

Product Catalog Overview

MetraNet Version 3.0



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Introduction

The purpose of this document is to describe the MetraNet™ Product Catalog, which is contained in versions 2.0 and newer of the MetraNet.

The power of the Product Catalog is the flexibility with which new bundles of services (Product Offerings) may be created to reflect a variety of business models. To optimize revenue, service providers are increasingly looking to create tailored Product Offerings for specific market segments at specific times.

The document presents an overview of most of the concepts and terms associated with the Product Catalog, using a hypothetical business case for a fictional company, SuperMP3.com. The document will describe the business problem and then show how the MetraTech Product Catalog can be used to deliver a working solution.



Note

This document describes a basic example. It by no means represents everything you can do using the Product Catalog. This feature is very flexible and powerful, and this document is intended only to introduce you to its basic functionality.

Basic Concepts

The top of the conceptual pyramid is the Product Offering, which is simply a set of services to which customers may subscribe and for which they will be billed. The Product Catalog makes use of a number of basic building blocks, which must be understood before proceeding to subsequent sections. These building blocks include the following:

- Charges. There are three basic types of charges:
 - Usage Based (can be aggregate-rated or not)
 - Recurring
 - Non-recurring
- Discounts. MetraNet offers a very versatile way of working with discounts. You can work define and use discounts in any of the following ways:
 - proportional vs. fixed distributions
 - flat vs. percentage-based
 - qualified vs. unconditional
- Price Lists
- Rate Schedules
- Product Offerings



Note

This document discusses the default MetraTech names for basic concepts. You can customize these within the Graphic User Interfaces of the applications, as well as within the online help, without having to write any code.

For example, although MetraTech uses the term *product offering*, you could change this to be *Our Deals* throughout MetraNet if you'd like.

Offers

Let's assume you're the CEO of a new company, SuperMP3.com, and you're entering the music download business.

You've got a basic idea of the kinds of items you'd like to offer your customers, such as the following:

- Downloading of copyrighted music in MP3 and WAV format (where customers are charged based on how many megabytes (MB) of data and/or how many songs they download).
- Allowing your customers to swap non-copyrighted music amongst themselves (with your company taking a small fee for these transactions).
- Offering "Virtual Concerts," where your customers can log onto your site and, for a fee, see or hear a concert through Windows Media Player or some other streaming media application.

You also know you'd like to charge customers a sign-up fee and a monthly access fee.

Based on these ideas, you've come up with two ways to package these items into plans that you can sell to customers:

- a Trial Membership
- a Deluxe Membership

Trial Membership

The Trial Membership includes the following:

- A \$3.00 monthly membership charge, waived for the first three months.
- MusicSwap, where members can exchange non-copyrighted music files. For this service, you charge 10 cents per file downloaded.
- MusicSource, where members can download copyrighted music files. For this service, you charge 15 cents per MB for the first 300 downloaded during the month, then 10 cents per MB for everything over 300.
- VirtualConcert, where members view concerts you offer through their computer. For this service, you charge a flat rate of \$6 per concert.

Deluxe Membership

The Deluxe Membership includes the following:

- A signup fee of \$1.95.
- A \$5.00 monthly membership charge.
- MusicSwap, where members can exchange non-copyrighted music files. You offer this service to Deluxe members for no charge.
- MusicSource, where members can download copyrighted music files. For this service, you charge 5 cents per MB for the first 1,000 downloaded during the month, free for everything over 1,000.

- VirtualConcert, where members view concerts you offer through their computer. For this service, you charge a flat rate of \$6 per concert.
- Also, you want to offer your Deluxe members a discount based on viewing Virtual Concerts: if Deluxe members view 3 or more Virtual Concerts in a month, they get a \$7 discount on their total bill for that month.

Comparison of Offers

The following table shows how the two Product Offerings (Plans) compare.

