line number field for the next item.

Note Once a requisition is added to a PO, the requisition record is deleted. It now exists only as purchase order line item.

Add Purchase Order: Line 1

Purchase Order Maintenance X

Go To • Actions • Copy • Print • Preview • Attach •

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010004 Supplier: 1051002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
10-100		04110038	60003	37.0	EA	55.00	0.00

Line Details

Qty Received: 0.0 Due Date: 4/11/2012 CRT Int: 0.00
Qty to Rel: 0.0 Pur Acct: 6610 Mech: ADM
Single Lot: ☐ Performance Date: 4/11/2012 Project:
Location: 020 Need Date: 5/22/2012 Type:
Item Revision: Sales/Job: Taxable: ☐
Status: Fixed Price: ☒ Inspect Req: ☐ Cnvrts: ☐
Supplier Item: UM Conversion: 1.0000
Manufacturer: Stock UM Quantity: 37.0 EA
Description: Keyboard Update Avg/Last Cost: ☒
Extended Net Cost: 2,035.00

QAD

QS-PL-500

Line 1 for item 60003 is shown here; the data defaults into the PO line from the requisition. If buyers have authority, they can override the requisition information and manually adjust the PO line item quantities, due date, or cost and discount. Buyers often, for example, have authority to increase the line item quantity slightly in order to get a quantity discount.

The buyer adds two more requisitions to the order before exiting the lines to complete the trailer.

The trailer frame displays the total value of the order and completes the purchase order.

Receive Purchase Order

Receive Items

Purchase Order Receipts X

Go To Actions Copy Print Preview

Order: p1010004 Supplier: 10S1002 Status: Effective: 4/12/2012

Packing Slip:
Receiver: Bridgeville Industries

Move to Next Operation: ☒
Receive All: ☒
Comments:

Purchase Order Receipts X

Go To Actions Copy Print Preview

Order: P1010004 Supplier: 10S1002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	60003	EA	37.0	EA	37.0	EA		4/11/2012	
2	60003	EA	20.0	EA	20.0	EA		4/11/2012	
3	60003	EA	20.0	EA	20.0	EA		4/11/2012	

QAD

Q9-PL-358

In Purchase Order Receipts (5.13.1), the receiving clerk checks Receive All since the purchase order has been shipped complete. This sets up the receipt for simplified processing. If the vendor has provided a packing slip with a reference number, the number can be entered.

Next displays a screen with all the receiving data pre-filled. Click Next to proceed and click Yes when prompted to display the details about the receiving transactions about to be completed, including the default inventory location where the system expects the material to be placed. If all is correct click Next.

You can use Inventory Detail by Item Browse (3.2) to review the current inventory balances of the component items after the receipt.

Review Planned Order Report or Browse

Planned Order Report or Browse

The screenshot shows the 'Planned Order Browse' window in QAD. It features a search bar with 'Item Number' and 'starts at' filters, and a table of planned orders. The table columns are: Item Number, Site, Work Order, ID, Buyer/Planner, Purchase/Manufacture, Qty Ordered, UM, and Rel Date. The first row is highlighted in blue.

Item Number	Site	Work Order	ID	Buyer/Planner	Purchase/Manufacture	Qty Ordered	UM	Rel Date
01010	10-100	04110002	2326386	1-01	M	22.0	EA	5/24/2012
01010	10-100	04110003	2326387	1-01	M	5.0	EA	6/1/2012
01010	10-100	04110004	2326388	1-01	M	5.0	EA	6/8/2012
01010	10-100	04110005	2326389	1-01	M	12.0	EA	6/22/2012
01010	10-100	04110006	2326390	1-01	M	3.0	EA	6/29/2012
01010	10-100	04110007	2326391	1-01	M	5.0	EA	7/6/2012
01013	10-100	04110007	2326404	1-03	P	1,000.0	BX	6/22/2012
01025	10-100	04110008	2326392	1-01	M	9.0	EA	6/6/2012
01030	10-100	08020029	2286330	1-01	M	50.0	EA	4/9/2012
01030	10-100	08020030	2286331	1-01	M	25.0	EA	4/26/2012
01030	10-100	08020031	2286332	1-01	M	25.0	EA	5/10/2012
01030	10-100	08020032	2286333	1-01	M	25.0	EA	5/31/2012
01030	10-100	08020033	2286334	1-01	M	25.0	EA	6/14/2012
01030	10-100	09070005	2288191	1-01	M	25.0	EA	7/5/2012

QAD QS-PL-590

The QMI planner and buyer have handled the planned purchase orders. Next, the planner focuses on the manufacturing orders.

The production control planner checks the Planned Order Report (23.12) or Browse (23.9) to see a list of the orders that MRP has planned but that are not firm planned yet. Once approved, MRP planned orders become firm planned orders. Remember, firm planned orders cannot be replanned by MRP so you do not want to approved MRP planned orders until you are ready to release them.

Note MRP planned purchase orders, when approved, become purchase requisitions. MRP planned work orders, when approved, become firm planned orders.

The Planned Order Browse shows both manufactured and purchased item planned orders. Note the M or P in the Purchase/Manufacture column.

For this example, the planner decides to release the first planned order.

Approve Planned Work Orders

Planned Work Order Approval

Go To Actions Copy Print Preview Attach

Item Number: 01010 To: 01010

BOM Formula: To:

Site: 10-100 To: 10-100

Release Date: To:

☒ Default Approve

☐ Buyer/Planner

☐ Include Phantom

☐ Include Kanban Replenished Items

☐ Include Line Manufactured Items

☐ Include Purchased Items

QAD Q9-PL-600

The planner uses Planned Work Order Approval (23.10) to approve the MRP planned order. The planner has deselected Default Approve.

