BP*win*®

Getting Started

Computer Associates

MAN10160833E

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Chapter 1

Build a Model Business!

Manage Change with Business Process Design

Today's information revolution changes the way you conduct business. The boundless growth of the Internet redefines commerce and presents enormous opportunities and unique challenges. Now, more than ever, it is critical for organizations to keep up with necessary organizational and operational changes. BP*win* is designed to help you meet and exceed your objectives.

BP*win* is a comprehensive business-modeling environment that helps you to visualize, analyze, and improve business processes. This impacts your bottom line by reducing the total costs and risks associated with adapting to operational changes. BP*win* enables you to:

- Assess current business operations
- Formulate and evaluate alternative responses to market pressures
- Communicate operation changes quickly and intuitively

Comprehensive Business Perspectives

You can use BP*win* models to provide a framework that helps you gain a better understanding of your business processes, and determine how these processes interact with the data flowing through the organization. Using this powerful tool, you gain a clear understanding and analysis of process, dataflow, and workflow.

How Does Modeling Help My Business?

- **Business Process Modeling (IDEF0)** allows you to systematically analyze your business, focusing on the normal day-to-day functions and the controls that support these functions.
- **Process Flow Modeling (IDEF3)**, also referred to as Workflow modeling, is used to graphically describe and document processes by capturing information on process flow, the relationships between processes, and important objects that are part of the process. You can use workflow diagrams to assist business process reengineering efforts, develop a measure for determining the completeness of deliverables, and collect information on policies and procedures in the company.
- **Data Flow Modeling (DFD)** focuses on the flow of data between various tasks. It ensures that your organization can maximize data availability while you minimize response times.

Distinctive Features and Benefits

Intuitive User Interface. Navigate easily through the point-and-click, drag-and-drop interface.

Automated Design Process. Use BP*win* to ensure correct and consistent design results. Object highlighting guides you as you build your model, eliminating common modeling errors.

User-Defined Properties. Customize BP*win* to capture information relevant to your business. Then BP*win* makes this information available through a dictionary grid that can then export the data to other programs like Microsoft Word and Excel.

Integration of Modeling Techniques. BP*win* provides integrated reuse and coordination for Business Process, Process Flow, and Data Flow modeling processes.

Cost and Performance Metric Analysis. Activity-based costing is made simple by employing BP*win*'s comprehensive reporting and bi-directional interface with dedicated ABC tools.

Pre-testing. BP*win* offers an interface to simulation software, allowing you to explore the effect of change before it actually takes place.

U.S. Government FIPS Standard. BP*win* incorporates Federal Information Processing Standards (FIPS) for process modeling. It is used by successful Fortune 500 companies, the Department of Defense, and other U.S. government agencies.

Integration with AD*vantage* Product Suite. BP*win* is part of the AD*vantage* family of products, a foundation for building, deploying, and managing applications. AD*vantage* consists of process and project management, change and configuration management, modeling and design, and knowledge publication and visualization. AD*vantag*e strengthens your ability to automate critical application life cycle processes and to thrive in today's increasingly complex and rapidly changing eBusiness climate.

Usability Advantages

Swim Lane Diagrams. You can add a Swim Lane diagram to any model that contains a Process Flow Network (IDEF3) diagram. In a Swim Lane diagram, you can better visualize the process flow because you can see additional process properties as separate lanes in the diagram.

Organization Charts. You can create hierarchical organization charts based on Roles, Role Groups and Resources that you define. You can also select various display options to view and print organization charts using Role names, Role Group names, Resource names, bitmaps, shapes, and colors.

Node Tree Diagram Enhancements. You can display Node Tree diagrams with orthogonal lines and you can change activity properties by double-clicking Node Tree diagram objects. Very large Node Tree diagrams can now be printed.

Improved Model Explorer. The BP*win* Model Explorer has an improved interface that includes a new Objects tab and an enhanced Diagram tab. You can drag dictionary objects from the Objects tab onto the diagram. From the Diagram tab, you can view the entire diagram hierarchy and access other BP*win* diagrams including Organization chart, Node Tree, Swim Lane, FEO, and IDEF3 Scenario diagrams.

Improved Dictionaries. All dictionaries have been redesigned with an easy to use grid interface. You can customize any dictionary to suit your specific needs, and you can print, export, import, and report on dictionary contents.

Customizable Grid Interface. The new dictionary framework in BP*win* makes entering and managing model information a quick and painless proposition. This customizable grid interface is simple to use and provides an elegant mechanism for quickly populating models, whether you're manually typing or importing data from external text sources.

Report Template Builder. BP*win* includes the powerful Report Template Builder (RTB) reporting tool that you can use to easily and quickly create reports about your model. You can create reusable report templates and export reports in .txt (CSV), HTML, and RTF formats.

Improved Property Dialogs. Diagram property dialogs and diagram object property dialogs have been enhanced to include tabs for Font, Color, Roles, Box Style, Header/Footer, and Page Setup.

Diagram Page Setup. You can modify the page setup for individual diagrams by using the Page Setup tab in any diagram property dialog.

Diagram Headers and Footers. You can modify the headers and footers of individual diagrams by using the Header/Footer tab in any diagram property dialog.

Workspace Enhancements. There are many workspace and user interface enhancements that include improved object resizing, tools icons, dockable toolbars, and dockable Model Explorer. Toolbar buttons also adjust to the open diagram type.

Graphics Extensions. You can import bitmap files into BP*win* and apply them to diagram objects along with various display options. You can also assign shapes to diagram objects and display UDP markers on activities.

Export to Arena. You can export your *BPwin* model to Arena, the business process simulation tool from Systems Modeling Corp.

Object Multi-select. You can lasso-select (or use the control or shift keys to select) multiple diagram objects for repositioning and deleting. When you reposition a group of diagram objects, BP*win* automatically stretches or reroutes all connected arrows.

Entity/Data Store Association. You can associate entities that you create in BP*win* or import from ER*win*, with BP*win* data stores in Data Flow Diagrams (DFD).

For More Information

After walking through this Getting Started guide, you can refer to the numerous resources available to you for additional information. The online help system offers procedural information and answers to questions you may encounter.

Your BP*win* CD contains useful instructional documents that showcase your software as well as detailed explanations about BP*win*'s comprehensive, feature-rich components.

The BP*win* Help menu includes a BP*win* Online Tutorial menu option for BP*win*. Full lessons and sample models are included for you to learn how to use BP*win*. You will also find Help buttons on most dialog boxes that will provide more general information about the dialog box. If a Help button is not present, you can press F1 on your keyboard for context-sensitive help for the current dialog.

Buddy Tip—*If you need help with this product, consult* esupport.ca.com *on the Internet.*

Chapter 2

Understanding BP*win*!

The Basics of Operation

This chapter describes the concepts behind BP*win*, as well as the key components and how they interact with each other and the surrounding environment.

Why Business Process Improvement?

In today's complex and ever-changing world, businesses need to stay focused on the process of how they satisfy customer needs. Whether you are in a small or large organization, it is the process by which you deliver goods or services that defines quality and ultimately the success of the business. Business process improvement includes mapping and modeling the myriad of interactions within an organization to better understand and improve its operation. You can reengineer an entire organization or a distinct part of the organization such as aligning business requirements to the existing information technology.

Modeling is one of the most effective techniques for understanding and communicating business rules and processes. In a process model, extraneous detail is eliminated and important information is highlighted, thereby reducing the apparent complexity of the system under study. Graphics (namely boxes and arrows) are used to provide much of the structure, which is why most people think of process models as pictorial representations. With process modeling you can look at a system of interest in depth, so that subtle nuances of your organization can be analyzed, understood and perhaps most importantly, communicated to others.

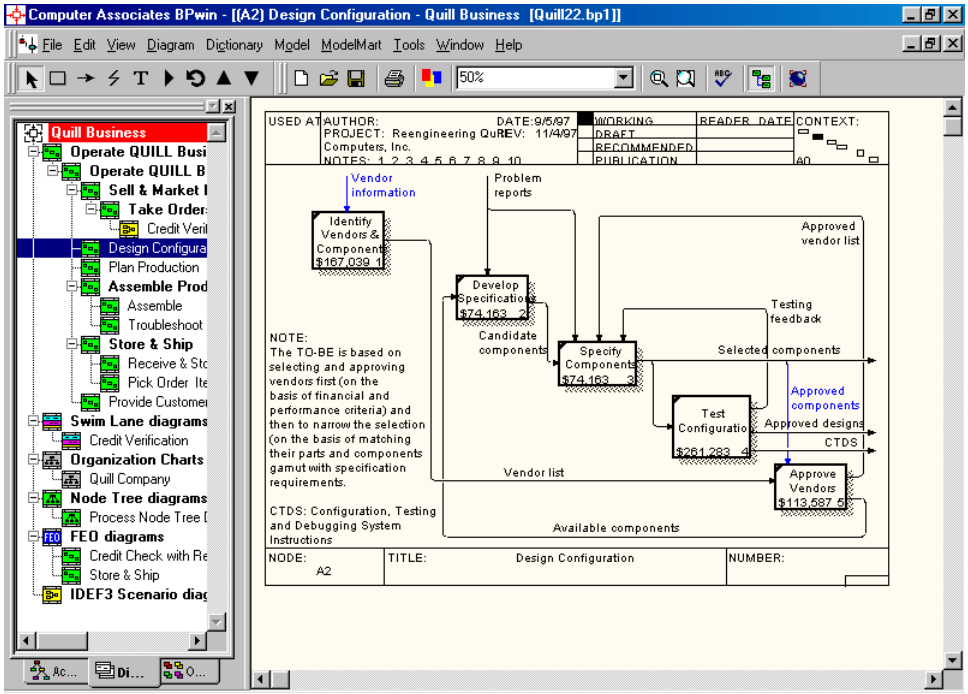
Before You Begin

Before you install BP*win*, be sure that your environment meets the following minimum requirements:

- Operating System: Microsoft Windows 95/98 (1st and 2nd editions)/2000/NT 4.0 (SP 5 or 6)/Millennium Edition
- RAM: 32 Mb
- Space: 125 Mb

Overview of Modeling Methods and Diagramming

The BP*win* model provides an integrated picture of how your organization gets things done, from small departments to the entire organization. Here is one diagram of a typical model:



The following is a brief description of the modeling methods and processes employed by BP*win*.

Activity Models

An activity model presents a system as a collection of activities in which each activity transforms some object or collection of objects. Activity models represent activities as boxes, shapes, or graphical bitmaps. These shapes are then labeled with a verbal description to represent what the activity accomplishes. To further characterize the activity, arrows are used to represent the interface between and activity and its environment.

The level of detail that is shown in an activity model diagram is known as a hierarchical relationship. For instance, an activity hierarchy might look like the following outline:

Activity Hierarchy
1. Operate Business
1a. Plan Production
Manage Component Inventory
Schedule Production
Dispose of Outdated Component Parts
1b. Assemble Product
Populate Motherboards
Assemble
Configure
Perform Final Test
Troubleshoot & Repair
Prepare Order for Shipment

IDEF0 Function Modeling Method

IDEF0 is a technique that models entire systems as a set of interrelated activities or functions. In this way, the functions of a system can be analyzed independently of the objects performing those functions.

Before you embark on building an IDEF0 model, you are required to identify the purpose of the model, the model's scope, and the intended audience for the model's presentation. You are also asked to submit the viewpoint (for example: customer, supplier, store owner, and editor) perspective from which the model will view the system.

IDEF0 contains two graphical symbols – boxes and arrows. Use this BP*win* component at the beginning stage of a project and to provide an analysis for the IDEF3 method.

IDEF3 Process Description Capture Method

IDEF3 is a technique designed to provide a structured method by which a domain expert can describe a situation as an ordered sequence of events, and can describe any participating objects of those events.

Use this BP*win* component to model a process that may not yet be complete. You can judge the performance of the method by analyzing it through simulation.

Data Flow Diagramming

Similar to IDEF0, Data Flow Diagramming models systems as a network of activities connected to one another by pipelines of objects. Additionally, data flow diagrams also model holding tanks called data stores, and external entities, which represent interfaces with objects outside the system. The arrows used by DFD represent the movement of data from an activity.

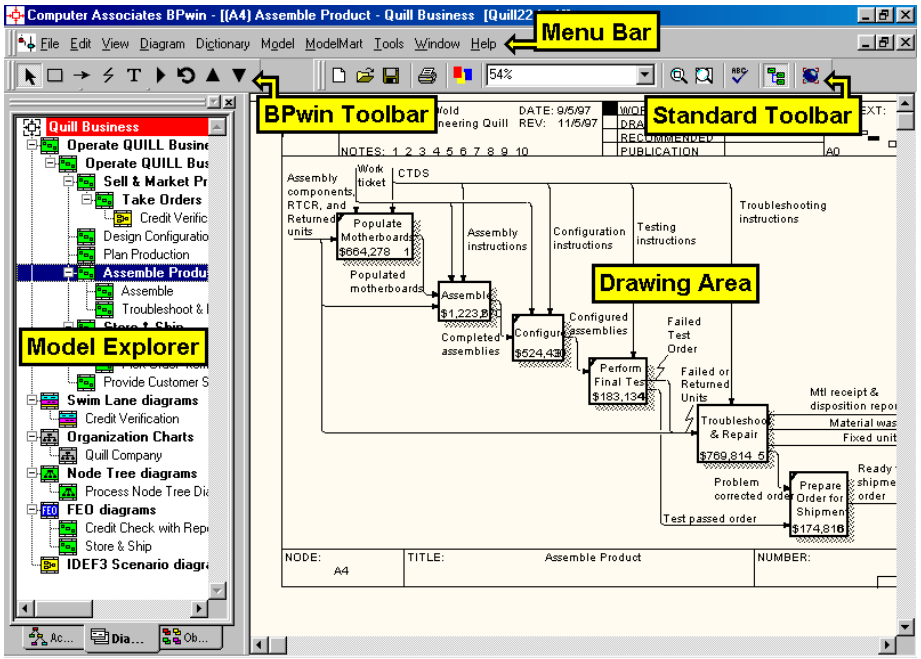
Data Flow Diagramming is widely used in software design.

Activity Based Cost and Performance Metrics

Activity Based Costing is a technique for capturing and analyzing activity costs. This method is used in conjunction with the results of other system, object, and activity models. This method is invaluable in delivering an accurate calculation of the production cost of a product based on the cost to perform all of the activities involved in its creation.

Visiting the BP*win* Workplace

The following diagram typifies the environment in which a BPwin model is created:

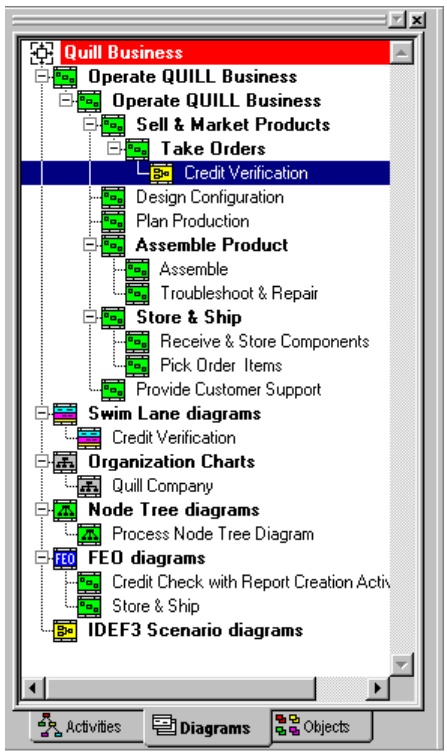


BP*win* Model Explorer

The BP*win* Model Explorer is a powerful tool that you can use to globally view and access activity, diagram, and dictionary objects in any open BP*win* model. With one or more models open, you can view all diagrams, activities, and dictionary objects as graphical objects in a collapsible and expandable hierarchical tree-like structure. For any methodology you use, the Model Explorer gives you a total perspective of the entire model.

You can click the Activity tab or Diagram tab in the Model Explorer to view the activity hierarchy or diagram hierarchy of all activities and diagrams in any open model. In the Activity tab, you can open Activity Property Dialogs, cut and paste activities, and create decompositions within the same model or across different models. In the Diagram tab you can view and open Diagram Property Dialogs for all BP*win* diagram types including Node Tree, FEO, IDEF3 Scenario, Swim Lane, and Organization Charts.

When you click the Object tab in the Model Explorer, you can view unused dictionary names (diagram object names not used in a diagram) and drag unused dictionary names to a diagram as diagram objects. For example, if you have a RECEIVE ORDER activity name in the dictionary, you can simply drag the RECEIVE ORDER name to the diagram to create the activity complete with all other dictionary properties.



To display and hide the Model Explorer, click the Model Explorer button  on the toolbar. When it is displayed, the Model Explorer appears in an adjustable and dockable pane to the left of the current model diagram.

Arrows in BP*win*

Using correct arrow styles is imperative to the integrity of every type of diagram you create in BP*win*. When you choose Default Arrow Types on the Model menu, you can change the arrow style default for all new arrows that you add to a diagram. You can also change the arrow thickness and style default in the Style tab in the Arrow Properties dialog.
Each time you change an arrow style default, the Arrow tool button changes to reflect the new arrow style.

The different arrow styles you can use in BP*win* are explained in the table below:

	**Precedence**	Changes the arrow type to a solid line to illustrate precedence. You can draw this arrow from left to right or top to bottom. This is the most commonly used arrow in BP*win*.
	**Relational**	Changes the arrow type to a dashed line. In BP*win*, this arrow is also used to connect a referent to a UOW (Unit of Work, which is used to indicate an event, process, decision, or action) in IDEF3 modeling. You can draw this arrow in any direction from one object to another. This arrow is used primarily in IDEF3 and DFD modeling.
	**Object Flow**	Changes the arrow type to a double-headed arrow. You can draw this arrow from left to right or top to bottom. This arrow is used primarily in IDEF3 and DFD modeling.
	**Bi-directional**	Changes the arrow type to a directional arrow. You can draw this arrow in any direction between two objects. This arrow is only used in DFD modeling.

What's Next?

This is just the beginning. In the next chapters, you will get a clear idea of the distinct capabilities of BP*win* that help you create the perfect business model for your organization.

Chapter 3

Building the Ideal Business Process Model!