Plan	Signup Fee	Monthly Fee	Music Swap	Music Source	Virtual Concert
Trial	Free	\$3 (after 3 months)	10¢ per file	<=300, 15¢ per Mb > 300, 10¢ per Mb	\$6 per concert
Deluxe	\$1.95	\$5	Free	<=1,000, 5¢ per Mb > 1,000, free	\$6 per concert \$7 discount for 3 or more

Let's map these columns to the type of building blocks they correspond to:

Signup fee:	Non-recurring charge
Monthly fee:	Recurring charge
Music Swap service:	Usage charge
Music Source service:	Aggregate rated Usage charge
Virtual Concert service:	Usage charge
Virtual Concert discount:	Discount
Trial plan:	Product Offering
Deluxe plan:	Product Offering

Product Terminology

This chapter describes all the “visible” concepts that correspond to the services and packages that you will be selling to your customers.

Priceable Items, Discounts, and Product Offerings

Let’s look at each item in the Trial Membership, and describe the terms MetraTech uses to describe these items.

- A monthly membership charge.
- MusicSwap, where members can exchange non-copyrighted music files.
- MusicSource, where members can download copyrighted music files.
- VirtualConcert, where members view concerts you offer through their computer.

These items are the basic services that you want to charge for. We call these *priceable items*:

A **priceable item** is anything that can be rated and charged by the product catalog. There are three types of priceable items: non-recurring charges, recurring charges, and usage charges.

Another basic building block in the Product Catalog is a *discount*:

A **discount** is a line item on a bill that reduces the total amount of a subscriber’s bill. Subscribers qualify for discounts based on information about their account and their usage.

An example of a discount was the following item from the Deluxe Membership:

- If Deluxe members view 3 or more Virtual Concerts in a month, they get a \$7 discount on their total bill for that month.

When you group these items together into a package that you want to sell to customers, we refer to this as a *product offering*:

A **product offering** is a collection of priceable items and discounts that your customers can subscribe to.

So, your Trial and Deluxe Memberships are both product offerings.

Recurring Charges, Non-Recurring Charges, and Usage Charges

There are three kinds of priceable items in the Product Catalog. Let’s take a look at the priceable items from the Deluxe Membership.

Non-recurring Charges

An activation charge of \$1.95 (you could also call this a signup fee; the Product Catalog feature is very flexible, and allows you to name items however you wish).

This is treated as a *non-recurring charge* in the MetraTech Platform:

A **non-recurring charge** is a one-time charge, applied either when subscribing or unsubscribing to a product offering.

Recurring Charges

A \$5.00 monthly membership charge.

This is treated as a *recurring charge* in the MetraTech Platform:

A **recurring charge** is a charge that occurs on a recurring cycle, such as weekly, monthly, or bi-weekly. You can set up recurring charges to be charged either in advance or in arrears.

Usage Charges

MusicSwap, where members can exchange non-copyrighted music files. You offer this service to Deluxe members for no charge.

MusicSource, where members can download copyrighted music files. For this service, you charge 5 cents per megabyte for the first 1,000 downloaded during the month, free for everything over 1,000 megabytes.

VirtualConcert, where members view concerts you offer through their computer. For this service, you charge a flat rate of \$6 per concert.

These are all treated as *usage charges*:

A **usage charge** is a charge tied to a particular transaction. For example, each time a customer downloads a file, a usage charge line item is written to the customer's bill.

Usage charges can be broken down into two types:

- Flat-rated: usage charged at a flat rate. For example, customers pay \$6 for every Virtual Concert.
- Aggregate-rated: aggregate rating refers to the ability to set different rates corresponding to different levels of usage. For example, the MusicSource priceable item sets rates of \$0.15 and \$0.10 per megabyte of music downloaded (for the Trial Membership).

That's it for the concepts that correspond to the services and packages that you will be selling to your customers. The next chapter describes concepts that are internal to Product Catalog, and are never seen by your customers.

Rates

The concept of *rates* is a fairly complex one in the Product Catalog. This chapter describes concepts that deal with rates.