Note You can also choose orders by planner code or release date to limit the items displayed.

Planned Work Order Approval: Line 1

Planned Work Order Approval: Line 1

Planned Work Order Approval
Go To
Actions
Copy
Print
Preview
Attach

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	04110002	2326386	01010	22.0	5/24/2012	☐
2	04110003	2326387	01010	5.0	6/1/2012	☐
3	04110004	2326388	01010	5.0	6/8/2012	☐
4	04110005	2326389	01010	12.0	6/22/2012	☐
5	04110006	2326390	01010	3.0	6/29/2012	☐
6	04110007	2326391	01010	5.0	7/6/2012	☐

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	04110002	2326386	01010	22.0	5/24/2012	☐

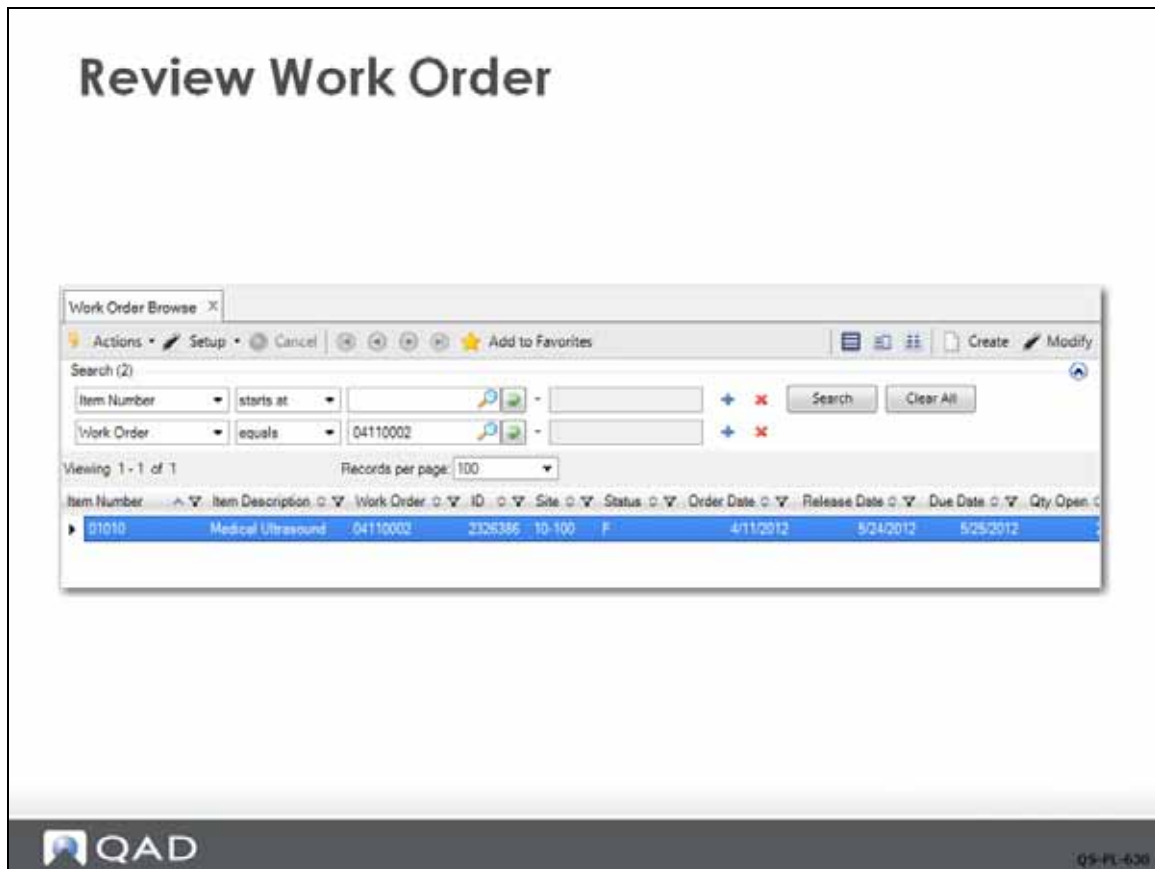
Q9-PL-618

Because Default Approve was unchecked in the first frame of Planned Work Order Approval (23.10), the OK check box defaults to unchecked. After reviewing the list, the planner approves specific orders by entering the line number displayed in the upper window into the Ln field of the lower frame, clicking Next, and checking OK by clicking the cursor in the box.

Clicking Next moves the check mark to the upper window and clicking it again displays a confirmation message.

Clicking Yes to the confirmation approves the planned order and makes it Firm Planned. When an order is firmed, you can no longer see it in Planned Work Order Browse.

Review Work Order



In this example, the planner uses Work Order Browse (16.2) to review work orders for item 01010 at site 10-100.

Since there are many orders, the planner adds another search criteria to the browse and searches for the specific order he just approved (04110002), which now has a status code of F (firm planned). This means that it is no longer under MRP control.

Note the different numbering scheme for MRP planned orders compared to the one you created in Chapter 9, “Manufacturing Execution,” manually (see page page 284). The manually created order has a sequential number assigned from the counter in Work Order Control. The MRP orders have a date-coded sequential number.

