

**BaanERP 5.0c**

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**Multisite concepts**

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# Table of contents

<b>1</b>	<b>Introduction to multisite</b>	<b>1-1</b>
	Multisite structures	1-1
	Enterprise structure modeling	1-2
	<i>To implement a multisite structure</i>	1-2
	Enterprise units	1-3
	Multicurrency	1-4
	Intralogistic-company transactions	1-5
	Data sharing	1-5
	Multisite processing	1-5
	<i>Multisite Finance</i>	1-5
	<i>Multisite Enterprise Planning</i>	1-6
	<i>Multisite Manufacturing</i>	1-6
	<i>Multisite Order Management</i>	1-6
	<i>Multisite Project</i>	1-7
	<i>Multisite Service</i>	1-7
	<i>Multisite Warehousing</i>	1-7
<b>2</b>	<b>Multicompany structures</b>	<b>2-1</b>
	The BaanERP company	2-1
	<i>The company as a working environment</i>	2-1
	<i>The company as a database</i>	2-1
	Company types	2-3
	<i>Logistic company</i>	2-3
	<i>Financial company</i>	2-3
	<i>Logistic and financial company</i>	2-4
	<i>Financial group company</i>	2-5
	Multicompany structures	2-6
	<i>Multicompany structure types</i>	2-6
	<i>Single logistic/single finance</i>	2-7
	<i>Single logistic/multifinance</i>	2-8
	<i>Multilogistic/single finance</i>	2-9
	<i>Multilogistic/multifinance</i>	2-9

<b>3</b>	<b>Currency systems</b>	<b>3-1</b>
	Home currencies	3-1
	<i>Reference currency</i>	3-2
	<i>Transaction currencies</i>	3-2
	Currency exchange rates	3-2
	<i>Currency rate types</i>	3-2
	Multicurrency systems	3-3
	<i>Single currency system</i>	3-3
	<i>Dependent multicurrency system</i>	3-5
	<i>Independent multicurrency system</i>	3-8
<b>4</b>	<b>Enterprise Modeling Management</b>	<b>4-1</b>
	Enterprise modeling	4-1
	The multisite structure building blocks	4-2
	Enterprise units	4-3
	<i>Clusters</i>	4-4
	Goods transfer relationships	4-5
	<i>Goods transfer relationships between enterprise units</i>	4-6
	<i>Goods transfer relationships between entities</i>	4-6
	<i>The relationship parameters</i>	4-8
	<i>Invoicing</i>	4-8
	Time zones	4-9
	<i>User time-zones</i>	4-9
	<i>Financialcompany time-zones</i>	4-9
	<i>Address time-zones</i>	4-10
	Calendars	4-11
<b>5</b>	<b>Business partners</b>	<b>5-1</b>
	Business-partner types	5-1
	Business-partner data by department	5-2
	<i>The business partner's credit limit</i>	5-3
	Accounting office	5-3
	<i>The accounting office's enterprise unit</i>	5-4
	To enter the business-partner data by department	5-4
	The business partner's credit limit	5-5
	The business partner's order balances and invoice balances	5-6
<b>6</b>	<b>Multisite Finance</b>	<b>6-1</b>
	Corporate accounting	6-1
	<i>Intercompany transactions</i>	6-1
	<i>Intergroup transactions</i>	6-2
	Triangular invoicing	6-3
	Bilateral invoicing	6-4

<b>7</b>	<b>Multisite tax issues</b>	<b>7-1</b>
	Multisite tax registration	7-1
	Multisite VAT processing for intra-EU transactions	7-2
	<i>VAT types</i>	7-2
	<i>Tax numbers</i>	7-3
<b>8</b>	<b>Multisite Enterprise Planning</b>	<b>8-1</b>
	Multisite supply-chain planning	8-1
	<i>Centralized planning</i>	8-2
	<i>Decentralized planning</i>	8-2
	Multisite aggregation and disaggregation	8-3
	<i>Centralized planning</i>	8-3
	<i>Decentralized planning</i>	8-4
<b>9</b>	<b>Multisite Manufacturing</b>	<b>9-1</b>
	Product definition	9-1
	<i>The standard cost price</i>	9-2
	Engineering Data Management	9-2
	<i>The Engineering Data Management (EDM) module</i>	9-3
	<i>BaanERP Object Data Management (ODM)</i>	9-4
	Routing	9-4
	Production scheduling	9-5
	<i>Production in multiple companies</i>	9-5
	<i>Production in different enterprise units</i>	9-6
	<i>WIP transfers</i>	9-7
	<i>Subcontracting</i>	9-8
<b>10</b>	<b>Multisite Order Management</b>	<b>10-1</b>
	Sales offices and purchase offices	10-1
	Sales order processing	10-2
	<i>Inventory check</i>	10-2
	<i>Order delivery and invoicing</i>	10-4
	Purchase order management	10-5
	<i>Central contracting/local purchasing</i>	10-6
	<i>Central purchasing</i>	10-7
	<i>Central purchasing with direct deliveries</i>	10-8
	Vendor rating	10-9
	Business partner management	10-9
	<i>Credit check</i>	10-10
	Pricing	10-10

<b>11</b>	<b>Multisite Project</b>	<b>11-1</b>
	Financial reporting by project	11-1
	<i>Goods transfer</i>	<i>11-1</i>
	The project currency	11-1
	<i>To aggregate the project data</i>	<i>11-2</i>
	Multisite limitations for BaanERP Project	11-2
<b>12</b>	<b>Multisite Service</b>	<b>12-1</b>
	Service call handling	12-1
	A service enterprise unit	12-1
	Goods transfer relationships	12-2
	Multisite limitations in Service	12-2
<b>13</b>	<b>Multisite Warehousing</b>	<b>13-1</b>
	Financial accounting per country	13-1
	<i>Goods transfer across country borders</i>	<i>13-1</i>
	Goods transfer relationship	13-2
	The supply network in Enterprise Planning	13-2
	Default warehouse by sales/purchase office	13-2
	<i>Triangular invoicing</i>	<i>13-3</i>
	Multisite inventory check	13-3
<b>14</b>	<b>Multisite data sharing</b>	<b>14-1</b>
	Sharing data	14-1
	Data sharing methods	14-2
	To share referenced data	14-2
	Data integrity	14-3
	<i>Data ownership</i>	<i>14-4</i>
	<i>Integrity of referenced data</i>	<i>14-5</i>
	<i>Transaction-data integrity</i>	<i>14-5</i>
	To choose a data sharing method	14-5
	Logical table linking	14-7
	Data replication	14-8
	<i>BaanERP Exchange</i>	<i>14-9</i>

<b>15</b>	<b>Multisite technical issues</b>	<b>15-1</b>
	Network types	15-1
	Server configurations	15-1
	<i>Single server</i>	15-2
	<i>Dedicated database server</i>	15-3
	<i>Application server cluster with a single database server</i>	15-4
	<i>Server cluster with multiple database servers</i>	15-5
	<i>The single point of failure</i>	15-5
	Electronic Data Interchange (EDI)	15-6
	<i>External EDI</i>	15-6
	<i>Multisite (internal) EDI</i>	15-6
	<b>Appendix A Glossary</b>	<b>1</b>
	<b>Index</b>	<b>1</b>

**Multisite concepts**

**vi**

# About this document

This document describes the functional aspects of multisite structures in BaanERP 5.0b and 5.0c. For information about the technical aspects, refer to the related documents listed later in this section.

This document does not attempt to determine the preferred multisite structure for a specific situation because each organization has unique requirements. The definition of an organization's multisite structure must be made after a thorough investigation of business and technical requirements as well as the BaanERP functional and technical capabilities.

It is assumed that you are familiar with:

- The overall structure of packages, modules, and sessions of the BaanERP software.
- The company concept and the use of database tables in BaanERP.
- The concept of business partners and the business partner roles.
- The general business procedures used in everyday business practice.
- The basic concepts of enterprise management.

## **To use this document**

Chapter 1, "Introduction to multisite", describes the main features of a BaanERP multisite environment.

Chapter 2, "Multicompany structures", describes the BaanERP company types and the possible combinations of company types in a multicompany structure.

Chapter 3, "Currency systems", explains the types of currencies that a company uses and the possibilities and limitations of multicurrency systems.

Chapter 4, "Enterprise Modeling Management", describes how you can use the Enterprise Modeling Management (EMM) module of the common data package to map the entities of your Baan system on the enterprise model that you define in the Dynamic Enterprise Modeler (DEM) package.

Chapter 5, "Business partners", describes the different types of business partners and how BaanERP can register separate business partner data for each sales office and purchase office, and in each financial company of a multicompany structure.

Chapter 6, "Multisite Finance", describes the most important financial reporting functions of the BaanERP Finance package in a multicompany structure.

Chapter 7, "Multisite tax issues", describes the multisite aspects of BaanERP tax handling, which includes the value-added tax (VAT) computing for transactions in the European Union (EU) countries.

Chapters 8 up to 13 describe the most important features of the BaanERP packages in a multisite, multicompany environment.

Chapter 14, "Multisite data sharing", describes the methods that you can use to share data between the companies of a multisite structure.

Chapter 15, "Multisite technical issues", describes some multisite technical topics such as electronic data interchange (internal EDI).

The Glossary at the end of this document lists the definitions of the Baan terms used in this document.

**Related documents**

*Baan Enterprise Modeling User Manual*, (U7169A US).

*Multicompany Table Sharing*, (U7285A US).

*BaanERP Common - General Data (COM)*, (UP099A US).

*BaanERP Common - System Tables (MCS)*, (UP103A US).

*Enterprise Modeling Management (EMM)*, (UP101A US).

*To Set up a Company*, (U7287A US).

*BaanERP Exchange User Guide*, (U7137A US).

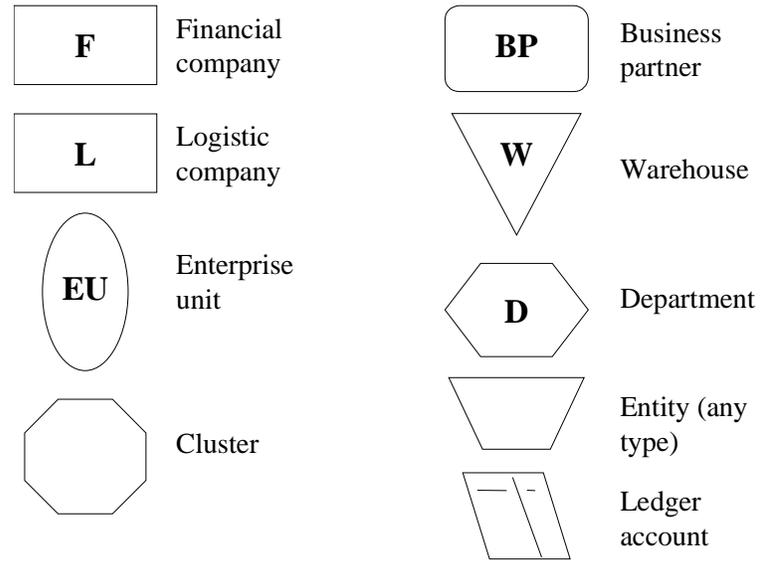
*BaanERP EDI User Guide*, (U7100B US).

**Acronyms used in this document**

<b>Acronym</b>	<b>Full term</b>
BOM	Bill of material
DEM	Dynamic Enterprise Modeler
EDI	Electronic data interchange
ESD	Enterprise structure diagram
EIS	Enterprise information system
EMM	Enterprise Modeling Management

**Notation conventions**

Figure 1 shows the symbols that are used in the diagrams:



*Figure 1, Symbols.*

**Multisite concepts**

**x**

# 1 Introduction to multisite

This chapter briefly describes the following main aspects of multisite processing:

- Multisite structures.
- Enterprise structure modeling.
- Enterprise units.
- Multicurrency.
- Intralogistic-company functions.
- Data sharing.
- Multisite processes.

## Multisite structures

A site is a set of company processes that is independent, to a certain degree, of the other company processes. For example, the production plants, an assembly plant, a distribution center, and the sales offices of an organization can form separate sites. A multisite structure is the integration of a number of sites in one organization structure.

A multisite structure consists of application logic and technology that refers to more than one enterprise unit, company, organization, or Baan server. A multisite structure can provide optimization at enterprise level, with planning and control that encompass the entire enterprise such as central inventory control, central purchasing, and central sales. The master data can be the same enterprise wide. The actual operations can be decentralized and carried out anywhere in the world.

A BaanERP multisite structure usually includes multiple logistic and financial companies. Therefore, multisite is often synonymous with multicompany. If the various sites are located in different countries, you must set up a multicurrency system for the companies of the multisite structure.

## Enterprise structure modeling

The Baan software is now used in more complex company structures than in the past. For example, the possibility to do enterprise planning across different sites enables you to use Baan software for the production planning in large companies. Another example is the possibility to do the financial accounting of separate parts (sites) of one logistic company in separate financial companies.

The Dynamic Enterprise Modeler (DEM) is a tool that you can use to model the structure of your enterprise. For example, the production sites can be in Asia and America and the sales offices in various European countries. The various sites of your enterprise are represented by enterprise units in the enterprise structure diagram. You also indicate the relationships between the enterprise units in the enterprise structure diagram.

In this way, you can model your enterprise independent of the organization of the BaanERP databases.

- You use enterprise units to model the multisite structure.
- You use logistic and financial companies to organize the database and the users' authorizations to work with parts of the database.

Obviously, you cannot completely ignore the organization of the databases and their distribution over the different servers when you design a multisite structure.

### To implement a multisite structure

To implement a multisite structure with Baan you must:

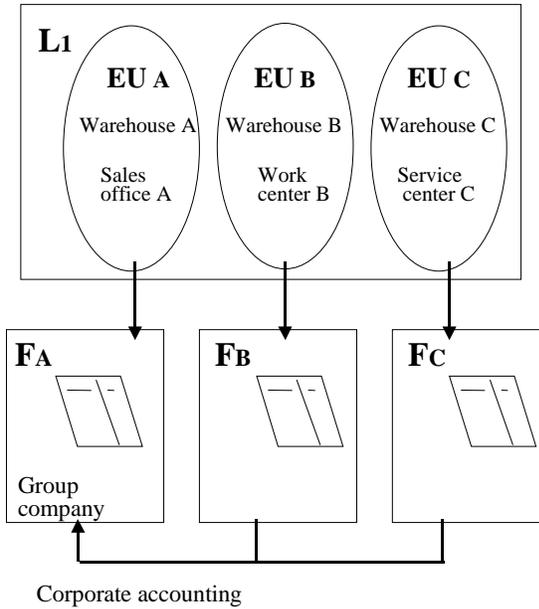
- 1 Create the logistic and financial companies, sharing the database tables as required.
- 2 Define the basic company data such as the implemented packages and the languages, the units of measure, and the currencies used.
- 3 Working in one of the logistic companies, define the enterprise structure in the Dynamic Enterprise Modeler. This results in a number of enterprise units and their relationships. Refer to *BaanERP Enterprise Modeling User Manual*, (U7169A US) for details.

- 4 In each logistic company, use the sessions of the BaanERP Common Data package to define each company's entities as required and to link the entities to the enterprise units that you defined in the Dynamic Enterprise Modeler. An enterprise unit's entities can be:
  - Departments: sales offices, purchase offices, work centers, service centers, accounting offices.
  - Business partners of the internal or affiliated-company type.
  - Warehouses.
  - Projects.
- Use the EMM module of the Common Data package to:
  - Specify the company's currency system and currencies, and, for the financial companies, the time zone.
  - Define the goods transfer relationships between the entities.

## Enterprise units

An enterprise unit is a financially independent part of the organization. An enterprise unit consists of entities such as departments, work centers, warehouses, and projects, within one logistic company. An enterprise unit can represent a manufacturing plant, an assembly plant, a sales organization, and so on.

In the multisite structure, an enterprise unit identifies a financial unit or a fiscal unit. All the transactions related to an enterprise unit are posted to one financial company. You can link the enterprise units of one logistic company to different financial companies for separate financial accounting, and perform the corporate accounting in the financial company that acts as the group company. Figure 2 illustrates this.



*Figure 2, Separate financial accounting of the enterprise units.*

If separate sites of your organization together form one legal and fiscal unit, you can link the enterprise units of one or more logistic companies to one financial company.

You can use the enterprise units for the modeling and configuration of a multisite structure. Therefore, you do not need to create separate companies for the different business units and different locations of your enterprise, which was the usual solution in previous versions of the BaanERP software.

## Multicurrency

In BaanERP a logistic company can operate in multiple countries and in this way, in multiple currency areas. The BaanERP multicurrency systems enable a company to do its accounting in more than one currency. Amounts can be computed and registered in up to three currencies.

Multicurrency enables organizations with operations in high inflation countries to report both in the local currency and in a stable currency. Refer to "Independent multicurrency system" in Chapter 3, "Currency systems" for details.

Multicurrency also provides a solution to the European monetary integration period after 1999. During this period participating countries can report to governments in both their local currency and the currency of the EMU, the euro.

## **Intralogistic-company transactions**

Sales offices, purchase offices, work centers, service centers, and warehouses are entities of logistic companies. The entities are grouped into enterprise units. You can define the enterprise units within one logistic company as each other's customers and suppliers and model the goods flow and the corresponding financial relations, such as invoicing and pricing agreements between them. To do this you must define internal business partners and link them to the enterprise units.

## **Data sharing**

The companies of a multisite structure must use consistent data. For example, you can use the same calendars, item codes, business partners, and pricing information in the various sites.

Some data must be shared, some data can be shared if this is required, and other data must not be shared. You can use several data sharing and replication techniques to make the same data available to the companies. Refer to Chapter 14, "Multisite data sharing", for details.

## **Multisite processing**

The multisite structure enables enterprise wide production planning and operations management. The following sections briefly describe the multisite functions that are supported by the various BaanERP packages. Refer to the chapters on each package, later in this manual, For more details about each package, refer to the relevant chapters, later in this manual.

## **Multisite Finance**

Within one logistic company you can carry out logistic transactions between departments, work centers, and warehouses of enterprise units that are linked to different financial companies. If the debit and the credit sides of a logistic transaction are posted to different financial companies, BaanERP can automatically generate intercompany transactions between the companies.

You can aggregate the data of a group of financial companies to the financial group company for corporate accounting.

Refer to Chapter 6, "Multisite Finance", for more information.

Refer to Chapter 7, "Multisite tax issues", for details about BaanERP tax computation and registration in a multisite structure.

## **Multisite Enterprise Planning**

You can use central multisite planning to define a central plan that coordinates and triggers the local plans in the production companies. You can also aggregate and disaggregate the plans to different levels. Refer to Chapter 8, "Multisite Enterprise Planning", for more information.

## **Multisite Manufacturing**

Product definition, engineering data management, production scheduling and execution, is controlled within each logistic company. Enterprise units do not have an effect on the activities that do not have financial consequences.

Within a logistic company, routings can include work centers in different countries that belong to different enterprise units. BaanERP posts the WIP transfers to the financial companies of the enterprise units.

Refer to Chapter 9, "Multisite Manufacturing", for more information.

## **Multisite Order Management**

During sales order entry, you can see the available inventory in warehouses of your own and other logistic companies using the bill of enterprise or by using BaanERP Enterprise Planning and BaanSCS Order Promising. If the sales office and the warehouse are linked to different financial companies, BaanERP can generate intercompany settlements between the financial companies.

BaanERP registers some financial business partner data separately for each sales office and for each purchase office. In this way the different enterprise units can do business with the same customers and suppliers.

In a multisite structure, you can manage (part of) the purchase orders centrally. For example, you can create a central purchase contract with your suppliers, including price and discount agreements that apply to all the sites of your organization.

Refer to Chapter 10, "Multisite Order Management", for more information.

## **Multisite Project**

You must link a project to an enterprise unit and in this way to a financial company. If you use multiple financial companies, you can do separate financial accounting for the projects of one logistic company.

You can aggregate the data of several subprojects to a main project for integrated project monitoring.

You can specify a project currency for each project and subproject. In this way you can manage a project in any currency that is convenient; for example, the local currency of the country where you carry out the work.

Refer to Chapter 11, "Multisite Project", for more information.

## **Multisite Service**

Service centers and warehouses that contain spare parts are all parts of enterprise units. You can perform separate financial accounting for the service centers and their warehouses by assigning them to enterprise units that are linked to different financial companies.

The handling of service contracts and service call handling and tracking is only possible within one logistic company.

Refer to Chapter 12, "Multisite Service", for more information.