Priceable Item Type

We've already discussed priceable items such as sign-up fees, MusicSwap fees, and VirtualConcert discounts. In the Product Catalog, priceable items are derived from *priceable item types*:

A **priceable item type** contains the general algorithm for rating. It has a service definition and processing software associated with it. Several priceable item types come predefined with the system; Systems Integration Developers can define new ones in the MetraTech Platform Manager application (MPM).

For example, MetraTech ships a Flat Rate Recurring Charge Priceable Item Type. Its rating algorithm simply says to charge X each period Y. The values for X and Y are stored in a *parameter table*:

A **parameter table** is where the rates or rating parameters of a priceable item, expressed as rules with conditions and actions, are stored.

So, for example, we said you'd like to set up a membership charge for the Deluxe offer. You could set up a Recurring Charge Priceable Item called **Monthly Deluxe Membership Charge**, and set X to \$5.00 and Y to *Monthly*. These values are stored in a parameter table.

Let's take a high-level look at a sample parameter table:

MusicSource	
\$0.15 up to 300 MB	Rates for the <i>Trial</i> Membership
\$0.10 over 300 MB	
\$0.05 up to 1000 MB	Rates for the <i>Deluxe</i> Membership
\$0.00 over 1000 MB	
\$0.20 up to 100 MB	Rates for another offer (not described)
\$0.15 up to 200 MB	
\$0.10 over 200 MB	

Figure 1 MusicSource Parameter Table

Figure 1 shows the information a parameter table for the MusicSource priceable item could contain. It contains rating information for several different product offerings.

You may also come across the term *discount table*:

A **discount table** is a common name for a parameter table that stores rules specifically used for discount calculations. For example, the Deluxe Membership includes a discount of \$7 off the total bill if a customer orders 3 or more Virtual Concerts in a month.

When you set up a priceable item, you typically associate a rate or series of rates with that item. For example, we had the MusicSource priceable item in the Trial Membership:

15 cents per megabyte for the first 300 megabytes downloaded in the month, and 10 cents per megabyte for anything over 300 megabytes.

This group of rates is called a *rate schedule*:

A **rate schedule** is the collection of rules within a parameter table that belong to a single price list.

Let's take another look at the parameter table for MusicSource:

MusicSource	
\$0.15 up to 300 MB	} Rate schedule (<i>Trial</i>)
\$0.10 over 300 MB	
\$0.05 up to 1000 MB	} Rate schedule (<i>Deluxe</i>)
\$0.00 over 1000 MB	
\$0.20 up to 100 MB	} Rate schedule (other)
\$0.15 up to 200 MB	
\$0.10 over 200 MB	

Figure 2 Rate Schedules

Figure 2 shows that the parameter table for the MusicSource contains three rate schedules.

Price Lists

You can also set levels of rates. In our example, the Trial Membership rates for MusicSource are higher than the Deluxe Membership rates:

Trial Members	Deluxe Members
0 – 300 Megabytes: \$0.15	0 – 1,000 Megabytes: \$0.05
300 or greater: \$0.10	1,000 or greater: \$0.00 (free)

We've defined two different levels of rates for the MusicSource priceable item. For each priceable item we've discussed, we've done the same thing; defined a "Trial" rate schedule and a "Deluxe" rate schedule.

If you group all the Trial rates together, this is the Trial *price list*:

A **price list** is the collection of rates that apply to a particular rate level. For example, you could separate your customers into three levels: Platinum, Gold, and Silver. Then you set up three levels of rates for each priceable item. You've defined three price lists. A price list has a name, description, and currency associated with it.



Note A price list does not need to have rates for each priceable item in the system; only the ones that are part of the product offering associated with that price list.

For example, the Deluxe Membership contains a signup priceable item (\$1.95), but the Trial Membership doesn't contain this priceable item. Therefore, the Trial Membership price list does not set a rate for the signup fee priceable item.

The following diagram shows how parameter tables, rate schedules and price lists relate to each other.