Verify Availability of Components

Verify Availability of Components


QAD

Work Order Component Check

04/12/12

Work Order 04110002	ID	Component Item	Short Only No	Output PAGE	
Component Item	Qty	Req UM	On Hand	Qty Alloc	Qty Short
50001	22.0	EA	89.0	0.0	0.0
Probe Unit - 10 Mhz	10-100				
60001	22.0	EA	777.0	0.0	0.0
Durable Plastic Housing	10-100				
60002	22.0	EA	135.0	0.0	0.0
Display / Readout	10-100				
60003	22.0	EA	123.0	0.0	0.0
Keyboard	10-100				
60005	22.0	EA	1,209.0	0.0	0.0
Battery	10-100				
60006	22.0	EA	125.0	0.0	0.0
Monitor Cable	10-100				
60007	22.0	EA	771.0	0.0	0.0
Movable Cart	10-100				
60008	22.0	EA	235.0	0.0	0.0
Printer	10-100				
60050	22.0	EA	183.0	0.0	0.0
Base Unit / CPU	10-100				
90093	22.0	EA	545.0	0.0	0.0
Shipping Carton	10-100				

16.3.18

Work Order Component Check

wwwccc.p


QAD

Q3-PL-648

QMI's production activity control (PAC) manager uses Work Order Component Check (16.3.18) to verify the availability of components in inventory.

By default, this utility shows only those components that are short of the requirement for this order.

In the selection screen, you enter the specific work order you want to check. If you deselect the Short Only check box, you will see the display pictured here, which shows the specific quantities required for this order and the quantity on hand. In this example, each component has a sufficient quantity.

Other programs can be used to review potential shortages:

- Work Order Bill Shortage Inquiry (16.15)
- Work Order Bill Shortage Report (16.16)
- Work Order Bill Shortage by Item (16.17)

Release Work Order

Release Work Order

Work Order Release/Print X

Go To Actions Copy Print Preview Attach

Work Order: 04110002
ID: 2326306
Batch:
Print Picklist: ☒
Print Routing: ☒
Print Co/By-Products: ☒

Deliver To:
Print Bar Code: ☐
Operation: ☒
Update Release Date: ☐

Item Number: 01010
Medical Ultrasound
Quantity Ordered: 22.0
Quantity Completed: 0.0
Sales/Job:

Release Date: 5/24/2012
Work Order Due Date: 5/25/2012
Work Order Status: F
Supplier:

Remarks:

Output:
Batch ID:

QAD Q9-PL-458

The PAC manager releases the work order using Work Order Release/Print (16.6). Note the print selection options that have been chosen. Set the Output field to Page to view the result of releasing the work order.

Work Order Release/Print: Picklist

Work Order Release/Print



Work Order Release/Print
10USA

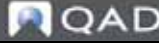
04/12/12 00:37:21
Page:2

Work Order Picklist

Work Order: 04110002
ID: 2326386
Batch:
Item Number: 01010
Remarks: Medical Ultrasound
Qty Ordered: 22.0 EA

Issue Date: 05/24/12
Rev: 0
Work Order Due Date: 05/25/12
Sales/Job:
Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
*** Continued ***						
50001		020	50001-1011-2	1.0	()	
		020	50001-1011-3	1.0	()	
		020	50001-1011-4	1.0	()	
		020	50001-1011-5	1.0	()	
		020	50001-1011-6	1.0	()	
60001		10-100		22.0	EA	
Durable Plastic Housing		020		22.0	()	
60002		10-100		22.0	EA	
Display / Readout		020		22.0	()	
60003		10-100		22.0	EA	
Keyboard		020		22.0	()	



QS-PL-660

This slide shows the hard-copy work order picklist. This document would be routed to the stock room so the stock clerk can use it to issue the components to the work order.

Work Order Release/Print: Routing

Work Order Routing



Work Order Release/Print
10USA

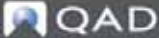
04/12/12 00:37:21
Page:5

Work Order Routing

Work Order: 04110002
ID: 2326386
Batch:
Item Number: 01010
Medical Ultrasound
Remarks:
Qty Ordered: 22.0 EA

Rev: 0
Work Order Due Date: 05/25/12
Sales/Job:
Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000 Mach: 1001 General Assembly-Ultra ASSEMBLE COMPONENTS			5.0			()
				220.0			()
20	1050 Mach: 1001 Product Test-Ultra TEST FINISHED UNIT			2.0			()
				110.0			()
30	1060 Mach: 1001 Packaging -Ultra PACK FOR SHIPPING			0.5			()
				44.0			()


Q9-PL-670

This slide shows the work order routing, which would be sent with the components to the work center of the first operation and each subsequent operation.

Note It is not necessary to print hard-copy documents. Many companies manage production in a paperless fashion. The system records what components are required for each order, so the stock room can do an electronic transaction to issue the parts. In the same manner, the shop floor control system records each operation in each work center for the work order and reporting can be done with any terminal.

Issue Work Order Components

Work Order Component Issue

Work Order: 04110002 ID: 2326386 Op: Effective: 4/12/2012
 Item Number: 01010 ST: R Issue Alloc: ☐
 Medical Ultrasound Issue Picked: ☒
 Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss
50001	22.0	0.0	22.0	22.0
60001	22.0	0.0	22.0	22.0
60002	22.0		22.0	22.0

Display items being issued

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: U/M: Reference:
 Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐
 Document:

QAD QS-PL-660

The stock clerk issues the components using Work Order Component Issue (16.10). By checking Issue Picked in the header frame, the system pre-fills the transaction fields with the information from the work order picklist created in the previous step.