## **Multisite Warehousing**

You can define goods transfer relationships between enterprise units or individual warehouses of the same logistic company to transfer goods between warehouses, and to generate invoices for the goods without using sales orders and purchase orders. For example, you can use this to transfer goods between warehouses in different countries.

You can define warehouse surcharges which are added to the valuation price of the goods either when the goods are issued from a warehouse or when they are received.

Refer to Chapter 13, "Multisite Warehousing", for a summary of the multisite warehousing functions.

**Multisite concepts**  
**1-8**

## 2 Multicompany structures

This chapter describes:

- The various types of BaanERP companies.
- The multicompany structures that you can set up in BaanERP.
- The multicurrency systems that the companies can use.

### The BaanERP company

A BaanERP company is both a database and a user's working environment.

#### The company as a working environment

A company is a Baan user's working environment, which consists of a set of BaanERP packages used to process and manage business transactions such as purchase orders, sales orders, and production orders as well as the corresponding financial transactions. To work with BaanERP, users log on to a specific company. They can:

- Use the packages implemented for the company. For example, if BaanERP Service is not implemented for the company, the user cannot enter or manage service orders.
- Carry out transactions using the data that is stored in the company's database and to which they have access.

Users that log on to different companies of the same multicompany structure can work with a different set of sales orders, production facilities, item cost prices, and so on.

#### The company as a database

BaanERP stores data by company number. In this way a company corresponds to a logical database in which all the data concerning logistic transactions or financial transactions are stored. The database can partially exist uniquely for the company and partially contain database tables that the company shares with other companies.

For example, the company data includes:

- Item data.
- Sales orders.
- Production plans.
- Business partners (the customers and suppliers) with the credit limits, prices, and discount agreements that apply to them.
- Employees and production tools, with their costs and availability schemas.
- The currencies used to calculate cost prices and inventory valuation, and in transactions with business partners.

The company data consists of:

- **Common master data.**  
Common master data is used in more than one of the BaanERP packages. You define the common master data in BaanERPCommon Data. For example, common master data includes
  - The item data.
  - The currencies and currency rates.
  - The business partners.
  - The enterprise modeling (EMM) data.
  - The calendars.
- **Package master data.**  
Package master data is specific for the package. You define the package master data in the individual BaanERP packages. For example:
  - The ledger accounts in Finance.
  - The item production schedule in Manufacturing.
  - The price books in Order Management.
  - The organization breakdown structure for projects, in Project.
- **Dynamic data.**  
Dynamic data is present in all the BaanERP packages. You create and change dynamic data when you carry out transactions such as:
  - Entering a sales order.
  - Calculating a budget.
  - Releasing materials from a warehouse for production.
  - Computing an interest invoice.
  - Registering the receipt of goods in a warehouse.

If you set up multiple companies in one BaanERP system, the companies can share parts of the database. For example, two companies can share the item data but have their own tables of business partners and production plans. Therefore a company corresponds to a logical database, while part of the physical database can be shared.

Sharing (static) master data puts different requirements on the database than sharing dynamic data. Refer to *Multicompany Table Sharing*, (U7285A US), for the technical details of table sharing.

## Company types

Depending on the type of data that the company controls and the types of processing for which you use the company, a company can be:

- A logistic company.
- A financial company.
- Both a logistic and a financial company.

### Logistic company

A logistic company is only used for logistic transactions such as the production, sales and purchase, and transportation of goods. A logistic company can consist of multiple enterprise units that are linked to different financial companies. In this way BaanERP can post the financial transactions that correspond to the logistic activities to different financial companies.

A logistic company contains the following BaanERP packages:

- Common Data.
- Some or all of the other BaanERP packages except Central Invoicing and Finance.

### Financial company

The main function of a financial company is to register all accounting transactions that result from the activities carried out in the enterprise units that are linked to the financial company. These activities consist of the operational and logistical transactions that result from a logistic goods flow and from production, service, warehousing and support activities.

A financial company contains the following BaanERP packages:

- Common Data.
- Central Invoicing.
- Finance.

In order to register the accounting transactions BaanERP Finance transforms the logistical data about activities and goods transactions into accounting data. Other functions of a financial company are to register the purchase and sales invoices created in the Order Management, Warehousing, Service, Project, and Manufacturing packages. These invoices are registered in the Central Invoicing package.

The BaanERP Finance package also includes a large number of functions for purely financial activities such as cash management, credit management, overhead cost interpretation and allocation, fixed asset registration and financial reporting. These functions only pass on information to the logistic company occasionally.

One of the currencies used by a financial company is marked as the local currency. BaanERP uses the local currency to do the accounting and tax reporting in a country's local currency. It is legally required to do a business's accounting for each country. Therefore, financial companies are restricted to one currency area.

BaanERP records document dates in Finance in the local time according to the financial company's time zone. This is necessary for posting the financial data to the correct financial periods. Therefore, a financial company is also restricted to one time zone. For details, see "Time zones" in Chapter 4, "Enterprise Modeling Management .

## **Logistic and financial company**

You can create a company that is both a logistic and a financial company. The company database then contains the logistic and the financial data. Such a company contains the following packages:

- Common Data.
- Finance.
- Central invoicing.
- Some or all of the other BaanERP packages.

You can still link enterprise units of a company of type logistic and financial (Both) to other financial companies, depending on your financial reporting requirements. For example, the company of type Both can then be the financial group company (see the next section).

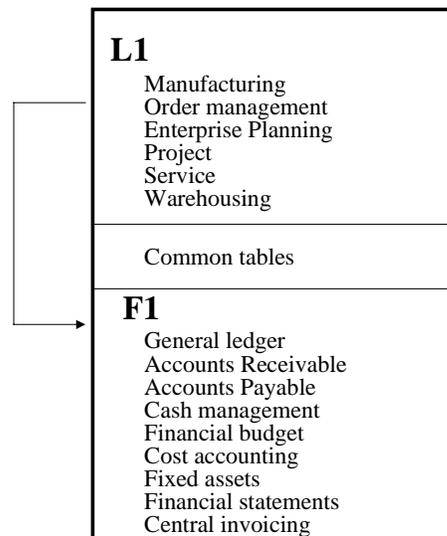


Figure 3, Both a logistic and financial company.

### Financial group company

A financial group company is a regular financial company to which a number of other financial companies are linked. A financial group company is used to:

- Process the corporate and administrative accounting.
- Accumulate the data from the group's financial companies for consolidated financial reporting.
- Perform central cash-management processes such as payments and direct debit.

The group company is usually one of the regular financial companies of the multisite structure, which in addition acts as the group company. You do not have to create a separate financial company to be the group company.

Creating a dedicated financial company is not recommended because this has the following disadvantages:

- An extra company for which table sharing must be set up correctly.
- An increased number of companies in the multicompany structure, which affects the performance without returning any benefit.

## Multicompany structures

To reflect a complex organization, a BaanERP system usually consists of multiple companies. A logistic company can cross borders and include several plants or sites in different countries. However, financial companies are restricted to one currency area to do the accounting and tax reporting of each site in each country's local currency.

**NOTE** Hardware limitations and restricted data replication possibilities can in some cases force you to define a separate logistic and financial company for each site or Baan server.

The companies of a multicompany structure must share specific tables and can optionally share other tables. This is discussed in more detail in Chapter 14, "Multisite data sharing".

The financial results of the activities that are carried out in a logistic company, such as production, purchase of materials, and the sales of the product, are posted to financial companies. Logistic companies contain enterprise units, which are linked to financial companies for their financial reporting. In this way, the logistic and financial companies are linked to each other through the enterprise units.

The logistic and financial companies that have links with each other form a multisite, multicompany structure.

**NOTE** A large organization can consist of multiple multisite structures. In this case each multisite structure consists of a set of companies and servers. Separate multisite structures cannot share data. You must use sales and purchase relations for goods transfer between different multisite structures in the same way as for goods transfer to and from external business partners.

### Multicompany structure types

Depending on your business requirements and the technical possibilities, you can set up the following combinations of logistic companies and financial companies in a multisite structure:

- Single logistic/single finance.
- Single logistic/multifinance.
- Multilogistic/single finance.
- Multilogistic/multifinance.

**NOTE** The companies of a multisite company structure must all use the same currency system. If parts of your organization need to use different multicurrency systems or different sets of home currencies, you must create separate multisite structures for these parts. Refer to Chapter 3, "Currency systems", for more information about currency systems

## Single logistic/single finance

In a single logistic/single finance (stand alone) company structure all processing is done within one company and only one database is used. For example, in a single logistic/single finance company structure you can use only one standard cost price for each item and one bill of material for each item.

You must define at least one enterprise unit in the logistic company, and link it to the financial company.

A single logistic/single finance company structure can consist of:

- One logistic company and one separate financial company.
- One company of type Both.

How you organize the single logistic/single finance company structure depends on your requirements. For example, you can create a separate logistic and financial company if:

- You intend to add more logistic or financial companies in the future.
- The logistic company and the financial company run on different servers and use separate databases.

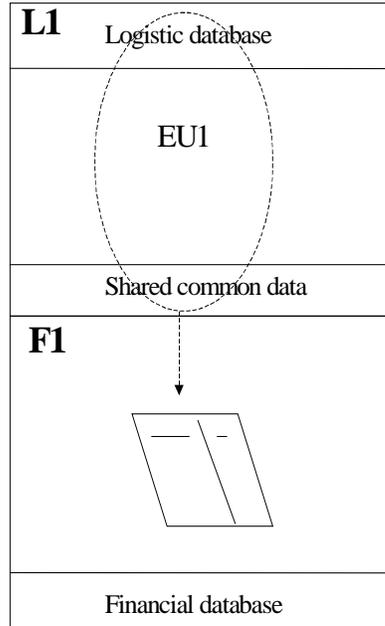


Figure 4, A single logistic/single finance company structure.

## Single logistic/multifinance

In a single logistic/multifinance company structure you manage and control the manufacturing and distribution processing centrally in one company, while you do the accounting in multiple financial companies. This can be the preferred solution for multinational logistic companies.

You can create an enterprise unit for each financial or fiscal unit within the logistic company and link the enterprise units to separate financial companies. In this way you can manage all your enterprise's logistic processing centrally and do separate accounting in the local currency for the plants, sites, and warehouses of your organization that are in different states or countries. You must use a dependent multicurrency system, as described in Chapter 3, "Currency systems".

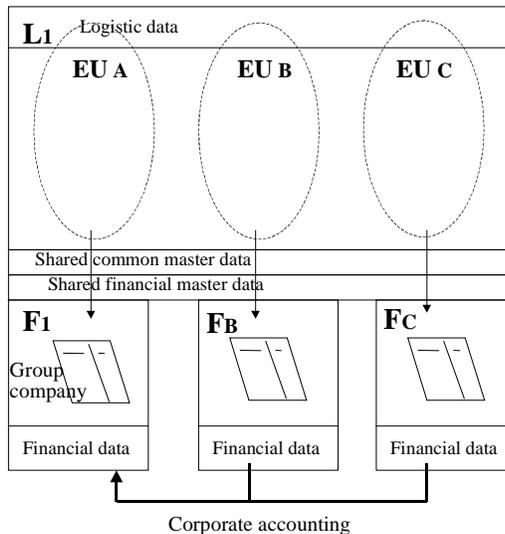


Figure 5, A single logistic/multifinance company structure.

You must assign all the entities of a logistic company, such as warehouses, work centers, projects, sales offices and purchase offices, to an enterprise unit. The transactions are posted to the financial company that is linked to the enterprise unit. If the financial companies on the debit and credit entries of the transaction are different, BaanERP generates intercompany transactions. Refer to Chapter 6, "Multisite Finance", for more details about intercompany transactions.

You can link the financial companies to a financial group-company to perform corporate accounting and financial administration in the group company.

## **Multilogistic/single finance**

In a multilogistic/single finance company structure you can manage the manufacturing and distribution processes in a number of separate companies and perform the financial accounting in one company. You must create one or more enterprise units in each logistic company, and link all the enterprise units to the financial company.

For example, you can use a multilogistic/single finance multisite structure for an organization that consists of a number of separate production sites within one country, that use their own BOM and production process but that form one legal entity. This is because BOMs and the item cost prices based on them are specific for each logistic company.

## **Multilogistic/multifinance**

In a multilogistic/multifinance company structure you can manage the manufacturing and distribution processes a number of separate companies and perform separate financial accounting for the enterprise units or groups of enterprise units. You must create one or more enterprise units in each logistic company, and link the enterprise units to the appropriate financial companies.

You can link the financial companies to a financial group company to perform consolidated financial reporting in the group company.

A multilogistic/multifinance company structure includes aspects of the other three types. In one multisite company structure one company can process as a single logistic/single finance company structure, and several other companies can process as single logistic/multifinance and multilogistic/single finance company structures. All combinations are technically possible.

**Multisite concepts**  
**2-10**

## 3 Currency systems

This chapter describes the currency systems that you can use in BaanERP. It explains the following concepts:

- Home currencies.
- Multicurrency systems.
- Currency exchange-rates.

### Home currencies

A company's home currencies are the base currencies that the company uses to express and register all amounts internally. A BaanERP company can use up to three internal home currencies. In addition to the home currencies, a company uses external currencies for the transaction with business partners.

You select a company's home currencies in the EMM module in BaanERP Common Data. The following types of home currencies exist:

- The local currency.  
The legal currency of the country in which the company is established. Tax reporting must usually be done in the local home currency. In a logistic company, BaanERP uses the local currency to store the amounts for which you do not specify a specific currency. For example, inventory costs in BaanERP Warehousing.
- Reporting currency.  
In addition to the local currency a company can use one or two reporting currencies. If the company uses reporting currencies BaanERP calculates and stores the local currency amounts both in the local currency and in the reporting currencies.

If you use more than one home currency, BaanERP calculates and stores amounts in all the home currencies. In sessions that display home currency amounts, you can use the **Rotate Currency** command to display the amount in each of the home currencies in turn. If you print a report, you can usually select the home currency to be used for the report.

## Reference currency

You must select one of the home currencies as the reference currency.

The reference currency is a company's base currency for all calculations between currencies. All the companies in a multisite structure must use the same reference currency.

The reference currency function is especially important in a multisite structure that uses a dependent multicurrency system. This is described later in this chapter.

**NOTE**

The reference currency is sometimes called the logistic currency.

## Transaction currencies

In addition to the home currencies, companies use a number of transaction currencies. These are the currencies used for transactions with your business partners. For example, the following amounts are expressed in transaction currencies:

- Contract amounts.
- Invoice amounts.
- Price lists.

You can select a default transaction currency for each business partner.

## Currency exchange rates

BaanERP uses the currency exchange rates that you specify in the Tables (MCS) module to convert transaction currency amounts to the home currencies. Which currency exchange rates you must define depends on the currency system. This is described later in this chapter. For each currency rate you can define an effective date. Each rate is valid until the next effective date of the currency rate.

## Currency rate types

You can use the currency rate types to link different currency exchange rates to different types of transactions. For example, you usually want to use a different rate for sales transactions, purchase transactions, and internal transactions and computations. BaanERP uses the internal currency exchange rate to convert amounts from the reference currency into the other home currencies.

You can select the default currency exchange rate types for sales transactions, for purchase transactions, and for internal transactions and computations of a company in the Enterprise Modeling Management (EMM) module.

## Multicurrency systems

The company's currency system determines:

- The number of home currencies that the company can use.
- The method that BaanERP uses to convert amounts in transaction currencies to the home currencies.

If the companies form a multisite structure, they must all use the same currency system. Specific rules apply to the currencies that each company can use, depending on the currency system. These rules are described later in this chapter.

You select a company's home currencies and currency system in the Enterprise Modeling Management (EMM) module in BaanERP Common Data. BaanERP supports the following currency systems:

- **Single currency.**  
All the companies of a multisite structure use the same local home currency, and no reporting currencies.
- **Dependent multicurrency.**  
All the companies of a multisite structure use the same reference currency. The other home currencies can differ.
- **Independent multicurrency.**  
All the companies of a multisite structure use exactly the same home currencies.

The multicurrency systems are described in detail later in this chapter.

### Single currency system

In a single currency system, only one home currency is used in the multisite structure. This currency is the reference currency as well as the local home currency of the logistic companies and all the financial companies of the multisite structure.

Figure 6 shows the possible links between logistic companies and financial companies in a multisite structure that uses a single currency system. No additional home currencies (reporting currencies) are used.

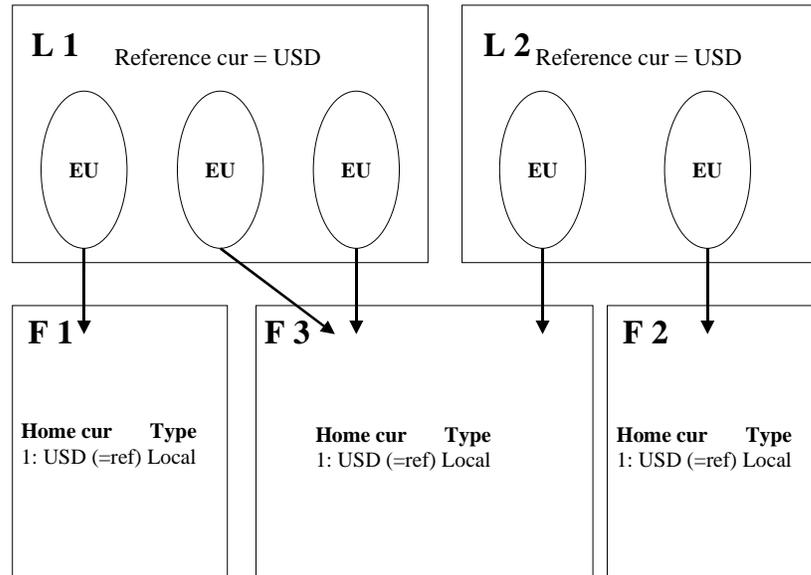


Figure 6, A single currency system.

### Currency rates in a single currency system

In a single currency system you only need to define the currency exchange rates between the transaction currencies and the companies' home currency, which is also the reference currency. Figure 7 show the currency rates that BaanERP uses in a single currency system.

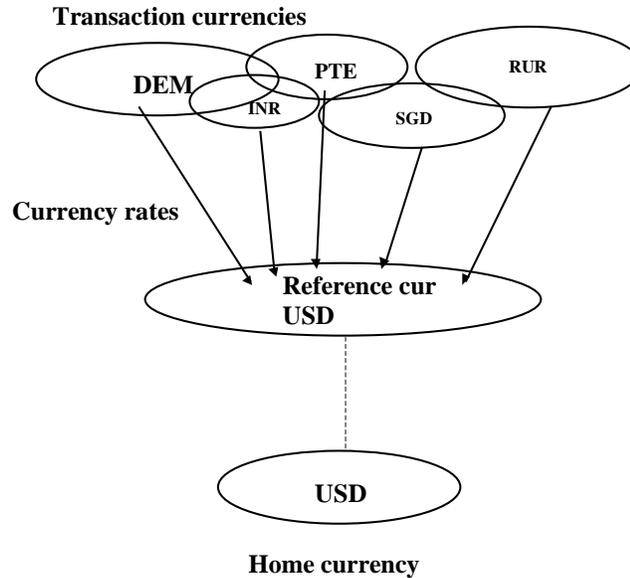


Figure 7, Currency rates in a single currency system.

### Dependent multicurrency system

In a dependent multicurrency system, all the logistic companies and financial companies of a multisite structure must use the same reference currency.

The logistic companies only have a reference currency. For the financial companies you can select up to three home currencies. One of these must be the same as the reference currency while the other home currencies can differ for each financial company.

In a logistic company, BaanERP uses the local currency of the financial company to which an enterprise unit is linked, to store amounts.

In a financial company, BaanERP stores all transaction amounts in all the home currencies. The transaction amounts are first converted into the reference currency and then the transaction amount in the reference currency is converted into the other home currencies.

Figure 8 shows the possible links between logistic companies and financial companies in a multisite structure that uses a dependent multicurrency system.