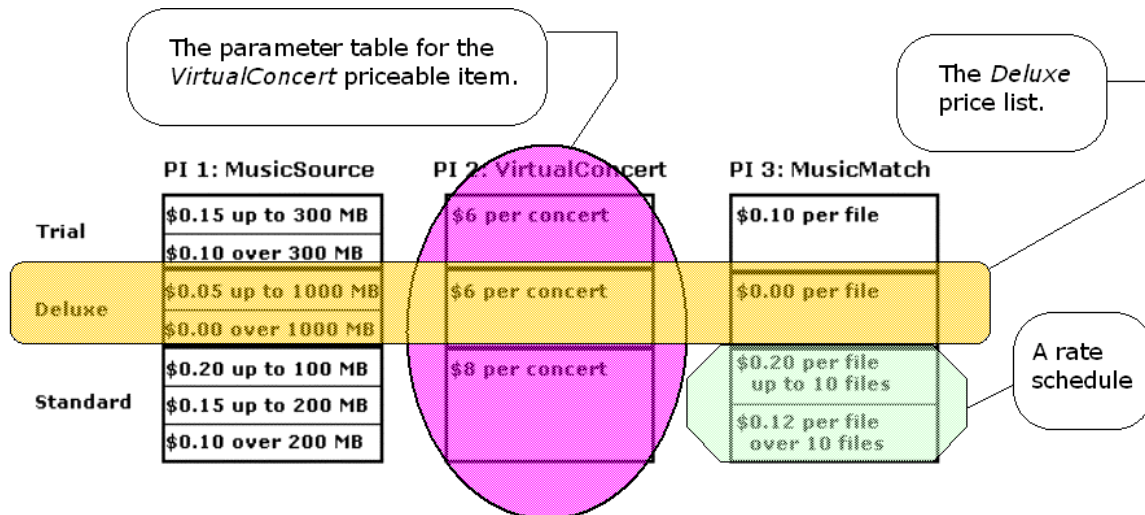


Figure 3 Parameter Tables and Price Lists



Note Figure 3 does not contain all the priceable items that SuperMP3.com supports in the Trial and Deluxe Memberships. Also, it has rates for an offering we have not discussed: the *Standard Membership*.

Aggregate Rating and Counters

Aggregate rating refers to the ability to set different rates corresponding to different levels of usage. For example, the MusicSource priceable item sets rates of \$0.15 and \$0.10 per megabyte of music downloaded during a month. The rate customers pay depends on how many megabytes they've downloaded. Therefore, the MusicSource item is called an *aggregate rated priceable item*.



Note Only usage charges can be aggregate rated: recurring and non-recurring charges cannot be.

In order for the Product Catalog to determine how many megabytes of music a customer has downloaded (and then charge the proper rate), the system uses *countables*:

Countables are those priceable item properties that should be counted to determine if a subscriber qualifies for a discount or aggregate rate and for how much.

The value of a countable is a *counter*:

A **counter** is the total of those attributes that are used to qualify for a discount or aggregate rate.

So, for example, the number of megabytes (of music files) a customer downloads during the month is the *countable*, and the value of that property is the *counter*. Therefore, the value of this particular counter goes up during the customer's billing cycle. The following table illustrates this example.

Date	Counter	Countable
July 5	75 megabytes	Number of megabytes of music a customer downloads in a month
July 27	415 megabytes	

This table assumes the customer's bill runs from the first of the month through the last day of the month. It shows that on the fifth day of the cycle, the counter is 75—the customer has downloaded 75 MB of music so far this month. And on the 27th, it is 415 MB.



Note

A counter has a period of time associated with it. For example, the counter in the table above is a monthly counter; it is reset to 0 for each customer every month.

Billing Cycles and Aggregation Periods

Let's define two terms that we've mentioned throughout this document.

An **aggregation period** is the period of time over which usage is summarized (or counted) for the purpose of aggregate rating and discounting.



Note

Aggregation periods are associated with priceable items (aggregate rated priceable items) and discounts.

A **billing cycle** is the period of time over which a customer is billed.



Note

Billing cycles are associated with individual subscribers.

