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**by Rachel Blum
and Mark Chen**



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Moore Stephens Business Solutions and its U.K. parent, Moore Stephens Consulting, are leading providers of Microsoft business intelligence and performance management deployments for the insurance industry.

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Introduction

Welcome to the world of business performance management (BPM), and welcome to PerformancePoint Server 2007 (PPS). It's easier than you think to create and deploy a BPM solution for your organization. We are going to show you the fastest and easiest way to do the following:

- ✔ Create a framework to manage the planning and budgeting activities within your company
- ✔ Create reports, scorecards, and dashboards that communicate how your company is doing; enabling your users to get the information they need when they need it
- ✔ Analyze your data to get to the root of business issues

PerformancePoint Server: Bringing Performance Management to Your Organization

PPS is Microsoft's premier BPM development platform. It is composed of two primary components:

- ✔ **PPS Planning:** Enables developers to create a framework for budgeting and planning activities through the managed and coordinated distribution and consolidation of Excel data entry templates throughout the organization
- ✔ **PPS Monitoring and Analytics:** Enables developers to create and deploy reports, scorecards, and dashboards through a reporting portal that can be used by managers and analysts to track and analyze the progress of the business plan or company strategy

PPS is part of Microsoft's highly integratable business intelligence (BI) stack and falls between these two services:

- ✓ Analysis Services, SQL Server, and Excel Services as data sources
- ✓ SharePoint as the front-end user portal

PPS integrates the monitoring power of Business Scorecard Manager with the analytical prowess of ProClarity, adding in the missing link of a planning component to complete the BPM cycle.

Who Should Read This Book — and Why

Whether you're new to PerformancePoint Server or you need to find out how to expand the functionality of existing PPS instances, this book will serve you well. This book provides a detailed account of not only how to configure planning applications, scorecards, and reports but also why you should choose one option over another and how those choices should be driven by your business approach.

One goal of the book is to keep code to a minimum. In addition, the following points better describe this book's depth and intended audience:

- ✓ While we expect readers to be comfortable with technical concepts in general, we do not expect you to write complex MDX (multidimensional expression language) or PEL (PerformancePoint expression language) to get the job done. If you need additional assistance to fully leverage the capabilities of PPS through these means, we suggest reading other PPS guides that are intended for more advanced users. The goal here is to get you off the ground and running with the large breadth of functionality that is available to you in a packed application.
- ✓ This book is also not intended for system administrators from the perspective of installing and maintaining the PPS application. At times, we reference some administrative functionality that is necessary to make certain functions work properly, but the initial installation and configuration of PPS should be done by an IT administrator.

So who is this book really written for? It is intended for the key players in a BPM implementation: analysts, developers, and decision makers.

First and foremost, PerformancePoint is an analyst's application, because BPM is all about business analysis — planning your business and monitoring and analyzing your business performance.

Broadly defined, the analyst is an individual who sits between the business and the technology. At the heart of PPS is a business intelligence framework that is meant to use technology to provide analysis, monitoring, and planning to business users. More so than many other types of software, familiarity with the business concepts and needs is critical to the successful adoption of the technology.

How to Use This Book

Instead of reading the entire book before you start using PPS, note that the book has been separated into logical parts suited to particular needs. Few organizations will leverage all the pieces of PPS simultaneously. Rather, an organization will see a need that PPS can fill and will pursue that specific portion of the PPS application. Very likely, most readers will only ever read half of this book. The other half may simply not apply or be of interest. (Maybe farther down the line, your company will realize that it has additional tremendous capability it has already purchased and will choose to leverage that capability. Lucky you!)

If you want to focus on a particular topic, you can use the table of contents and index to access the right topic. Part II focuses entirely on the planning and budgeting aspect of PPS. Parts III and IV concentrate on the monitoring and analytics capabilities of PPS.

Throughout the book, we provide as many examples as possible. Working through the examples can assist the learning process, and you'll gain a sense of the way the applications are organized and function. Of course, to work through the examples, you need a running instance of PPS with the relevant components configured.

How This Book Is Organized

This book groups related PPS components in parts. We recommend reading Part I to gain an understanding of the capabilities of the entire suite of functions and then honing in to your specific area of interest in Parts II, III, and/or IV.

Part I: Planning and Reporting

In this part, you gain an understanding of who needs PPS and what it can do for all members of your organization. This includes getting familiar with the two sides of PPS (planning versus analytics) and familiarizing yourself with the general architecture of the application and what tools you'll need along the way.

Part II: Applying Your Goals

Part II walks you through the myriad steps involved in creating a fully working planning and budgeting framework.

Part III: Building Your Business Reports

Part III is a step-by-step guide to understanding the building blocks (elements) of PPS: finding out what needs to be built and knowing how to build it. Each element has its own dedicated chapter. Unlike the rest of this book, users should read the chapters in this part in order.