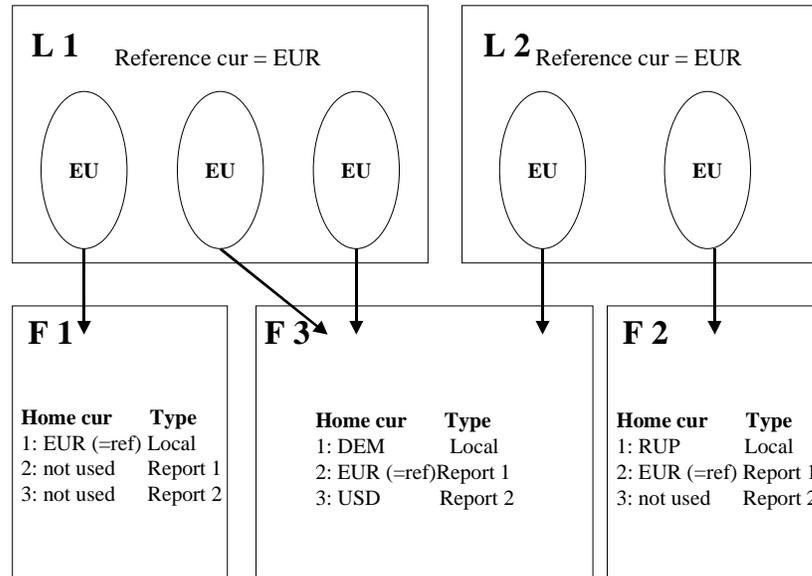


Figure 8, A dependent multicurrency system.

### Currency rates in a dependent currency system

In a dependent currency system BaanERP converts the transaction amounts to the home currencies through the reference currency. BaanERP uses the internal currency exchange rate to convert amounts from the reference currency into the other home currencies.

You must define the following currency exchange rates in a dependent multicurrency system:

- Between the transaction currencies and the reference currency.
- Between the reference currency and the other home currencies.

Figure 9 shows how BaanERP uses the currency rates in a dependent multicurrency system.

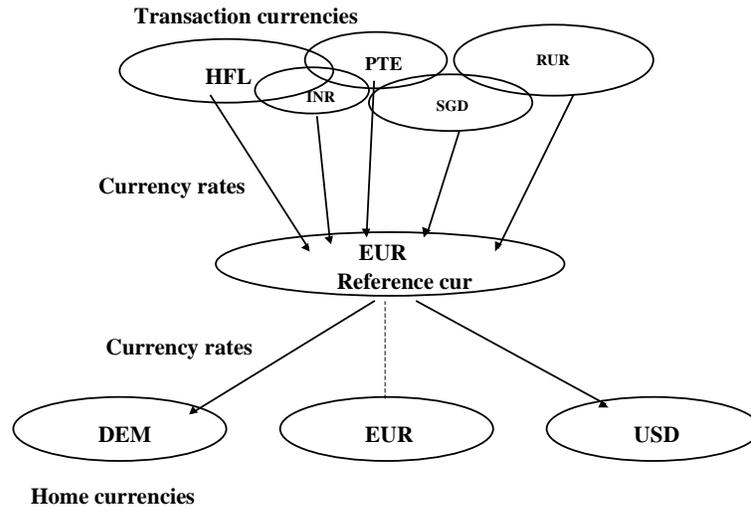


Figure 9, Currency rates in a dependent currency system.

## Independent multicurrency system

In an independent multicurrency system, BaanERP stores all the transaction amounts in all the home currencies. BaanERP converts the transaction amounts directly from the transaction currency into each of the home currencies. No currency rates are used between the home currencies of an independent currency system. Therefore, the home currencies are independent of each other.

In an independent multicurrency system, all the financial companies and logistic companies of a multisite structure must use exactly the same local currency, reporting currency 1 and reporting currency 2, and the same reference currency.

Figure 10 shows the possible links between logistic companies and financial companies in a multisite structure that uses an independent multicurrency system.

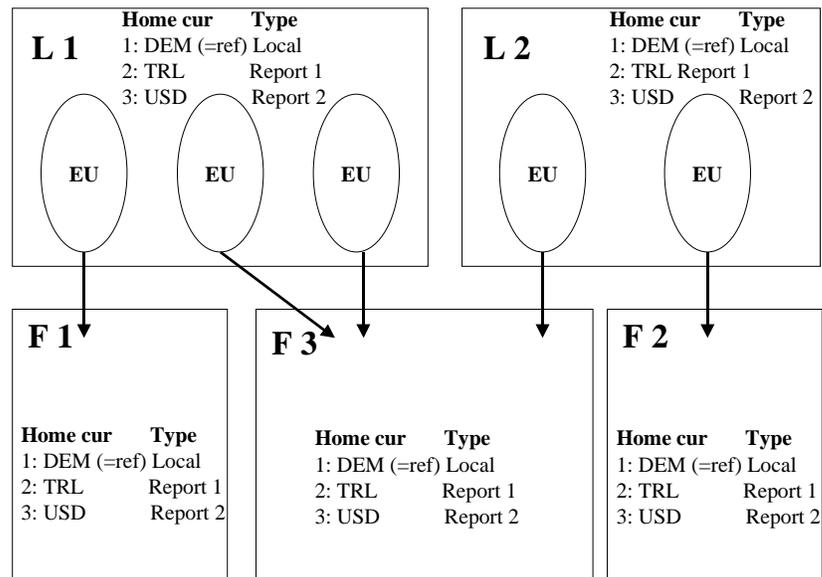


Figure 10, An independent multicurrency system.

All the companies of a multisite structure with an independent currency system must have the same local currency. Therefore, such a system is restricted to one currency area or one country.

The independent multicurrency system is intended for use in high inflation countries. The (less stable) national currency is the local currency for reporting to the local authorities. At the same time, you can do the company accounting in a more stable currency such as dollars.

### Currency rates in an independent multicurrency system

In an independent multicurrency system you must define the currency exchange rates between the transaction currencies and all home currencies. The currency rates between the home currencies are not used. Figure 11 shows the currency rates that BaanERP uses in an independent multicurrency system.

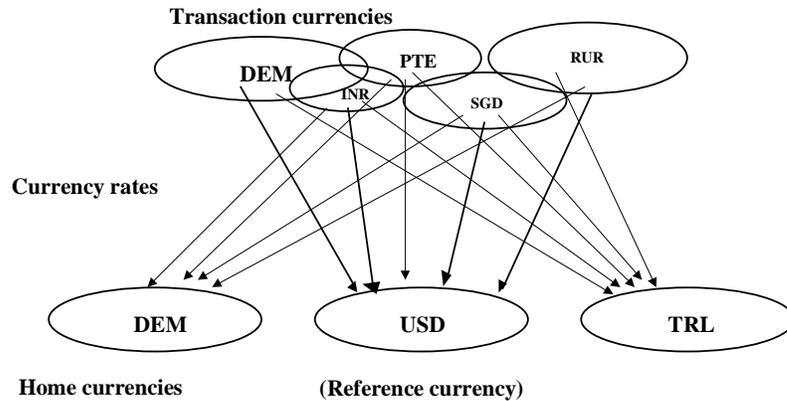


Figure 11, Currency rates in an independent multicurrency system.

### Exchange gain and loss calculation

Converting the transaction amounts directly from the transaction currency into the home currencies can result in inconsistencies between the transaction values in the different currencies.

For example, the exchange rates from USD to ITL and from DEM to ITL can be inconsistent with the exchange rate between USD and DEM. This can be caused by shifting exchange rates between the currencies, which is often the case with currencies that are subject to substantial inflation.

In an independent multicurrency system, you can use the Exchange Gain and Loss Calculation (tfgld5202m000) session in BaanERP Finance to calculate the differences in values that are caused by shifting currency rates. BaanERP posts the differences to a specific ledger account that you can specify in the Company Parameters (tfgld0103s000) session in Finance.



# 4 Enterprise Modeling Management

This chapter describes how you can map the entities of your Baan system on the enterprise model that you define in the Dynamic Enterprise Modeler (DEM) package.

Refer to *Enterprise Modeling Management*, (UP101A US), for details about using the EMM sessions. Refer to *To Set up a Company*, (U7287A US), for a description of the complete procedure for setting up a company.

## Enterprise modeling

You use the Baan Dynamic Enterprise Modeler to model a multisite structure. Based on the analysis of your organization's structure and its business processes, you define a structure of companies, enterprise units, and the relationships between the enterprise units. Refer to *BaanERP Enterprise Modeling User Manual*, (U7169A US), for details.

The Enterprise Modeling Management (EMM) module forms the link between the enterprise model and the BaanERP company databases.

The enterprise units consist of a number of entities such as departments and warehouses that you define in the Tables (MCS) module. You use the EMM module of BaanERP Common Data to link the entities to the enterprise units. Entities that are linked to an enterprise unit are called key entities.

The other BaanERP packages refer to the EMM module to retrieve the enterprise modeling information of each entity. The enterprise modeling information mainly consists of:

- The company's currency system and home currencies.
- The enterprise unit to which an entity is linked and, through the enterprise unit, the financial company to which an entity is linked.
- The goods transfer relationships between the entities, and the relationship parameters.

The companies of a multisite structure must share some EMM database tables as well as some other tables of the Common Data package. Refer to *Multicompany Table Sharing*, (U7285A US), for details.

## The multisite structure building blocks

A multisite structure consists of one or more of the following building blocks:

- **Company.**  
Refer to Chapter 2, "Multicompany structures", for details about company types and multicompany structures.
- **Enterprise units.**  
Key entities are the components of enterprise units. An enterprise unit consists of any number of the following types of key entities:
  - Warehouses.
  - Departments, which can be sales offices, purchase offices, work centers, accounting departments, and service offices.
  - Projects.  
Usually one enterprise unit is created to contain one project and its related sales office and warehouses.
- **Internal business partners.**  
If the goods transfer between the enterprise units of one logistic company must be invoiced, you must define internal business partners and link the enterprise units to them. Refer to Chapter 5, "Business partners", for details.
- **Relationships.**  
A relationship in the multisite context defines the type of transfer that can take place between two entities of the same logistic company. BaanERP 5.0c only supports the goods transfer relationship. If you define a goods transfer relationship between two entities, you specify the pricing and the type of financial settlement to be applied when goods are transferred between the entities. Refer to "Goods transfer relationships" later in this chapter, for details.
- **Clusters.**  
A cluster is a group of entities that are not necessarily related to one financial company or logistic company. The only clusters used in BaanERP 5.0c, are clusters of warehouses used in Enterprise Planning.

## Enterprise units

An enterprise unit is a financially independent part of your organization that consists of a combination of entities such as departments, work centers, warehouses, and projects. The enterprise unit's entities must all belong to the same logistic company, but a logistic company can contain multiple enterprise units. For example, an enterprise unit can be a manufacturing plant, an assembly plant, a sales organization, a distribution center, or a service organization.

### Logistic company

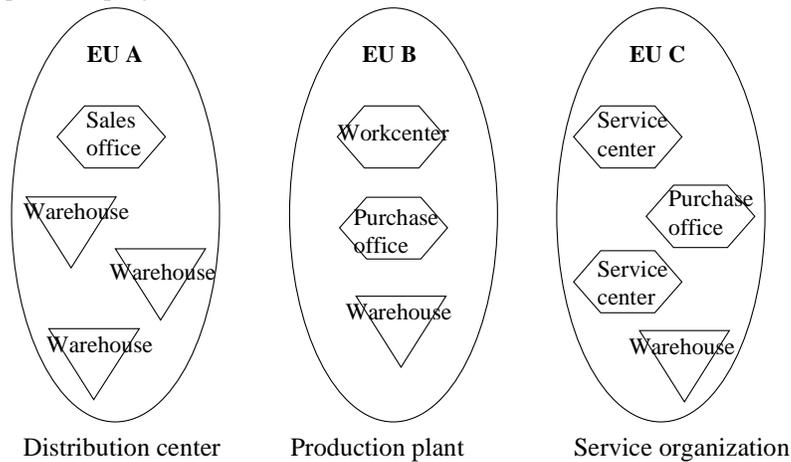


Figure 12, Enterprise units.

Each enterprise unit is linked to a single financial company. When you carry out logistic transactions between enterprise units, these are posted in the financial companies to which each enterprise unit is linked.

You can use enterprise units to do separate financial accounting for parts of your business. For example, you can define enterprise units for separate parts of your organization that belong to one logistic company but that are located in different countries. BaanERP can then perform the accounting of each enterprise unit in each country's national currency and in the financial company linked to the enterprise unit.

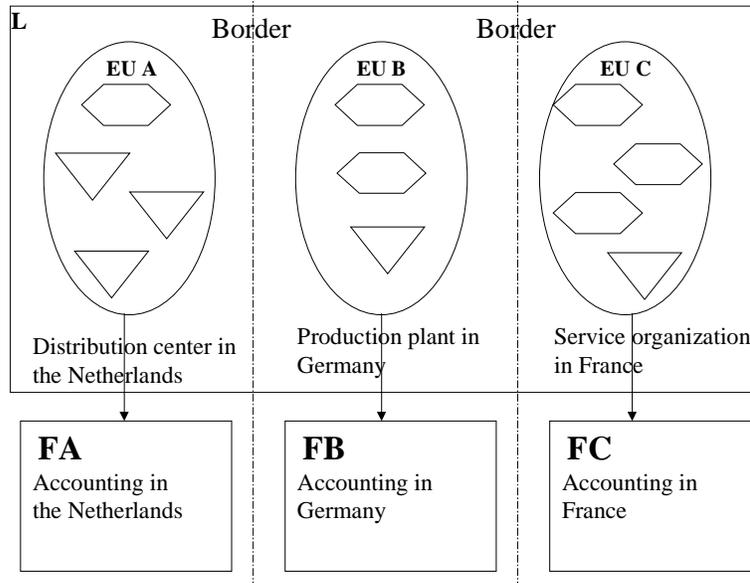


Figure 13, Separate financial accounting of enterprise units.

### Clusters

A cluster is a group of entities that are not necessarily related to one financial company or enterprise unit. For example, you can specify a cluster of the warehouses in which you store spare parts in a specific geographical area, independent of the financial companies or the enterprise units to which the warehouses belong.

**NOTE** In BaanERP 5.0c, clusters are only used for Distribution Requirements Planning (DRP) in Enterprise Planning.

Clusters are dynamic. If you assign an entity to a cluster you must specify an effective date and you can optionally specify an expiry date.

### Clusters in Enterprise Planning

In Baan Enterprise Planning, you can define clusters as groups of warehouses that are connected by supplying relationships. The warehouses must be non-nettable warehouses and the warehouses of one cluster must belong to the same logistic company.

## Goods transfer relationships

You can define goods transfer relationships to apply the BaanERP pricing and invoicing functions to the goods transfer between the entities of one logistic company, without using sales orders and purchase orders.

If you do not define a goods-transfer relationship between two entities, all goods transfer between the entities takes place against valuation prices and without invoicing.

Goods transfer relationships are flexible. If you define a relationship between entities, you must specify an effective date and you can optionally specify an expiry date.

You must define a goods transfer relationship between entities if one or both of the following is required:

- BaanERP generates invoices for goods transfer within the same logistic company.
- BaanERP applies a commercial price for the goods or a surcharge percentage added to the valuation price.

If you do not define a goods transfer relationship:

- BaanERP generates intercompany transactions if the enterprise units are linked to different financial companies.
- BaanERP does not generate any financial postings if the enterprise units are linked to the same financial company.

You can define goods transfer relationships:

- Between two enterprise units (the default relationships).
- Between two entities.

Defining goods transfer relationships between entities of the same enterprise unit can be necessary, for example, in the United States, where goods transfers between states must always be invoiced.

**NOTE**

Goods transfer between entities outside the logistic company (affiliated-company business partners and external business partners) is always controlled by sales and purchase transactions.

## Goods transfer relationships between enterprise units

You define the relationships between the enterprise units in the Dynamic Enterprise Modeler. These are the default relationships between all the entities of the enterprise units in the EMM module. You define the relationships between the key entities in the EMM module.

If you do not specify a goods transfer relationship between the enterprise units in the Dynamic Enterprise Modeler, you can specify the goods transfer relationship between the individual entities of the enterprise units in the EMM module.

## Goods transfer relationships between entities

You can define the following goods transfer relationships between entities in BaanERP:

- From warehouse to warehouse.
- From work center to work center (WIP-transfers).
- From warehouse to sales office.
- From work center to sales office (only for Final Assembly Schedule (FAS) items).

Goods transfer relationships between other entities are not possible. For example, you cannot define the goods transfer from a warehouse to a service center.

If you release the materials for production the Shop Floor Control (SFC) module of BaanERP Manufacturing, you do not want to use an invoicing relationship. Therefore, you do not need to define a goods flow relationship between a warehouse and a work center.

Figure 14 shows some examples of the goods transfer relationships that you can define in a multisite structure.

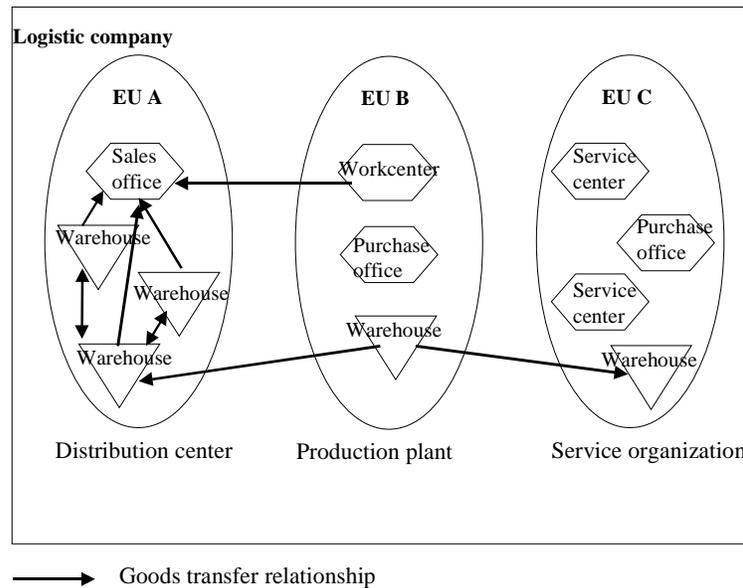


Figure 14, Goods transfer relationships.

### Internal business partners

In addition to specifying the goods transfer relationship between the enterprise units and the entities, you must link the enterprise units to internal business partners. In the logistic company in Figure 14, you must define three internal business partners and link the enterprise units EU A, EU B, and EU C to them.

The business partner data is complementary to the relationship parameters. For example, if the relationship parameters specify that internal pricing applies to the goods transfer, BaanERP retrieves the price from the internal price book used for the business partner.

## The relationship parameters

The relationship parameters define some of the data that is relevant to the transactions. For example, the goods transfer relationship parameters define:

- The type of pricing (commercial price or valuation price).
- A surcharge percentage for the transfer.
- The type of invoicing (triangular, bilateral, or no invoicing).
- The currency to be used.

The relationship parameters that you define in the EMM module overrule the default parameters of the relationship between the enterprise units that you defined in DEM.

## Invoicing

The invoicing type that you define for the goods transfer relationship determines how BaanERP handles the financial side of the goods transfer. There are three possibilities:

- No invoicing.  
If you selected the valuation price for the goods it is not mandatory to select an invoicing type. In that case BaanERP can generate intercompany transactions between the financial companies when goods are transferred. Refer to Chapter 6, "Multisite Finance", for details about intercompany transactions. Transfer at valuation price and without invoicing is usually applied to goods transfer between two work centers (WIP transfer).
- Bilateral invoicing.  
If you select bilateral invoicing, BaanERP generates the invoices and prints the invoicing documents for the transfers between entities of the same logistic company. Bilateral invoicing is usually applied to goods transfer between two warehouses that are located in different countries (enterprise units). The invoices must accompany the goods when they cross the border.
- Triangular invoicing.  
If you select triangular invoicing, BaanERP automatically generates the settlements between the entities in the financial companies to which the entities are related. You can print the invoice documents if this is required. Triangular invoicing is usually applied to goods transfer between a warehouse and a sales office, where the goods are not delivered to the sales office but directly to the ship-to business partner. Refer to Chapter 6, "Multisite Finance", for an explanation of triangular invoicing.

## Time zones

A time zone is a geographical region in which the same standard time is used. BaanERP contains the world's time zones information in the Time Zones (ttaad0160m000) session in BaanERP Tools. In the Time Zones (tceeml100m000) session in the EMM module you can select those time zones that you use and add a description to each time zone.

The companies of a multisite structure must share the Time Zones (emm100) table.

BaanERP records dates and times of logistic transactions such as the various types of order documents, transactions, postings shipments, and receipts, in Universal Time Coordinated (UTC) time, which is the same in every geographical location round the world. Therefore, a logistic company is independent of time zones.

### User time-zones

In the User Management module in Tools you must link a time zone to each BaanERP user by means of the user-data template. BaanERP uses the user's time zone to display logistic transaction dates and times, which are registered in UTC time, in the user's local time.

### Financialcompany time-zones

You must select a time zone for each financial company in the EMM module. BaanERP records postings in BaanERP Finance with the local date and time.