So far, our examples have described monthly cycles for the billing and rating cycles. Moreover, in our examples, these two were identical; they both ran from the first to the last of the month. That is, we've described the following scenario:

	Billing Cycle (for a subscriber)	Aggregate Period (for an aggregate rated priceable item)
Type	Monthly	Monthly
Begins	First day of month	First day of month
Ends	Last day of month	Last day of month

This was done for simplicity, in order to introduce the product offerings, discounts, aggregate rating, and other concepts that we've discussed so far.

However, the MetraTech Platform and Product Catalog are far more powerful and flexible than we've seen. The billing cycle and aggregate cycle do not need to be the same. For example, you could set up the following scenario:

Subscriber	Billing Cycle	MusicDownload aggregation period	VirtualConcert discount
John	Monthly; runs from the 5 th through the 4 th . For example, one bill would list charges for March 5 th 2002 through April 4 th 2002.	Weekly; runs from Monday through Sunday	Monthly; runs from the first day of the month through the last day of the month.
Mary	Semi-monthly; billed on the 1 st and the 15 th . For example, one bill would list charges for March 15 th 2002 through March 31 st 2002.		So, for example, you would need to order 3 or more Virtual Concerts during a calendar month in order to qualify for the discount.

As you can see from this example, the number of ways you can set up your subscribers and your product offerings via the Product Catalog is virtually limitless.

Attaching Rates to Customers

So far, we've discussed Product Offerings and Rates. This chapter discusses how rates are attached to a particular customer, through a *subscription*:

A **subscription** is the mapping of a customer account to a Product Offering.

So, for example, if Jon Smith subscribes to the Trial Membership, this is a subscription.

Prior to version 2.0, therefore, the rates customers paid were based on the rates for each individual priceable item (known as *services* prior to v2.0).

In version 2.0 and newer, we still support this non-subscription based rating. However, we also support subscription-based rating.

Subscription and Non-subscription Based Rating

Non-subscription based rating is supported by attaching a price list directly to a customer's account. Effectively, you map the rates from an individual priceable item's parameter table directly to a customer's account.



Note

This was the only method of rating supported prior to version 2.0, which introduces the Product Catalog feature.

Subscription-based rating is supported by attaching a product offering's price list to a customer, by subscribing a customer to the product offering. When a person subscribes to the Trial Membership, this is an example of subscription-based rating.

Custom Rates

Let's say your company, SuperMP3.com, has a customer named Jon Smith. He subscribes to the Deluxe Membership, and is a very good customer. To reward him, you'd like to offer him special rates that are better than the ones associated with the Deluxe Offering.

You can do this via the concept of *custom rating*:

Custom rating is the ability to set rating and discount rules and parameters for a specific subscriber (or group of subscribers).

For example, you could offer Jon a rate of \$4 per VirtualConcert, as opposed to the \$6 standard rate that all other Deluxe subscribers pay.

Rate Resolution

Now that we've described the different types of rating, let's describe what happens when some usage data comes into the system, and show how it is rated.

How The System Resolves Rates

Let's suppose a usage record comes into the system. It can have a lot of information associated with it, such as the date and time of the usage. For our purposes for this example, the only information that it must have is the following:

- User Account: the account identifier; that is, who we are going to charge.
- Priceable Item: the name of the priceable item

The user is Jon Smith, and he has viewed a VirtualConcert.

To determine how much to charge, the system first checks to see if Jon has any custom rates for Virtual Concerts. He does; we find that Jon pays \$4 per VirtualConcert. That's it; this item has been rated.

Now let's assume that the usage is for Mary Jones. She doesn't have any custom rates for Virtual Concerts. The next step the system takes is to check to see if Mary is subscribed to any product offerings that contain the VirtualConcert priceable item. She does; Mary is a subscriber to the Deluxe Membership, and pays \$6 per VirtualConcert. The item has been rated.

If, however, Mary was not subscribed to any product offering that contained the VirtualConcert priceable item, there are two possible outcomes:

- If Mary's account has been set up so that she doesn't need to be subscribed to a product offering in order to view a VirtualConcert, then she would pay the amount that is tied directly to the priceable item's parameter table. For example it might be \$9.