Click Yes to Display Items being Issued so you have an opportunity to verify that the correct items are being issued from the correct locations in the correct quantities. Then click Yes again when prompted to confirm the transaction and issue the components.

Report Labor

Report Labor

Labor Feedback by Work Order

Go To Actions Copy Print Preview Attach

Work Order: 04110002 ID: 2326386
 Operation: 30 PACK FOR SHIPPING Op Status: QUEUE
 Document:
 Employee: 10-emp01 Alex Erikson Pay Code:
 Department: 0550 Work Center: 1060 Time Ind: Hours Minutes
 Shift: Machine: 1001 Project:

Quantity Completed: 22.0 Effective Date: 4/12/2012

Rejects: ☐
 Rework: ☐

Start Setup: 00:00:00
 Elapsed/Stop Setup: 00:00:00 Elapsed Setup: 0.000
 Start Run: 00:00:00
 Elapsed/Stop Run: 00:00:00 Elapsed Run: 0.000

Operation Complete: ☒
 Move to Next Operation: ☒
 Previous Ops Complete: ☒

Comment:
 Down Time: 00:00:00 Down Time Reason:

QAD Q9-PL-690

On the shop floor, Alex (employee 10-EMP01) uses Labor Feedback by Work Order (16.20.1) to report the labor for completing the 22 medical ultrasound units. Operation 30, shown here, is the last operation.

Each operation was recorded with Operation Complete selected. This means no intermediate reporting was done. Move Next Operation was selected, which set the status at the next operation to Queue. Previous Operations Complete was selected just to be sure all operations were closed in case anyone forgot to report it.

Discussion

Where were the standard setup and run times defined?

Receive and Close Work Order

Work Order Receipt

Go To • Actions • Copy • Print • Preview • Attach •

Work Order: 04110002 ID: 2326386 Effective: 4/12/2012

Remarks: Batch:

Item Number: 01010 Lot/Serial Control: S UOM: EA

Description: Medical Ultrasound W/O Stat: R

Open Quantity: 22.0 Automatic Lot Numbers: ☐

Document:

Quantity: 22.0

UOM: EA

Conversion: 1.0000

Site: 10-100

Location: 010

Lot/Serial:

Reference:

Multi-Entry: ☒

Set Attributes: ☐

Total Units: 22.0

Remarks:

Close ☒

QAD Q9-PL-700

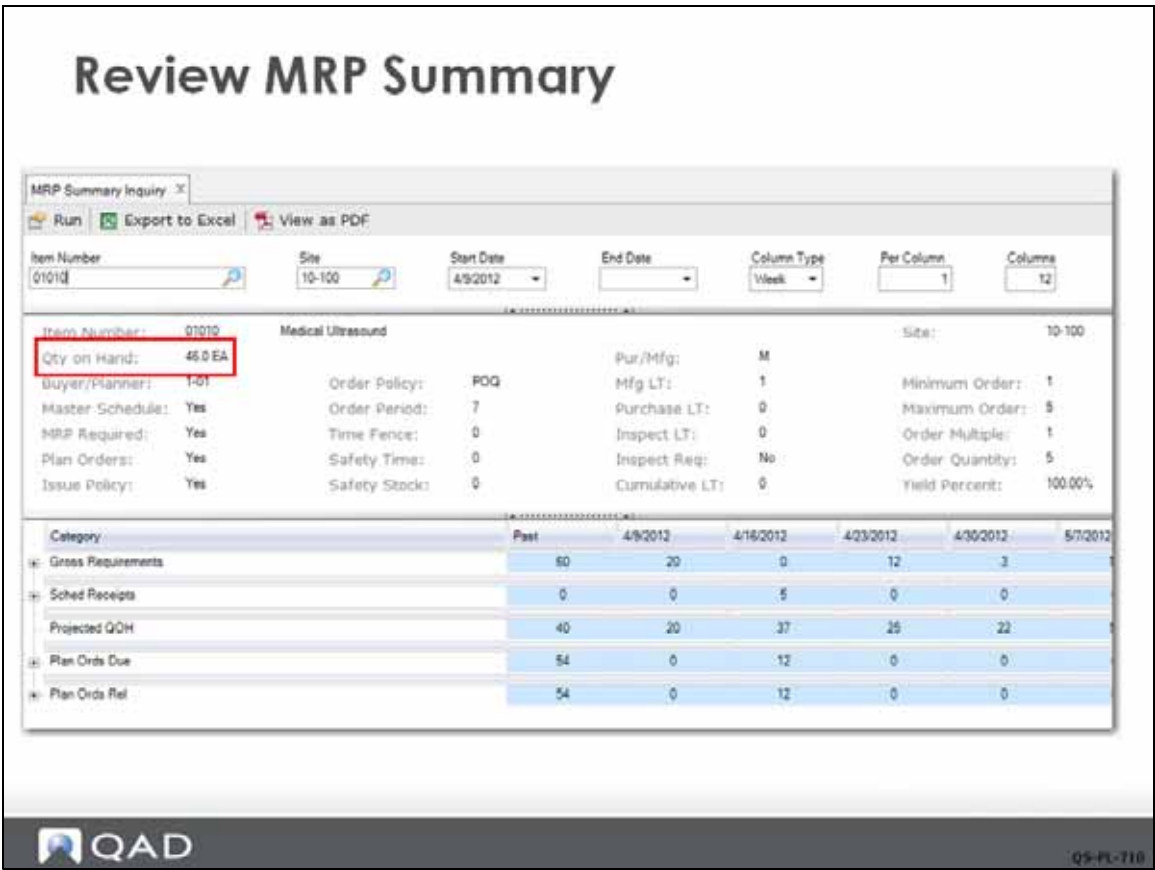
Using Work Order Receipt (16.11), the Finished Goods Inventory personnel receive the 22 units of 01010 and close the work order.