When transactions are transferred from the logistic company to Finance, BaanERP converts the transaction date and time from UTC time to the financial company's local date and time. In this way the amounts are posted in the correct financial periods in each financial company.

BaanERP also converts the effective date and time of currency rates and tax rates, which you define in the logistic company, from UTC time to the financial company's local time. In this way the correct rates are applied to convert the amounts into the home currencies in Finance and to compute the tax amounts.

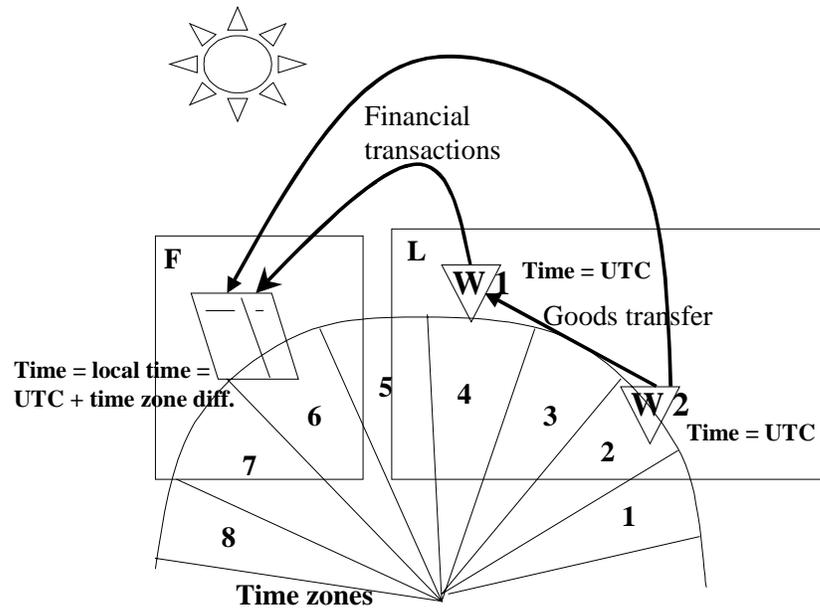


Figure 15, Time zones.

## Address time-zones

The time zone that you link to a financial company is only used in Finance. You can optionally link time zones to addresses in the Addresses (tcom4130s000) session. By means of the address, you can link time zones to:

- Companies.
- Employees.
- Warehouses.
- The various business partner roles.

BaanERP uses the addresses' time zones for statistics in Baan Service, and in BaanERP Warehousing.

## Calendars

Calendars define the availability of resources (for example, employees, departments and work centers) for particular activities at particular times.

You can link calendars to:

- Companies.
- Employees.
- Departments.
- Addresses.
- The various business partner roles.

BaanERP uses the most specific calendar. For example, if you link a calendar to a ship-to business partner this calendar is used instead of the calendar that you linked to the ship-to business partner's address. The company's calendar is the default calendar for all the entities that use calendars.

If you want to share the calendar tables between the companies of a multisite structure, the first day of the week must be the same for all the companies. For example, you cannot share the calendars if one company defines the first day of the week as Sunday and another company as Monday.

**Multisite concepts**  
**4-12**

# 5 Business partners

This chapter describes:

- The business partner types.
- How you can specify business-partner data for a sales office or purchase office.
- How you can use an accounting office to register separate business-partner data for each financial company.
- How you can specify the business partner's credit limit.
- How BaanERP computes and uses the business-partner open order balances and open invoice balances in a multicompany structure.

A business partner is a customer or a supplier with whom you carry out business transactions. The transaction type (sales orders, invoices, payments, shipments) is defined by the business partner's role. For example, a sold-to business partner is a party to whom you supply goods or services.

## Business-partner types

If you want to use pricing and invoicing functions for a party, you must define that party as a business partner. The business partners must have the roles that correspond to the transactions to be carried out.

You can define the following types of business partners:

- **External business partners.**  
Customers and suppliers outside your own organization.
- **Internal business partners.**  
Business partners that are linked to enterprise units of the same logistic company. You must define all the business partner roles for an internal business partner.
- **Affiliated-company business partners.**  
Logistic companies of the same multisite structure that act as a business partner to your logistic company. You must define the sold-to and the buy-from roles for an affiliated-company business-partner.

By defining internal business partners and affiliated-company business partners you can invoice an enterprise unit or a logistic company, use pricing and discounts, and keep a balance of open invoices for the enterprise unit or logistic company. This can be required for financial accounting and local tax reporting.

## Business-partner data by department

In a single logistic/multifinancial company structure, you can specify the BP financial data for each department. For example, you can do this if the logistic company has sites (enterprise units) in different countries, which do business with the same business partner. In the different countries you can then use a different default currency and different invoicing methods for the business partner.

The department can be a sales office or a purchase office. For internal business partners, you can also define business-partner data for each work center.

You can define financial business-partner data for each department for the following business partner roles:

- Invoice-to.
- Pay-by.
- Invoice-from.
- Pay-to.

**NOTE**

This section describes how you can define invoice-to and pay-by business-partner data for each sales office. The same applies to invoice-from and pay-to business partners and purchase offices.

The financial business-partner data that you define for each sales office consists of:

- The default currency.
- The default exchange rate type.
- The financial business partner group.
- The default invoicing method.
- The default terms of payment.
- The default payment method.

The business partner details that you define for a sales office only apply to transactions that are handled by that sales office. The business partner details that you define without selecting a sales office apply to:

- All the sales offices for which you do not define specific details.
- All transactions with the invoice-to business partner that are not linked to a sales office, such as cost invoices.

## The business partner's credit limit

For invoice-to business partners and invoice-from business partners, you can set a credit limit. The credit limit is part of the default invoice-to business partners data and applies to all the sales offices in the company. You cannot specify a credit limit for each sales office. Refer to "The business partner's credit limit", later in this chapter, for details.

## Accounting office

BaanERP stores the business partner financial data such as the open billing request amount and the open invoice balance for each department in the database. In a company of type Financial, BaanERP uses the company's accounting office to create the link from the financial company to the financial business-partner data for each department. You must specify the accounting office in the financial company parameters in BaanERP Finance

Figure 16 illustrates how BaanERP stores and retrieves the business-partner data for each department in a single logistic/multifinancial company structure.

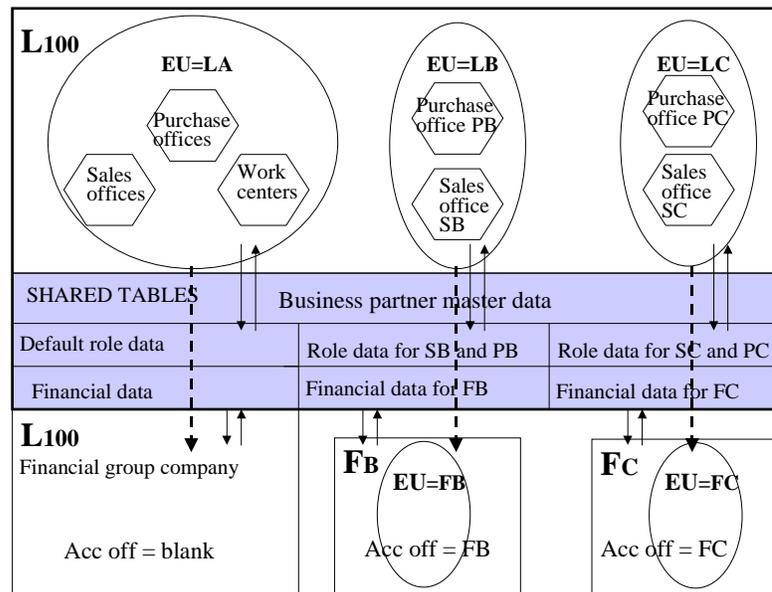


Figure 16, Business-partner data by department

All the companies in Figure 16 use the same database server. Therefore, the companies can share data by sharing the database tables.

Figure 16 illustrates the following:

- Financial company FB uses the business-partner data that is registered for the company's accounting office FB.
- Financial company FC uses the business-partner data that is registered for FC.
- The financial company part of company L100 uses the business-partner data in which the department field is empty. This is the default data.

### The accounting office's enterprise unit

The accounting office department must be defined as a key entity of an enterprise unit. Enterprise units are restricted to one company; companies cannot share the enterprise units. Therefore, in a company of type Finance, you must create an enterprise unit and link the accounting office to it.

## To enter the business-partner data by department

The business-partner data for each department consist of logistic data, such as the default currency, and financial data, such as the financial business partner group. Therefore, you must define the business partner role for each department in the logistic company and in the financial companies.

To enter the business-partner data by department, the following rules apply:

- You must supply default business-partner data.
- The (optional) credit limit is part of the default business-partner data.
- To enter the default data you must leave the **Department** field empty. Therefore, you must also leave the **Accounting Office** field empty for the financial company that processes the default business-partner data.
- If the logistic and the financial company share the **Departments** table, you can select a sales office or a purchase office as the financial company's accounting office.
- In a company of type **Both**, you can enter the financial business-partner data without changing company.
- To enter the financial business-partner data for a department that is linked to a separate financial company, you must work in the financial company. For the business partner department, you must select the financial company's accounting office.

- If you define the business partners in a company of the type Logistic only, you must change to the financial group company of the multisite structure to enter the default financial business-partner data. You must then leave the **Department** field empty.

For example, in Figure 16:

- In logistic company L100, you must define the invoice-to, pay-by, invoice-from, and pay-to roles three times:
  - The default business-partner data (no department specified).
  - The data for sales office S1 or purchase office P1.
  - The data for sales office S2 or purchase office P2.
- You can enter the default financial business-partner data in logistic company L100. You must leave the **Department** field empty.
- You must change to company FB to enter the financial business-partner data for the purchase offices and sales offices of enterprise unit LB. In the **Department** field, you must select the accounting office FB.
- You must change to company FC to enter the financial business-partner data for the purchase offices and sales offices of enterprise unit LC. In the **Department** field, you must select the accounting office FC.

## NOTE

If company L100 is of the type Logistic only, you must change to the financial group company of the multisite structure to enter the default financial business-partner data.

## The business partner's credit limit

For invoice-to business partners and invoice-from business partners, you can set a credit limit. When you enter a sales order for the invoice-to business partner, BaanERP checks that the sum of the open orders, the open billing requests, the open invoices, and the amount of the new order does not exceed the credit limit.

The credit limit is part of the default invoice-to business partners data and applies to all the sales offices in the company. You cannot specify a separate credit limit for each sales office. To check the credit limit, BaanERP computes:

- The total amount of the open orders of the business partner for all sales offices in the company.
- The total amount of the open invoice requests for the invoice-to business partner in all the financial companies linked to the sales offices.
- The total amount of the open invoices of the invoice-to business partner in all the financial companies linked to the sales offices.

## The business partner's order balances and invoice balances

When you enter a sales order or a purchase order, BaanERP increases the business partner's open order balance. When you receive a purchase invoice or you create a sales invoice, BaanERP increases the business partner's invoice balance.

The following table lists the effect of each process on a business partner's sales order balance and sales invoice balance.

<b>Sales orders</b>			
<b>Process</b>	<b>Open sales order balance</b>	<b>Open billing request amount</b>	<b>Open sales invoice balance</b>
Sales order entry	Increase for logistic company and sales office.	No action	No action
Release to invoicing	Decrease for logistic company and sales office.	Increase for financial company and accounting office.	No action
Sales invoice posting to Finance	No action	Decrease for financial company and accounting office.	Increase for financial company and accounting office.
Sales invoice receipt	No action	No action	Decrease for financial company and accounting office.

The following table lists the effect of each process on a business partner's purchase order balance and purchase invoice balance.

<b>Purchase orders</b>		
<b>Process</b>	<b>Open purchase order balance</b>	<b>Open purchase invoice balance</b>
Purchase order entry	Increase for logistic company and purchase office.	No action
Purchase invoice entry	No action	Increase for financial company and accounting office.
Purchase invoice approval	Decrease for logistic company and purchase office.	No action
Purchase invoice payment	No action	Decrease for financial company and accounting office.



# 6 Multisite Finance

This chapter describes the effects of the BaanERP multisite functions on the following processes in BaanERP Finance:

- Corporate accounting.
- Triangular invoicing.
- Multisite tax registration.

## Corporate accounting

Corporate accounting in a multifinancial company structure is performed in financial group companies and in the reference currency of the financial companies involved. Therefore, all the financial companies of a multicompany structure must use the same reference currency. In addition, the financial companies of a group must have the same chart of accounts, dimensions, and financial periods.

Goods flow between enterprise units that are linked to different financial companies must result in financial postings. The financial postings can be created by the following processes:

- Intercompany transactions.
- Intergroup transactions.
- Triangular invoicing.
- Bilateral invoicing.

## Intercompany transactions

Intercompany transactions are the transactions that BaanERP creates between financial companies. The financial companies must belong to the same financial group.

You can specify the financial companies and the transaction types for which you want BaanERP to generate intercompany transactions in the Intercompany Relations (tfgld0515m000) session in BaanERP Finance.

BaanERP can generate intercompany transactions for the following:

- Logistic operations, such as goods transfers, between enterprise units of the same logistic company that are linked to different financial companies and for which you have either defined no goods transfer relationship, or a goods transfer relationship without an invoicing type. (See also "The relationship parameters" in Chapter 4, "Enterprise Modeling Management".)
- Financial transactions in the group company such as journal vouchers, and cash transactions (direct debits).
- Manually entered accounts-payable invoices, and accounts-receivable invoices.

For example, if the financial company on a sales order header differs from the financial company of the warehouse on the sales order line and no invoicing relationship is defined, BaanERP creates an intercompany transaction when the goods are issued.

**NOTE**

Intercompany transactions never result from invoices that are processed in Central Invoicing (SLI).

If the financial companies reside on different servers, you must use data replication or distributed transaction processing to solve this problem. Refer to Chapter 14, "Multisite data sharing", for details.

### **Intergroup transactions**

A multisite structure can include multiple financial group companies. The financial companies of a multisite structure can belong to different group companies.

Transactions between entities of enterprise units that are linked to financial companies of different financial groups can result in intergroup transactions. Intergroup transactions are temporarily posted to one of the group companies, which for this purpose is called the base company. You can specify the financial companies for which you want BaanERP to generate intergroup transactions in the Intergroup Relations (tfgld2501m000) session in BaanERP Finance.

## Transactions in a single logistic/single financial company structure

In a single logistic/single financial company structure, you can use the dimensions to register transactions between the entities of different enterprise units. A dimension is an analysis account for ledger accounts, which you can use to obtain a vertical view on the ledger accounts. Dimensions are used to subdivide ledger account information.

For example, you can transfer goods between warehouses that belong to the same enterprise unit and post the financial transactions to different dimensions of the same ledger account in one financial company.

## Triangular invoicing

Triangular invoicing is the generation of internal financial settlements if goods and the invoice for the goods are sent by or received by different entities. The entities can be departments, warehouses, and internal or external business partners. BaanERP automatically generates the internal invoices or the settlement between the entities in the financial companies that are involved.

Triangular invoicing can occur between enterprise units of the same or different logistic companies in all types of multisite structures. BaanERP uses the self-billing function to generate the internal invoices and payments.

### Example

A sales office and a warehouse are linked to different enterprise units of one logistic company. The sales-office's enterprise unit is linked to financial company 100 and the warehouse's enterprise unit is linked to financial company 200. A sales order arrives from an external business partner to the sales office. The sales office initiates a warehouse order to ship the goods from the warehouse to the business partner.

The sales office sends an invoice to the invoice-to business partner. This results in an open receivable invoice for the sales office in the financial company of the sales office's enterprise unit.

At the same time, the warehouse's financial company expects a payment for the goods. BaanERP generates the following triangular invoices with the corresponding payments:

- An open receivable invoice for the warehouse in the financial company of the warehouse's enterprise unit.
- An open payable invoice for the sales office in the financial company of the sales office's enterprise unit.

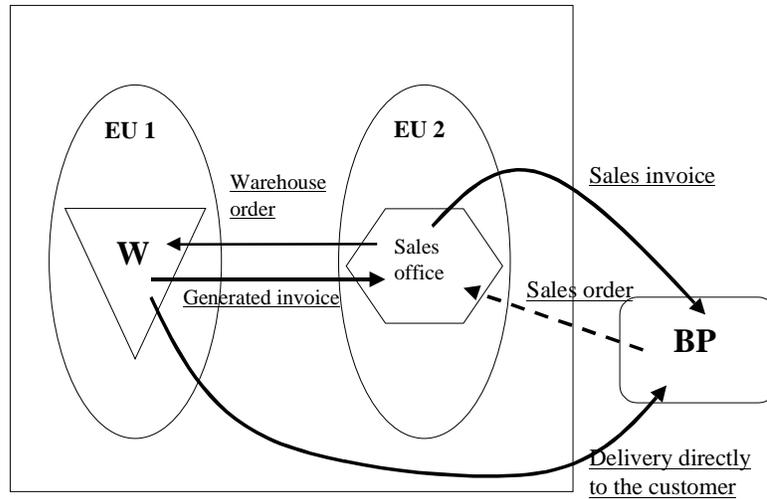


Figure 17, Triangular invoicing.

Figure 17 shows an example of a triangular invoicing situation. The warehouse delivers the goods to the business partner and sends an invoice to the sales office.

## Bilateral invoicing

Bilateral invoicing is the automatic generation of invoices between two financial companies as a result of goods transfer between warehouses of enterprise units that are linked to the financial companies. BaanERP always generates invoices for goods transfers for which you selected bilateral invoicing in the goods transfer parameters. Refer to "The relationship parameters" in Chapter 4, "Enterprise Modeling Management", for details.

# 7 Multisite tax issues

Tax reporting is part of the financial accounting and is restricted to one country. Therefore, the BaanERP tax handling in a multisite structure is very similar to the tax handling in a single company environment. This chapter describes the multisite aspects of BaanERP tax handling. It describes the following issues:

- Multisite tax registration.
- Multisite VAT processing for intra-EU transactions.

## Multisite tax registration

For tax registration, you define the various tax details for each country in BaanERP Common Data. The tax details of each country include information such as:

- The tax type (normal, shifted, or tax on payments).
- The tax authority.
- Whether the tax is expense purchase tax.
- The tax rates over various amounts, and the rate effective dates.

You specify the ledger accounts for posting the tax amounts for each financial company in the General Ledger (GLD) module of BaanERP Finance. In this way, BaanERP can post the tax amounts computed for the same tax codes to different ledger accounts in the financial companies, for example, in a single logistic, multifinancial company structure.

Whether the companies share the various tax code tables of Common Data and the general ledger tables of Finance, depends on the type of multisite structure and the requirements of the organization. Refer to *Multicompany Table Sharing* (U7285A US), for details.

## Multisite VAT processing for intra-EU transactions

The goods transfer between the countries of the European Union (EU) requires a complex value-added tax (VAT) handling.

Depending on the countries in which the goods are issued, delivered, and invoiced, different VAT types apply to the transactions. BaanERP applies the VAT rules for intra-EU transactions if:

- The business partners involved are legal persons (they have a tax number).
- The transactions are posted to financial companies that reside in the EU.

The VAT rules for intra-EU transactions apply to all the transaction types: that is:

- Generated intercompany settlements between financial companies that result from goods transfers between internal business partners (the enterprise units of one logistic company).
- Sales transactions and purchase transactions between affiliated-company business partners (logistic companies of one multisite structure).
- Sales transactions and purchase transactions between your company and external business partners.

### VAT types

Five types of VAT are imposed in the EU countries:

- Domestic VAT.  
The VAT that is imposed on transactions within an EU country.
- Intercommunity transactions (ICT) sales VAT.  
The VAT that is imposed on sales transactions between EU countries.
- Intercommunity transactions (ICT) purchase VAT.  
The VAT that is imposed on purchase transactions between EU countries.
- Import VAT.  
The VAT that is imposed on goods imported into the EU.
- Export VAT.  
The VAT that is imposed on goods exported from the EU.

For each VAT type, you can use the EU Tax Handling (tcmcs0538m000) session to enter the tax codes (VAT codes) and the corresponding VAT rates for each combination of:

- Financial company.
- Country.
- Item (optional).

BaanERP uses the tax code you entered in the Item Sales Data (tdisa0101s000) session and the Item Purchase Data (tdpur0101s000) session for the domestic VAT.

If a VAT codes applies to a specific item, you must specify the item. BaanERP applies the VAT codes with an empty **Item** field to all the items for which you do not specify a specific VAT code.