PI 2: VirtualConcert	
Trial	\$6 per concert
Deluxe	\$6 per concert
Standard	\$8 per concert
"Default"	\$9 per concert

Figure 4 Default (non-subscription based) Account Rates

In this case, Mary's account has been tied to the non-subscription based rate schedule of the VirtualConcert priceable item.

- If the system has been set up to only use subscription-based rates, then the system will generate an error.

The system looks first for custom rates; then for subscription (product offering) rates; then for default account rates (if they've been set up). The following diagram illustrates this:

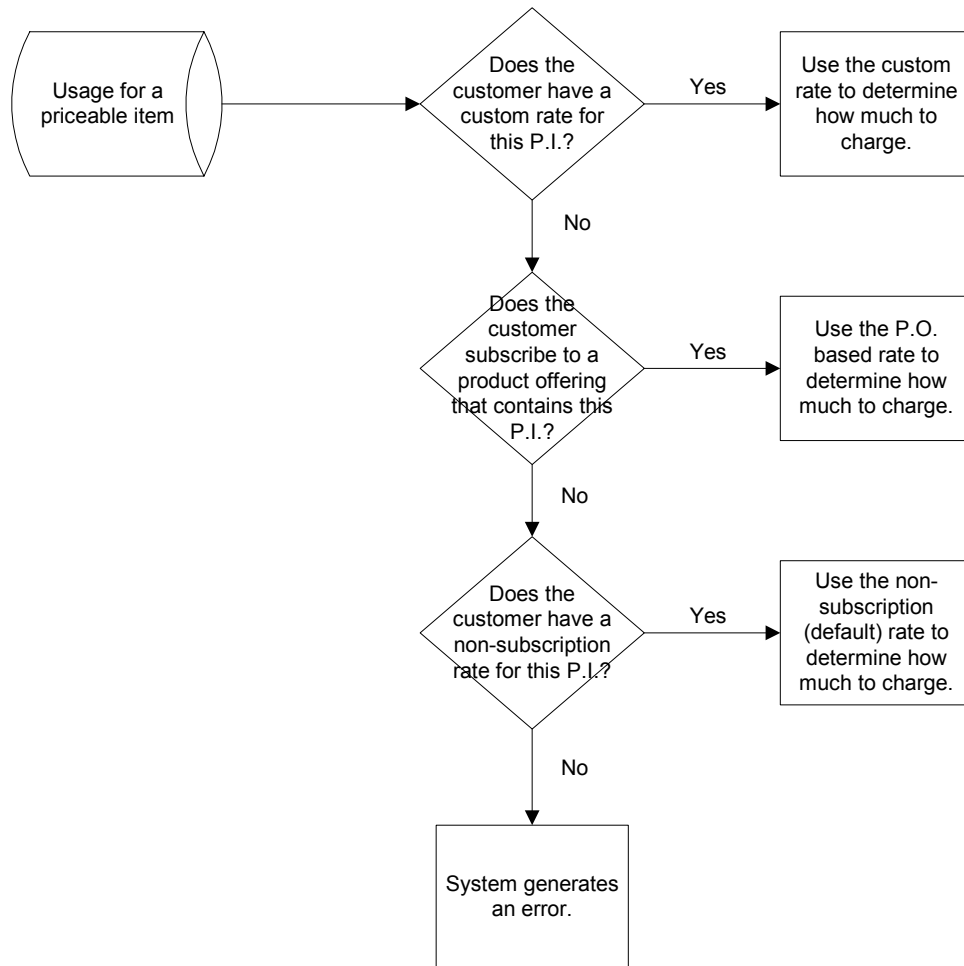


Figure 5 **System rate resolution flow chart**

Price List Chaining

Figure 5 illustrates the system's algorithm for determining rates. However, the system is even more flexible than this; you can configure the level of chaining according to your business rules.