Use the IDEF0 Model to Track Your Business

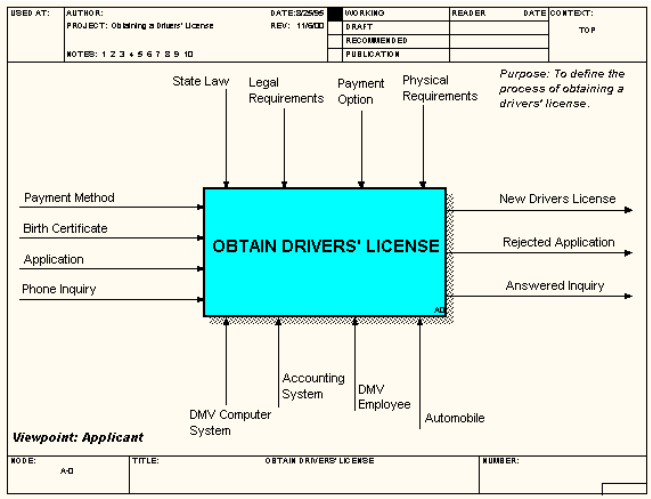
If you have ever experienced a business downturn, you might have pledged that next quarter you would prepare your organization against such an event reoccurring. Now you can become proactive by using BP*win* to view and manage your operations at various levels of detail. For example, it may be important to focus on a particular line of business within your company.

In this chapter, we will explore the IDEF0 modeling technique, which analyzes whole systems as a set of interrelated activities or functions.

The IDEF0 Business Process Model

Business Process modeling (IDEF0) uses activities and arrows to graphically describe and document business processes. It does this by capturing information about the business or process and displaying the information and resources that are included in each step. IDEF0 activity modeling is best utilized as an analysis and logical design technique. As such, it is generally performed in the early phases of a project, followed by IDEF3 modeling for data collection and AS-IS process modeling.

Below is an example of an IDEF0 model representing the activity "Obtain Drivers' License." Note the input arrows to the left of the Activity Box (the box labeled "Obtain Drivers' License"), the control arrows above, the output arrows to the right, and the mechanism arrows below. A discussion of these four types of arrows appears on the next page.



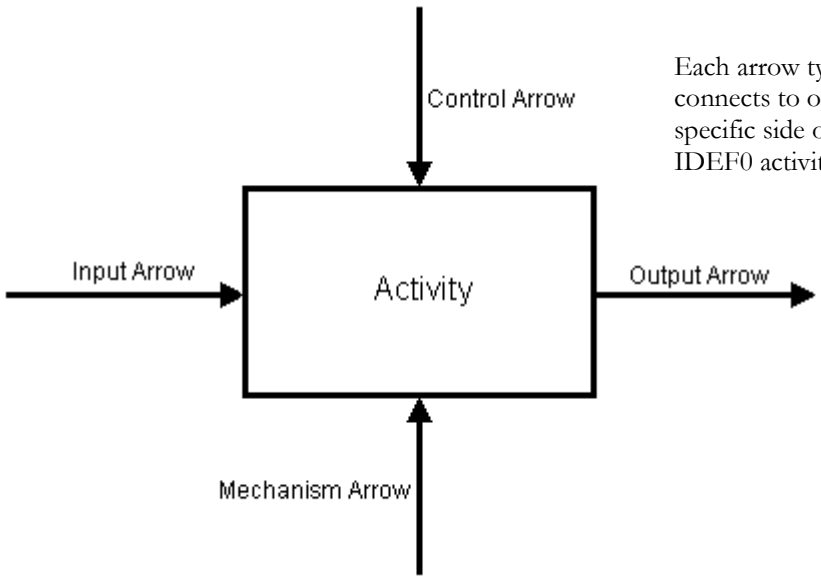
IDEF0 models a system as a set of activities (functions) using only two graphic symbols: boxes and arrows.

- Activities are represented by boxes containing a single, active verb plus a common noun that clarifies the objective of the activity from the viewpoint of the model, for example, "Obtain Drivers' License." (An adjective may be used to further qualify the noun.)
- Arrows represent four types of information that are connected to an activity. An *Input* Arrow shows what is consumed or transformed by an activity. An *Output* Arrow shows what an activity produces or creates. A *Control* Arrow represents the objects that govern the manner in which inputs are transformed yet are not themselves transformed by the activity. A *Mechanism* Arrow represents those objects that actually perform the transformation of inputs to outputs yet are not themselves transformed by the activity. Arrows are typically labeled with nouns such as Birth Certificate and Drivers' License.

ICOM, an acronym for the categories of information that are captured on IDEF0 diagrams, represents the four types of arrows:

I	=	Input: something consumed in the process.
C	=	Control: a constraint on the operation of the process.
O	=	Output: something resulting from the process.
M	=	Mechanism: something used to perform the process, but is not itself consumed.

The following figure illustrates the four arrow types, showing the specific box side to which each arrow type must connect:



Each arrow type connects to one specific side of an IDEF0 activity.

Creating an IDEF0 Business Process Model

In order to build an IDEF0 model, you must first identify its *purpose* (the set of questions your model is intended to answer), *viewpoint* (the perspective from which the model will view the system), and *scope* (the appropriate breadth and depth of the model). Once you have defined these three essential elements, you can begin to lay the groundwork for your model.

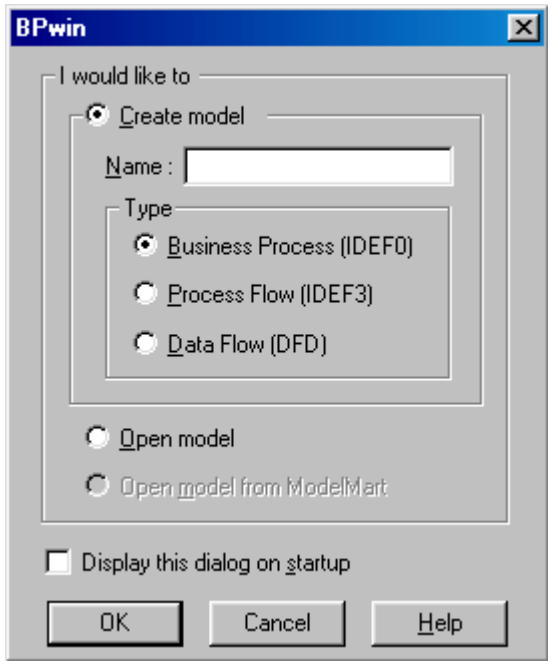
IDEF0 modeling always starts with a context diagram. When you create a business process model, a context diagram is created with one activity that defines your model. You can then add decomposition diagrams that may contain activities, arrows, and related properties. The context diagram depicts the highest-level activity in a model, and represents the boundary of the process under study with respect to purpose, scope, and viewpoint. The scope statement can be summarized as the activity name that appears in the model's context diagram.

In the example that follows, we will create an IDEF0 diagram called "Operate Quill Business."

Buddy Tip—*A similar IDEF0 diagram called* Operate Quill Business *can be found in the sample model* Quill Business *under the file name* Quill1.bp1 *on your BP*win *CD.*

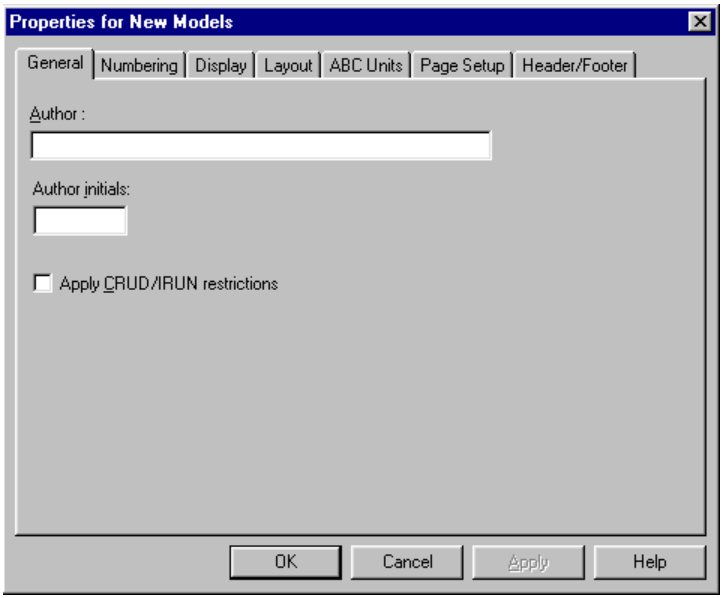
To create a new IDEF0 model:

1. From the BP*win* menu, click File, New. The following dialog box appears:

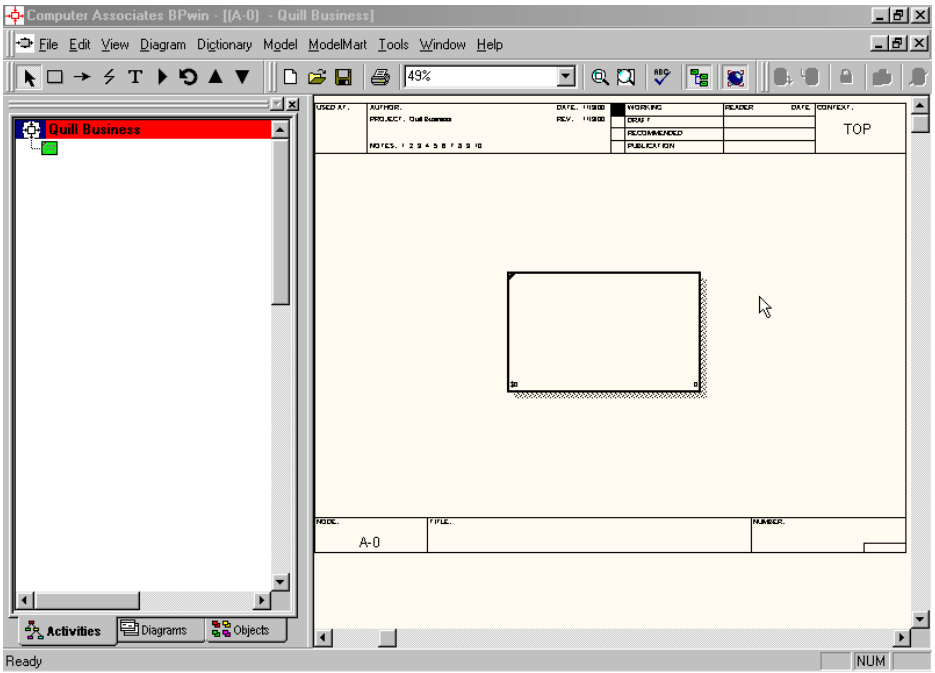


2. Choose a name for the model you are creating. Because we hypothetically own a computer business called Quill Computers, Inc., we name the model "Quill Business." Select *Business Process (IDEF0)* as the model type and click *OK*.

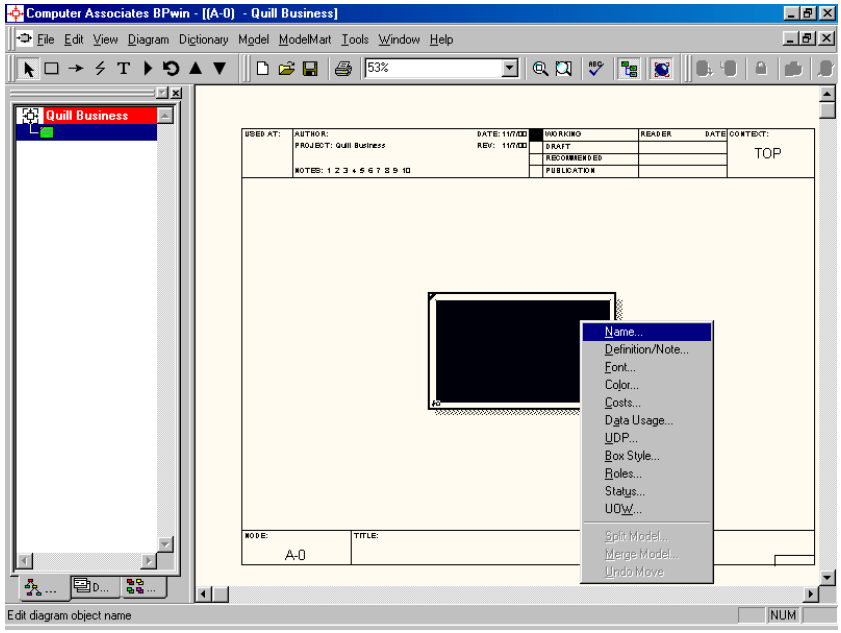
3. When you click *OK*, the Properties screen appears.



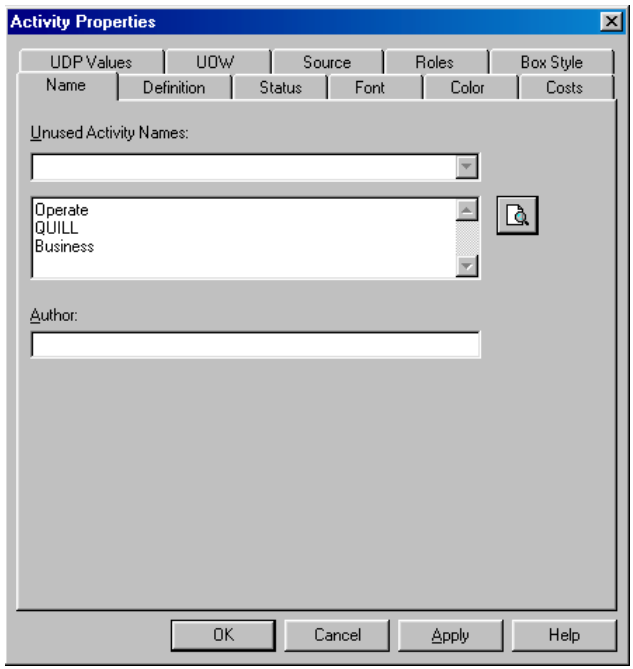
4. The General tab is displayed by default. Enter your name as Author and click *OK*. The model opens:



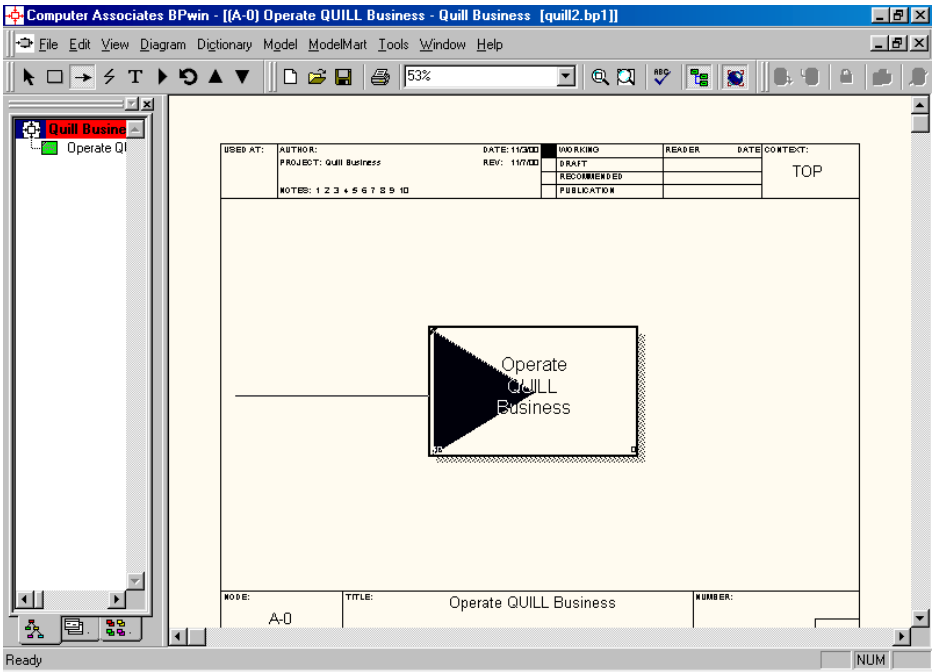
5. The Activity Box that appears will be your context activity. You must now label the Activity Box by right-clicking on the box and selecting *Name* from the shortcut menu.



In this case, we name the activity "Operate QUILL Business." When you click *OK*, the label will be displayed inside the context diagram Activity Box.

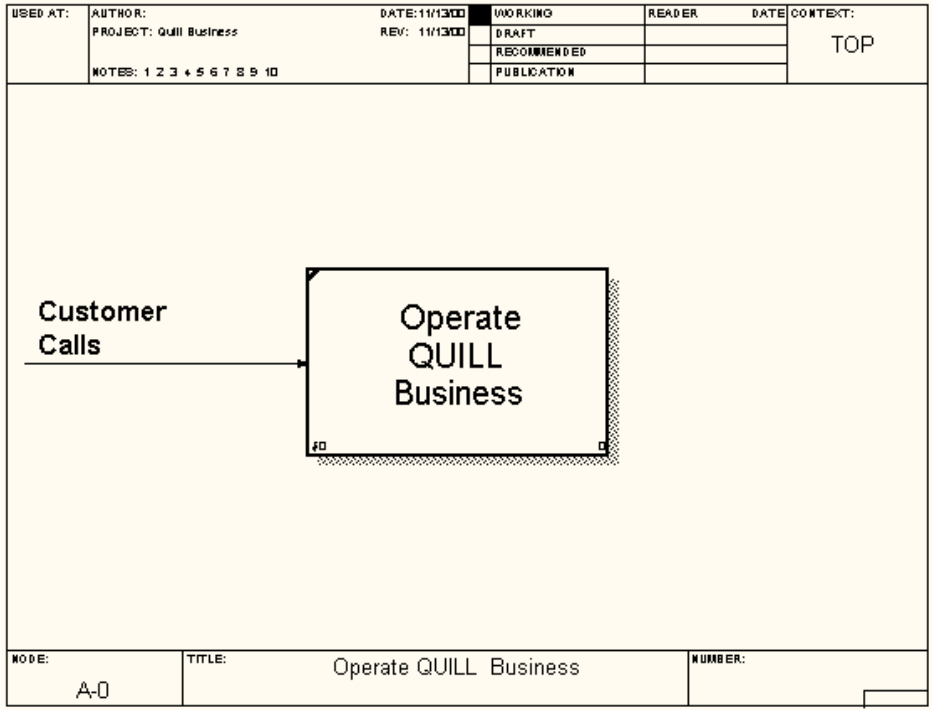


6. To populate the diagram with an input arrow, select the Arrow Tool  on the BP*win* toolbar. Click the left border of the diagram, release the mouse button, and move the arrow cursor  over the input side of the activity (in this case, the left side of the Operate Quill Business Activity Box). A large highlight triangle that identifies the side of the box to which the arrow will connect appears in the Activity Box:



Click on the large highlight triangle in the Activity Box. You have now created an input arrow from the border of the diagram leading into the Operate Quill Business Activity Box.