## **Tax numbers**

Legal businesses that are taxable in the EU are identified by a tax number. If you define a business partner in an EU country, you must enter the business partner's tax number.

You can enter a default tax number for a business partner in the Business Partners (tccom4100s000) session. BaanERP uses the default tax number for all the business partner addresses for which you do not enter a specific tax number.

If the business partner has sites in different countries, you must enter the business partner's tax number in each country as part of the business partner's address for each role.

Business partners that do not have a tax number are considered to be private persons instead of commercial businesses. Domestic VAT must be applied to all transactions with private persons.

## **Supply of goods with installation or assembly**

Different rules apply to goods that must be assembled or installed on arrival. For example, these are components needed to repair, improve or expand already built or installed goods. This type of transactions typically occur in a project or service environment. Therefore, BaanERP uses the ship-to address to determine the country and the VAT number for transactions that you enter in BaanERP Project and BaanERP Service.



# 8 Multisite Enterprise Planning

This chapter describes the multisite functions in BaanERP Enterprise Planning.

BaanERP Enterprise Planning supports multisite logistic planning (involving multiple logistic companies) in various ways. Two types of multisite-planning techniques can be distinguished:

- Multisite supply-chain planning.
- Multisite aggregation and disaggregation.

## Multisite supply-chain planning

An enterprise's supply chain consists of a number of supply-chain entities such as subassembly plants, final-assembly plants, and distribution centers that are linked to each other by means of supplying relationships. Figure 18 presents a typical supply chain that you can model in BaanERP.

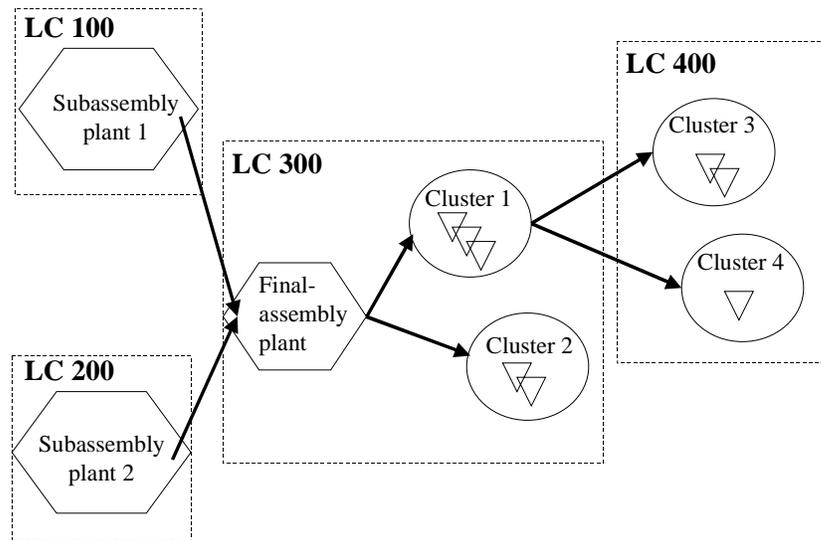


Figure 18, A typical supply chain.

In Figure 18, four logistic companies are used to model the supply chain. The arrows represent supplying relationships that connect two supply-chain entities, either within a logistic company or between two logistic companies.

The distribution centers are represented by clusters. A cluster contains a non-nettable warehouse, or several nonnettable warehouses that are aggregated for planning purposes.

From a planning-control perspective, two control mechanisms can be distinguished:

- Centralized planning.
- Decentralized planning.

### **Centralized planning**

In centralized planning, one central planning authority is responsible for generating planned orders and plans throughout the supply chain. In Baan Enterprise Planning, you can set up such a situation by defining a central multisite scenario (usually in a separate company) and linking scenarios of the local plan sites (that is, L 100, L 200, L 300, and L400) to this scenario. In the plan-item settings, you can specify which items must be controlled by central multisite planning.

When you perform a simulation run for the multisite scenario, BaanERP triggers the local scenarios involved. If the scenario codes involved are identical, dependent demand is automatically passed on between companies. BaanERP plans the items that are involved in the correct order, taking demand dependencies into account. All planning results (planned orders, plans, signals) are recorded in the local sites involved.

### **Decentralized planning**

In decentralized planning, each site is responsible for its own planning. There is no coordinated planning effort: a separate planning run is performed in each of the four logistic companies. If the scenario codes involved are identical in each company, dependent demand is automatically passed on between companies.

## Multisite aggregation and disaggregation

Another type of multisite support that is provided by Baan Enterprise Planning is aggregation and disaggregation of planning data.

In Figure 19, forecast data from multiple sales offices is aggregated centrally, and provides the input for planning multiple production plants.

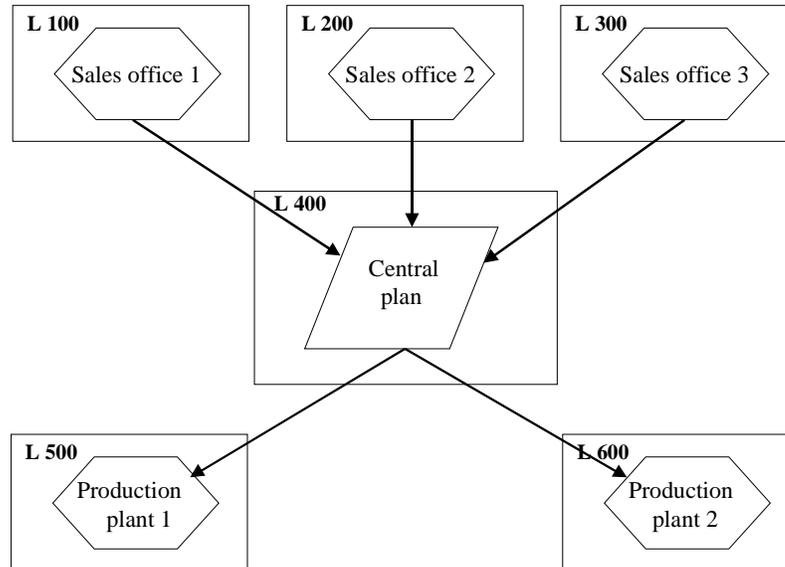


Figure 19, Aggregating planning data.

Six logistic companies are used to model the business flow. Forecast data from the various sales offices is aggregated in a central plan. In order to do this, you must define aggregation relationships from the various sales offices and the central site. (For this example, you do not necessarily have to define a plan-site structure or a central multisite scenario.)

Next, a production plan must be generated for the two production plants. Again, two planning-control mechanisms can be distinguished:

### Centralized planning

In centralized planning, a central production plan is generated in L 400. Next, the overall production plan is disaggregated to the local sites (L 500 and L 600). In order to do this, you must set up disaggregation relationships from the central office to each of the production sites.

## Decentralized planning

In decentralized planning, the local production sites are in control of their own planning. The central site only disaggregates the centralized forecast data to the local production sites. The planning run itself, however, is performed in each of the local sites.

If you wish, you can again aggregate the planning results to the central site, to get a centralized overview of the locally generated production plans.

To disaggregate the forecast and to aggregate the local planning results, you must set up (dis)aggregation relationships between the central office and each of the production sites.

# 9 Multisite Manufacturing

This chapter describes the effects of the multisite functions on the different phases in BaanERP Manufacturing:

- Product definition.
- Engineering data management.
- Routing.
- Production scheduling.
- Assembling the item.

This information applies to standard production items as well as to customized Project (PCS) items.

## Product definition

The manufacturing product data is specific for each logistic company. The manufacturing product data includes the item data, bill of materials, and routing. Enterprise units have no effect on the routing, the bill of materials, and the (standard) cost price of the item.

If you use a multilogistic company structure, the companies must share the basic item data such as the item code and the item type, which you define in the General Item Data (IBD) module of BaanERP Common Data. The other item data, such as Item Purchase Data or Item Production Data, do not have to be shared.

If the product routing includes two or more logistic companies, you must define the logistic companies as each other's affiliated-company business partners. You must define a multilevel BOM, multiple routings, and intermediate items. In each logistic company you must define a routing for each single level BOM. The routing can only include tasks that you defined in the same logistic company.

The transfer of the work between the logistic companies is controlled by means of purchase and sales transactions and invoices. You can use internal Electronic Data Interchange (EDI) as a fast way to generate and exchange the orders and invoices.

## The standard cost price

Different logistic companies can produce the item in different ways by using different bills of materials, different routings, and different costing structures. This results in a different cost price per company, because BaanERP calculates the cost price based upon this data. The item cost price is mainly used in simulations, estimations, and cost analysis.

If the same items have cost prices in the different companies, inventory transactions have different effects on the inventory value, depending on which cost price is used. In each company, BaanERP determines the local valuation price for each item and warehouse combination. This valuation price can be derived from the cost price.

BaanERP uses one currency for the standard cost-price. In a dependent currency system, you can use different currencies for the work centers, operation rates, subcontracting rates, and surcharges. In that case you must define an item currency. BaanERP uses the internal exchange rates to translate the operations cost and materials costs to the item currency. If an exchange rate changes, you must also update the standard cost price. If the internal rates are used in the cost price calculation, BaanERP cannot change historical internal rates

**NOTE**

BaanERP calculates specific cost prices per project and also performs inventory valuation of customized items that you produce by using the Project Control (PCS) module for customized items.

## Engineering Data Management

Engineering data management and change order control is restricted to items within one logistic company. To control the engineering data in a multilogistic company, you must set up the required data sharing and replication processes.

Engineering data management does not involve any financial transactions or cost calculations. Therefore, enterprise units do not have any effect on the engineering data management functions.

You can use one of the following applications for engineering data management and change order control:

- The Engineering Data Management (EDM) module of BaanERP Manufacturing.
- The Baan Object Data Management package.

## The Engineering Data Management (EDM) module

You can use the Engineering Data Management (EDM) module to define:

- Engineering items
- Engineering item versions
- Engineering bill of materials
- Relationships between engineering items and standard or customized items.

The Engineering Data Management (EDM) module also includes an approval procedure.

The engineering data can be defined in two ways:

- You enter the definitions manually
- BaanERP bases the definitions on engineering change orders (mass BOM changes).

EDM can control the engineering data that is defined in one logistic company. Engineering items can only be related to standard items and customized items in the same logistic company, and the engineering procedures only apply within the logistic company.

The engineering item data contains information that is related to the following session data:

General Item Data (tcibd0501m000) session  
Item Ordering Data (tcibd2500m000) session  
Item Production Data (tiipd0501m000) session.

The engineering BOM is related to the manufacturing BOM. EDM also uses some common data for the definition of the engineering item data.

The logistic companies of a multilogistic company structure can use the same item revisions if you ensure the data consistency between:

- The EDM data in both companies for retrieval of the correct revision code.
- The EDM module and the related item data. Apart from the EDM data, some or all of the General Item Data, Item Ordering Data, Item Production Data and the Bill of Materials must also be synchronized.
- The common data that is used to define the engineering items. For example, this includes suppliers, item types, item groups, unit sets, and signalling codes.

## **BaanERP Object Data Management (ODM)**

The Baan Object Data Management package is client-based software with a server-based database. In addition to the functions of the EDM module, Object Data Management also contains functions for the definition of document trees, revisions on document, and the linking of documents (versions) to item (versions). The documents can be of any type, ranging from CAD drawings to marketing brochures. Object Data Management contains workflow functions to facilitate and accelerate the engineering activities.

During the installation, you must define the logistic company for which you use Object Data Management. Object Data Management can only copy engineering item data to one logistic company. By means of replication you can share item data among companies. The companies must share the same data as described for the EDM module. Object Data Management has no specific multisite features.

## **Routing**

In the Routing (ROU) module of Manufacturing you define work centers, machines, and tasks on the logistic company level. A work center is linked to an enterprise unit that determines the financial company. In this way one logistic company can contain work centers in different countries. The work centers' financial accounting is carried out in separate financial companies, using each country's local currency.

Linking the tasks to work centers is not influenced by the enterprise units.

You can link tasks to multiple work centers within the same logistic company. These can be main work centers, sub work centers or subcontracting work centers. BaanERP uses the default work center for planning and cost price calculations. During production order scheduling you can easily change the work center. Scheduling and production order costing use the work centers in the production planning.

The work center concept was designed for a single logistic company environment. However, if you use the correct naming conventions and data replication methods, implementation in a multilogistic company structure is possible.

## Production scheduling

You schedule the production in the Shop Floor Control (SFC) module. The production schedules are valid for the production orders within the logistic company. Enterprise units do not influence the production scheduling.

BaanERP stores the production schedule dates in universal time code (UTC) format. The user's time zone is used to convert the dates to the local dates before it is displayed. The time zone related to the financial companies of the enterprise units is not used in production scheduling. Refer to "Time zones" in Chapter 4, "Enterprise Modeling Management", for details about UTC.

If you have implemented the SCS Scheduler, you can schedule the required production capacity against limited available resources. The Scheduler determines scheduled dates based on the production orders and other scheduling data. However, you can only use the Scheduler to schedule the production orders within one logistic company.

**NOTE** You can use the SCS Planner to plan orders in a multicompany environment.

## Production in multiple companies

You define the production orders for each logistic company. If parts of the assembly are performed in different logistic companies, you can :

- Use a multilevel bill of materials  
The items in the multilevel BOM are planned and produced relatively independent of each other.
- Define subcontracting task  
You can subcontract the work to another logistic company, using the normal purchasing and invoicing procedures. You must define the logistic company as an affiliated-company business partner and in the invoice-from business partner data you must specify that this is a subcontractor.

**NOTE** In the current company, you cannot monitor or control the production progress in the subcontracting company.

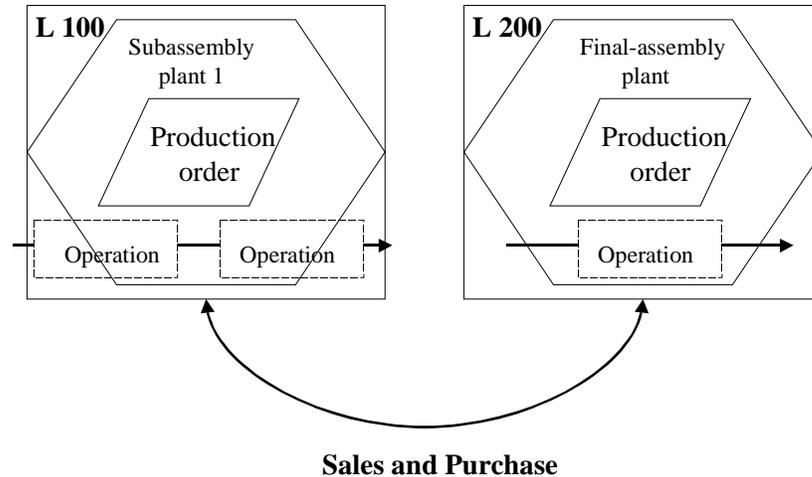


Figure 20, Manufacturing in a multilogistic company structure.

### Production in different enterprise units

The work centers on the production order can belong to different enterprise units. The production order itself is also linked to an enterprise unit by means of a work-center that acts as a calculation office. You can set parameters to determine whether BaanERP calculates and registers the financial data:

- On work-center level, in the financial company of the work center's enterprise unit.
- On order level, in the financial company of the calculation office's enterprise unit. This is also done in older versions of Baan.

The financial data consist of the production cost, the Work in Process (WIP) value, and production variances. BaanERP registers the financial data in the reference currency of the financial company linked to the appropriate enterprise unit.

If you issue items to an operation, BaanERP registers the WIP value in the work center of the operation. On the work center level, the WIP value consists of issued materials and booked hours. On order level, the WIP value consists of surcharges, issued materials, and booked hours.

### WIP transfers

During the execution of the production order you can carry out a WIP transfer. A WIP transfer is the transfer of the estimated WIP value to the next work center. After completion of a number of items or the completion of the total operation, a value is transferred to the next work center. If the work centers are located in different countries, WIP transfers are especially important to ensure a correct registration of the WIP value in each country.

You can specify the pricing type, surcharges, and invoicing method to be used for goods transfer between work centers that belong to different enterprise units by defining the goods transfer relationships in the EMM module. Refer to "Goods transfer relationships" in Chapter 4, "Enterprise Modeling Management " for details.

The calculation office collects the WIP values on the production order level. These mainly consist of the production surcharges. The calculation office is also used in the completion and the receipt of finished end items in the warehouse.

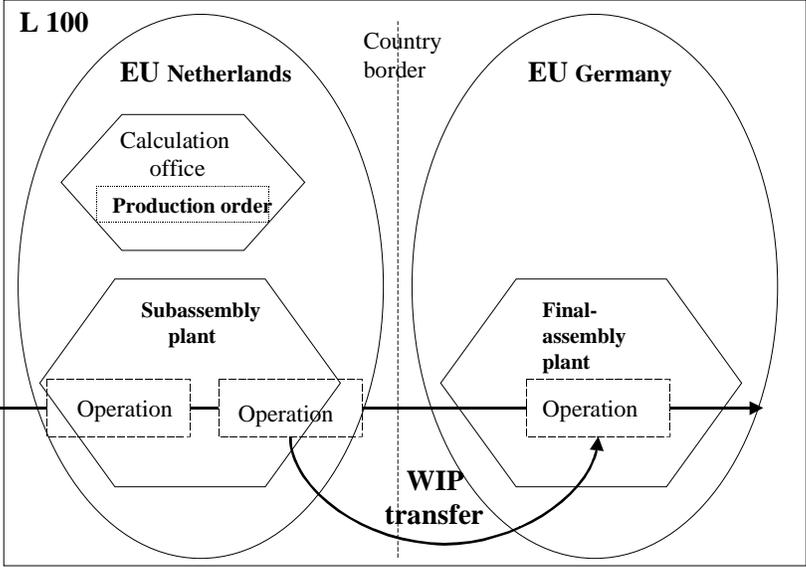


Figure 21, Manufacturing in different enterprise units.

The production results are divided into price variances, efficiency variances and calculation variances. You can set parameters to determine whether BaanERP posts the price and efficiency variances to the work center or to the order. If the work centers and production orders are linked to different enterprise units, BaanERP can post the production results to different financial companies.

## Subcontracting

If part of the routing is not performed within your own company, this is called subcontracting. The subcontractor is the organization that performs the subcontracted operation. You cannot control the logistic goods flow and the production progress at the subcontractor's site.

You can subcontract work to:

- External buy-from business partners of the Subcontractor type.
- Affiliated-company buy-from business partner of the Subcontractor type  
This is a work center of another logistic company of the multicompany structure.
- Internal buy-from business partners of the Subcontractor type.  
This is a work center of another enterprise unit in the same logistic company.  
This type of subcontracting is usually not necessary.

Subcontracting in BaanERP is considered as purchasing a service. Subcontracting items are administrative items that are used on the purchase order. Subcontracting costs are entered by cost calculation code, by subcontractor, by task, and by subcontracting item. BaanERP distinguishes two forms of subcontracting:

- Planned subcontracting.
- Unplanned subcontracting.

With planned subcontracting the item routing contains one or more tasks that are performed in subcontracting work centers. When the production order is released to the shop floor, the purchase orders can be generated and sent to the subcontractor. The subcontracting operation or a quantity is reported completed when the items are received by means of a warehouse order in BaanERP Warehousing.

In a multifinancial company structure one logistic company can contain work centers in different countries and do separate financial accounting for the work centers. These work centers can be included in the routing in the normal way. This reduces the need for planned internal subcontracting.

BaanERP processes unplanned subcontracting by means of purchase orders and invoices.

# 10 Multisite Order Management

This chapter describes the effects of the BaanERP multisite functions on the following BaanERP Order Management processes:

- Sales order management.
- Central purchasing.
- Performance measurement.
- Business partner management.
- Pricing.

## Sales offices and purchase offices

You use the sales offices and purchase offices to define parameters that only apply to the orders that are processed by the sales office or purchase office, instead of all the orders created in the logistic company. You can define multiple sales offices and purchase offices in a single logistic company. Sales office and purchase office parameters are:

- The default warehouse.
- The default work center, for sales offices.
- The series codes for orders, contracts, schedules, and so on.

In addition, you can define certain business partner data for each sales office or for each purchase office. BaanERP then registers the open order balance and open invoice balance per sales office or purchase office. Refer to "Business partner management", later in this chapter, for details.

You can define goods transfer relationships between warehouses and sales offices to specify the price type, invoicing type, and warehouse surcharge separately for each sales office/warehouse combination. Refer to "Goods transfer relationships" in Chapter 4, "Enterprise Modeling Management", for details.