Note the check mark in Multi-Entry. The medical ultrasound is a serial number controlled item so each of the 22 units must be received individually. To streamline this, you can enter the first serial number and the system will generate a sequence of 21 more numbers for you.

After completing this, the clerk selects the Close box. This indicates the work order is complete and closed from a manufacturing standpoint. To do a partial receipt, enter the quantity being received into inventory and leave the Close box unchecked. This leaves the work order status R (Released) and open to receive the balance of the items at a latter time.

Clicking Next displays a prompt to review; clicking Next again displays a confirmation.

Review MRP Summary



A quick review of the MRP Summary Inquiry (23.13) for item 01010 shows a much more balanced situation. Previous quantity on hand was 24 and now 46 items are on hand. None of the weeks show a projected negative quantity on hand, which means there should be enough inventory to meet orders.

Ship Items on Sales Order

Allocate Items to Sales Order

Sales Order Manual Allocations
X

Go To ▾
Actions ▾
Copy ▾
Print
Preview
Attach ▾

Order	Sold-To	Site
10S10001	10C1003	Pacific Health Care Systems 10-100

Ln	Item Number	T	Qty Allocated	Qty Picked	Qty B/O	Due Date
1	01010		15.0	0.0	0.0	4/12/2012
2	01010		0.0	0.0	15.0	5/19/2012

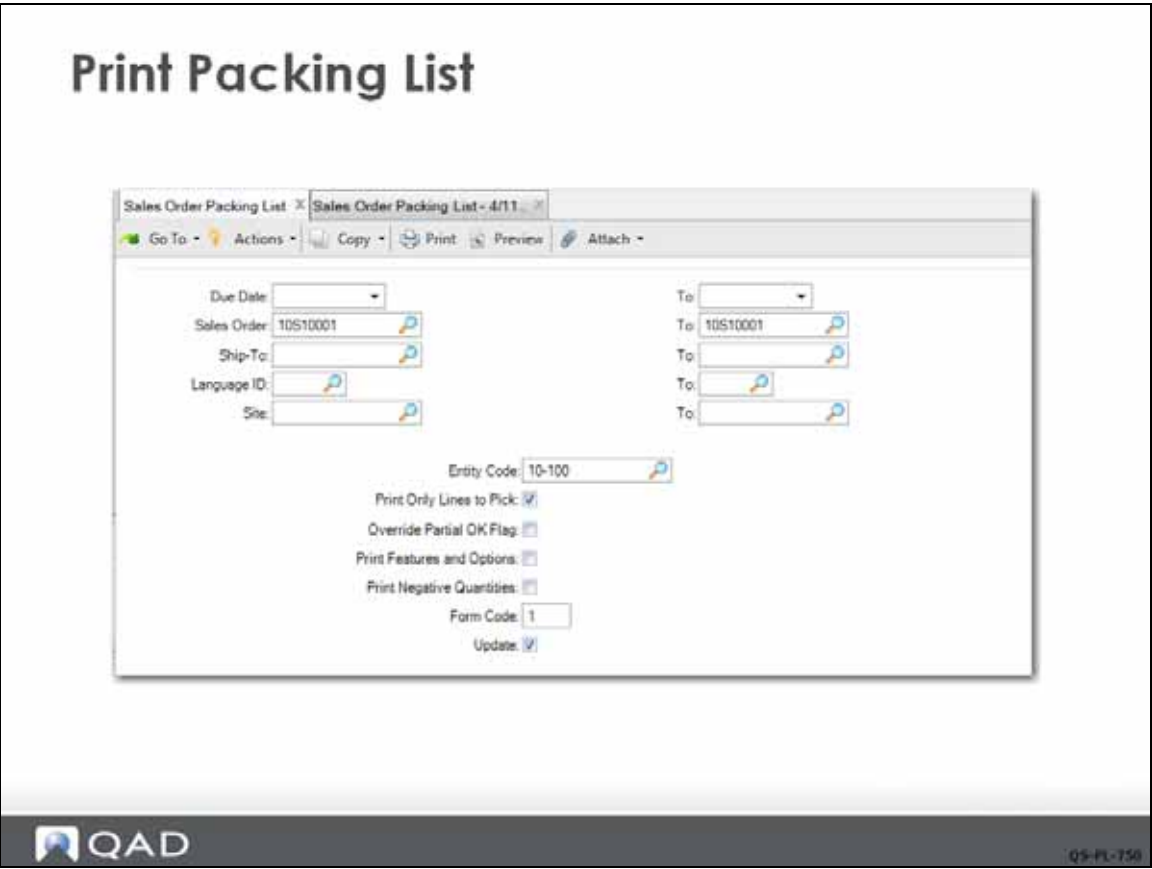
Ln	Item Number	T	UM	Qty Allocated	Qty Picked	Detail Allocations
☐						

Q9-PL-740

QMI's sales department has received the authorization from the customer to ship the first line (quantity of 15) on their sales order 10S10001. Sales Order Control has been set to allocate orders 10 days before the shipment due date. In order to complete the shipment, 15 units of inventory (01010) need to be allocated to the sales order.