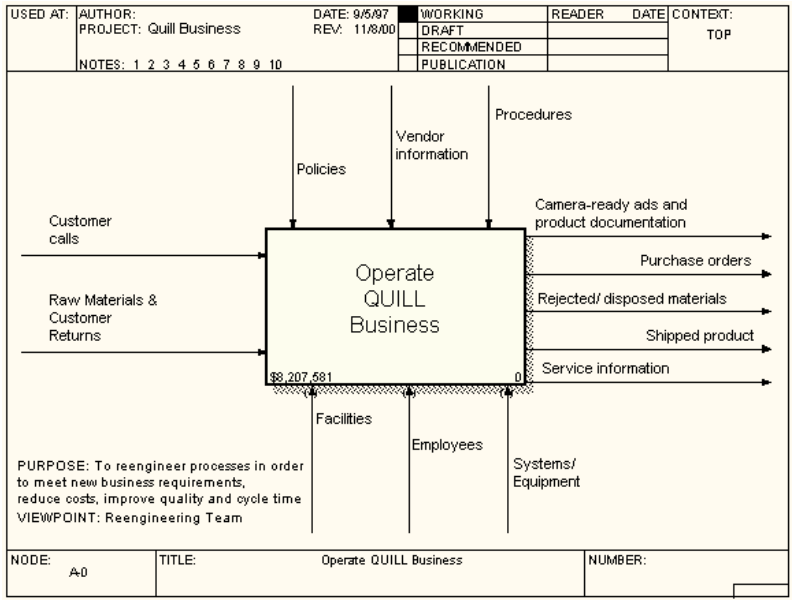
7. You can label the input arrow by right-clicking on the stem of the arrow and selecting *Name* from the shortcut menu. Name the arrow "Customer Calls." When you click *OK*, "Customer Calls" will be displayed with the input arrow.



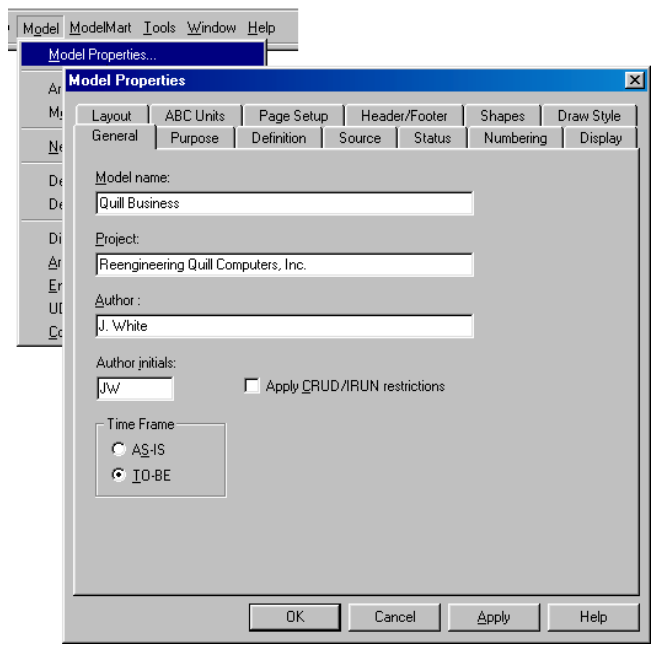
NOTE: It is a good idea to keep the name near the root of the arrow to avoid spacing problems as the model develops.

You can continue to populate your model with input, output, control, and mechanism arrows using the steps just described. For the purpose of illustrating additional IDEF0 modeling functionality in upcoming pages, we have populated the Operate Quill Business context diagram with arrows that would typically be associated with this type of business:

You can insert a text block into the diagram by selecting the Text Tool from the toolbox and clicking on the diagram where you want the text block to appear. Then enter text in the Text Block Properties box that appears and click *OK*.



You can view and edit various properties of your model, such as Purpose, in the Model Properties Dialog. Simply select *Model Properties* from the Model menu on the toolbar.



Buddy Tip—*When the context diagram appears to be complete and stable, ask the following questions:*

- *Does the diagram summarize the business activity to be modeled?*
- *Is the context diagram consistent with the purpose, viewpoint, and scope statements?*
- *Are the arrows at an appropriate level of detail for the activity?*
- *Does the model have work group consensus?*

Once you have completed your context diagram, you can begin to explore processes in greater depth by decomposing your context activity. The following steps will introduce you to activity decomposition in IDEF0 modeling.

Creating Activity Decomposition Diagrams

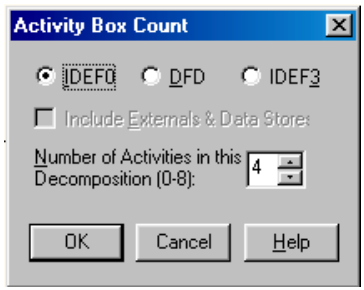
Decomposition diagrams are used in business modeling to break down an activity into its constituent parts. For example, the activity "Run Video Store" can be decomposed into activities such as Open Store, Receive Payment, Rent Video, and Close Store. Each of these activities can in turn be decomposed into associated constituent activities. The detail of activity decomposition is entirely up to you.

You can decompose activities in IDEF0 and DFD modeling, and UOWs (Units of Work, which are used to indicate an event, process, decision, or action) in IDEF3 modeling. Although the methodologies differ, the basic premise of the decomposition is the same. BP*win* also allows you to decompose IDEF0 models into IDEF3 and DFD constituent activities and Units of Work. In other words, a business process (IDEF0) can be decomposed into other sub-processes, data flows (DFD), and workflows (IDEF3).

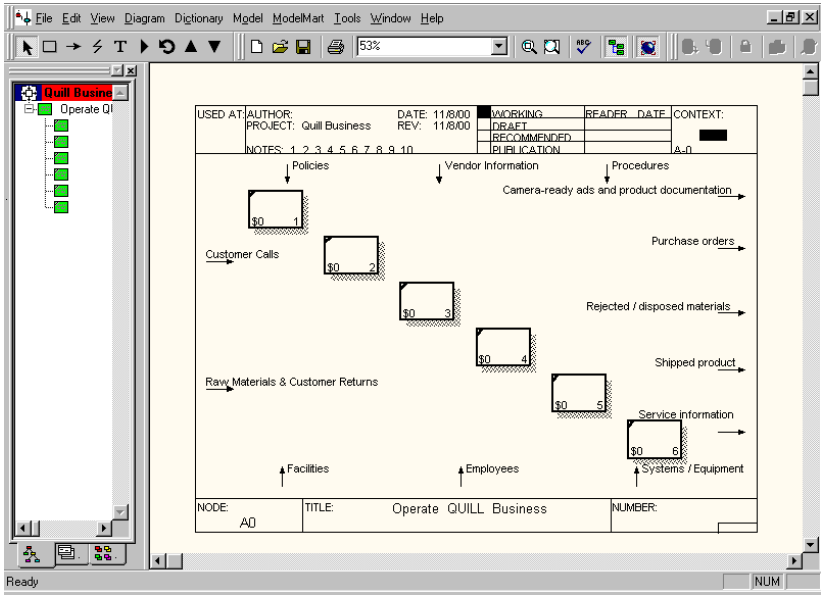
Buddy Tip—*It is a good idea to have at least two levels of IDEF0 activities before decomposing into another methodology. That way, you will have enough activities to create various child decomposition diagrams.*

To decompose an activity:

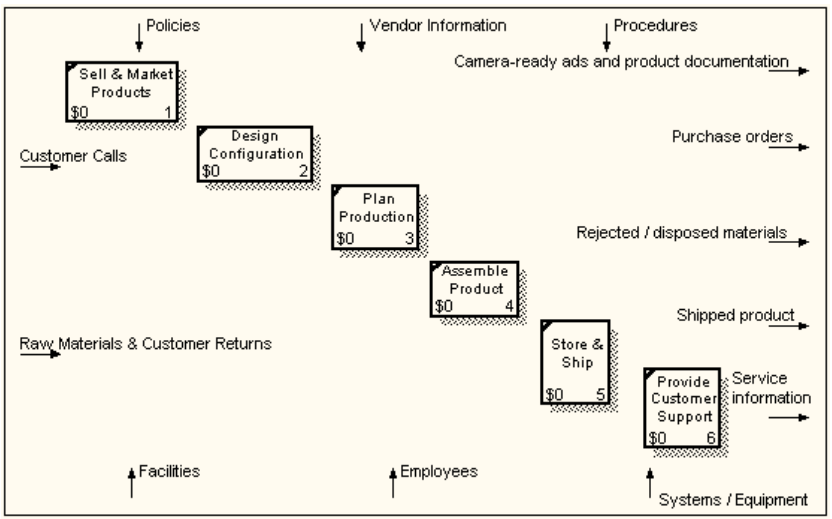
1. Click on the activity you want to decompose. In our example, we click on our context diagram, Operate QUILL Business.
2. On the menu bar, click on the Go To Child Tool  . This opens up the Activity Box Count screen:



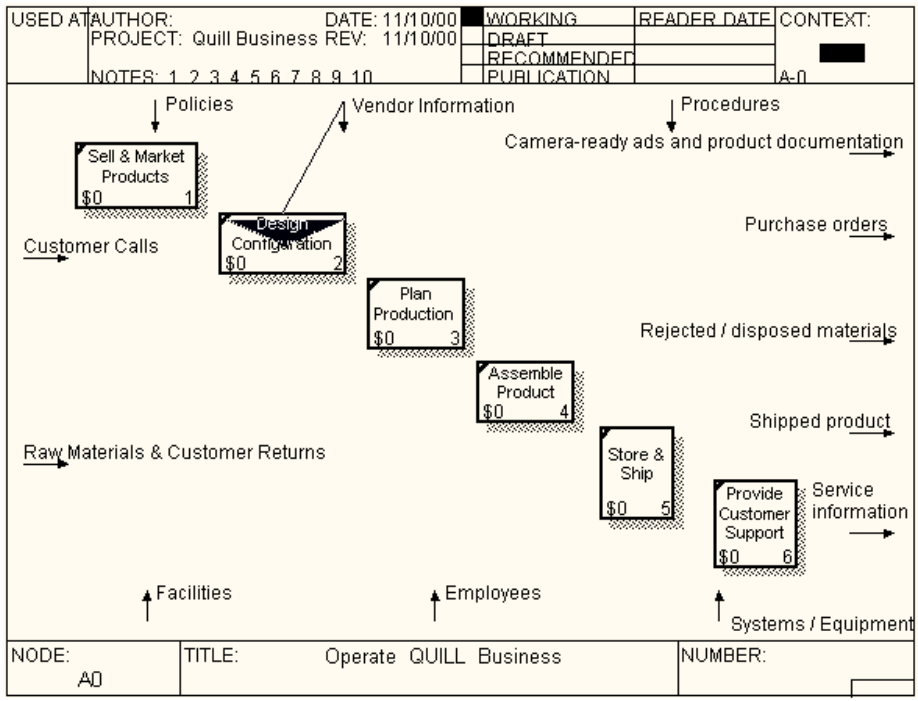
3. When decomposing an activity in IDEF0 modeling, the default methodology is IDEF0 and the default number of activities in the decomposition is 4. Here, we select the IDEF0 methodology and choose 6 activities for our decomposition. When you click *OK*, BP*win* immediately creates the decomposition diagram with the number of activities you specify. In addition, BP*win* automatically includes all arrow objects from the context diagram in your decomposition.



4. Label each activity in your decomposition diagram by right-clicking on a selected Activity Box and choosing Name from the shortcut menu. In our Quill Business example, we labeled our activities to reflect industry-appropriate business processes:



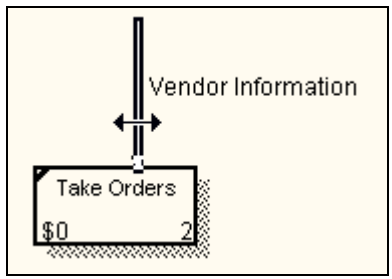
5. Connecting existing arrow objects to activity boxes in a decomposition diagram is easy. Simply click on the arrow you would like to connect and move the cursor over the desired Activity Box until a large highlight triangle appears in the box.



When you click the mouse again, the arrow will be connected to the Activity Box.

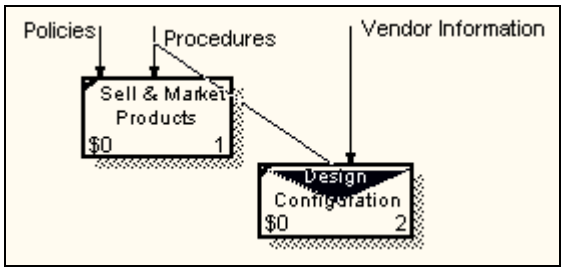
Buddy Tip—*The side of the Activity Box in which a highlight triangle appears depends on the arrow type — for example, if the arrow will represent a control, then it must enter an Activity Box on the top side of the box. If the arrow will represent an input, then it must enter the Activity Box on the left side of the box.*

6. You can move the arrow object to any location within the diagram, constrained by its connections, by placing the cursor arrow over the arrow segment until a horizontal double-headed arrow appears:

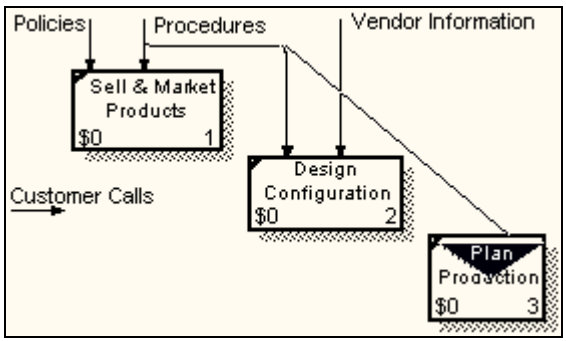


Then, click and drag the arrow to the desired location and release the mouse button.

7. In many instances, you will want an arrow object to connect to more than one activity. After you have connected an arrow object to an Activity Box, select the Arrow Tool on the menu bar and click on the arrow you want to branch.

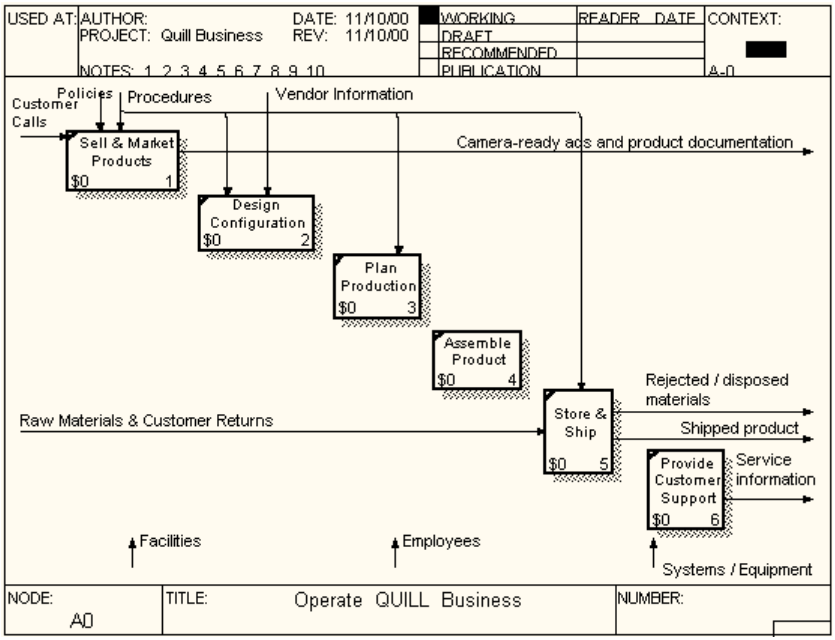


Move the cursor over the desired Activity Box and click the mouse on the highlight triangle that appears...

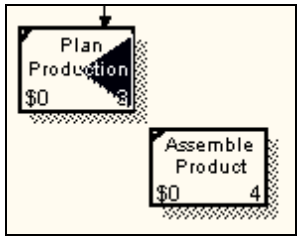


…To connect the arrow to a third Activity Box, simply click on the arrow segment where you want it to branch, and repeat the above instructions.

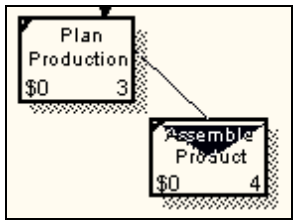
8. In our Quill Business example, we continue to connect arrow objects to Activity Boxes so that the resulting diagram appears as follows:



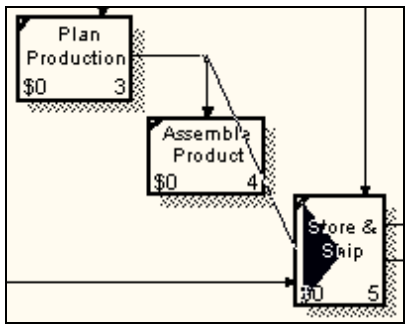
9. At this point, you will want to remove any inherited arrow objects that will not be represented in your decomposition diagram. In this example, we removed the *Facilities*, *Employees*, and *Systems/Equipment* arrow objects by highlighting each arrow and selecting *Cut/Delete* from the Edit menu (or just press the Delete key). This will cause those arrows to appear with a tunnel in the parent diagram, meaning that they are unresolved in the decomposition diagram.
10. In the following example, we will add a new arrow object (*Work Ticket*) that begins as an output from *Plan Production*. The arrow will connect to *Assemble Product* as a control arrow and to *Store & Ship* as an input arrow.



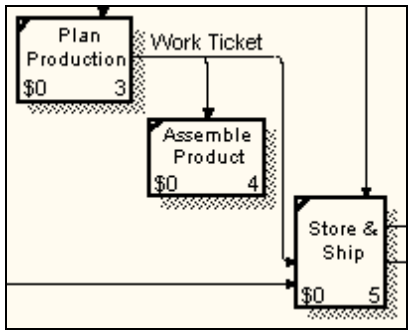
Click on the Arrow Tool in the menu bar, then click on the right side (output) of the *Plan Production* Activity Box. A large highlight triangle appears…



…Move the cursor over the top portion of the *Assemble Product* Activity Box (remember, the arrow will enter *Assemble Product* as a control arrow). Click on the highlight triangle to complete the connection…

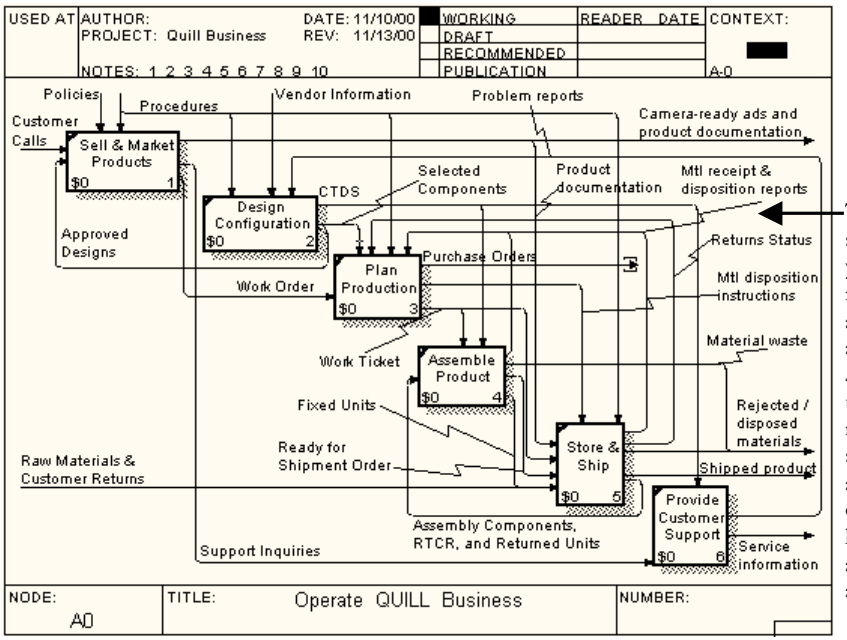


…Click on the arrow you've just created where you want it to branch. Move the cursor over the left side of the *Store & Ship* Activity Box (remember, the arrow will enter *Store & Ship* as an input arrow). Click on the highlight triangle to complete the connection…



…After you connect the new arrow to both *Assemble Product* and *Store & Ship*, you can label it by right-clicking on the arrow and selecting *Name* from the shortcut menu. Name the arrow "Work Ticket."