Part IV: Viewing and Analyzing Your Business Reports

Part IV teaches end users (managers, analysts, and decision makers) how to use a PPS dashboard to get the information they need.

Part V: The Part of Tens

In Part V, we provide our top-ten recommendations for PerformancePoint and related references as well as our top-ten tips, tricks, and potential pitfalls.

Icons Used in This Book

The icons in this book are meant to grab your attention. Here's what they mean:



This icon indicates that you need to be extra cautious, lest you become subject to a common pitfall or problem.



Tips provide insight into configuring, developing, or understanding something better regarding PPS.



This icon denotes a key point of understanding, or serves as a reminder for how to handle something particularly tricky.

What Next?

If you have any questions about this book or PerformancePoint Server, please visit our blog at <http://rachelandmarkbiblog.blogspot.com> and post your questions.

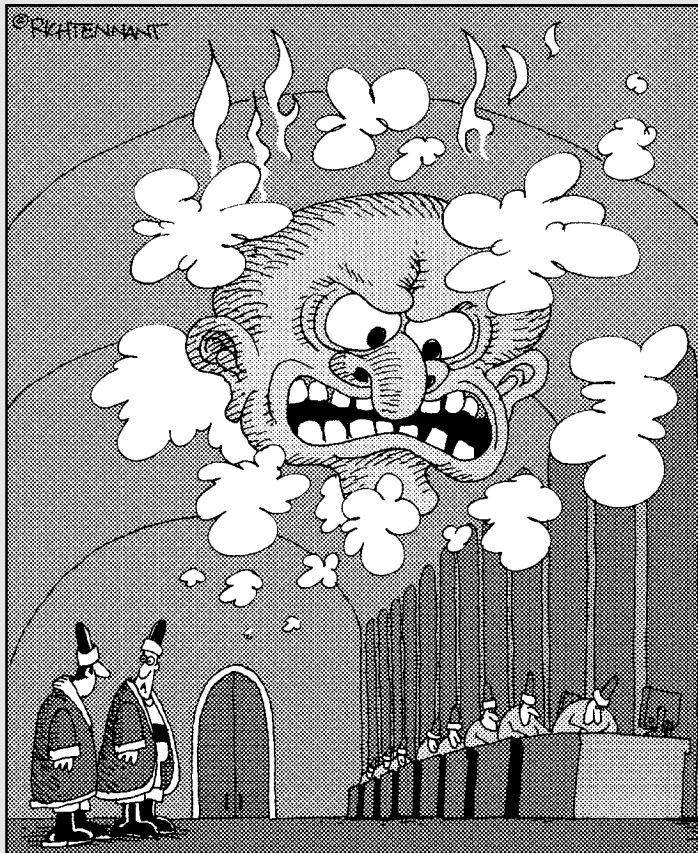
Let's get started!

Part I

Planning and Reporting

The 5th Wave

By Rich Tennant



“We’ve discussed implementing PerformancePoint in Oz, but it just doesn’t have the impact of the giant, floating, disembodied head of the Wizard keeping an eye on everything.”

In this part . . .

part I describes the two platforms that come with PerformancePoint: Planning and Monitoring & Analytics. You find out about the general architecture of the application and discover what tools you'll need to use along the way.

Chapter 1

Understanding PerformancePoint 2007

In This Chapter

- ▶ Finding out what PerformancePoint Server 2007 has to offer
 - ▶ Understanding the differences between PerformancePoint Planning and PerformancePoint Monitoring and Analytics
-

With the advent of new database technologies, the prospect of consolidating and managing enormous amounts of data is becoming easier. The concept of data warehousing puts relevant, accurate, and well-organized data in the hands of eager users. Furthermore, the means to access that data in an efficient and easy-to-use way is also growing by leaps and bounds.

As data storage and management mature, so does a user's desire to leverage that information to provide insight to the organization. PerformancePoint Server 2007 is designed for just that purpose. In today's fast-paced corporate environment, access to company performance metrics is becoming more than a want — it has become a critical need to stay abreast of developments within the marketplace and within the company itself.

Integrating Microsoft's Business Intelligence Stack

The PPS stack is composed of two primary domains that enable users and organizations to more easily attain a higher level of business intelligence:

- ✔ **PerformancePoint Planning:** The Planning component provides a centralized framework for consolidating budgeting and planning activity within an organization by funneling information from multiple users to a central data store and by providing the tools to manage the information-gathering process through workflow. No more calling and soliciting budget figures by phone and harassing executive planners to get numbers in. No more figuring out how to combine budget numbers from different spreadsheets and cutting and pasting items from one worksheet to another to produce a consolidated report. PPS Planning can take care of this for you.
- ✔ **PerformancePoint Monitoring and Analytics (M&A):** The Monitoring and Analytics engine enables the quick implementation of a business performance management solution, providing insight to your business performance data.