Sales offices and purchase offices are linked to enterprise units and via the enterprise unit to a financial company. In a multifinancial company structure, the transactions that take place within one logistic company are posted to the financial companies of the sales offices, purchase offices, and warehouses.

BaanERP can generate intercompany transactions for the settlements between the financial companies without using invoices. Therefore, in a single logistic/multifinance structure you can deliver goods from warehouses in different countries, without the need for purchase and sales transactions between the sales office in one country and the warehouses or work centers in other countries.

## Sales order processing

To issue the goods on a sales order, BaanERP:

- Searches the warehouses for sufficient inventory of the required item.
- If you use ATP, BaanERP also searches for a work center that can produce and deliver the required item.
- Enters the warehouse or work center that is found, on the sales order line.
- Allocates the required quantity to the order.
- Ships the goods from the warehouse or work center to the ship-to address.

In a multisite structure, the sales office of the sales order and the warehouses or work centers on a sales order line can be:

- In the same logistic company as the sales office.
  - Linked to the same financial company as the sales office, by means of the enterprise unit.
  - Linked to a different financial company than the sales office, by means of the enterprise unit.
- In a different logistic company than the sales office. This results in purchase orders and sales orders between the logistic companies.

## Inventory check

During sales order entry you can see the available inventory in the warehouses of the current company and in other logistic companies of the multisite structure. If sufficient inventory is found BaanERP enters the warehouse or the work center on the sales order line and allocates the required quantity to the order.

You can use two methods to see the inventory:

- Defining a bill of enterprise.
- Using the Available to Promise (ATP) functions of BaanERP Enterprise Planning and the Order Promising (OPS) application of the Baan Supply Chain Suite (BaanSCS).

## Bill of Enterprise

You can define a search sequence of warehouses in the multisite structure in the Bill of Enterprise (whwmd2130m000) session of BaanERP Warehousing. The bill of enterprise can include warehouses in the current company and in other logistic companies. You can assign a priority to each warehouse. BaanERP searches the warehouses of the bill of enterprise in the order of their priority for sufficient quantities of the ordered item.

## Multisite ATP

If the ordered item is defined as a plan item in BaanERP Enterprise planning, or in BaanSCS Order Promising, BaanERP can perform an available-to-promise (ATP) check for the item. The ATP checks and the stock allocations can be carried out in multiple logistic companies of a multisite structure.

## To use BaanSCS Order Promising

If you have implemented BaanSCS Order Promising, BaanERP uses Order Promising to handle sales orders across multiple companies. If you enter a sales order line and the default warehouse does not contain sufficient inventory, Order Promising performs an ATP check and a channel constraint check. If a sufficient quantity is found, Order Promising returns the logistic company and a warehouse that can deliver the goods. BaanERP includes this information in the sales order line.

### NOTE

If no sufficient quantity is found, Order Promising can return a next best date, together with the logistic company and the warehouse, at which the sales order line can be accepted. You can then accept the later date or accept the sales order line for a smaller quantity of the goods.

Technically, BaanSCS Order Promising is integrated with BaanERP Enterprise Planning. When you enter a sales order line in BaanERP Order Management, BaanERP passes the ATP check request on to BaanERP Enterprise Planning and BaanERP Enterprise Planning starts Order Promising.

## The sales order status

The sales order line also includes the sales order status. Order Promising uses the sales order status to determine whether an immediate ATP check is required or the ATP check can be included in a batch ATP-check process. Order Promising also changes the Sales Order Status to indicate the result of the check.

## Order delivery and invoicing

The allocated quantity is issued and shipped to the ship-to address. The goods on an order line can be delivered from:

- A warehouse in the same logistic company as the sales office
- Warehouses in another logistic company than the sales office

**NOTE**

As will be explained later in this chapter, internal EDI requires that all the warehouses on one sales order belong to the same logistic company.

### Issue from a warehouse in the same logistic company

If the warehouse belongs to the same logistic company but is linked to a financial company other than the sales office, you can:

- Define a goods transfer relationship between the warehouse and the sales office to generate invoices. Refer to "Goods transfer relationships" in Chapter 4, "Enterprise Modeling Management" for details.
- Set up BaanERP Finance to automatically generate intercompany transactions between the financial companies involved.

### Issue from warehouses in another logistic company

BaanERP does not support warehouse transfers between logistic companies. Therefore, if the goods on a sales order are delivered from warehouses in another logistic company than the sales office, BaanERP generates a purchase order by which the sales office buys the goods from the other logistic company.

You must define the logistic companies as each other's affiliated-company business partners. Refer to Chapter 4, "Enterprise Modeling Management", for details about affiliated-company business partners.

The purchase order and sales order are exchanged by using Electronic Data Interchange (EDI). EDI bases the addressing on the information in the original sales-order header. As a result, the warehouses on one order must all belong to the same logistic company. Refer to Chapter 15 "Multisite technical issues", for more details about internal EDI.

The goods can be delivered directly from the warehouse to the ship-to business partner. BaanERP can apply triangular invoicing to generate the financial settlements. Refer to Chapter 6, "Multisite Finance", for details of triangular invoicing. .

**NOTE**

BaanSCS Order Promising does not support direct deliveries.

Figure 22 shows the orders and documents that are generated during a triangular invoicing transaction.

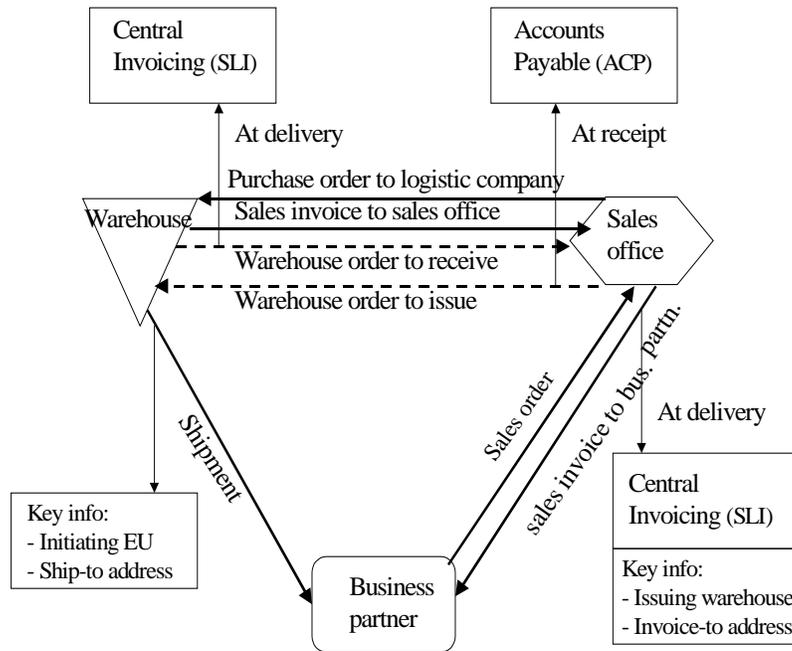


Figure 22, Documents generated during triangular invoicing.

## Purchase order management

In a multisite structure, you can manage (part of) the purchase orders centrally. For example, you can:

- Create a central purchase contract with your suppliers, which includes price and discount agreements.
- Receive all purchased goods centrally and distribute them over the organization's sites.

Depending on the part of the purchasing that is centralized, there are different central purchasing scenarios:

- Central contracting/local purchasing.
- Central purchasing.
- Central purchasing with direct deliveries.

You can use the following sessions to see the purchased quantities and other details for each order:

- Purchase Contracts by Company (tdppur3502m000).
- Purchase Contracts by Purchase Office (tdppur3505m000).

### Central contracting/local purchasing

The central purchase office maintains the purchase contracts and purchase pricing. Each separate logistic company (site) purchases goods directly from the outside suppliers, handles the receipts and pays the invoices. The local purchase orders are based on the conditions, pricing and discounts negotiated for the contract. The quantities that the individual sites purchase are aggregated to the central contract.

In Figure 23, company L1 maintains the central contract. The companies L2 and L3 use the contract data on their purchase orders.

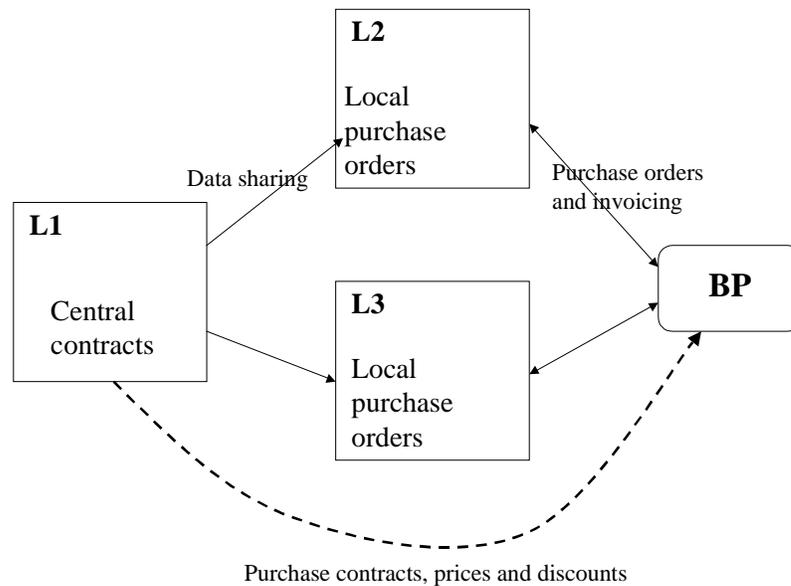


Figure 23, Central Contracting/Local Purchasing.

The companies must share the contract tables by means of logical table linking or by replication. Refer to Chapter 14, "Multisite data sharing", for more details. Refer to *Multicompany Table Sharing*, (U7285A US), for details about which contract tables must be shared.

**NOTE** In the company that maintains the central contract, you cannot use delivery schedules to update the planned inventory transactions, because the inventory is present in other companies. You can only use the delivery schedules to display information.

BaanERP records the supplier performance information in the local companies, that issue the purchase orders.

### Central purchasing

The central purchase office maintains the purchase contracts and purchase pricing and creates all the purchase orders to external suppliers for the organization. Each site passes its requirements to the central purchase office. The local sites' requirements of an item are aggregated into larger orders. The central purchase office handles the receipts, pays the invoices, and distributes the goods to the sites.

The sites are separate logistic companies. Therefore, a purchase/sales relationship and invoicing are needed to distribute the goods to the sites.

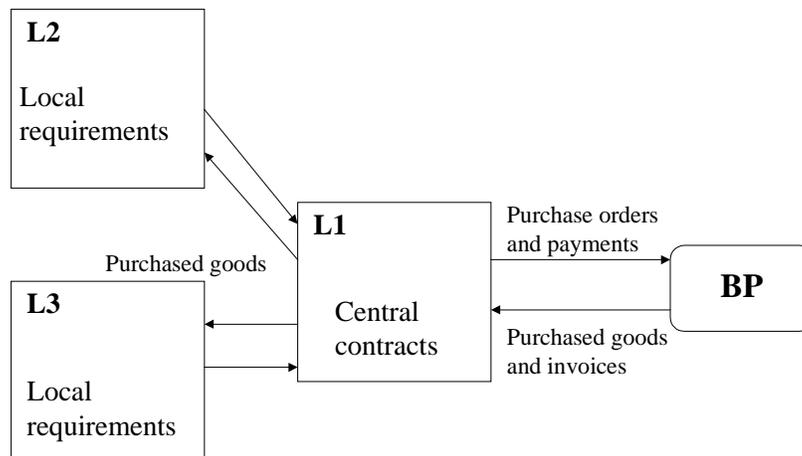


Figure 24, Central purchasing.

Figure 24 illustrates how central purchasing can be organized.

The companies do not need to share the purchase contract data and the supplier data. The central purchase office's company acts as the supplier to the local companies. Handling each company's requirements and distributing the goods received causes some extra overhead in the central purchase office's company.

## Central purchasing with direct deliveries

The central purchase office maintains the purchase contracts and purchase pricing, creates all the purchase orders to external suppliers for the organization, and pays the invoices. Each site passes its requirements to the central purchase office. The central purchase office enters the local sites' warehouses on the orders so that the suppliers ship the goods directly to the sites.

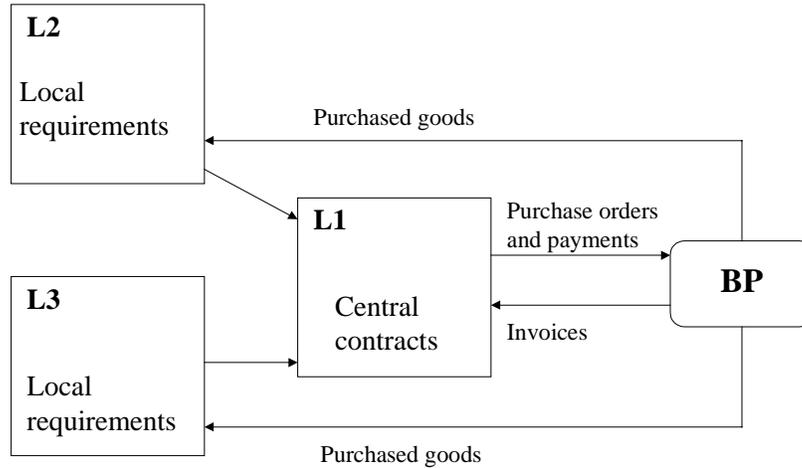


Figure 25, Central purchasing with direct deliveries.

Figure 25 illustrates how central purchasing with direct deliveries can be organized.

The ship-to warehouse is part of the order header. Therefore, the central purchase office must create a separate purchase order for the items ordered for each site. As a result, you cannot aggregate the local sites' requirements into a single order.

BaanERP records the supplier performance information only in the company of the central purchase office.

## Purchase requirements collection

To create contracts and pricing conditions, the central purchase office needs to know the organizations purchase requirements for the medium and long term. Depending on the type of item, you can do this in several ways:

- You can use BaanERP Enterprise Planning to centralize the planned demand or to aggregate the local demand of the various sites. Refer to Chapter 8, Multisite Enterprise Planning, for details.
- You can use BaanERP Exchange to aggregate the planned demand of different logistic companies to the central purchasing company.
- You can use BaanERP Exchange to aggregate the purchase budgets of logistic companies that reside on different servers, to the central purchasing company. Refer to Chapter 14, Multisite data sharing, for details about using Exchange.

## Vendor rating

BaanERP records the vendor rating data in the company that issues the purchase orders. Vendor rating is always per logistic company. If you use central purchasing, only the company of the central purchase office needs to have this information.

## Business partner management

BaanERP can store the business partner data per sales office and purchase office. As a result, different sites can have sales and purchase relationships with the same business partners and each use their own business partner data, such as the default currency. Refer to "Business-partner data by department" in Chapter 5, "Business partners", for details.

## Credit check

The business partner's credit limit is part of the business partner's default data. The invoice-to business partner's credit limit applies to all the sales offices and the invoice-from business partner's credit limit applies to all the purchase offices.

BaanERP records one open order/invoice balance per invoice-to and invoice-from business partner. The open order/invoice balances are updated via the sales offices and purchase offices.

If multiple logistic companies use the same business partners, the companies must share the master business partner tables.

If you want to maintain separate order balances and credit limits per company for the business partners, you can define the business partners separately in each company, using the same identification codes.

During order entry in any of the sales offices or purchase offices, BaanERP calculates the total open order balance and checks it against the business partner's credit limit.

## Pricing

Pricing is restricted to one logistic company. If you want to use the same pricing data in multiple logistic companies, the companies must share the Pricing Control (PCG) tables.

When you create the item purchase data or the item sales data of a new item, BaanERP enters the default price from the Item Sales Data (tdisa001) table or the Item Purchase Data (tdipu001) table in the default price book in PCG. If the entry already exists, BaanERP displays an error message. Therefore, if multiple companies share the PCG tables and each company can create new items, you must ensure that the item codes are unique.

# 11 Multisite Project

This chapter describes the most important multisite features for BaanERP Project.

## Financial reporting by project

Projects are key entities of enterprise units. You must link a project to an enterprise unit and in this way to a financial company. The project costs, commitments, revenues, and results are posted to the financial company that is linked to the enterprise unit. In this way one logistic company can contain multiple projects for which you perform separate financial accounting.

You can transfer goods to a project from a warehouses or deliver goods directly on the project via a purchase office. If the enterprise unit of the warehouse or the purchase office and the enterprise unit of the project are linked to different financial companies, BaanERP creates intercompany transactions between the financial companies.

## Goods transfer

You can specify the types of pricing and invoicing to be used for goods transfer between your warehouses and the project warehouse(s) by defining the goods transfer relationships in the EMM module. Refer to "Goods transfer relationships" in Chapter 4, "Enterprise Modeling Management " for details.

## The project currency

You can select a project currency for each project and subproject. The project currency does not have to be one of the company's home currencies. The project's financial data is based on the project currency. This data includes the actual costs, and the project revenues.

In the Project Monitoring (PPC) module, the amounts are only displayed in the project currency, not in the company's home currencies. For some reports you can select a report currency. When posting the data to Finance, BaanERP converts the amounts from the transaction currencies to the financial company's reference currency.

## **To aggregate the project data**

You can aggregate the data from subprojects in the same or different enterprise units to a main project to use it for monitoring a group of projects. In the subprojects the data is based on the subproject's project currency. When you aggregate the data to the main project, BaanERP converts the amounts to the main project's currency.

## **Multisite limitations for BaanERP Project**

You cannot spread one project over multiple logistic companies. BaanERP Project does not support the multilogistic/multifinance company structure. You can perform transactions between the project and other logistic companies by means of sales and purchase relationships.

BaanERP converts amounts from the project currency to the financial company's reference currency. Project cannot convert the amounts into more than one home currency. Therefore, you cannot use the independent multicurrency system in relation with Project.

# 12 Multisite Service

This chapter describes the effects of the BaanERP multisite functions on the BaanERP Service.

## Service call handling

In a typical service environment, service calls are received in a (central) call center or support center. If it is not possible to solve the problem during a telephone call, the call center dispatches the call to the appropriate field service center. Service contracts are usually created by sales representatives, and in this way connected to a sales office. The sales office invoices the business partner for the service contract.

The service activities that result from the service contract and the service calls are carried out by employees of various service centers and service subcenters. Part of the service activities are covered by the service contract. The service center invoices the business partner for the activities that are not covered by the service contract.

The employees use a service truck or a service kit with tools and spare parts which is replenished from a warehouse. Other spare parts can be supplied by issuing a purchase order via a purchase office. The spare parts can also be returned to the warehouses.

## A service enterprise unit

The following entities are involved in the described service activities:

- The sales office that sells the service contract.
- The call and support center that receives the service calls.
- The field service centers that handle the service order.
- The warehouses that contain the spare parts.
- The purchase office that orders spare parts and subcontracts if necessary.
- The mobile warehouses (service trucks) and portable warehouses (service kits) that are replenished from and return items to the warehouse.
- An internal or external sold-to, invoice-to business partner.

A typical enterprise unit in a service environment consists of:

- A service center that serves a (geographical) area.
- One or more supporting warehouses, including mobile and portable warehouses.

In a multifinance company structure you can perform separate financial accounting for the service centers and their warehouses by assigning them to different enterprise units. You can set up BaanERP to generate the corresponding intercompany transactions between the financial companies to which the enterprise units are linked.

## **Goods transfer relationships**

You can model the goods transfer relationships between the service warehouses within one logistic company, and specify the pricing and invoicing types, in the EMM module. Refer to "Goods transfer relationships" in Chapter 4, "Enterprise Modeling Management ", for details.

## **Multisite limitations in Service**

Service contracts and call handling and tracing are restricted to one logistic company. For example, a call center in logistic company B cannot register service calls that are based on a service contract sold by a sales office in company A. All transactions between service centers and warehouses in different logistic companies must be managed by means of sales and purchase relations.

You can only model goods transfers between warehouses. You cannot specify the goods transfer between a warehouse and a service center.

In addition, you cannot use the EMM module to specify the pricing and invoicing types to be applied when service activities are invoiced to the sales department.

# 13 Multisite Warehousing

Most of the multisite warehousing features are related to other packages and therefore they have already been discussed in the previous chapters. This chapter provides a summary of the multisite features of BaanERP Warehousing. These are:

- Separate financial accounting.
- Goods transfer relationships.
- Default warehouse by sales/purchase office.
- Triangular invoicing.
- Inventory check in multiple logistic companies.

## Financial accounting per country

Each warehouse is a key entity of an enterprise unit and in this way you link each warehouse to a financial company. That means that BaanERP can do separate financial accounting for the warehouses of one logistic company. For example, these can be warehouses in different countries. Refer to "Single logistic/multifinance" in Chapter 2, "Multicompany structures", for details.