In keeping with our Quill Business example, we continued to populate our decomposition diagram with arrow objects representing industry-appropriate business processes. Our completed decomposition appears below:



To add a squiggle to your diagram, right-click on an arrow label and select *Squiggle* from the shortcut menu. A squiggle will appear connecting the label with its associated arrow object.

You can continue to decompose activities to the level of detail necessary to fulfilling the purpose of your model.

What's Next?

Now that you have successfully completed your first IDEF0 Business Process model, it's time to explore the IDEF3 Workflow modeling methodology (also referred to as Process Flow modeling). The following chapter will familiarize you with the steps needed to build a Process Flow model.

Chapter 4

Map Your Business!

Capturing the Processes Within Your Organization

Process Flow modeling, also referred to as IDEF3 modeling, is a modeling methodology that graphically describes and documents processes by capturing information on process flow, the relationships between processes, and important objects that are part of the process.

You can use Process Flow diagrams to assist business process reengineering efforts, develop a measure for determining the completeness of deliverables, and collect information on policies and procedures in your company. You can model real world scenarios; for example, you can map out real life emergency procedures or contingency plans based on your business needs and events. Each scenario provides a description of a process, and can be used to better communicate and document how your business functions.

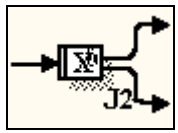
Activities (UOWs) in IDEF3 Modeling

The term UOW is an acronym for Unit of Work, and refers to a process, action, decision, or other procedure performed in a system or business within an IDEF3 (Process Flow) model. UOWs in IDEF3 modeling are equivalent to Activities in IDEF0 modeling.

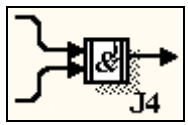
Junctions in IDEF3 Modeling

Junctions are used in process flow diagrams to show branching or joining in the process logic, to show alternative paths in the process flow, and to show multiple events that can or must be completed before the next UOW process can begin. There are two types of Junctions:

- **Fan-out Junction.** Branches one arrow into multiple arrows to show activities occurring in parallel. An example of a Fan-out junction appears below:



- **Fan-in Junction.** Consolidates multiple arrows into a single arrow to show the completion of the activities. An example of a Fan-in junction appears below:



NOTE: A junction cannot be both fan-in and fan-out at the same time.

The junctions available in process flow modeling and the meaning of the junction when used in a fan-out or fan-in setting are explained in the table below.

Junction	Name	Meaning in Fan-in	Meaning in Fan-out
	Asynchronous AND	All preceding processes must be complete.	All following processes must start.
	Synchronous AND	All preceding processes complete simultaneously.	All following processes start simultaneously.
	Asynchronous OR	One or more preceding processes must be completed.	One or more following processes must start.
	Synchronous OR	One or more preceding processes complete simultaneously.	One or more following processes start simultaneously.
	XOR (Exclusive OR)	Exactly one preceding process completes.	Exactly one following process starts.

Referents in IDEF3 Modeling

A referent is a term used to describe an object in an IDEF3 diagram where additional information is stored outside the process flow. For example, if a credit check were processed and a determination was made to set the credit rating as low, the information from that credit check would reside in a Bad Credit List. In this case, the Bad Credit List is considered a referent.

References are used in IDEF3 modeling to support junctions and other process flow objects.

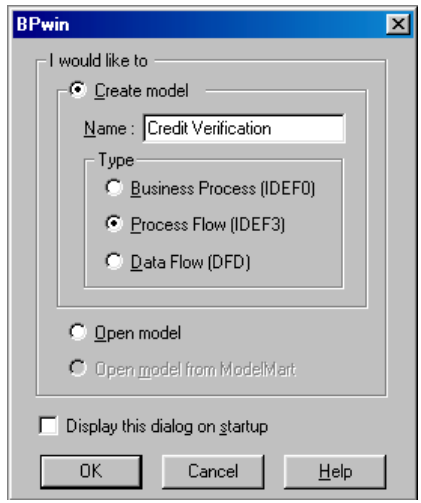
Creating An IDEF3 Diagram

In the example that follows, we will create an IDEF3 diagram called "Credit Verification."

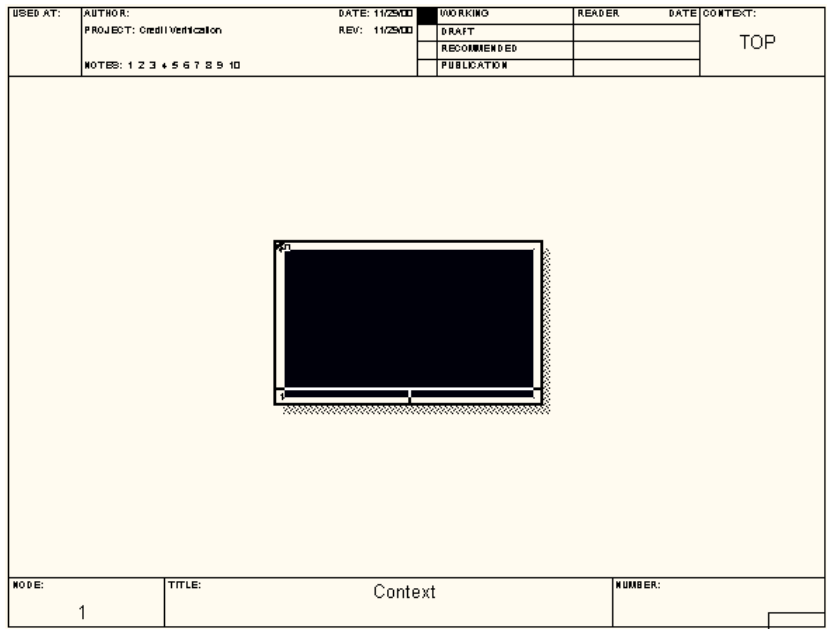
Buddy Tip—*A similar IDEF3 decomposition diagram called* Credit Verification *can be found in the sample model* Quill Business *under the file name* Quill1.bp1 *on your BP*win *CD.*

To create an IDEF3 diagram:

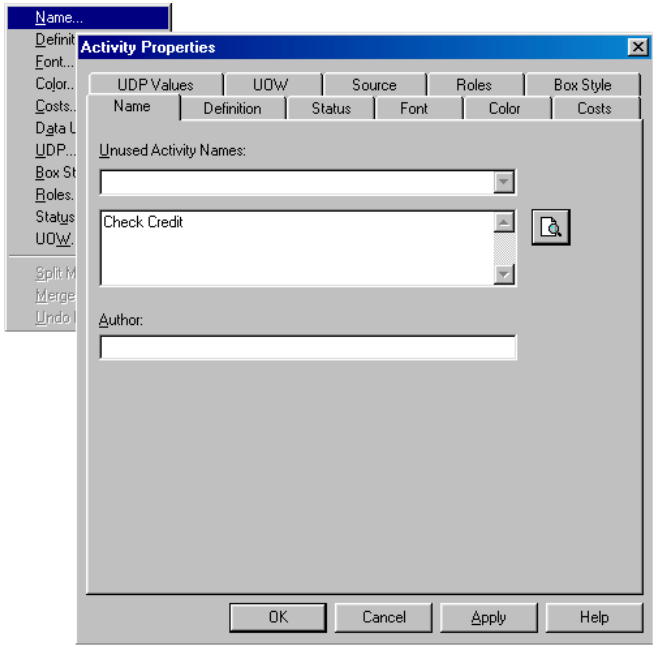
1. Select *New* from the File menu, or click the New button  on the toolbar. In the dialog that appears, name the model and select *Process Flow (IDEF3)* as the model type. In this case, name the model "Credit Verification."



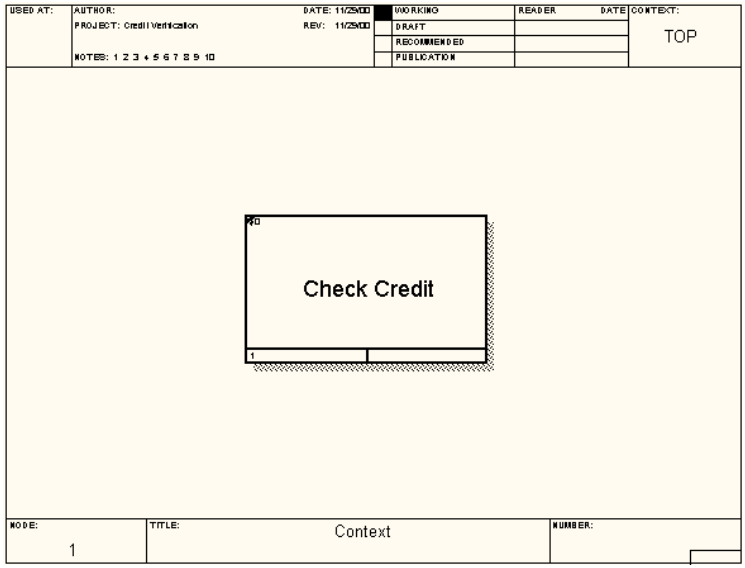
2. Click *OK*. Enter your name as Author in the Properties dialog box. Next, click *OK*. The model opens and the area that will become your first Activity (Unit of Work) appears.



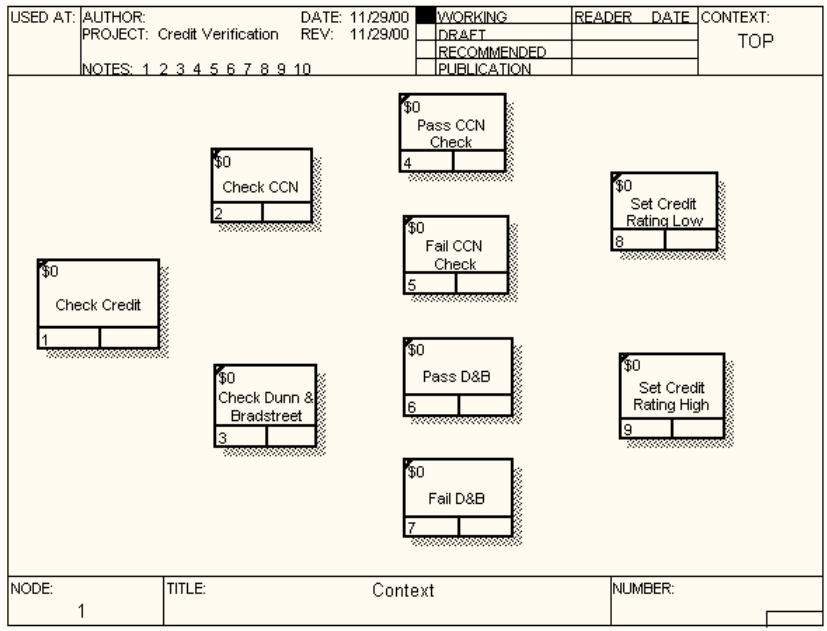
3. Right-click on the Activity Box and select *Name* from the shortcut menu. Name the activity "Check Credit."



4. Click *OK*. You can move the Activity Box within the diagram by clicking and dragging the box to the desired location. To resize, click on a corner of the Activity Box and drag the perimeter of the box until the desired size is achieved.



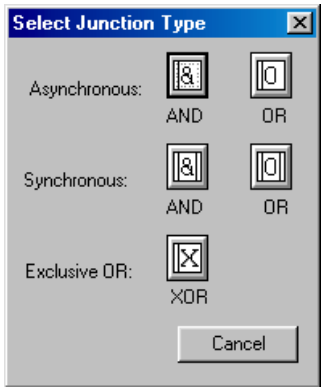
5. To add Activity Boxes to the diagram, simply click on the Activity Box Tool button  on the BP*win* toolbar and click inside the diagram to add an Activity Box. In our example, we added eight additional Activity Boxes and named them as follows:



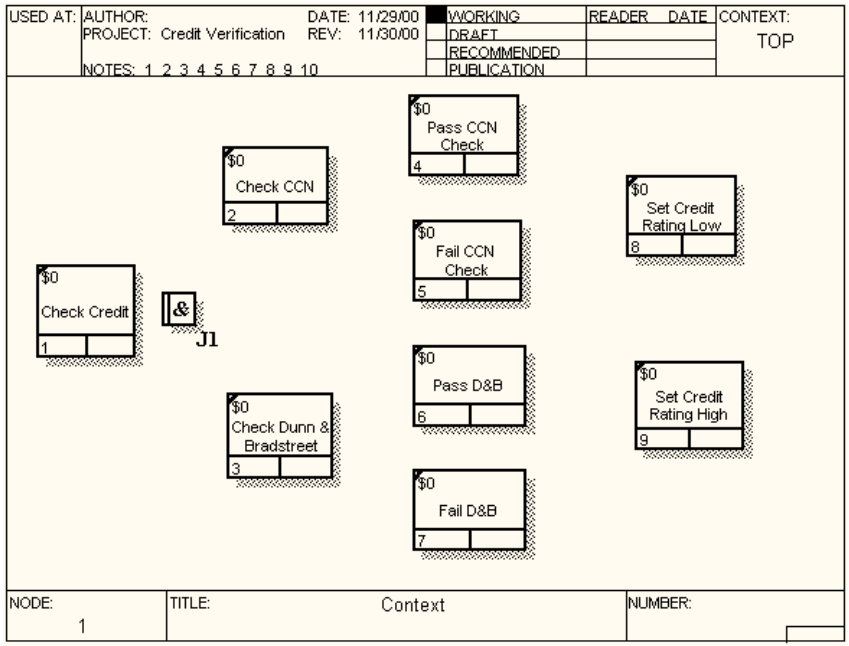
6. At this point, you will want to determine which types of junctions, if any, you will need to connect your activities. In this example, we want an asynchronous AND junction that will fan out from *Check Credit* to *Check CCN* (Credit Card Number) and *Check Dunn & Bradstreet* (from Check Credit, all following processes must start). Here, we want the Credit Verification process to begin with checking both CCN and Dunn & Bradstreet. We represent this on our diagram with an asynchronous AND junction.

   To place a junction in your diagram, click the Junction Tool button  on the BP*win* toolbar. The Junction cursor  appears.

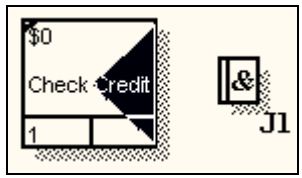
7. Click on the diagram where you want the junction to appear. The following screen opens:



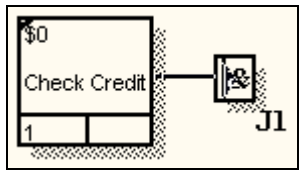
In our example, we click on the Asynchronous AND button. The junction appears in the diagram:



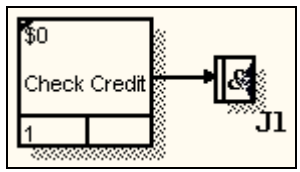
8. To connect the junction to Activity Boxes with arrows, follow the steps below:



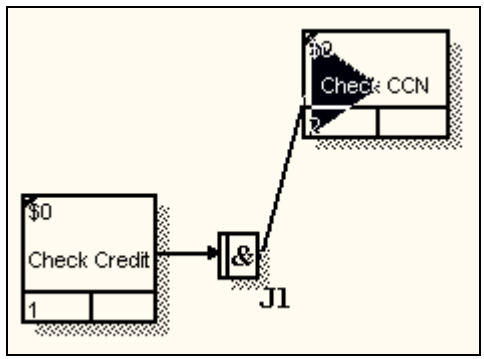
Step 1: Click on the Arrow Tool on the toolbar. Click the right side of the Activity (in this case, the right side of the Check Credit Activity Box) until a large highlight triangle appears. Click on the highlight triangle.



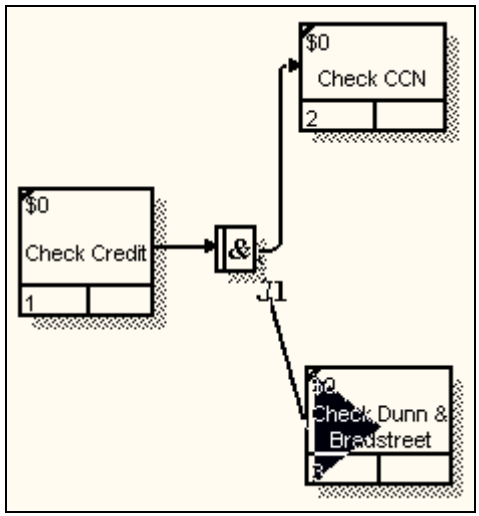
Step 2: Move the cursor over the destination box (in this case, the left side of the asynchronous AND junction we just created) until a large highlight triangle appears. Click on the highlight triangle to create the arrow.



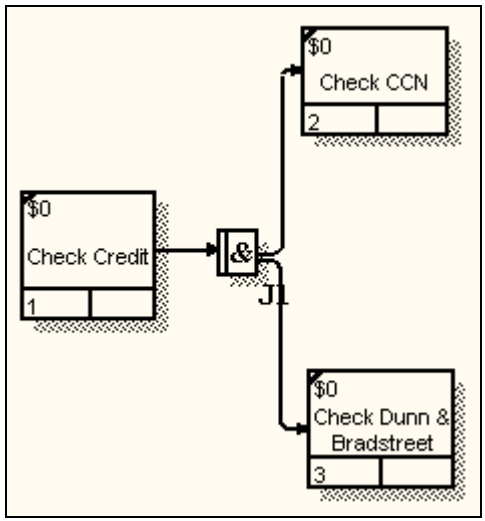
Step 3: To connect the junction to the activities that follow it, click the right side of the junction box until a large highlight triangle appears. Click on the highlight triangle.