The system lets you do this in several ways:

- Edit the order in Sales Order Maintenance and set Detail Allocations to Yes. Navigating all the frames in the maintenance program can be time-consuming.
- Create manual allocations with Sales Order Manual Allocations (7.1.6), shown here. These can be general or detail.
- Print a packing list and set Update to Yes. These allocations are always detailed and include serial numbers if required.



After creating the general allocations to the sales order line, print a packing list with Sales Order Packing List (7.9.13) to create detail allocations. Make sure that the Update check box is selected.

The picklist can be used to pick the items from inventory for shipment and can then be included with the shipment as a packing list. Alternatively, two copies of the packing list can be used if you need to keep a hard copy for internal purposes.

Ship Sales Order

Sales Order Shipments
Go To
Actions
Copy
Print
Preview

Order: 10S10001
 Effective: 4/12/2012
 Document:

Ship Allocated: ☐
 Ship Picked: ☒

Sold-To: 10C1003
 Pacific Health Care Systems
 Site:

Sales Order Line Items

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder	Site
1	01010		0.0	15.0	15.0	0.0	10-100
2	01010		0.0	0.0	0.0	15.0	10-100

Line: 1
 Quantity:
 Item Number:
 Description:

Cancel B/O: ☐

Site:
 Lot/Serial:
 Reference:

Loc:
 Multi Entry: ☐

With the packing list in hand, the QMI shipping department, pulls the inventory, packs it for shipment, and then processes the shipment transaction using Sales Order Shipments (7.9.15). Notice that the second line of the order has not been allocated and the 15 items on it display in the Backorder column. All of the items on line 1 are ready to ship.

The sales clerk continues to click Next and respond Yes when prompted to complete the transaction. The sales order remains open since not all of the items have shipped.

Invoice Post and Print

Invoice Post and Print



Invoice Post and Print
10USA

04/12/12 02
 P4

Sales Journal Reference: 2012/CINV000000002 AR Batch: 655

Invoice Number	Bill To Name	Sold-To Name	Ship To
2012/CINV000000002	10C1003 Pacific Health Care Systems	10C1003 Pacific Health Care Systems	10SP01

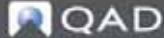
Sales Order: 10510001 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 04/11/12 PO:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced	Backorder	Tax	Price	Extended Price	Extended Margin
1	01010	EA	4010	mech	ADM	15.0		No	2,500.00	37,500.00	10,418.23
	Medical Ultrasound					0.0					

Non-Taxable: 37,548.57 Currency: USD Line Total: 37,500.00
 Taxable: 0.00 0.00% Discount: 0.00
 Tax Date: 04/12/12 Freight 20 : 48.57
 Containers: 0.00 Freight 20 : 0.00
 Line Charges: 0.00 Special 30 : 0.00
 Total Tax: 0.00
 Total: 37,548.57

Sales Journal Reference: 2012/CINV000000002 AR Batch: 655

				Consolidated Dr Consolidated Cr		
10USACO	1300	Gserv		04/12/12	37,548.57	.00 Invoice 2012/CINV000000002
10USACO	4010	mech	ADM	04/12/12	.00	37,500.00 Invoice 2012/CINV000000002
10USACO	4691			04/12/12	.00	48.57 Invoice 2012/CINV000000002
					37,548.57	37,548.57
					37,548.57	37,548.57



Q9-PL-000

Using Invoice Post and Print (7.13.4), process the shipment for invoicing.

Review the output of Invoice Post and Print by directing it to Page and viewing it on your monitor.

Exercise 11-3: Creating Supply for Demand

In the following exercise, you go through the basic processing functions and look at how they affect planning. During this exercise you:

- Review action messages and approve planned orders.
- Add purchase orders (POs) using purchase requisitions and receive them.
- Release MRP-approved work orders, issue components, report labor, receive, and close work orders.
- Ship and invoice a sales order.

Review Action Messages and Approve Planned Orders

- 1 Use MRP Summary Inquiry (23.13) and MRP Detail Inquiry (23.16) to review parent item 01010 and component items such as 60017 and 60018 at site 10-100.
- 2 Use Action Message Browse (23.6) to review each of the items.
- 3 Use Planned Purchase Order Approval (23.11) to approve any MRP-planned work orders based on Action Message Browse.

Field	Data
Item Number	<blank>
Site	10-100 to 10-100
Release Date	<blank> to today's date or end of the week
Default Approve	Yes

Approve orders (pop-up confirmation window displays; click Yes).

- 4 Use Purchase Requisition Browse (5.1.5) to check for items 60017 and 60018 to ensure that planned orders have been changed to purchase requisitions.

Add and Receive Purchase Orders (Using Requisitions)

- 5 Use Purchase Order Maintenance (5.7) to add a purchase order with each of the component items (60017 and 60018) on a purchase order line.

Header information:

Field	Data
Purchase Order	Use default (system generated)
Supplier	10S1002
Due Date	<blank>

On the line, in the Req (requisition) field, use your look-up browse to select a requisition for each item.

Update and exit.

- 6 Use Purchase Order Receipts (5.13.1) receive your purchase order.

Approve Planned Work Orders

- 7 Use Planned Order Browse (23.9) to view MRP-planned orders that need your approval. You will want to approve the first one at this time. Write down the number of this order for reference here: _____.

- 8 Use Planned Work Order Approval (23.10) to approve the work order you noted in the previous step.