## Goods transfer across country borders

By using separate financial accounting for the warehouses, you can perform goods transfer within one logistic company across country borders. You do not need to redefine the transferred items and you do not need to generate purchase orders and sales orders.

If the goods transfer must be invoiced, you must define internal business partners and link the warehouses' enterprise units to them. You can define a goods transfer relationship between the warehouses to specify the type of invoicing.

Refer to "Internal business partners" in Chapter 5, "Business partners", for details.

## Goods transfer relationship

In one logistic company you can define goods transfer relationships between:

- Warehouses.
- Warehouses and sales offices.
- Work centers and sales offices.
- Work centers (WIP-Transfers).

You can use the goods transfer relationship to specify:

- The type of pricing (commercial price or valuation price).
- A surcharge for the transfer of the goods.
- The type of invoicing (triangular, bilateral, or no invoicing).
- The currency to be used.

Goods transfers between different logistic companies must be controlled by sales orders and purchase orders. You must link the companies to affiliated-company business partners.

Refer to "Goods transfer relationships" in Chapter 4, "Enterprise Modeling Management", for details.

## The supply network in Enterprise Planning

You can use BaanERP Enterprise Planning to model a supply chain that includes production plants, distribution centers, and so on. The distribution centers consist of clusters of (non-nettable) warehouses. You must define the clusters in the Enterprise Modeling Management (EMM) module. The warehouses of one cluster must belong to one logistic company but you can define the supplying relationships between clusters of different logistic companies to form a supply network of warehouses. In this case, you must map the item definitions of one logistic company on the item definitions of the other logistic company.

Refer to Chapter 8, "Multisite Enterprise Planning", for details.

## Default warehouse by sales/purchase office

You can select a default warehouse for sales offices and for purchase offices. For example, the sales office's default warehouse is the default warehouse for all the sales orders that are created for the sales office. If the office and the warehouse are linked to different financial companies, BaanERP can automatically carry out intercompany settlements. Refer to Chapter 6, "Multisite Finance", for details.

## **Triangular invoicing**

If sold goods are shipped from a warehouse directly to the ship-to business partner and the warehouse sends an invoice to the sales office that created the warehouse order, BaanERP can apply triangular invoicing. Refer to "Order delivery and invoicing" in Chapter 10, "Multisite Order Management", for details.

## **Multisite inventory check**

During sales order entry you can see the available inventory in the warehouses of the current company and in other logistic companies of the multisite structure. If sufficient inventory is found, BaanERP enters the warehouse or the work center on the sales order line and allocates the required quantity to the order.

Refer to "Inventory check" in Chapter 10, "Multisite Order Management" for details.

Multisite concepts  
13-4

# 14 Multisite data sharing

The companies of a multisite structure must share some data and can optionally share other data. This chapter describes a number of data sharing techniques and their requirements, possibilities, and drawbacks.

## Sharing data

In a multisite structure, some database tables:

- **Must be shared.**  
For example, Companies (tccom000) table that contains the company numbers and the information about each companies' home currencies must be shared in all types of multicompany structures. In a multilogistic/single financial company structure, the General Ledger tables must be shared, among others.
- **Cannot be shared.**  
Data that is specific to one company cannot be shared. For example, the information about departments, warehouses, and projects that is company specific must not be shared.
- **Can be shared.**  
You organization's business requirements can demand that the companies share data such as the general item data, business partners, and pricing and contract data. This can be for practical reasons such as resources, security, and data consistency. Sharing data is preferred to manually updating the data in a number of companies. For example, if a production plant and a distribution center handle the same items, they can share (part of) the general item data.

Shared data can be of two types:

- Relatively static, such as master data (currencies, business partners, tax codes).
- Dynamic, for example, transaction data (sales order balances) or master data that frequently changes (currency exchange rates).

Refer to *Multicompany Table Sharing*, (U7285A US), for more details about which database tables the companies must share and can share.

## Data sharing methods

Depending on the type of data, the requirements, the number of database servers in the multisite structure, and the technical and networking possibilities, you can use the following methods to share data between companies:

- **Logical table linking.**  
Companies that share data by means of logical table linking, use the same physical tables. One instance of every record exists. The companies must use the same database server. Refer to "Logical table linking" later in this chapter, for details.
- **Data replication.**  
Companies that use different database servers can share data by means of data replication. Every company has its own copy of the data, therefore multiple instances of one record exist. It is important to determine which company has the right to change the data, in other words, which company owns the data. Refer to "Data replication" later in this chapter, for details.

Every organization has unique data management requirements and server configurations. Therefore, the decisions about the best data sharing method to use and which data must be shared are unique for each multisite structure. See also the description of network types and server configurations in Chapter 15, "Multisite technical issues".

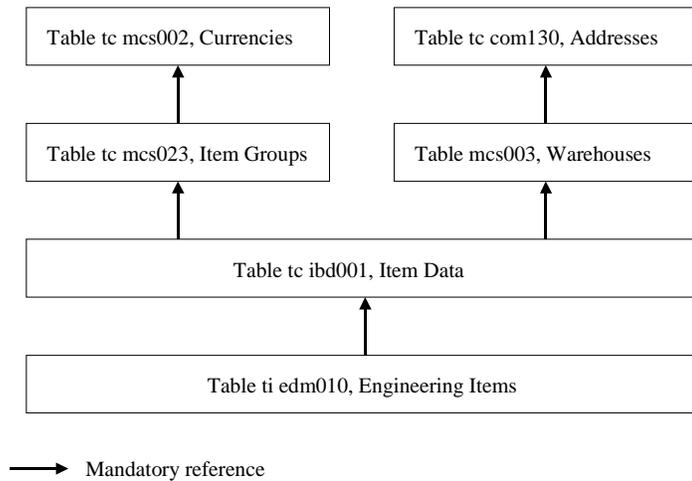
## To share referenced data

Many BaanERP tables contain references to data in other tables. If companies share data, they must usually also share the referenced data. This depends on whether the referenced data is mandatory or optional. The following rules apply:

- **Mandatory referenced data must be shared.**  
Companies that share tables must also share the tables that contain mandatory referenced data.
- **Optional referenced data can be shared.**  
Optional referenced data can be shared but can also be company specific. The optional referenced data must exist in the companies that use the referenced data. If a company does not use the optional referenced data, the data does not need to exist in that company.

Many levels of reference can exist, and the references can be far reaching and complex. You must investigate the table references in detail for each implementation.

Figure 26 shows an example of table references.



*Figure 26, Referenced tables.*

Figure 26 shows the following table references:

- The Engineering Items (tiedm010) table references the Item Data table, for the item group and the item type.
- The Item Data (tcibd001) table has mandatory references to the Item Groups (tcmcs023) table and to the Warehouses (tcmcs003) table.
- The Item Groups table has a mandatory reference to the Currencies (tcmcs002) table.
- The Warehouses table has a mandatory reference to the Addresses (tccom130) table.

## Data integrity

Data integrity is the accuracy of the data and its conformity to its expected value, especially after the data was transmitted or processed. If the companies share database tables, three aspects are important for the data integrity:

- The data ownership.
- Integrity of referenced data.
- Transaction data integrity.

## Data ownership

Data ownership is the right to change the data.

If the companies share data by means of logical table linking, only one instance of the data exists. Any company can modify the data, and all the companies work with the current version of the data. Multiple companies can own the data.

If the data is replicated, it is important to determine which company owns the data. Figure 27 illustrates this.

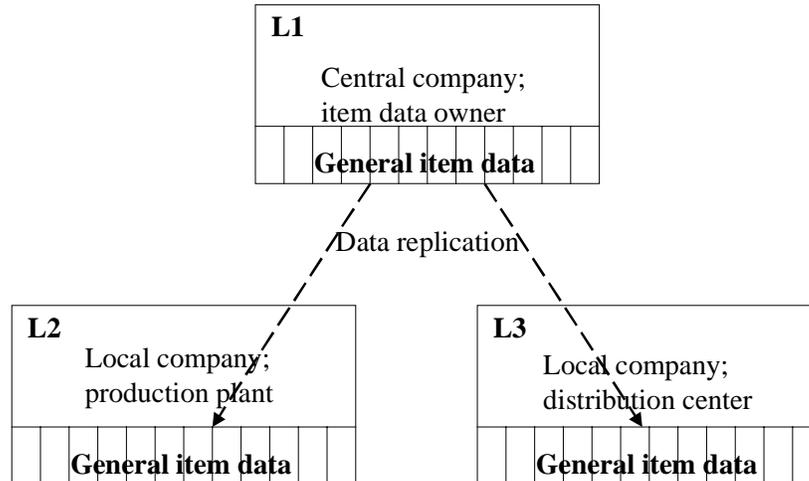


Figure 27, Ownership of replicated data.

The companies in Figure 27 use replication to share the general item data. The central company owns the general item data. Each time when the data is replicated from the central company to the local site companies, any changes that the local site companies made to the general item data are lost. This applies to all types of changes:

- Modified records.
- Created records.
- Deleted records.

## **Integrity of referenced data**

The mandatory data that is referenced by other data must exist. For example, you cannot remove a currency that is still used by an item group. For this reason, whenever you want to delete a record, BaanERP checks whether the record is still in use anywhere.

If you use data replication to share the data between the companies and different companies own the data tables that contain references to each other, you must take care that the data's referential integrity is preserved.

## **Transaction-data integrity**

Most transactions involve modifications of multiple tables. For example, when you confirm a sales order, BaanERP allocates the required inventory, generates the financial transactions, and updates the business partner's open order balance. To ensure the data integrity between these tables, the transaction must either be fully completed or not carried out at all. This can only be guaranteed if the tables that are involved in one transaction all reside on the same database server.

## **To choose a data sharing method**

Each data sharing method has its advantages and drawbacks. The various methods are suitable for sharing different types of data (dynamic transaction data or static master data) and each organization has unique data sharing requirements. Therefore, data sharing in a multiserver environment is usually achieved by a combination of data sharing methods.

When you choose a data sharing method for a specific category of data, you can consider the following factors:

- The number of database servers.
- The network reliability.
- The network response time.
- The network type (LAN or WAN).
- The database capabilities.
- The data model resemblance on the different servers.
- The importance of data consistency.
- The importance of data synchronicity.
- The importance of working with actual data versus replicated data.
- The referential integrity of the data.
- The total response time.
- The use of read only actions versus write actions.
- The volume of the shared data.
- The frequency of record changes.
- The ownership of the data.
- What type of data is shared: transaction data (dynamic) or master data (static).

## Logical table linking

Companies that use the same database server can share data by means of logically linked tables. Logical table linking means that the database tables are created for one company and used by a number of companies. Figure 28 illustrates this.

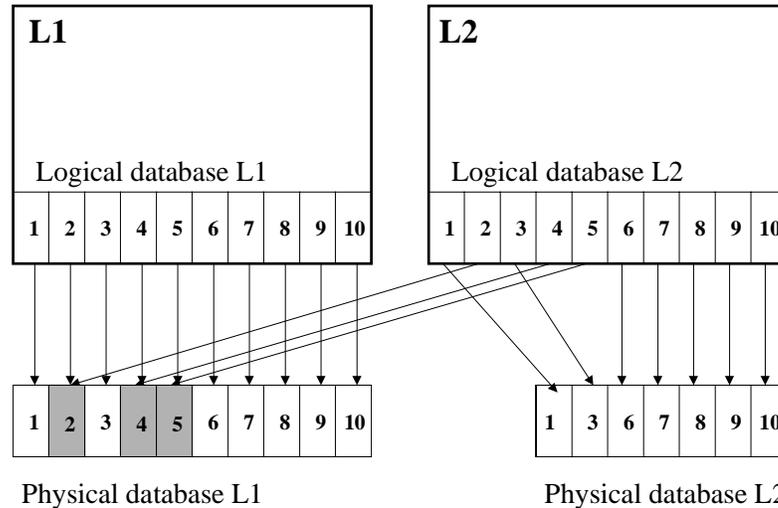


Figure 28, Logical table linking.

In Figure 28 the companies share tables 2, 4, and 5. In company L2 the tables 2, 4, and 5 are logically linked to the tables of company L1.

The following rules apply to logical table linking:

- The companies that share data by means of logical table linking must all use the same database server.
- The companies' data models must be exactly the same.
- Logical table linking is always per table. The companies cannot share part of a table and keep company specific information in a part of the table that is not shared.
- If tables are linked, referenced tables that contain mandatory data must also be linked.

If you use logical table linking, you must take the following into consideration:

- If a table contains transaction data, the table can become very large when several companies add records to it.
- Before deleting a record, BaanERP checks all the references in all the companies that have access to the table. This can take much time.
- Queries on a large table can take much time.
- If a user modifies a record, the record is locked. The chance that users try to access a locked record increases with the number of users of the table.

When you create a new company you can specify which tables must be logically linked to another company's tables, by using the data management sessions of BaanERP Tools. Refer to *To Set up a Company*, (U7287A US), for more details.

**WARNING**

You must not logically link the following types of tables:

- Tables that contain a key entity  
A key entity is an entity which is defined in the Enterprise Modeling Management (EMM) module. Each key entity contains a reference to an enterprise unit, which only exists in its company. Therefore, you must not logically link these tables.
- Tables that contain dynamic data and that do not refer to a company number  
This data is only relevant to the company to which it belongs

Refer to *Multicompany Table Sharing*, (U7285A US), for more details about which tables you can logically link.

## Data replication

If you use data replication to share data between the companies, the data is copied (replicated) to each company's database. Multiple instances of the same records exist.

You must replicate the data between the companies on a regular basis. Depending on the type of data this can be, for example, once a week for tax rates, daily for item data, or hourly for financial transaction data.

You can use BaanERP Exchange for data replication.

## BaanERP Exchange

BaanERP Exchange is the BaanERP package for data replication. Exchange exports the data to ASCII files and imports the data on other servers. You must set up exchange schemes on every server to import data from other servers and/or export data to other servers.

This section briefly describes the BaanERP Exchange functions. Refer to *BaanERP Exchange User Guide*, (U7137A US), for details.

Exchange offers two types of data replication:

- Audit based exchange.  
Only the changed data is replicated to the other database.
- Full exchange.  
All the specified data is replicated to the other database.

You can carry out both types of data replication manually or as a batch job that runs according to a predefined schedule or according to a calendar.

### Audit based exchange

During an audit based exchange, only the changed data is replicated to the other database. The audit based exchange is based on the audit log records. This type of data replication is mostly used for batch replication of data. Exchange can run as a job that collects the data of all the transactions within a specific time range. The minimum replication interval usually is 15 minutes. For performance reasons, audit based exchange is not always suitable for very dynamic data.

### Full exchange

During a full exchange, all the specified data is replicated to the other database. This type of data replication is mostly used for less frequent updates such as the export of data to history files or the update of the employees files. You can use the full exchange to modify the data when it is imported.

**NOTE**

Data ownership is important. If the data is changed on different database servers, the changes made on the target servers are lost when the data is replicated.

## BaanERP Exchange features

BaanERP Exchange has the features:

- Export and import of data is database independent and network independent.
- The data models of the data dictionaries involved need not be exactly the same.
- Exchange ensures the data integrity.  
On import or export of data Exchange checks the business rules in the BaanERP Data Dictionary. For example, Exchange checks that a sales order line contains a reference to a sales order header. If this is not the case, Exchange does not import the records. After repair, Exchange can import the refused records by a restart from the log-files.
- Exchange can replicate selected data.  
If you do not want to replicate all the data of a table, you can build an import scheme at the remote site that only imports specific rows and columns.
- Exchange can replicate the data by selected action.  
You can define import schemes that import data by type of action, that is, insert, delete, modify and update. For example, this enables the sites to replicate new records, but not change existing records or visa versa.
- Exchange can modify the data when it is imported or exported.  
You can define import and export schemes that transform the data before it is imported or exported. For example, Exchange can assign a constant value or a default value to columns, and perform calculations.

**NOTE**

During audit based exchange, Exchange cannot modify the imported or exported data.

- Exchange can start functions.  
You can provide scripts to perform functions based on the imported data.

Exchange also has its limitations:

- Exchange cannot guarantee the correct arrival of the exported records at the remote server or the import of records into the remote database.

# 15 Multisite technical issues

This chapter globally describes some technical issues that are relevant if you have a multicompany, multisite structure. These include:

- Network types.
- Server configurations.
- Electronic Data Interchange (EDI).

## Network types

You must use a network to exchange data between the workstations and the Baan servers. The type of network that you use also determines the data sharing possibilities. Basically, there are two network types:

- Local Area Network (LAN).  
A LAN is a network of data lines within one physical location. The data transfer speed is usually very good. You can use a LAN for all table sharing and data replication methods.
- Wide Area Network (WAN).  
A WAN is a network between remote sites. A WAN usually consists of rented cables that run over long distances. The capacity and the length of the cable restrict the volume and speed of the data transfer. A WAN is generally more sensitive to breakdowns, for example, by physical damage. Therefore, you can only use a WAN for:
  - User interface connections with remote BaanERP workstations.
  - Not so frequent data replication, if there is no other solution.

## Server configurations

Depending on the size of your system and the performance requirements, you can use a single server or a cluster of multiple servers. The application servers and database servers must be connected by means of a LAN. The workstations can be connected to their application servers by using a LAN or a WAN.

The following server configurations are the most important:

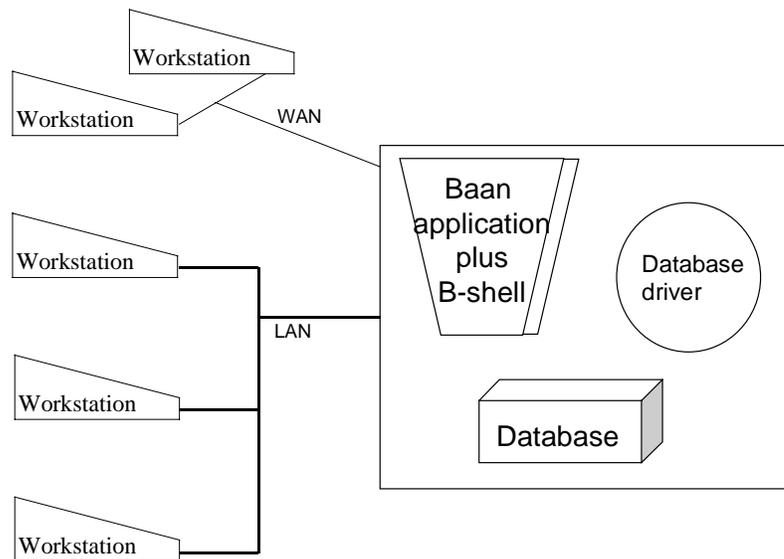
- Single server
- Dedicated database server
- Application server cluster with a single database server
- Server cluster with multiple database servers

Refer to the Baan technical documentation for implementation details and for information about other configurations that are possible.

## Single server

The simplest server configuration for a Baan system consists of one server, which is used as both the application server and the database server. The workstations can be connected to the application server by using a LAN or a WAN. The Virtual Machine (VM) component of the application server controls the presentation of the BaanERP application on the workstation (the user interface).

Figure 29 illustrates a single server configuration.



*Figure 29, A single server configuration.*

## Dedicated database server

If you want to increase the performance you can add a server which you use as a dedicated database server. The database server must be connected to the application server via a LAN. Figure 30 illustrates a server cluster with a dedicated database server.

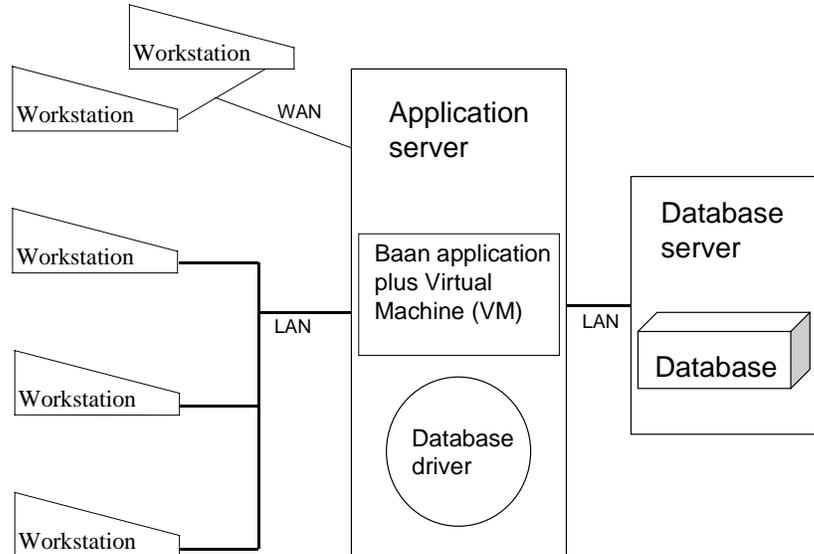


Figure 30, A dedicated database server.