Step 4: Move the cursor over the left side of the destination activity (in this case, the *Check CCN* Activity Box). To create the arrow, click on the large highlight triangle that appears.



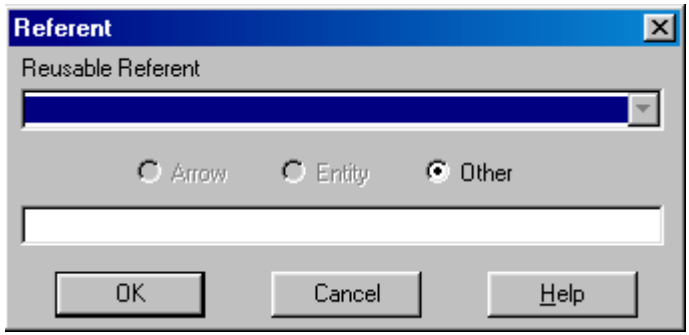
Step 5: Repeat Step 4 to connect the junction to the *Check Dunn & Bradstreet* Activity Box.



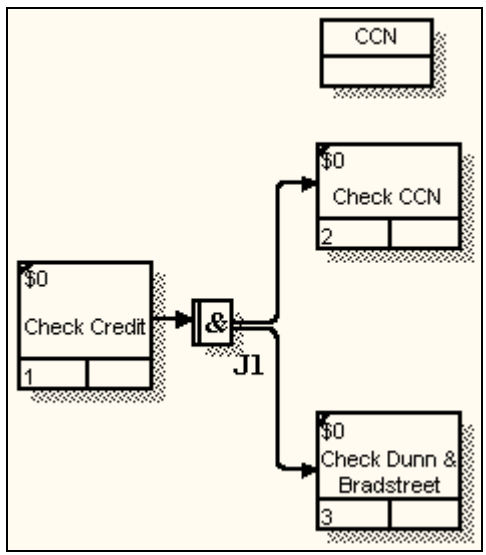
Now that you have completed the above steps, the asynchronous AND junction will fan out to activities 2 and 3 — *Check CCN* and *Check Dunn & Bradstreet*.

9. At this point, we need to add referents to our diagram representing the external sources of information we check in order to complete specific tasks in the process flow. In this example, we add a referent representing credit card number information that we must consult in order to complete the Check CCN process.

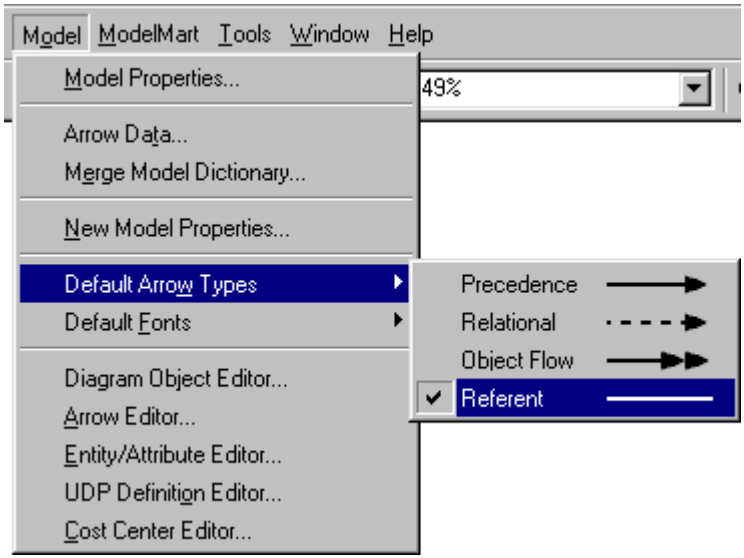
   To add a referent, click on the Referent Tool button  on the BP*win* toolbar. Click inside the diagram where you want the referent to appear. The following screen opens:



   In this example, we do not yet have any existing referent names in the *Reusable Referent* store. To assign a name to the referent, make sure *Other* is selected and type CCN in the bottom text box, then click *OK*. The referent appears in the diagram:

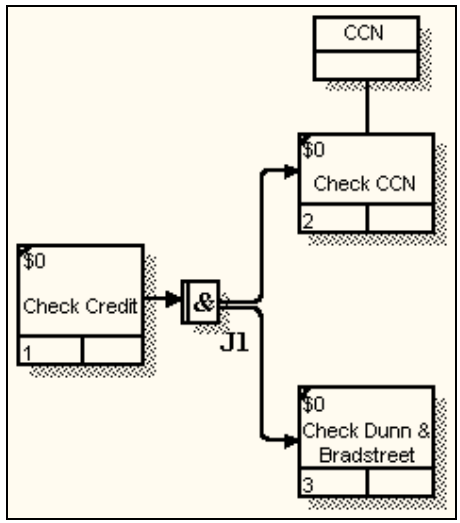


10. When you connect a referent to an activity, a Referent Line should be used. To change the default arrow type to Referent, select *Model* from the menu bar and choose *Default Arrow Types*. Then click *Referent*.

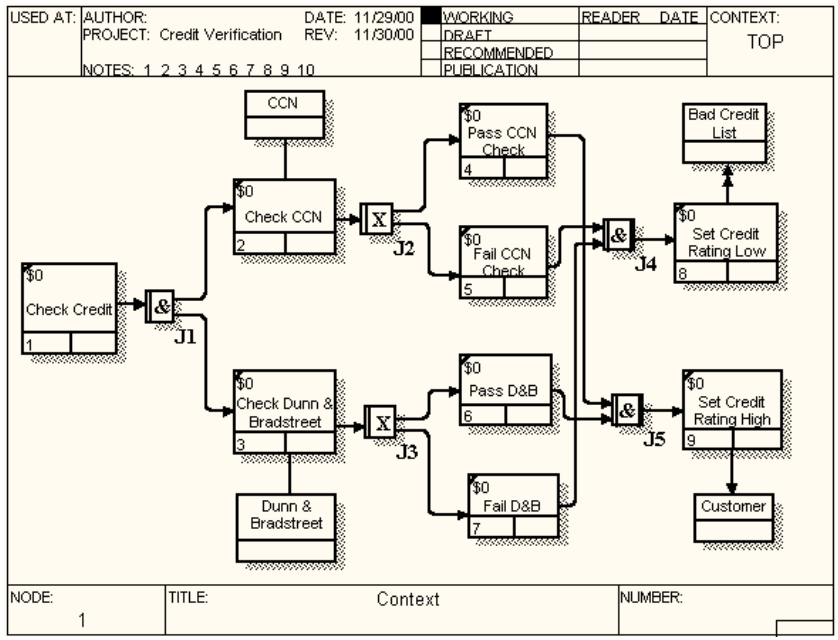


Buddy Tip—*Another way you can change the arrow type is to right click on an arrow in your diagram and select* Style *from the shortcut menu. An* Arrow Properties *dialog box will appear in which you can change the arrow style.*

11. Click on the Arrow Tool  (which has now changed to reflect the new arrow style) on the BP*win* toolbar to add a Referent Line to your diagram. Follow Steps 1 and 2 on page 4-7 to connect the CCN referent to the *Check CCN* Activity Box. In this example, the source of the line will be the CCN referent, and the destination will be the *Check CCN* Activity Box.



We continued to populate our diagram with additional junctions, referents, and arrows. When completed, our diagram appeared as follows:



What's Next?

The next chapter will introduce you to Data Flow Diagramming. With Data Flow Diagrams, you will be able to document the movement and processing of information within your organization.

Chapter 5

Reveal the Flow of Information

Using the Data Flow Diagram

You can use BP*win* to create a blueprint of your systems development tasks. This eliminates the costly time previously dedicated to repetitive planning and design. Now you can create and use Data Flow Diagrams (DFD) to document the movement and processing of information within your business or organization. And modelers use Data Flow Diagrams to complement existing Business Process models (IDEF0).

The Data Flow Diagram describes data processing functions (for example, Input Customer Data); data used or created by the data processing system (for example, Invoice); objects, persons, or departments that interact with sales (for example, Vendor), and data processing tables (for example, the Inventory table). Data processing functions are represented by Data Flow Diagram objects that include activities, arrows, data stores, and external references. You can also associate entities that you create in BP*win*, or that you import from ER*win*, with external references and data stores.

Objects in Data Flow Diagrams

The table below describes the four objects present in Data Flow Diagrams:

Activity	An Activity describes an action that processes or transforms data or resources. In DFD modeling, an Activity depicts an action that processes or transforms data.
Arrow	Arrows in Data Flow Diagrams represent the flow of data between activities, data stores, and external references.
Data Store	Data Stores are used in Data Flow diagramming to show the flow of data to and from a database table, ER*win* entity, or both.
External Reference	In Data Flow Diagrams, External References represent a location, entity, person, or department that is a source or destination of data but is outside the scope of the diagram.

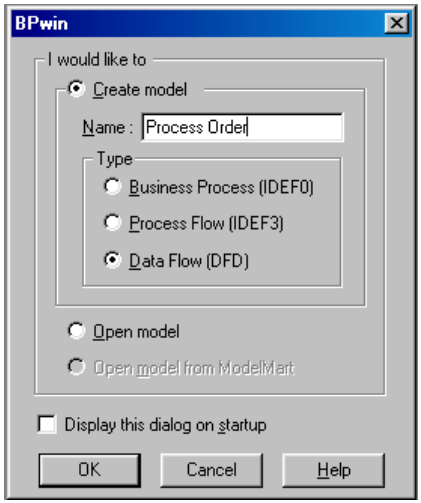
Creating a Data Flow Diagram

In the example that follows, we will create a Data Flow decomposition diagram based on the context activity, "Accept/Release Order."

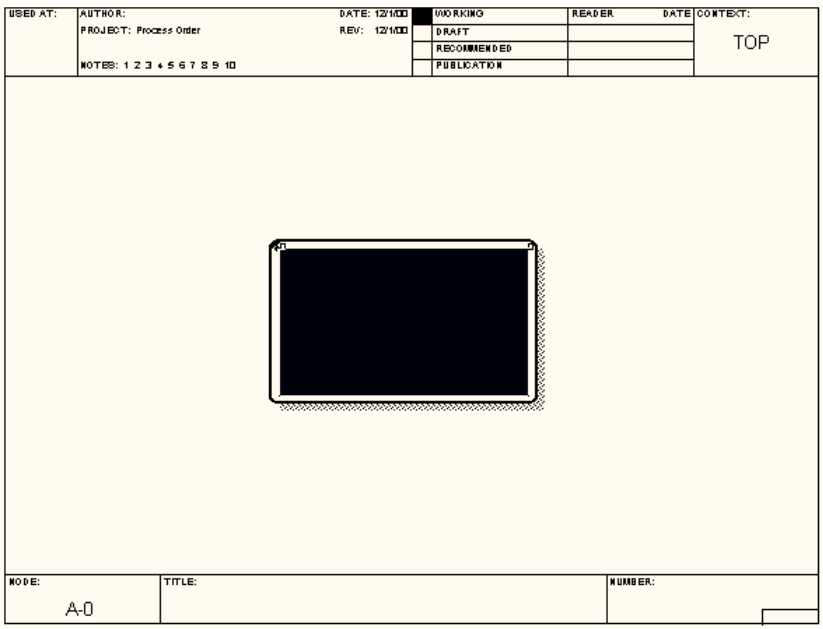
Buddy Tip—*A similar Data Flow Diagram called* Accept/Release Order *can be found in the sample model* Arena BE Test from BPwin40 *under the file name* BPDemo4.bp1 *on your BP*win *CD.*

To create a Data Flow Diagram:

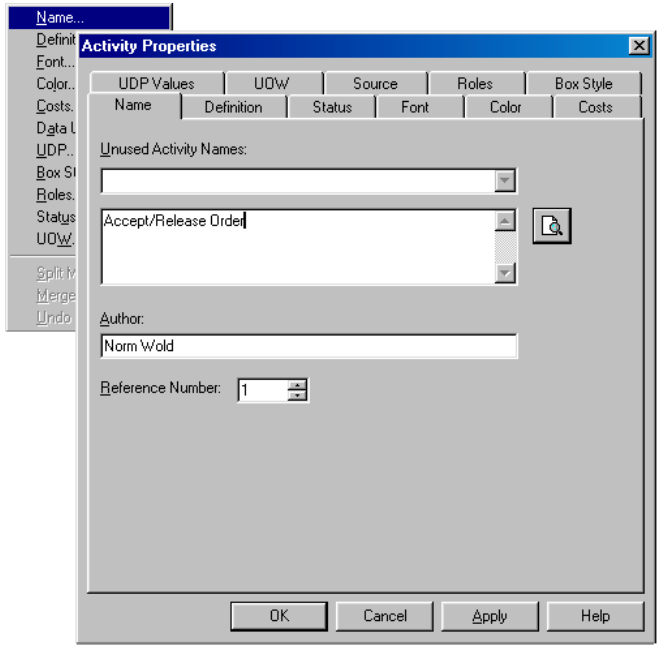
1. Select *New* from the File menu, or click the New button on the toolbar. In the dialog box that appears, name the model and select *Data Flow (DFD)* as the model type. In this case, name the model "Process Order."



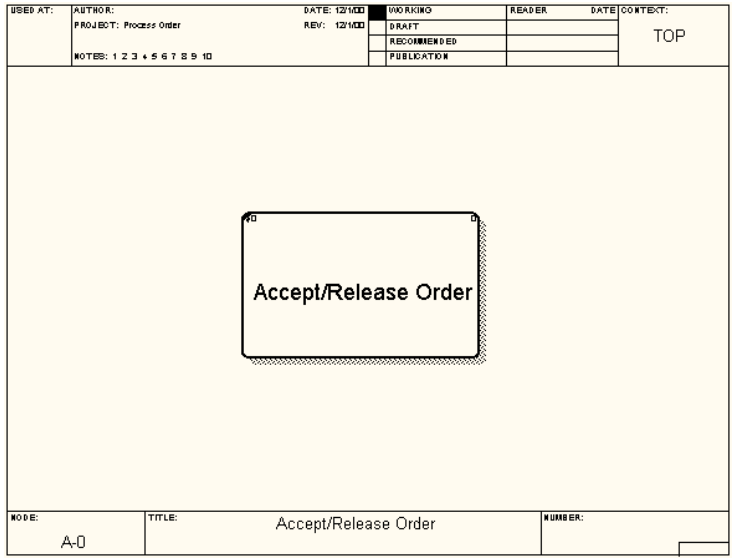
2. Click *OK*. Enter your name as Author in the Properties dialog box. Next, click *OK*. The model opens:



3. Right-click on the Activity Box and select *Name* from the shortcut menu. Name the Activity "Accept/Release Order."



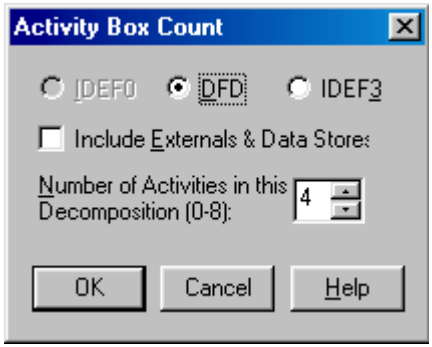
4. Click *OK*. You can move the Activity Box within the diagram by clicking and dragging the box to the desired location. To resize, click on a corner of the Activity Box and drag the perimeter of the box until the desired size is achieved.



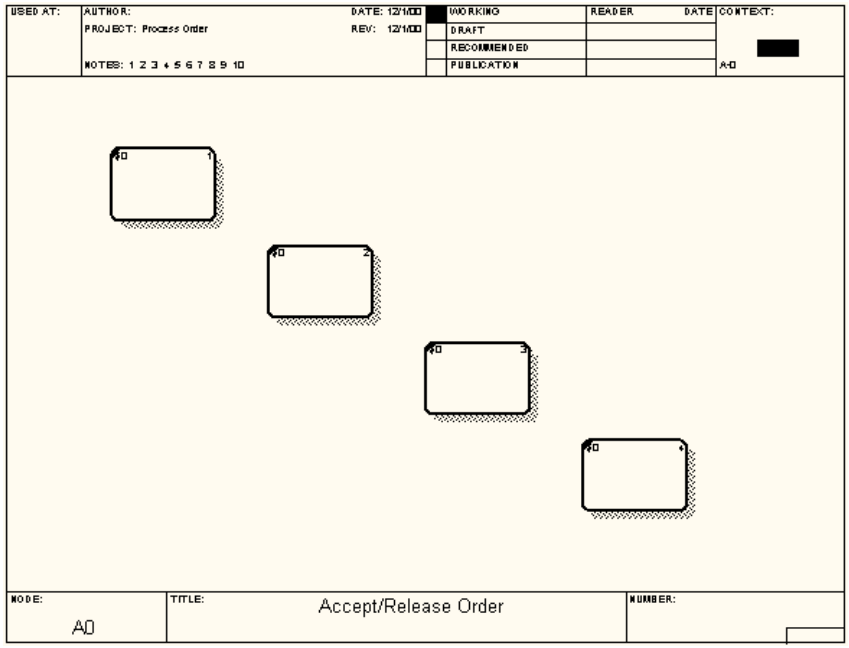
Once you have created your context activity, you can create a Data Flow decomposition diagram based on the context activity. In this case, we will create a decomposition diagram based on the "Accept/Release Order" context activity.

To create a Data Flow decomposition diagram:

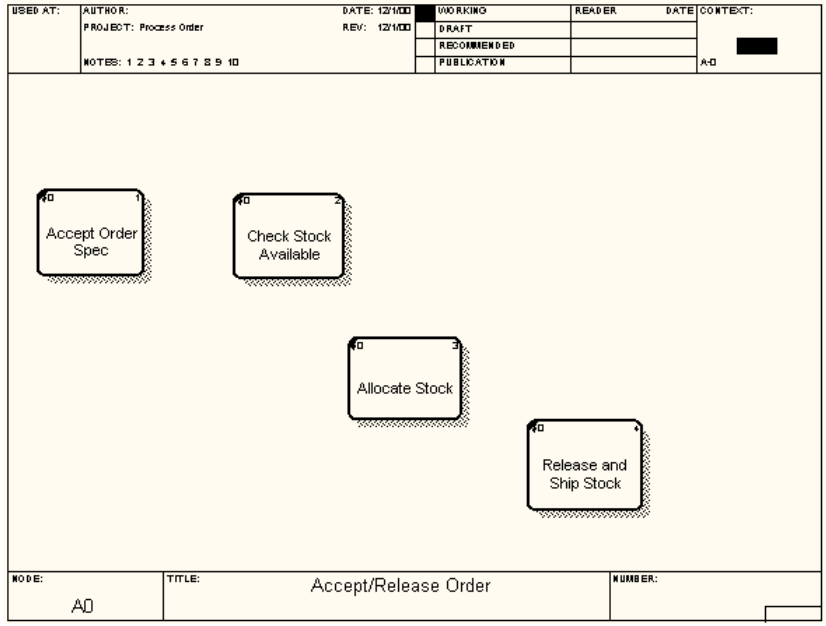
1. Highlight the Process Order Activity Box. Then, click the Go To Child Diagram Tool button  on the BPwin toolbar. In the Activity Box Count screen that opens, select DFD as the model type and enter 4 in the *Number of Activities in this Decomposition* box.