To summarize, the method of determining rates we've described is called *price list chaining*:

Price list chaining is the ability of the system to attempt to match rules from different price lists.

Benefits of Price List Chaining

Price list chaining is a very powerful mechanism for attaching rates to usage. A few of the benefits are as follows:

- Reduces the amount of time needed to track and maintain the potentially large number of rates and price lists throughout the system.
- Makes it easy to put individual rates on subscribers and ensure that the system applies the correct rates for each account in the system.

How MetraTech Fits In

Using the MetraTech Platform, and specifically the Product Catalog, you can quickly and easily set up a billing solution for these offerings.

You use the MetraTech Product Catalog Feature to turn the Trial and Deluxe Memberships into an online billing solution. The applications you'd use are:

- **MetraBill Catalog Manager (MCM):** The Billing Manager or Product Administrator configures, maintains, and changes the packages and prices that you want to sell.
- **MetraCare:** Customer Service Representatives (CSRs) use this application to interface between the products you sell and the customers you sell them to. Additionally, Account Administrators use MetraCare to manage service providers' account hierarchies. See the *MetraNet Account Hierarchies Overview* for details.
- **MetraView:** Subscribers view their interactive bills and online bill reports using this application.
- **The Pipeline Server:** This is where the usage data generated by your customers is processed and stored to a database for reporting and viewing. The Pipeline Server runs behind the scenes: while you never directly interface with it, this is where much of the processing power of the MetraTech Platform takes place.
- **MetraTech Platform Manager (MPM):** If you need to add customized services or types (discounts, counters, etc.), system integration developers can do so using this application.

Glossary

The following concepts are integral for understanding the Product Catalog.

Aggregation Period—The period of time over which usage is summarized (or counted) for the purpose of aggregate rating.

Billing Cycle—The period of time over which a customer is billed.

Countables—Those priceable item properties that should be counted to determine if a subscriber qualifies for a discount or aggregate rate and for how much. When choosing a priceable item whose properties may become countables, users select either priceable items within the context of a product offering list (if it/they are in a product offering) or an entire product offering.

Counters—Aggregations of those attributes that are used to qualify for a discount or aggregate rate. For example, if you are counting fax usage, a counter is maintained for fax usage that is updated whenever a transaction is received.

Custom Rating—The ability to set rating and discount rules and parameters for a specific subscriber.

Discount Table—A common name for a parameter table that stores rules specifically used for discount calculations.

Non-recurring Charge—A one-time charge, typically a charge applied when subscribing to or unsubscribing from a product offering. For example, your cable company might charge an initial fee of \$20 to set up cable for your home.

Parameter Table—Where the rates or rating parameters of a priceable item, expressed as rules with conditions and actions, are stored.

Priceable Item—Represents a service provider's sellable units. They can be one of the following types: a recurring charge, a nonrecurring charge, or a usage charge.

Priceable Item Type—Contains the general algorithm for rating. It has a service definition and pipeline associated with it. Several priceable item types come predefined with the system; System Integrators can define new ones in the MetraBill Platform Manager application (MPM).

Price List—The collection of rates that apply to a particular rate level. For example, you could separate your customers into three levels: Platinum, Gold, and Silver. Then you set up three levels of rates for each priceable item. You've defined three price lists.

Price List Chaining—The ability of MetraNet to attempt to match rules from different price lists.

Product Offering—A collection of priceable items and discounts that service providers' customers can subscribe to.

Rate Schedule—The collection of rules within a parameter table that belong to a single price list.

Recurring Charge—A charge that is on a recurring cycle. For example, your cable company might charge \$25 per month for Basic Cable.

Service Provider—An organization or company that integrates MetraNet components with their systems. The Service Provider is the company providing services to client companies and using the MetraNet system to bill for those services, customize their product offerings, and offer their subscribers websites to view their online invoices and reports.

Subscriber—A user who signs up to receive a product or service from a MetraNet service provider.

Usage Charge—A charge tied to a particular transaction. For example, your cable company might charge you \$3.95 for viewing a pay-per-view movie.