Field	Data
Item Number	01010
Site	10-100
Release Date	<blank>
To	Release date of work order to approve based on information from Planned Order Browse in previous step

- 9 Use Work Order Browse (16.2) to see if the status of the planned order changed from P (Planned) to F (Firm Planned) when you did the approval.

Issue Components, Report Labor, Receive, and Close

- 10 Use Inventory Detail by Site Browse (3.3) to verify the availability of components in inventory for site 10-100.
- 11 Use Work Order Release/Print (16.6) to release your firm-planned order. Locate the work order by using the lookup. Accept all default values.
- 12 Use Work Order Component Issue (16.10) to issue components to your work order.
- 13 Use Labor Feedback by Work Order (16.20.1) to report labor against your work order. Use an employee from the pull down menu and report standard setup and run time for all operations (10, 20, and 30) for your work order quantity.

Important Time Ind = Decimal Hours

These standard times can be viewed on the work order routing that was printed when the order was released.

- 14 Use Work Order Receipt (16.11) to receive your work order quantity of item 01010 into inventory and close the work order.

Field	Data
Multi Entry	Yes
Lot/Serial Number	MD9500021
Quantity	10
Create list of serial numbers	Yes

Click Next, then Back until the Remarks field is displayed. Click Next.

Display Items and Lot/Serial detail = Yes.

Is all the information correct = Yes.

Click Back to exit.

- 15 Use MRP Summary Inquiry (23.13) to check item 01010.

Ship and Invoice a Sales Order

- 16** Use Sales Order Shipments (7.9.15) to ship line 1 of the sales order that you created in the previous exercise (step 2). Do not ship line 2.

Enter Line 1 manually.

Field	Data
Multi Entry	Yes
Lot/Serial Number	MD9500021
Quantity	10
Create list of serial numbers	Yes

Enter Line 2 manually, Quantity 0.

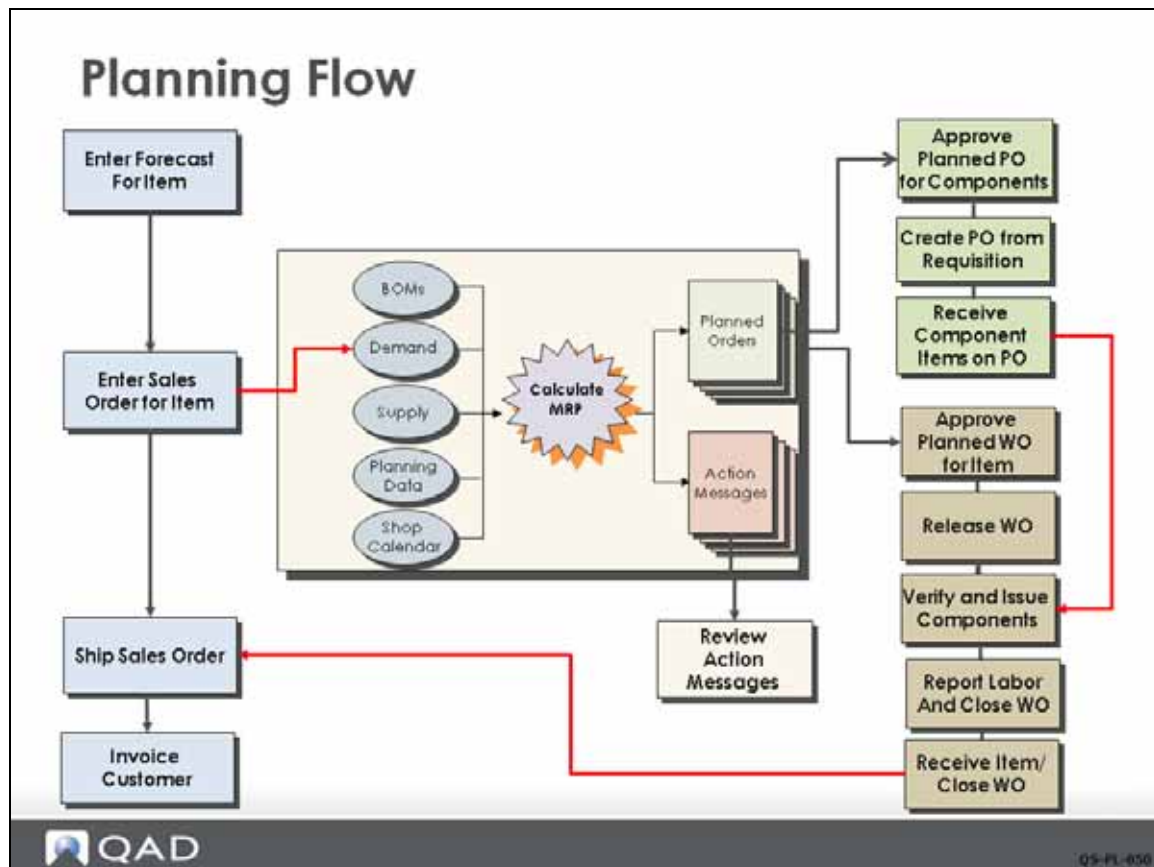
- 17** Use Invoice Post and Print (7.13.4) to post and print the invoice.
- 18** Use Customer Account Activity (27.17.3) to review the customer's account.

Note The update of the customer account requires some system setup. See the similar step “Review a Customer Account (Optional)” on page 345.