2. Click *OK*. The decomposition diagram opens:

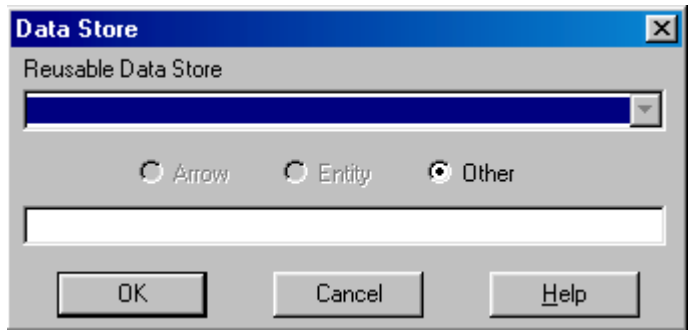


3. Label each activity in your decomposition diagram by right-clicking on a selected Activity Box and choosing *Name* from the shortcut menu. In this example, we named and repositioned the four activities as follows:

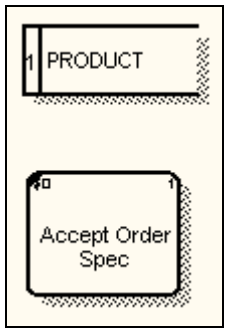


4. We can now add Data Stores to our diagram to represent various databases needed for each activity. On the BP*win* toolbar, click the Data Store Tool button  . The Data Store cursor  appears.

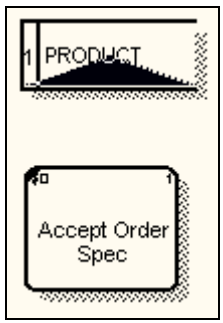
5. The *Data Store* text box appears.



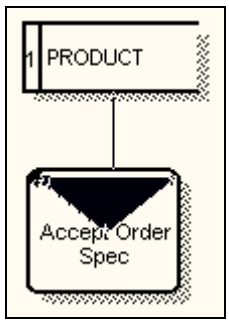
In this example, we do not yet have any existing data store names in the *Reusable Data Store* list. To assign a name to the Data Store, make sure *Other* is selected and type "PRODUCT" in the bottom text box, then click *OK*. The referent appears in the diagram:



6. To connect the data store to the Accept Order Spec Activity Box, simply click on the Arrow Tool button  on the BP*win* toolbar and follow the steps below:

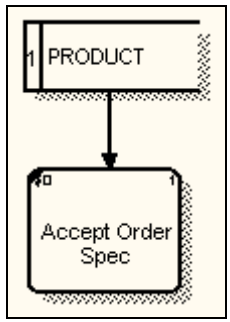


Step 1: Click the source border or Activity (in this case, the bottom of the *PRODUCT* Data Store) until a large highlight triangle appears. Click on the highlight triangle.



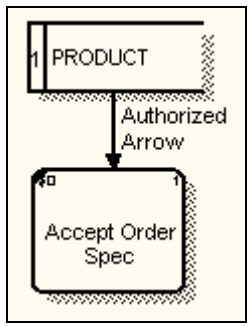
Step 2: Move the cursor over the destination border (in this case, the top of the *Accept Order Spec* Activity Box) until a large highlight triangle appears. Click on the highlight triangle to create the arrow.

Buddy Tip—*Unlike IDEF0 modeling, in Data Flow Diagramming, you can attach arrows to any side of an Activity Box.*

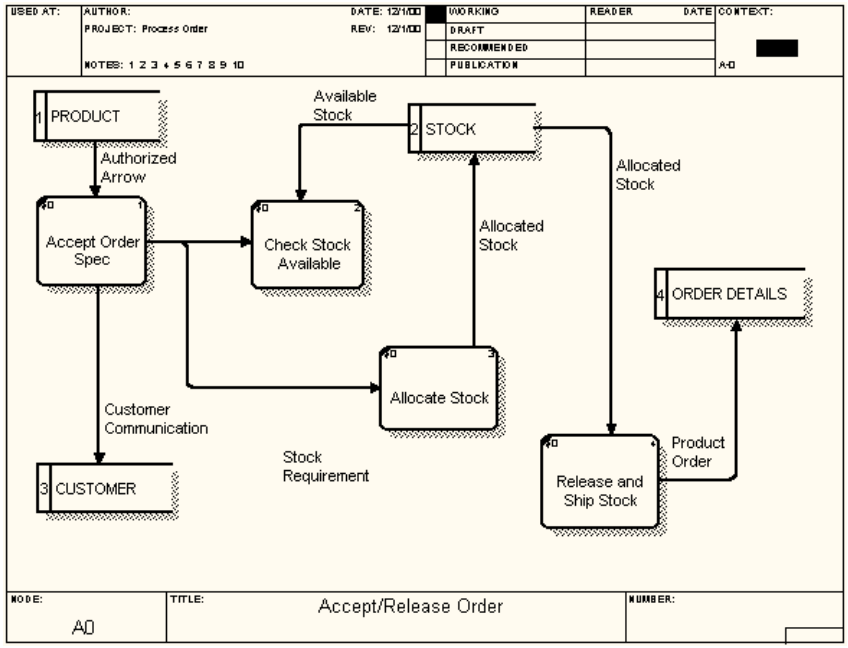


When you click on the highlight triangle, an arrow appears representing the flow of data between the *Product* Database and the *Accept Order Spec* Activity.

7. You can label the arrow by right-clicking on the stem of the arrow and selecting *Name* from the shortcut menu. Name the arrow "Authorized Order." When you click *OK*, "Authorized Order" will be displayed with the arrow.

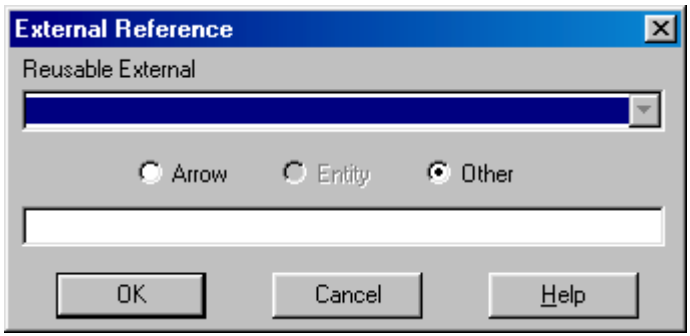


In this example, we added and connected three additional Data Stores, as well as additional arrows, as follows:

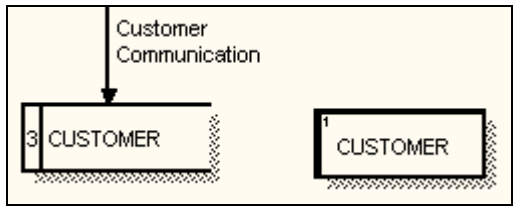


8. To add an External Reference to your Data Flow Diagram, simply click on the External Reference Tool button  on the BP*win* toolbar. The External Reference cursor  appears.

9. Click on the diagram where you want the External Reference to appear. The *External Reference* dialog box opens:

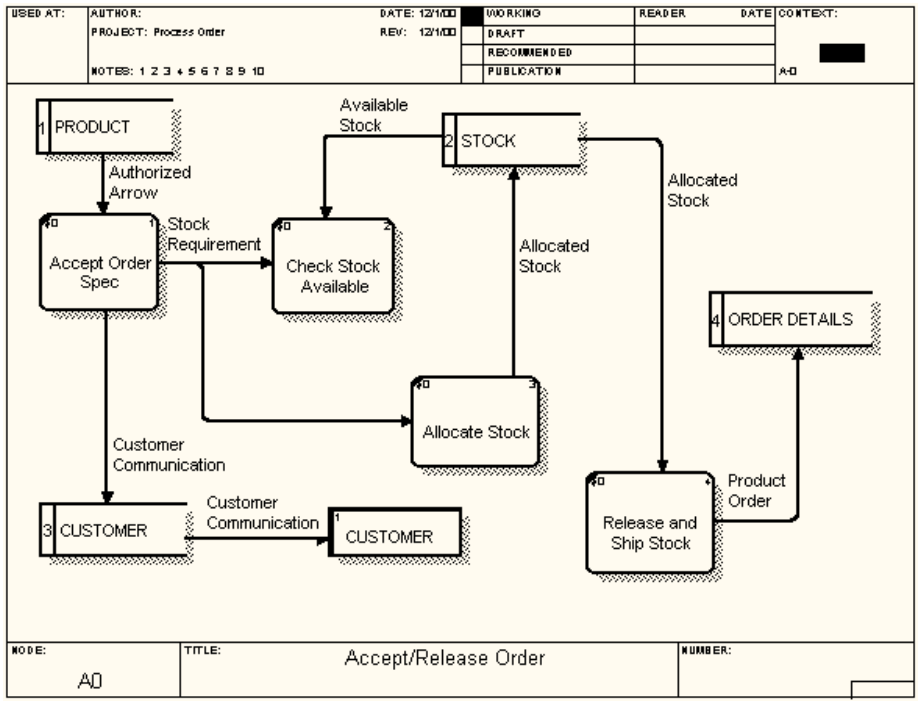


10. In this example, we do not yet have any existing external reference names in the *Reusable External* store. To assign a name to the External Reference, make sure *Other* is selected and type "CUSTOMER" in the bottom text box, then click *OK*. The External Reference appears in the diagram:



11. To connect the *CUSTOMER* Data Store to the *CUSTOMER* External Reference, simply follow Steps 1 and 2 on page 5-7. Label the arrow "Customer Communication."

Our completed *Accept/Release Order* Data Flow Diagram appears below:



What's Next?

Now that you have glimpsed how the Data Flow Diagram fits into your company's modeling scheme, you are ready to proceed to the next chapter. Here we will discuss how you can specifically tailor business models to fit the requirements of your organization, both now and as it continues to grow.

Chapter 6

Add Value to Your Model!

Refine the Model to Suit Your Organization

BP*win* provides a framework of features that you can use to add value to your model. You can specify characteristics such as cost, time, performance, or quality metrics. This chapter explores the benefits of using Activity Based Costing and User-Defined Properties.

Improving the Bottom Line

In today's fast-moving economy, it is critical to maintain a healthy profit structure. To more fully understand underlying production costs, organizations are turning to Activity Based Costing (ABC). This is a technique that captures and analyzes activity costs. ABC captures the costs of resources (e.g., materials, labor), assigns these expenses to various activities, and then allocates activities to various system outputs called cost objects. Compared to traditional cost accounting, which systematically under-costs low-volume products and over-costs high-volume ones, ABC provides a more exact calculation of the cost to produce a specific product based on the cost to perform all of the activities involved in creating it.

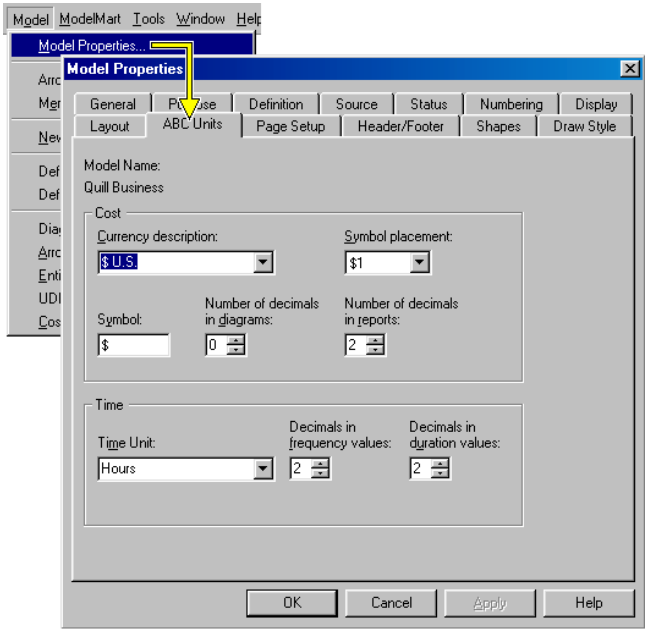
Because it is activity-based, the design of an ABC system mirrors your company's operations.

Calculating Costs

ABC is a technique for accruing costs into cost centers by allocating those costs throughout the model where they actually occur. Make sure that your model is complete and stable before you begin to allocate costs.

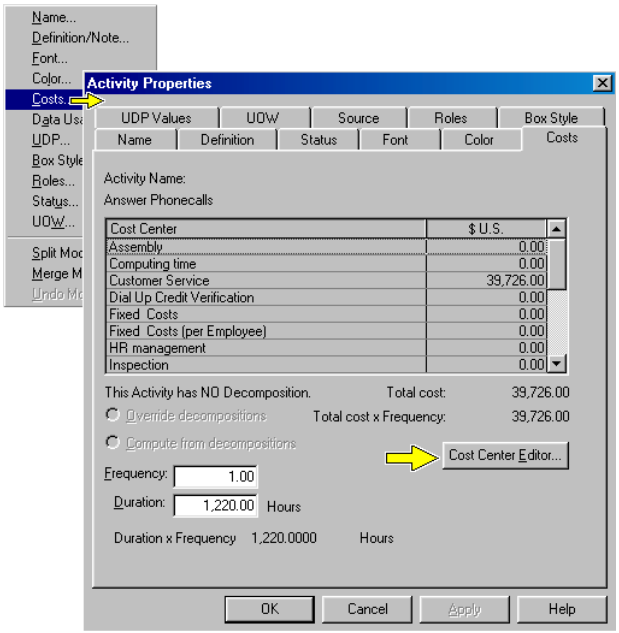
There are three steps to completing the costing activity:

1. Set the Units of Measurement:



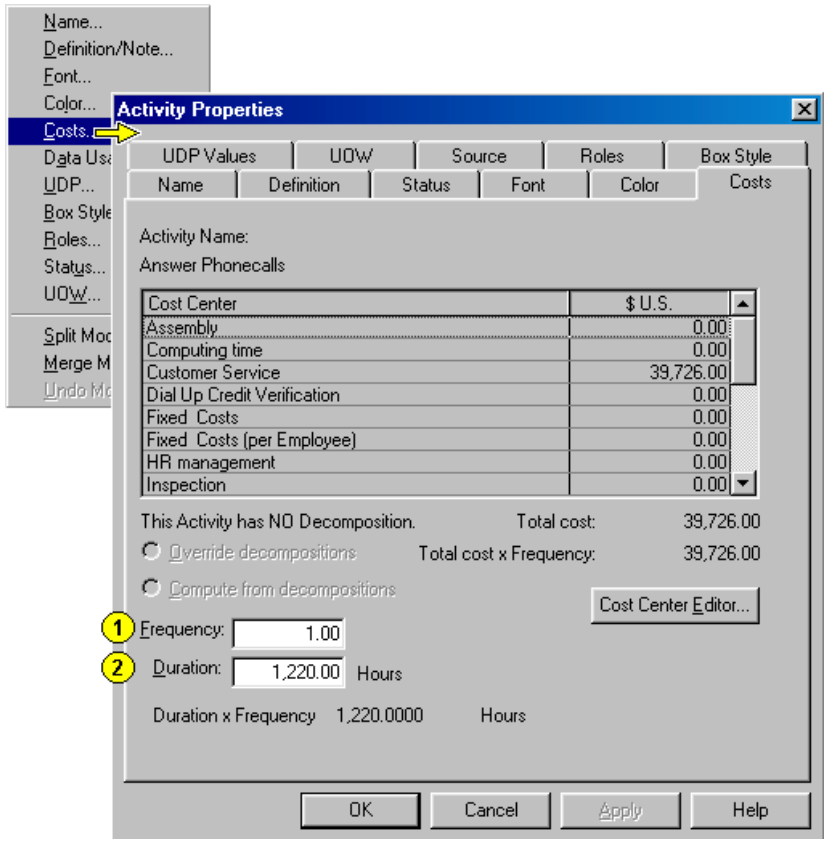
You must set the units of measurement by first deciding what currency you will use to measure cost (usually US dollars) and how it should be formatted for display and in reports (e.g., with cents). You also need to specify the unit of time you will be using (minutes, hours…). These values are global for the model and are set on the *ABC Units* tab of the Model Properties dialog.

2. Define the Cost Centers:



Next, you must add the cost centers you want to use. Cost centers are categories of costs that are shared across all activities. Some examples might include Marketing and Advertising, Purchasing, and Technical Support. The set of cost centers you wish to use is specified on the *Cost Center Editor*, which you can open by right-clicking on an activity, selecting *Costs* from the shortcut menu, clicking on the Costs tab, and clicking on the Cost Center Editor button.

3. Enter the Cost Information:
   To apply costing estimates to the model, you must first assess the cost of performing each activity in the model. The values you calculate must then be allocated to one or more of the Cost Centers you previously defined. To do this, right-click on an activity box, choose *Costs* from the shortcut menu, and click on the *Costs* tab.



For each Cost Center, you will specify the following:

1. How often the activity occurs (Frequency)
2. How long it lasts (Duration)

The total cost is automatically calculated for each Cost Center and for each activity. An activity's cost will be displayed in the lower left corner of the activity box (upper left corner in Data Flow diagrams) when you select *Model Properties* from the Model menu and put a checkmark next to *ABC Data* on the Display tab.

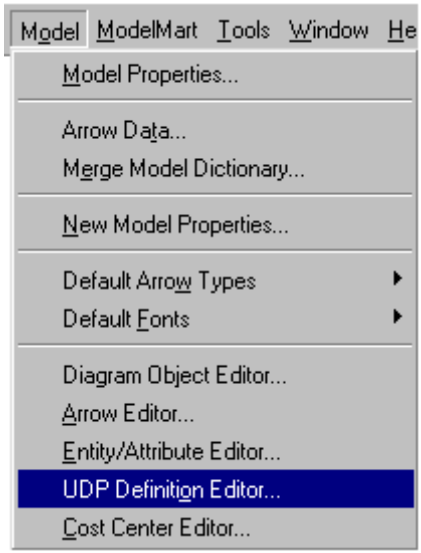
Customize Your Model

With User-Defined Properties, BP*win* allows you to custom-design a model that contains values specific to your company's activities. To further enhance the value of your model, you can make it as detailed as required. In BP*win*, you can create UDPs to associate business-specific information with a diagram object such as an activity or arrow. BP*win* supports various types of UDPs, including pull-down lists, command UDPs, and text lists.