## Application server cluster with a single database server

In a multisite structure, you can need to use multiple application servers. Ideally all the application servers of such a server cluster use one database server. The companies of the multisite structure can share data by logical table linking. Figure 31 shows a server cluster that uses one database server.

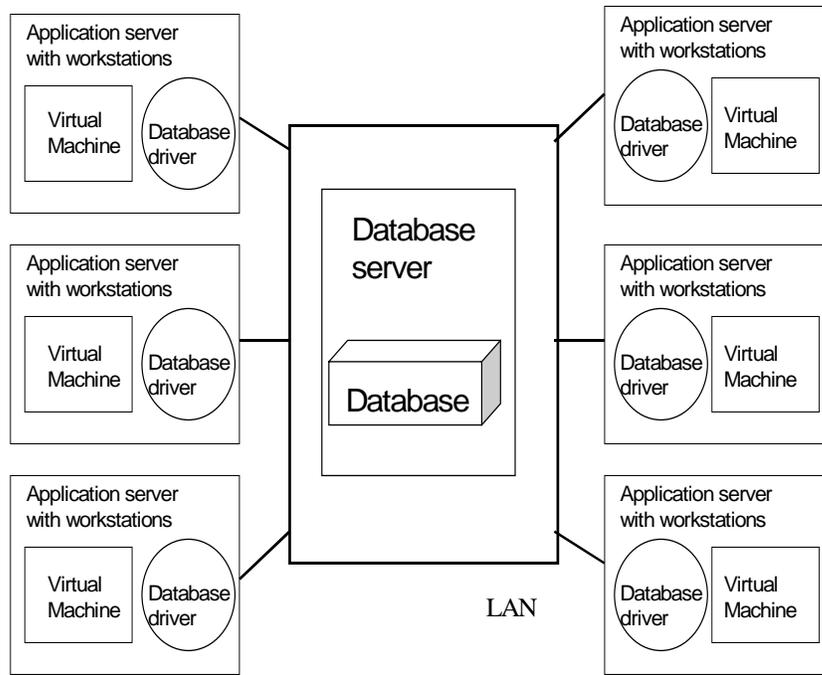


Figure 31, A server cluster.

## Server cluster with multiple database servers

If you need to use multiple database servers, the companies can share data by a combination of logical table linking and data replication. Note that all the data involved in one BaanERP transaction must reside on one database server.

Figure 32 shows a server cluster that includes multiple database servers.

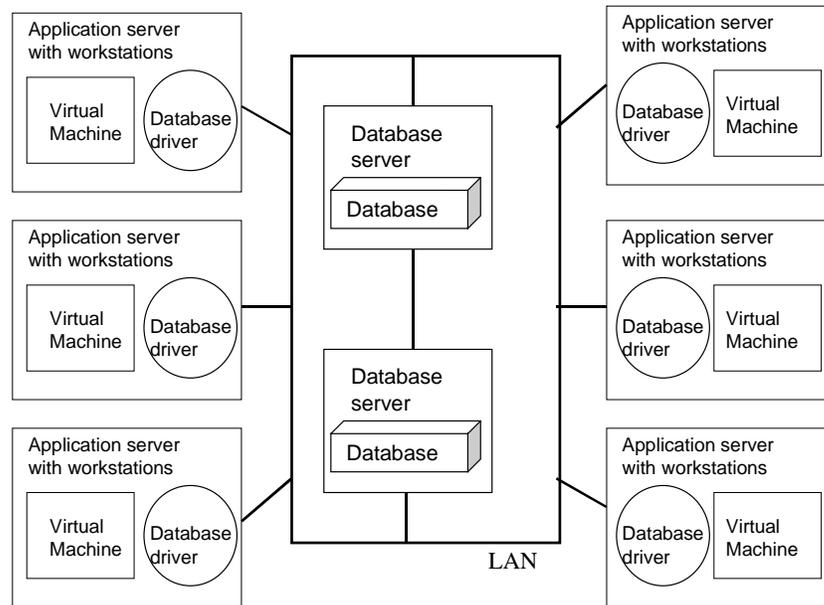


Figure 32, A server cluster with multiple database servers.

## The single point of failure

The single point of failure is the component of the cluster of which a failure stops the whole cluster from operating. It is important to realize which is the single point of failure of a server cluster, and to monitor that part.

For example, if an application server is not operational in the server cluster of Figure 32, its function can be taken over by another application server and work can continue. But if the database server is not available or there is a network failure, it is not possible to perform any transactions. For example, such a cluster has the following single points of failure:

- The network.
- The database server computer.

To avoid problems you must monitor the single points of failure and have an immediate stand-by solution for them. For example, you can apply high availability techniques to a database, such as mirroring the database on a second database server

## **Electronic Data Interchange (EDI)**

EDI is a way to exchange information with your business partners by using electronic mail. The information includes sales and purchase orders, shipment notices, invoices, and all other types of information necessary to carry out business transactions. You must define the appropriate business partner roles. For example, you can only send purchase-order EDI messages to a business partner with the buy-from role.

### **External EDI**

BaanERP EDI generates and reads ASCII files with a flexible format. Between external business partners, the data is typically transferred over commercial or noncommercial networks. The translation of the EDI files is handled by third-party translation and communication software that can also encrypt data that is transferred over unsecured networks.

### **Multisite (internal) EDI**

In a multisite structure, you use EDI to process standard messages between logistic companies that are each other's affiliated-company business partners. You do not need to encrypt the files, because the ASCII files are usually transferred over an internal company network (LAN or WAN). In addition, you do not need to translate the files to an external EDI standard because all the companies of the multisite structure use the same format for the ASCII files.

EDI is a module of the BaanERP Electronic Commerce (EC) package. Refer to *BaanERP EDI User manual*, (U7100B US), for details about how to set up multisite EDI.

# Appendix A Glossary

## **Accounting department**

A department that is used to determine the financial company for which to register and retrieve the financial data of a business partner. Other department types such as sales office and purchase office can also serve as accounting departments.

You can link departments to the following business partner roles:

- Invoice-to business partner
- Pay-by business partner
- Invoice-from business partner
- Pay-to business partner

## **Affiliated company**

A separate logistic company that acts as a business partner to your logistic company. You must define the sold-to role and the buy-from role for an affiliated company business-partner.

## **Base company**

A financial company or a financial and logistic company that is used to temporarily book the intergroup transactions (transactions between financial companies that belong to different group companies).

## **Bilateral invoicing**

A way of invoicing where the invoice and the goods or services are sent to or received from the same parties.

## **Business model**

A complete design that visualizes how an organization works or should work. The following two types of business models can be distinguished:

- Reference models that apply to specific industries or business typologies
- Project models that apply to a specific organization.

Each reference or project model consists of a combination of:

- A business control model
- A business function model
- A business process model.

**Business partner**

Party with whom you carry out business transactions, for example, a customer or a supplier. You can also define departments within your organization that act as customers or suppliers to your own department, as business partners.

**Calculation office**

A special type of work center that you use to link a project or a production order to an enterprise unit and in this way to a financial company. The order's financial data such as the production cost, Work in Process (WIP) value and production variances are posted to the financial company of the work center that acts as the calculation office.

The calculation office is one work center from a number of work centers in one logistic company. In addition to its administrative function, you can use the calculation office as a regular work center for manufacturing purposes; that is, you can link operations and materials to it.

**Central company**

The company in which all DEM model item data is stored. Central storage facilitates the retrieval of enterprise modeler data.

**Cluster**

General: A group of entities that are not necessarily related to one financial company or logistic company. An entity can belong to multiple clusters at the same time. BaanERP uses clusters of various entities in different contexts.

In Baan Enterprise Planning: A group of non-nettable warehouses within one logistic company, connected by supplying relationships, used to model the distribution structure and for enterprise planning.

**Company**

A working environment in which you can carry out logistic or financial transactions. All the data concerning the transactions are stored in the company's database.

Depending on the type of data that the company controls, the company is:

- A logistic company.
- A financial company.
- Both a logistic and a financial company.

In a multisite structure, the company database can partially exist uniquely for the company and partially consist of database tables that the company shares with other companies.

**Data replication**

To copy data between different servers on a regular basis, so that the companies on the different servers can work with the same information.

**Data sharing**

A technique that allows multiple companies to use the same physical database tables.

**Department**

A company's organizational unit that carries out a specific set of tasks. You must link every department to an enterprise unit and in this way to a financial company. The following department types are defined:

- Sales office.
- Purchase office.
- Service center.
- Work center.
- Accounting department.

**Dependent multicurrency system**

A currency system in which you can use multiple home currencies within the same logistic company. For most entities, the financial company determines the local currency that is used. All transactions are registered in all the home currencies.

Currency rates are defined between the external currencies and the reference currency, and between the reference currency and the other home currencies. Transaction amounts are first converted into the reference currency and then the transaction amount in the reference currency is converted into the other home currencies.

**EMM**

A module in BaanERP Common Data that is used to model the organization and to make the enterprise modeling information available to the other BaanERP packages. Modeling the organization consists of defining:

- The entities.
- The relationships between the entities.
- The enterprise structure.

**Enterprise structure model (ESM)**

A graphic design that shows the geographic location of enterprise units and the goods flow relationships between the enterprise units in a multisite organization. In the enterprise structure diagram, the supply chain is modeled at company level. All participants (enterprise units) in the supply chain are graphically represented on a map.

Examples of participants (enterprise units) are:

- Customers.
- Sales offices.
- Distribution centers.
- Assembly sites.
- Manufacturing sites.
- Suppliers.
- Central planning/purchasing sites.

**Enterprise unit**

An enterprise unit consists of logically grouped entities (work centers, sales offices, purchase offices, accounting departments, warehouses, and projects) of one logistic company that report to the same financial company. From a business perspective, an enterprise unit can be considered as an independent fiscal unit in a logistic context.

For example, an enterprise unit can be a manufacturing plant, an assembly plant, a sales organization, a distribution center, or a service organization.

**Entity**

A part of the Baan application that, together with other entity types, forms an enterprise unit. An entity can only belong to one enterprise unit at the same time. However, an enterprise unit may consist of multiple different entities.

Examples of entities are:

- Departments
- Work centers
- Warehouses
- Projects

**Financial company**

A company used for posting financial data in BaanERP Finance. You can link one or more enterprise units from multiple logistic companies to one financial company.

**Goods transfer relationship**

The information that applies to the pricing and invoicing of goods transfer between two enterprise units or between two entities.

If you want BaanERP to generate invoices for goods transfer within the same logistic company and/or you want to specify a commercial price for the goods or a surcharge percentage added to the valuation price, you must define a goods transfer relationship between the entities.

**Group company**

A financial group company is a financial company to which a number of other financial companies are linked. A financial group company is used to:

- Process the corporate and administrative accounting
- Accumulate the data from the group's financial companies for consolidated financial reporting.
- Perform central cash management processes such as payments and direct debit.

**Home currency**

One of the base currencies used by this company, in which all amounts are expressed. All the amounts in transaction currencies are converted to the home currency or currencies.

In a multicurrency system you can use two or three home currencies. One of these must be the same as the reference currency. The three home currencies that you can define for a company are:

- The company's local currency.
- Reporting currency 1.
- Reporting currency 2.

**Independent multicurrency system**

A currency system in which all financial companies and logistic companies that are related to each other in the enterprise structure model use the same two or three home currencies. All transactions are registered in all the home currencies.

Currency rates are defined between the transaction currencies and all home currencies. Transaction amounts are converted directly from the transaction currency into the home currencies.

**Intercompany settlements**

The automatic posting of sales transactions and purchase transactions between logistic companies to a settlement account. Each company must be defined as an affiliated-company business partner in the other company and it must be indicated that intercompany settlements can be performed for such a business partner.

**Intercompany transaction**

The transactions created between separate financial companies which belong to the same financial group.

**Internal business partner**

Business partners that are linked to enterprise units of one logistic company. You must define all the business partner roles for an internal business partner.

**Key entity**

The representation of an entity in the Enterprise Modeling Management module. For example, if you define a warehouse in Logistic Tables and specify the warehouse's name or description, its address, and its type, the warehouse is an entity. If you then link the warehouse to an enterprise unit in the Enterprise Modeling Management module, the warehouse is linked to a financial company and is called a key entity.

Every order must contain a reference to a entity to determine the financial company to which the financial transaction must be posted.

**Logistic company**

A Baan company used for logistic transactions, such as the production and transportation of goods. All the logistic data concerning the transactions is stored in the company's database.

A logistic company can consist of enterprise units that are linked to different financial companies.

**Mirror**

To mirror data is to duplicate data to more than one device, usually two hard disks, in order to protect the system against loss of data in the event of device failure.

**Multisite structure**

The integration of multiple sites in one holding structure. A site is a group of company processes that is independent to a certain degree of the other company processes.

**Multicompany structure**

A BaanERP environment that consists of multiple logistic and financial companies.

**Multicurrency systems**

Functionality that enables a BaanERP company to do its accounting in more than one currency. Amounts are computed and registered in up to three currencies.

**Physical company**

The place where a certain set of tables is physically stored. In a physical company, each table is defined once or it is not defined.

**Reference currency**

A company's base currency for all calculations with currencies. The reference currency is the common base currency of the companies in a multisite structure.

**Self-billing**

The automatic creation, matching, and approval of an invoice during receipt of goods by an agreement between business partners. The sold-to business partner pays for the goods without having received an invoice.

**Single currency system**

A currency system in which a company uses only one home currency. This home currency is also the reference currency.

**Tax number**

A number used for fiscal purposes and which identifies a legal person or business. The tax authorities assign the tax numbers to the registered businesses. Your business partners must provide you with their tax number. Business partners without a tax number are considered to be private persons.

**Time zone**

A geographical region within which the same standard time is used.

**Triangular invoicing**

The generation of internal financial settlements if goods and the invoice for the goods are sent by or received by different entities. The entities can be departments, warehouses, and internal or external business partners. BaanERP automatically generates the internal invoices or the settlement between the entities in the financial companies that are involved.

**Virtual machine**

A separate program that shields an application from the operating system, user-interface driver, and the database driver to make the application platform-independent. Synonym: VM

**UTC**

The acronym for Universal Time Coordinated, the time system that is similar to Greenwich Mean Time (GMT). The UTC's reference point is Greenwich, England located at 0° longitude, the imaginary north-south line also known as the prime meridian. When it is noon at Greenwich, it is 12:00:00 UTC.

**Warehouse**

A place for storing goods. For each warehouse, you can enter address data and data relating to its type.



# Index

---

## **A**

Accounting office · 5-3  
affiliated-company business partner · 5-1, 9-8, 10-4  
aggregate project data · 11-2  
aggregation  
    planning data · 8-3  
audit based exchange · 14-9  
available to promise, in multisite · 10-3

---

## **B**

bilateral invoicing · 6-4  
bill of enterprise · 10-3  
business partner · 5-1  
    affiliated-company · 5-1  
    external · 5-1  
    internal · 5-1  
business partner department · 10-9

---

## **C**

calendars  
    sharing · 4-11  
central production planning · 8-3  
central purchase contract · 10-6  
central purchasing · 10-7  
central purchasing scenarios · 10-5  
central supply-chain planning · 8-2  
change order control · 9-2  
cluster · 4-4, 8-2  
company · 2-1

database · 2-1  
financial · 2-3  
financial group · 2-5  
logistic · 2-3  
types · 2-3  
corporate accounting · 6-1  
cost price · 9-2  
cost-price currency · 9-2  
credit checking · 10-10  
credit limit · 5-5  
currency  
    of project · 11-1  
currency exchange rate · 3-2  
currency rates · 3-2  
    dependent currency system · 3-6  
    independent multicurrency system · 3-9  
    single currency system · 3-5  
    types · 3-2  
currency system · 3-1, 3-3

---

## **D**

data integrity · 14-3, 14-5  
data ownership · 14-4  
data replication · 14-8  
data sharing · 14-1  
database server · 15-3  
dependent demand · 8-2  
dependent multicurrency system · 3-5  
    currency rates · 3-6  
dynamic data · 2-2

---

**E**

EDI · 15-6  
    internal · 10-4  
EDM · 9-3  
Electronic Data Interchange · 15-6  
EMM · 4-1  
engineering data management · 9-2  
Enterprise Modeling Management · 4-1  
Enterprise Planning · 8-1  
enterprise unit · 1-3, 4-3  
    in Project · 11-1  
    in Service · 12-2  
Exchange · 10-9, 14-9  
exchange gain and loss calculation · 3-9  
external business partner · 5-1

---

**F**

Finance · 6-1  
financial company · 2-3  
    time zone · 4-9  
financial group company · 2-5, 6-1  
full exchange · 14-9

---

**G**

general item data · 9-1  
goods transfer relationship · 4-5  
    parameters · 4-8  
group company · 2-5, 6-1

---

**H**

home currency · 3-1

---

**I**

independent multicurrency system · 3-8  
    currency rates · 3-9

integrity  
    of shared data · 14-5  
    of transaction data · 14-5  
intercompany transactions · 6-1  
intergroup transactions · 6-2  
internal business partner · 4-7, 5-1, 9-8  
internal currency exchange rates · 3-2  
internal EDI · 10-4  
intra-EU transactions · 7-2  
inventory check · 10-2  
invoice balances · 5-6  
Invoice-from business partner data · 5-2  
invoices · 4-5, 4-8, 5-2  
    triangular invoicing · 6-3  
Invoice-to business partner data · 5-2  
item cost price · 9-2

---

**L**

LAN · 15-1  
Local Area Network · 15-1  
local currency · 3-1  
logical table linking · 14-7  
logistic company · 2-3  
logistic currency · 3-2

---

**M**

Manufacturing · 9-1  
master data · 2-2  
multicompany structures · 2-1, 2-6  
multilogistic/multifinance · 2-9  
multilogistic/single finance · 2-9  
multisite ATP · 10-3  
multisite processes, overview · 1-5  
multisite tax registration · 7-1

---

**N**

networks · 15-1

---

## *O*

Object Data Management · 9-4  
ODM · 9-4  
OPS · 10-3  
order balances · 5-6  
Order Management · 10-1  
Order Promising · 10-3  
ownership  
    of shared data · 14-4

---

## *P*

Pay-by business partner data · 5-2  
Pay-to business partner data · 5-2  
planning data aggregation · 8-3  
pricing control · 10-10  
production in multisite · 9-6  
production planning  
    centralized · 8-3  
    decentralized · 8-4  
Production scheduling · 9-5  
Project · 11-1  
project currency · 11-1  
purchase office · 10-1  
purchase orders · 10-5

---

## *R*

reference currency · 3-2  
referenced data, sharing · 14-2  
relationship  
    parameters · 4-8  
replication, of shared data · 14-8  
reporting currency · 3-1  
revisions of items · 9-3  
routing · 9-1, 9-4

---

## *S*

sales office · 10-1  
sales order delivery · 10-4  
sales orders · 10-2  
server clusters · 15-1  
server configurations · 15-1  
Service · 12-1  
sharing data · 14-1  
Shop Floor Control · 9-5  
single currency system · 3-3  
    currency rates · 3-5  
single logistic/multifinance · 2-8  
single logistic/single finance · 2-7  
single point of failure · 15-5  
structures, multicompany · 2-6  
subcontracting · 9-5, 9-8  
supply-chain planning  
    centralized · 8-2  
    decentralized · 8-2  
    multisite · 8-1  
surcharges · 4-5

---

## *T*

table sharing · 14-7  
tax number · 7-3  
tax registration · 7-1  
    ledger accounts for · 7-1  
time zone · 4-9  
    of a financial company · 4-9  
    of addresses · 4-10  
transaction currency · 3-2  
transaction data · 2-2  
transaction-data integrity · 14-5  
triangular invoicing · 6-3, 10-4

---

## *U*

UTC time · 4-9

---

**V**

value-added tax · 7-2  
VAT  
    in the European Union (EU) · 7-2  
    on Project transactions · 7-3  
    on Service transactions · 7-3  
VAT number · 7-3  
vendor rating · 10-9

---

**W**

WAN · 15-1  
Warehousing · 13-1  
Wide Area Network · 15-1  
WIP transfers · 9-7  
work center · 9-6