Answers to Order Policy and Modifier Activity

Period	1	2	3	4	5	6	7	8	9	10
Demand	25	30	20	35	25	30	25	35	30	25
LFL	25	30	20	35	25	30	25	35	30	25
FOQ = 35	35	35	35	35		35	35	35	35	
POQ 2 Periods	55		55		55		60		55	
POQ 2 Periods Min Qty = 60	60		60		60		60		60	
POQ 2 Periods Multi Qty = 25	75			75		50		75		25

Review



This is the slide that introduced the example of the planning activities that QMI followed, showing the way demand flows through the system.

- QMI entered a forecast for item 01010 and created a sales order for the item.
- Running Regenerate Materials Plan created planned orders and action messages.
- After approving a planned purchase order, QMI created a purchase order using the MRP requisitions for the component items and then received the items on the purchase order.
- QMI then approved a planned work order, verified availability of components, and released the work order.
- QMI verified component availability, issued work order components, reported labor, and received and closed the work order.
- The items built on the work order were then shipped on the sales order and the invoice posted and printed.

Quick Start Review Questions

Use the questions in this section to assess your learning.

- 1** Identify three ways to arrive at Item Master Maintenance using the .NET UI navigation features or process maps.
Find answer on page 12 and following.
- 2** Where are inventory status codes defined? What do they do?
Find answer on page 68.
- 3** Where are GL accounts associated with an item?
Find answer on page 136.
- 4** Three possible costing methods can be used with the current cost set. Name them.
Find answer on page 145.
- 5** Item costs are derived from five elements. Name them.
Find answer on page 141.
- 6** What are business relations?
Find answer on page 64.
- 7** Give a brief description of generalized codes. Name an example.
Find answer on page 148.
- 8** Where can item planning parameters be set for a single item and two or more sites?
Find answer on page 150.
- 9** What is the hierarchy for: location, site, database, domain, and entity?
Find answer on page 60.
- 10** What financial codes are set in the department? Work center? Machine?
Find answer on page 170.
- 11** At what levels can a shop calendar be set?
Find answer on page 169.
- 12** Which cost roll-up is performed first?
Find answer on page 190.

- 13** Explain the importance of the Order Quantity field in Item Planning Maintenance to the routing cost roll-up.
Find answer on page 190.
- 14** Is it possible to copy and move cost sets? Give an example.
Find answer on page 197.
- 15** Describe the purchasing flow.
Find answer on page 220.
- 16** What types of purchasing requisitions does the system support?
Find answer on page 222.
- 17** Describe three kinds of purchase orders.
Find answer on page 224.
- 18** What accounts are defined in Supplier Accounts Maintenance (2.3.7)?
Find answer on page 238.
- 19** Is the General Ledger directly updated by closing a purchase order? If not, how is it updated?
Find answer on page 257.
- 20** Where is the unit of measure (UOM) defined?
Find answer on page 239.
- 21** Describe the difference between “universal” and “specific” UOM conversions. Where is the relation set?
Find answer on page 239.
- 22** Name at least four of the seven work order types.
Find answer on page 267.
- 23** Put these work order statuses in the correct order to represent the life cycle: Batch, Released, Planned, Allocated, Exploded, Closed, and Firm Planned.
Find answer on page 269.
- 24** Is it possible to link an item to the operation where it is used? If so, how?
Find answer on page 157.
- 25** Can a scheduler create a planned order directly? If not, why?
Find answer on page 362.
- 26** There are two work order close functions. What are they and how do they differ?
Find answer on page 278.
- 27** To report labor, what records are required?
Find answer on page 275.
- 28** Describe the basic sales order process flow.
Find answer on page 312.

- 29** Explain the key distinctions of the three major sales order elements: header, line item, and trailer.
Find answer on page 313.
- 30** What is the difference between general and detail allocations of inventory?
Find answer on page 314.
- 31** Describe the basic payment process flow.
Find answer on page 318.
- 32** What are three ways to generate a sales order?
Find answer on page 312.
- 33** Where can you review the transaction detail processing a sales order shipment?
Find answer on page 338.
- 34** Provide examples of production plans, end-item plans, and component plans.
Find answer on page 351 and following.
- 35** What are key inputs to the Master Schedule?
Find answer on page 355.
- 36** Explain forecast consumption and identify where parameters are set.
Find answer on page 354.
- 37** Describe forward and backward consumption. Give an example.
Find answer on page 371.
- 38** Define the term Time Fence. How does it differ from horizon?
Find answer on page 360.
- 39** How are the Order Policy and Order Period related to each other?
Find answer on page 358.
- 40** What types of forecasts can the system manage and where are they entered?
Find answer on page 353.
- 41** What is the difference between Master Schedule and Material Requirements Plan? Can items be planned by both MPS and MRP?
Find answer on page 355.
- 42** There are five order policies; name two.
Find answer on page 358.
- 43** What are action messages?
Find answer on page 363.
- 44** Name three action messages.
Find answer on page 363.
- 45** What is different between the MRP Summary Inquiry and the MRP Detail Inquiry?

Find answer on page 388.

- 46** Identify at least two places where work order component availability can be found.

Find answer on page 410.

- 47** QAD's Manufacturing Execution suite supports multiple ways of producing items. Name two.

Find answer on page 122.

- 48** Locate the program number for Sales Order Maintenance.

Find answer on page 19.

- 49** Product Structure Maintenance (13.5) can be run in three modes, while most programs run only in two modes. What is the third mode and how do you change it?

Find answer on page 19.

- 50** Are blanket purchase orders recognized by MRP/MRP as a planned source? If not, what sources are recognized? (Hint: there are at least three.)

Find answer on page 225 and page 356.

- 51** Bonus: Identify at least two power browses.