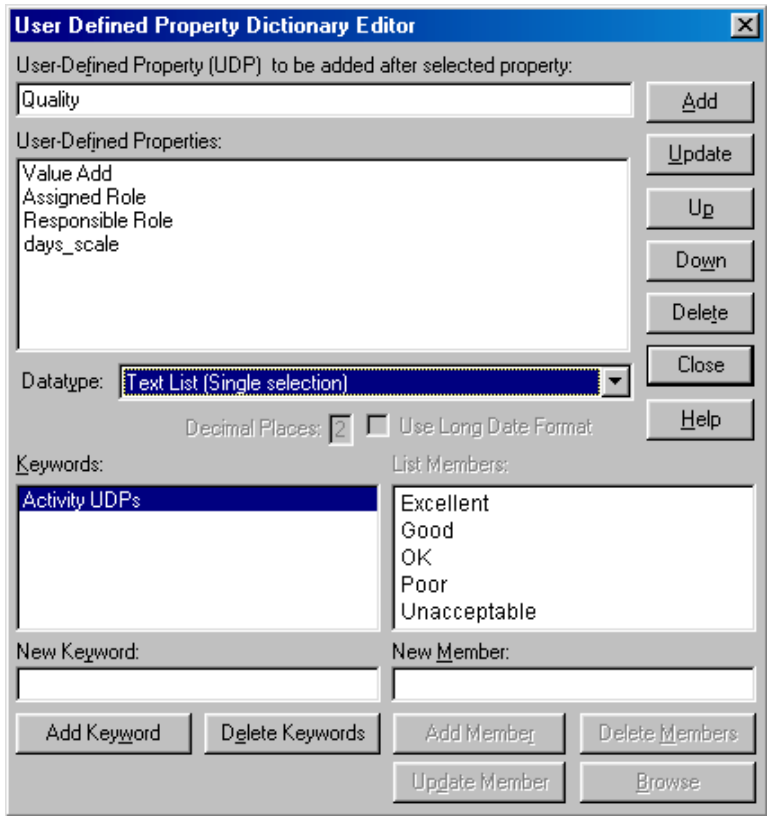
The first step to creating User Defined Properties (UDPs) is to apply UDP values to diagram objects such as activities and arrows. For example, you can create a text UDP called EMPLOYEES to list the names of employees who work in departments represented by diagram activities. You can create UDPs that use different datatypes such as text boxes, multi-select lists, and commands that run other Windows applications.

To use User Defined Properties:

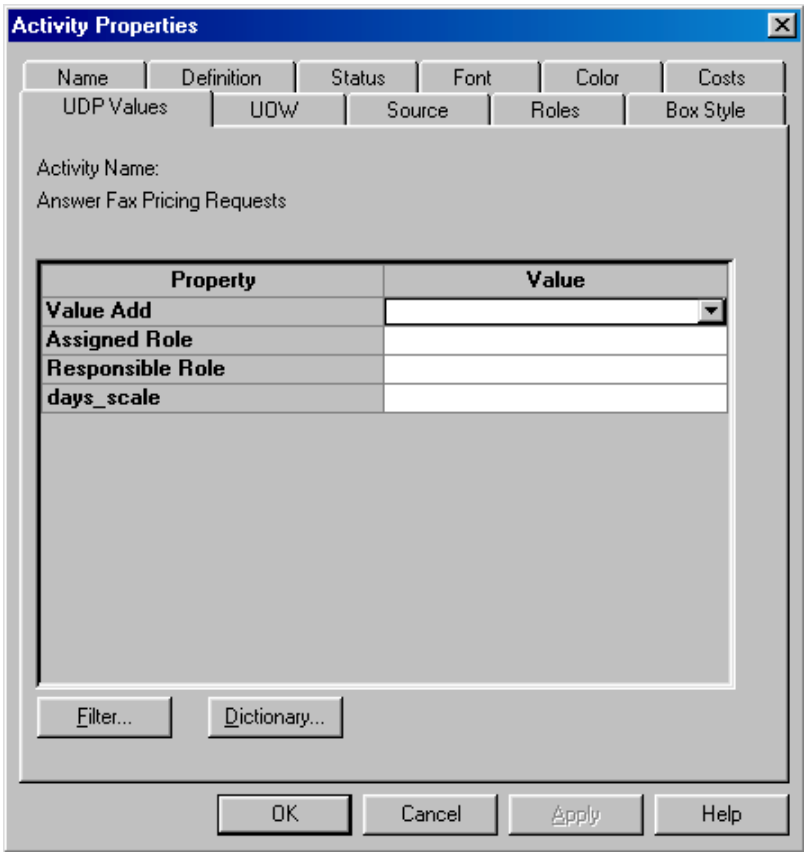
1. Select *UDP Definition Editor* from the Model drop-down menu:



2. Then, assign the property a name and a datatype. Depending on the datatype, you may need to further specify the properties (in the example shown, the datatype is a list, so the list values must be specified). Here, you are further detailing specific characteristics that are relevant to your quality cycle.



3. After you create a UDP, you can assign a UDP value in the UDP Values tab in any activity or arrow property sheet by right-clicking on the activity. The following dialog box will appear:



The UDP Values tab will display a list of properties that can be applied to the object. You can specify each value you wish to assign to the selected activity or arrow in the *Value* column.

Chapter 7

Advanced Features

Visualize Your Organization

Complex eBusiness processes often cut across a number of organizational boundaries and disciplines. Understanding and optimizing these types of processes requires companies to extend their thinking beyond traditional hierarchical modes and to visualize their operations from the perspective of their customers and partners.

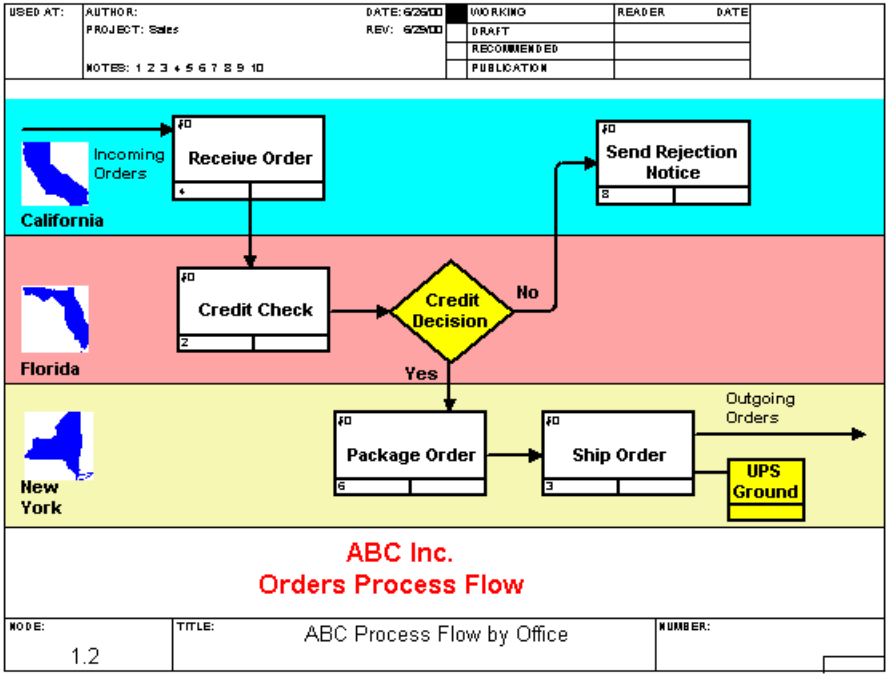
With Swim Lane Diagrams and Organization Charts, BP*win* gives you the tools to visualize the structure of your organization, as well as current process flows. Swim Lane diagrams enable you to quickly assess and improve complex eBusiness process flows across organizational groups, while Organization Charts graphically help you to understand your organization's structure and its impact on your eBusiness optimization effort.

Swim Lane Diagrams

Swim Lane diagrams can provide your organization with an efficient mechanism for visualizing and optimizing processes. Swim Lane diagrams organize complex processes across functional boundaries, and help you to conveniently view processes, roles, and responsibilities and their flow. They can be built from scratch or based on existing Process Flow (IDEF3) diagrams.

You can add Swim Lane diagrams to any BP*win* model to better visualize process flow. Swim Lane diagrams use Process Flow Network (IDEF3) methodology, and display graphical horizontal lanes that represent process dependencies called "roles." For example, you could create a Swim Lane diagram to display all activities with the "Shipping" role in the "Shipping" swim lane. You can also add bitmaps and a diagram scale or timeline to any Swim Lane diagram.

An example of a Swim Lane Diagram appears below:



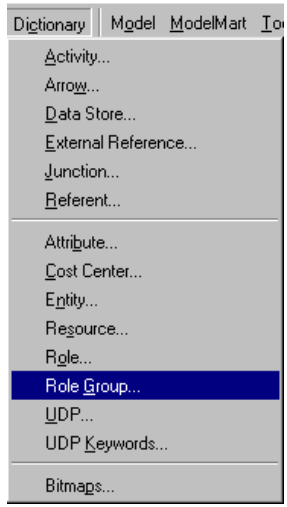
Creating A Swim Lane Diagram in Your Model

Before you add a Swim Lane diagram to a model, you must first create the process roles. This can be accomplished in one of two ways:

- Create Process Roles in the Role Dictionary, OR
- Create Process Roles in the UDP Dictionary by adding list items to a Text List UDP (UDPs are detailed in Chapter 6, "Add Value")

To add roles in the Role Dictionary:

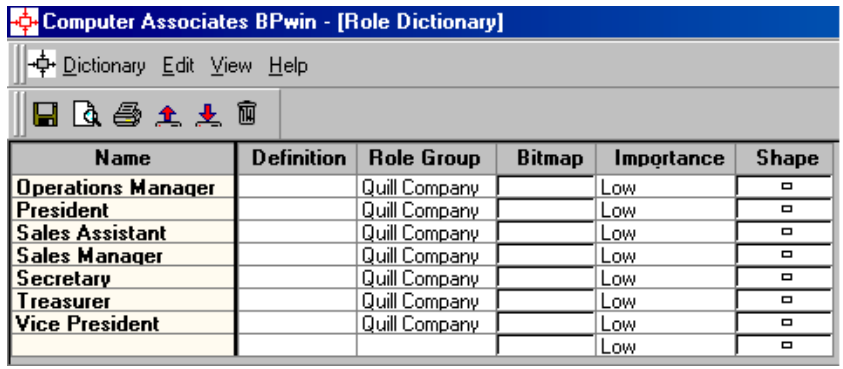
1. Select *Dictionary* from the menu bar. The following drop-down menu appears:



Choose *Role Group* from the drop-down menu.

2. Make and save the selections for the Role Group. Exit *Role Group*.

3. Select *Role* from the Dictionary drop-down menu, and identify the members of the Role Group. Save and exit.



Name	Definition	Role Group	Bitmap	Importance	Shape
Operations Manager		Quill Company		Low	
President		Quill Company		Low	
Sales Assistant		Quill Company		Low	
Sales Manager		Quill Company		Low	
Secretary		Quill Company		Low	
Treasurer		Quill Company		Low	
Vice President		Quill Company		Low	
				Low	

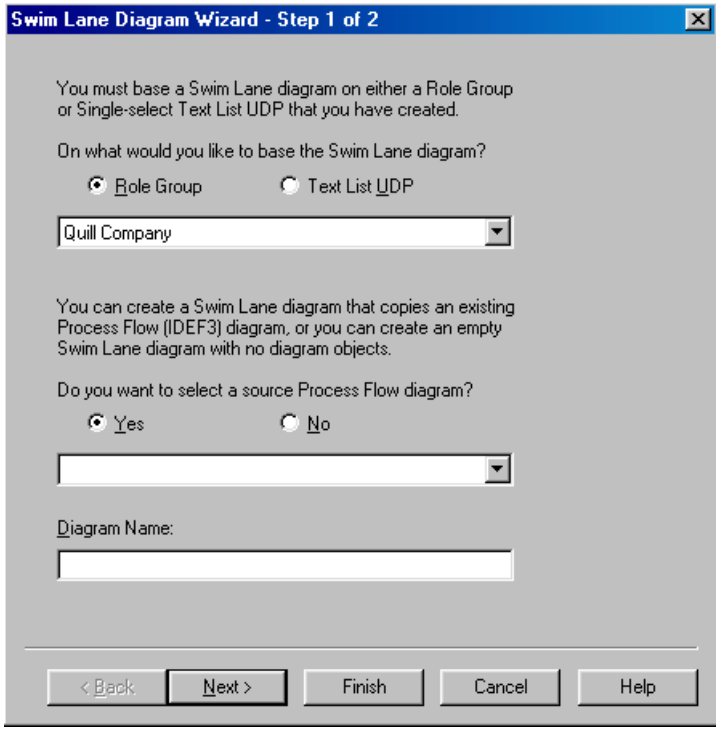
4. Select *Resource* from the Dictionary drop-down menu.

Buddy Tip—*Make sure that the Resource names are correctly associated with the Role Group names.*

5. Save and Exit the Resource Dictionary.

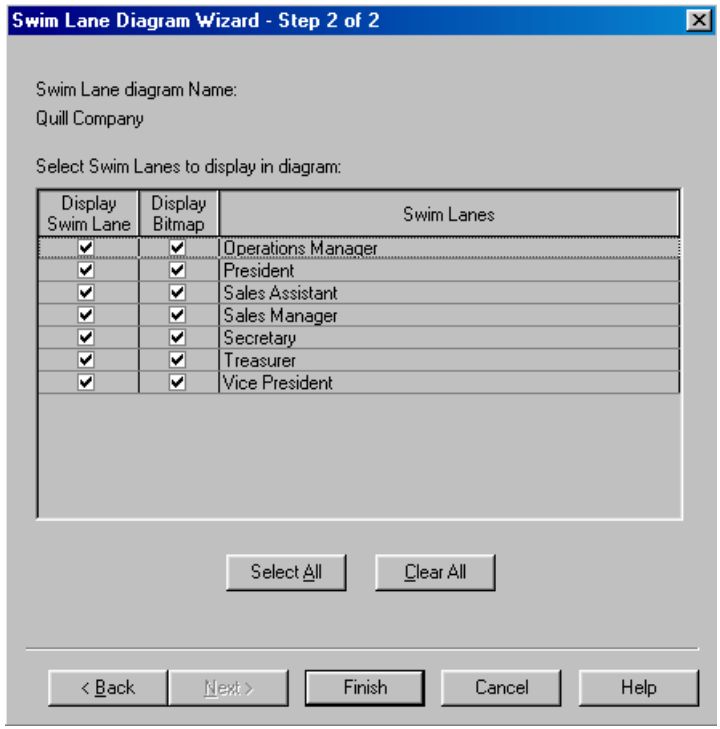
Congratulations! You have completed the background task. Now you are ready to create the Swim Lane diagram:

1. On the Diagram menu, choose *Add Swim Lane Diagram*. This will open the *Swim Lane Diagram Wizard – Step 1 of 2* dialog.



2. Select the Role Group or Text List UDP on which you want to base the Swim Lane diagram, and choose whether you want to select a source Process Flow diagram.
3. Type a name for your diagram in the Diagram name box, then click *Next*.

4. In the *Swim Lane Diagram Wizard – Step 2 of 2* dialog that appears, select the checkbox for each swim lane you want to display in the Swim Lane diagram.



To show or hide the role bitmap for each swim lane, select or clear the check box in the *Display Bitmap* column.

Buddy Tip—*You can use bitmaps (*.bmp) to enhance the appearance of any BP*win *diagram. To use bitmaps in BP*win *diagrams, you first add bitmaps to the Bitmap Dictionary by importing them from an external source, such as your computer hard disk. Then you can associate the bitmaps in the Bitmap Dictionary with diagram objects such as activities, and object properties such as Roles and Role Groups.*

NOTE: Swim Lane bitmaps apply only to Swim Lane Diagrams based on a Role Group. Bitmaps do not apply to Swim Lane Diagrams that you base on a text list.

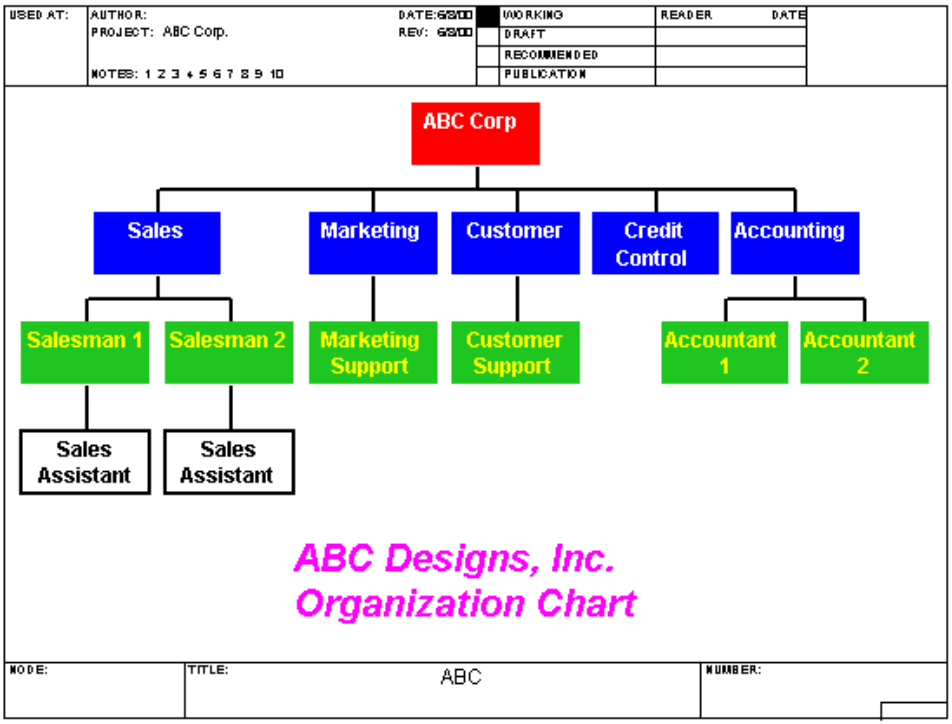
5. Click *Finish*. Your Swim Lane diagram will be displayed. You can move objects in your newly created Swim Lane diagram simply by clicking and dragging objects to the desired location. To resize objects, move the cursor over an object until you see a double-headed arrow, then click and drag to resize.

Organization Charts

Organization structures have an immense impact on how eBusiness processes are defined and carried out. Without a clear understanding of roles, relationships, and responsibilities, it is often impossible to successfully optimize eBusiness operations.

BP*win*'s Organization Charts are based on user-defined roles and provide a convenient graphical view of an organization's structure, which can quickly clarify the eBusiness process optimization effort.

An example of an Organization Chart appears below:



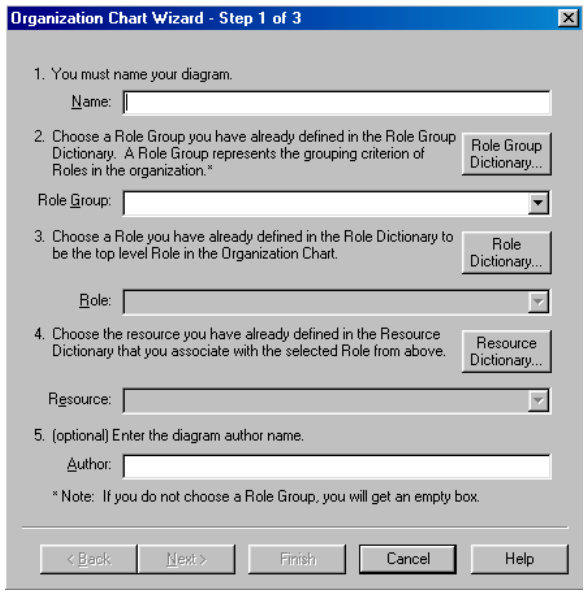
Creating an Organization Chart in Your Model

Make sure the following prerequisites are met before creating an Organization Chart:

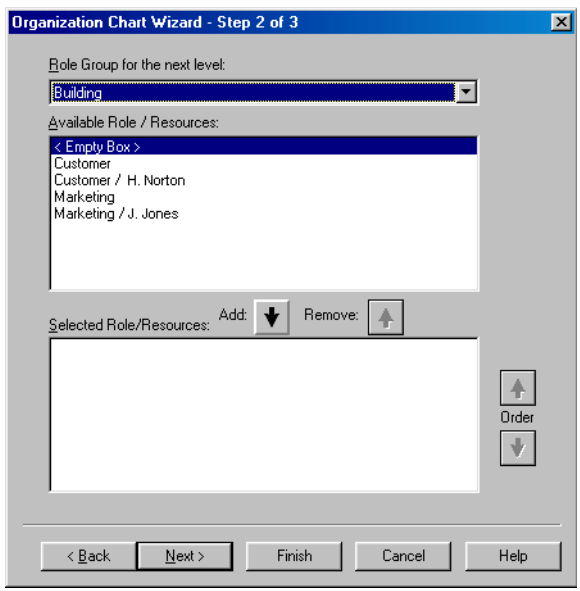
- You must have at least one role group defined in the Role Dictionary (this is described in the *Creating a Swim Lane Diagram* section of this chapter)
- The necessary roles must exist in the Role Dictionary and be associated with a role group
- Any required resources must be added to the Resource Dictionary and associated with roles

The Organization Chart Wizard helps you build an Organization Chart into your model. To launch the Organization Chart Wizard in an open model:

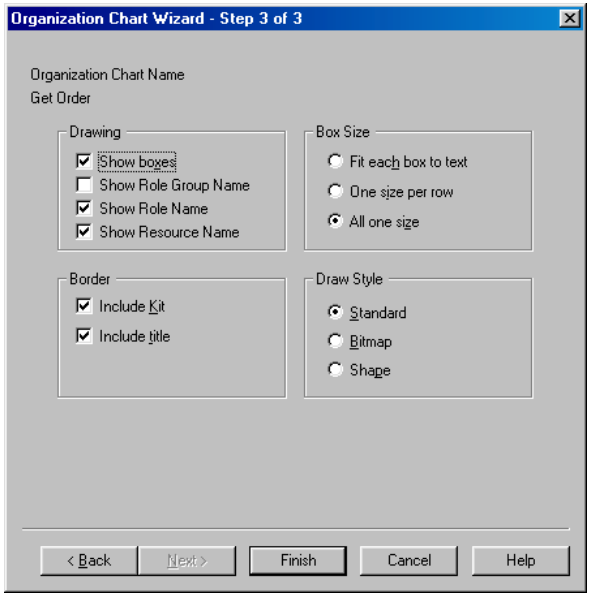
1. Select *Add Organization Chart* from the Diagram drop-down menu on the menu bar. The following screen appears:



2. Enter the appropriate information in fields 1 through 5, and click *Next*. The *Organization Chart Wizard – Step 2 of 3* appears:



3. Select the appropriate Role Group from the *Role Group for the next level* drop-down menu. From the *Available Role/Resources* window, select each role with its corresponding name and click the Add button to add each role to the *Selected Role/Resource* window. When you have finished, click *Next*. The *Organization Chart Wizard – Step 3 of 3* appears:



4. In the *Organization Chart Wizard – Step 3 of 3* screen, select the desired options (see the BP*win* Help files for detailed descriptions of each option).

5. Click *Finish*. Your Organization Chart will be displayed. You can move objects in your newly created Organization Chart simply by clicking and dragging objects until the cursor changes into a thick black arrow. The arrow points to the location where the object can be placed. When an arrow pointing to the desired location appears, release the mouse button and the object will appear in its new location.

Chapter 8

Ask Your Buddy

Ask Your Buddy – Questions and Answers

Question: Where can I find out about BP*win*'s new features?

Answer: You can open the "What's New" menu item in the BP*win* Help menu to review new features and related overview topics.

Question: Why do I see a ModelMart Toolbar and Menu in BP*win*?

Answer: BP*win* will support ModelMart integration through a Service Pack at a later date. You can hide the ModelMart toolbar by clicking the toggle button on the far right side of the Standard Toolbar.

Question: What do the "Notes 1 2 3 4..." do, and how can I turn them off?

Answer: "Notes 1 2 3 4 5 6 7 8 9 10" is an IDEF0 (Business Process) convention. Its purpose in the kit is to facilitate making manual notes on a physical document being distributed in a group. Each person who makes a note on the drawing crosses out a number. When the next person makes a note, he/she does not need to inspect all the other notes to find which number is the next in sequence. This display has no internal function in BPwin and can be "turned off" only by disabling the kit in the Page Setup tab in the Diagram Properties dialog.

Question: How do I adjust the page size of a diagram that I have already created, especially if it needs to be enlarged due to "crowding"?

Answer: Double-click the drawing area in any diagram to open the Diagram Properties dialog and click the Page Setup tab. Select a new page size or specify a custom layout, and then select the "Scale diagram objects with page" checkbox. The diagram automatically rescales to the new sheet size.

Question: How do I insert a new diagram between two existing levels in a model?

Answer: There are two ways to do this as described in the following scenario:

Example: A model with diagrams A1, A2, and A3 (all of which are already decomposed) — we want the current diagram A2 to become A21 and replace the current A2 with a new diagram.

1. **Split Model/Merge Model method:** In diagram A0, use the right mouse button over A2 and select Split Model. Enter a model name (for this example, "park"). The new model created will have A2 as its context activity and the old activity A2 will have a call arrow named "park". The old activity A2 is now a leaf activity and can be decomposed to make a new diagram A2 in the original model. You must rename either the context activity of the new model (park) or the old A2 activity. Then, delete the call arrow "park" from the old activity and insert a new call arrow "park" on the activity in the new decomposition where the old A2 is to be located (in this case A21). The context activity of the new model "park" should be given the same activity name as the Activity A21 in the new decomposition. Use the right mouse menu over the activity A21 or over the call arrow "park" and select Merge Model and merge the model "park" back into the original model. Note that the new diagram will have border arrows that correspond to the square tunneled arrows that connect to the inserted Activity A21. These arrows should be connected as desired.
2. **Cut/Paste Method**: Go to diagram A0, select activity A2, delete and preserve for pasting. Add a new activity A2 (say no to paste) and decompose it. Go to the newly created decomposition and paste. Reconnect arrows as appropriate. The primary drawback to this method is that the arrows connected to the original activity A2 will be deleted when the activity is cut. For more help, see the question, "I have discovered that an activity in my model should really be in a child diagram. How do I accomplish this?" below.

Question: What file suffix should I use when exporting Node Trees, arrows, etc.?

Answer: Use the .txt extension.

Question: How do I associate data with my arrows and activities, so that I can generate a Data Usage report?

Answer: Please refer to the online help system for all the details about data associations, importing data definitions from ER*win*, etc.

Question: I have discovered that an activity in my model should really be in a child diagram. How do I accomplish this?

Answer: You can simply cut the activity, go to (or create) the necessary child diagram, and then paste the activity. However, if the activity you want to move is already connected to other activities with arrows, you probably want to preserve these connections. First, create a new activity near the activity you want to move. Next, disconnect each arrow from the current activity, and reattach them to the new activity. Now, you can simply cut & paste the original activity, and then rearrange the diagrams to your taste. Of course, if your intention is to have the new activity take on the name of the activity you just moved, this is accomplished by first renaming the moved activity, then reusing that name in the new activity. Note that this is necessary because a fundamental rule of functional decomposition is that an activity can only appear once in a model.

Question: Why can't an IDEF3 junction be a "fan-in" and "fan-out" at the same time?

Answer: This is actually mandated by the IDEF3 (Process Flow Network) methodology. If you think of an exclusive OR junction with two inbound arrows and two outbound arrows, you would have to describe each combination of circumstances under which an inbound arrow maps to one of the outbound arrows. It is recommended to join a fan-in junction to a separate fan-out junction instead.

Question: When I cut and paste activities, sometimes I am prompted to preserve for pasting, and sometimes I am not. Why?

Answer: If the activity being cut has no decompositions (i.e., a leaf level activity), you will not get this message, although you must confirm the delete. When decompositions are involved, BP*win* goes to these extra lengths to make sure that you are aware that you are about to delete an entire branch of your activity hierarchy, and not just a single activity.

Question: How do I remove the "T" in the Parent Text Diagram node number?

Answer: The "T" indicates the diagram is a parent text diagram. It cannot be turned off.

Question: What's the difference between CUT/DELETE, MOVE/RENAME, and COPY PICTURE?

Answer: CUT/DELETE is used to move an activity and its arrows from one place in your model to another place in the same model, or to a different model. CUT/DELETE does not use the Windows clipboard, but rather an internal mechanism that allows it to keep track of all the various objects being CUT in relation to other objects within the model. In BP*win* version 4.0, the CUT/DELETE function is automatically invoked within the same model if you select an activity, delete it, and place another activity using the activity tool. Using this technique between models provides a true COPY between models that also merges dictionaries automatically.

Consider the following scenarios:

If you CUT/DELETE an activity and its ICOMS (arrows), you may notice that you cannot CUT another activity until you paste the current "cut" activity somewhere. Also, notice that the CUT/DELETE menu option is grayed out for this reason. This is as intended behavior. This keeps you from corrupting your model's integrity. Since the activity you CUT is vital to your model, BP*win* prevents you from accidentally overwriting an activity in the CUT "buffer".

NOTE: Once you have pasted your CUT activity, you cannot paste it again. This is intended behavior. Being able to create a duplicate activity would corrupt your model's integrity. If you try to paste your cut activity/ICOMS into the A-0 level, you cannot. This is intended behavior. The A-0 level, by definition in IDEF0, can only contain one activity.

MOVE/RENAME enables an internal move of an activity (and any decompositions) within the same model. BP*win* places a placeholder activity with no name in the location of the original activity. You can then name or delete the placeholder activity. You can then paste the activity elsewhere in the model. This technique preserves the model infrastructure (the ICOMS etc.). You can use MOVE/RENAME in the Model Explorer by pressing the CRTL key at the same time as the left mouse button.

COPY PICTURE uses the Windows clipboard in the traditional way by copying the current diagram image. You can then paste it into an external document such as a word processing document.

Question: How do I change the title of my IDEF0 (business process) diagram?

Answer: It depends on where you are in your model. If you are on the A-0 Context level, or the A-0 first level decomposition, then the title is derived from the name of the top-level context activity and can only be changed by renaming the context-level activity. When you reach the third layer of decomposition, the diagram title is controlled by the name of the parent activity in the second level diagram, and so on.

Question: I'm printing my model, but my diagram looks funny in one or more of the following ways. Why?

Answer: Your diagram printout shows one or more of the following:

- Arrows printing "funny".
- Extraneous lines.
- Arrows hanging on the opposite side of the page.
- Line going down the middle of page instead of going into the activity.
- Breaks in arrows.
- Some arrows do not print or have breaks.

Printing problems are invariably caused by not using the correct or most up-to-date printer driver for your printer. Using an older driver, or a driver from another printer model from the same manufacturer, typically does not cause a problem when printing word processing, spreadsheet, or database documents. However, applications that use graphics such as BPwin are more sensitive to printer drivers. If your driver is not the "exact" and most up to date driver for that specific printer, you are likely to have problems when printing graphics.

Question: Why would my system not be using the correct driver?

Answer: It could be your network configuration, or your Windows workstation environment configuration. Consult your resident IS professionals for quick troubleshooting. Or, you can go to your print setup box, choose options, and set your printer to print in RASTER mode. This causes your model to be printed in bitmap format as opposed to vector graphics. While this will slow printing (which may be unacceptable for the long run), it will allow you to print your model until you or your IS person can resolve the printer driver issue.

Question: Is BP*win* multi-user? Can it be installed on a network?

Answer: BP*win* is a single license product. You must purchase one license for each person (not seat) using the product. Although the BP*win* executable is relatively benign in terms of installing it on your network, you should respect the license requirements. There are two files: BPWIN40.INI and BPWINRPT.INI that should exist on each workstation in the Windows System directory. Because BP*win* is a single user product, it does not contain file-locking capabilities. Be aware that two users on a network can open the same file, and that the person who saves last can overwrite the changes made by the person who saved previously.

Question: How do I link to other documents from within BP*win*? Does it have OLE functionality?

Answer: Other documents and applications can be launched from BP*win* by using the COMMAND datatype in a User Defined Property (UDP). When you associate a UDP with an arrow or activity, right-click the arrow or activity and select UDP Editor from the shortcut menu. Then select the UDP you wish to run. The application/document associated with the UDP will be launched.

Question: Can I import entity and attribute model information from ERwin to BP*win*?

Yes, you can import a .eax file from ER*win* that includes ER*win* model information such as entities and attributes. First, export the .eax file from ER*win* (File|Export|BPwin is the correct sequence for ER*win* 4.0, and File|BPwin|Export is correct for ER*win* 3.52 — BP*win* 4.0 supports both). Then, import the .eax file into BP*win* (File|Import|ERwin (.EAX)). Refer to the online help system for more information on the interface between ER*win* and BP*win*.

Question: Can I export entity and attribute information from BP*win* to ER*win*?

Answer: Yes, you can export entities and attributes that you have created in the BP*win* Entity/Attribute Dictionary. To do so, first export the .bpx file from BP*win* (File|Export|ERwin 4.0 (.BPX) or File|Export|ERwin 3.5.2 (.BPX)). Then, import the .bpx file in ER*win* (File|BPwin|Import).

NOTE: Refer to the online help system for more information on the interface between ER*win* and BP*win*.

Question: Can I use BP*win* with a third party model simulation tool?

Answer: Yes, you can export BP*win* models to Arena, a powerful simulation tool that can be purchased from either Systems Modeling Corporation or Computer Associates. You start the export process by choosing File|Export|Arena. See the online help for more information.

Question: When I print diagrams using the Print Parent Diagram mode or standard reporting, all of the line breaks and tabs are lost. How do I format the text so that it prints properly?

Answer: When "Remove Special Characters" is unchecked in the report editor, carriage returns function as paragraph markers. When it is checked, all carriage returns and line feeds are replaced with spaces, causing each carriage return to appear as two spaces. Tabs should never be used in the BP*win* editors. If you want to include a carriage return in text in a printed report, use a double carriage return in the text box in BP*win* and uncheck the "Remove Special Characters" option in the Report Editor.

If you want to include carriage returns in a DDE report to Word or Excel, you must also use spaces instead of tabs for the report to format correctly. If you check the "Remove Special Characters" option to remove the tabs, BP*win* also removes all carriage returns from your text.

Question: How do I create, maintain, and use a common project dictionary?

Answer: The merging rule for all paste operations is that dictionary fields that are already defined in the destination will not be overwritten by those in the source.

The following procedure illustrates the technique for building and using a common dictionary.

1. Open a New BP*win* Model. Name the context activity "Repository" and name the model REPO and save it as REPO.BP1. This model will now be used as the common project dictionary.
2. Add the dictionary of a model to REPO. Open a source, whose dictionary is to be merged into REPO and open REPO. Select the context diagram of REPO and then the menu item Model | Merge Model Dictionary. Select the source model and click on OK.
3. Merge the common dictionaries into a working model. Open REPO as the source model. Activate any window of the destination model and select the menu item Model | Merge Model Dictionary. Select the model REPO and click on OK.
4. Change the common definitions. To make changes to the definitions after they have merged into REPO, use the Diagram Object Dictionary and the Arrow Dictionary editors in REPO and then use step 3 to update the working models.

Dictionary Merge is also available by dragging and dropping as described previously

Also: A feature of the BP*win* Model | Merge Model Dictionary function allows Diagram Object and Arrow Dictionaries and their corresponding costs and UDPs to be copied from one model to another. Using these options, the Diagram Object and Arrow dictionaries with costs and UDPs from separate models can be merged, separately maintained, and reused in multiple models.

Question: How do I set up the Auto-Save feature for on-demand and timed temporary saves?

Answer: The Auto-Save dialog box, accessed from the Tools menu, can be used to set the frequency and file types of saves. A frequency of zero turns off the Auto-Save feature. The Auto-Save feature has three modes:

1. Use Save-As Dialog. Prompts the user for a file name each time it saves.
2. Use Temporary (.BPB) File. Saves the file to the current file name changing the extension from .BP1 to .BPB. If it is a new model, the first time it is saved, it will use the Save-As dialog. When a model is opened, if a .BPB file corresponding to the selected .BP1 file has a newer date and time than the .BP1 file, the user will be informed and given the option of recovering the temporary save. When the model is saved to a .BP1 file, if a corresponding .BPB file exists, it will be deleted.
3. Use Queue (BPQUnnnn.BP1) Files. Saves the current model to a queue of files named BPQU0000.BP1 - BPQUnnnn.BP1 where nnnn is one less than the user-specified number of files in the queue.

Note: Auto Save is disabled when connected to ModelMart.

Question: What are the set-up options for Spell checking?

Answer: When you choose Spelling Options from the Tools menu, you can set the following spell check options:

1. In the BP*win* Spelling Checker Options dialog, you can specify any BP*win* text field to be spell checked.
2. You can select a dictionary to check against (including a dictionary you define).
3. You can set spelling checker "behavior" options such as to include/exclude words with numbers, ignore case, use phonetic, alphabetic matching, etc.