In the first release of PPS Monitoring and Analytics, Microsoft provides a report development and dashboard deployment solution. Even better, incorporated into this release is an integration of Business Scorecard Manager. So, in addition to various charts and grids, users can incorporate powerful scorecards into a dashboard interface, and connect scorecards to other dashboard reports.

Shipped with PPS Monitoring and Analytics is ProClarity version 6.3, which is the version of ProClarity Microsoft released after its purchase of this application.



Upon the next release of PPS M&A (version 2, due sometime in 2009), it is expected that ProClarity functionality will be integrated much more fully into the reporting and dashboard functionality. So for now, integrating ProClarity with PPS means importing ProClarity Analytics reports as components of your PPS dashboard. Reports created in Excel Web Services and Reporting Services are integrated in the same way.

Also, Microsoft hasn't completely integrated the Planning and the Monitoring and Analytics functions. That's not to say that you can't run analytics against the planning cubes. However, that ability to peer into the underlying planning data from dashboards and scorecards isn't as streamlined as one would think, given that both functions are contained in one package.



Although several points of integration have yet to occur, PerformancePoint Server can now provide an effective and easy solution for managing and disseminating powerful business planning and timely business performance management analytics.

What PerformancePoint Can Do for You

Your company probably has a lot of data — budget data, data from administrative systems, and data from external systems. You probably have a lot of reports and pages that took a whole bunch of people a lot of time to put together. This requires even more time for your users to sort through to find the information they need.

But what many organizations don't have is a way to efficiently and clearly deliver, monitor, and analyze a clear plan and corporate strategy tied to that data. This is where PerformancePoint triumphs — by allowing you to deploy and maintain the cycle of business performance planning, monitoring, and analysis.

Setting company goals with planning

PerformancePoint is designed to capture your company's planning data from across the organization, consolidate it into a meaningful structure, and provide an easy-to-understand means of viewing that information.

Rather than relying on the solicitation of budget figures by the usual means, leverage PPS's built-in workflow to distribute assignments to budget contributors, and then after the numbers are submitted, pass the budget figures to reviewers and approvers automatically. Reduce the time spent gathering and asking for budget figures, and spend more time analyzing and sharing results.

Wowing your users with reports

With PerformancePoint, you can deliver powerful, actionable, dynamic, and integrated business performance management reports, including charts and grids, to your users quickly and efficiently. And your users can view, analyze, format, and publish their reports when they need them, enabling them to make business decisions and take appropriate actions to reduce risks and increase profitability.

Helping your users make decisions

Business users need to know quickly which areas of the business are doing well and, more importantly, which are not. PerformancePoint gives them this power with key performance indicators, scorecards, and dashboards.

- ✔ **Make key business decisions from key performance indicators (KPIs).** KPIs provide a clear graphical representation of how a value is performing against its target.
- ✔ **Highlight the good, the bad, and the ugly with scorecards.** Scorecards bring together KPIs in a consolidated view and enable rollup to overall objectives with standardized scoring.
- ✔ **Manage your business at a glance with dashboards.** Dashboards provide users with a consolidated and integrated view of reports and scorecards that tell them how their business is performing. Dashboards also allow users to view and analyze trends over time and across organizational hierarchies. Users can leverage many business analysis techniques to dig deeper into the data to get the more detailed information they might need.

Imagining Your Workday with PerformancePoint

So how does PPS fit into your work life? How is this application going to make your job easier, better, and more efficient? Read on to find out.

Planners

Corporate planners tend to exist throughout all departments of a corporation. The critical process of planning and budgeting, then, spans the entire organization. Most analysts involved in the collection of planning figures spend an inordinate amount of time gathering the data rather than analyzing it.

With PerformancePoint Planning, you can do the following:

- ✔ You can forget about time spent on the phone tracking down budget figures across the organization. The planning components automatically notify contributors when it's time to enter their numbers.
- ✔ Budgeting contributors can enter their figures into standardized and custom-tailored Excel worksheets.
- ✔ After the numbers are submitted, the PPS workflow manages any review and approval processes automatically. You have no more lost e-mail, you don't wonder who has the next task, and you don't have to sort through conflicting versions of spreadsheets.
- ✔ All the data is held within a central data store so that the reporting and history of a plan or budget come from a single source.

Streamline, track, manage, and consolidate — all with one application.

Developers

If you are a typical IT developer, you are asked to create report after report for a large group of business users. They need to see the data in numerous ways. No problem. But on the umpteenth iteration of essentially the same report, you ask yourself the following questions:

- ✓ Is there a better, more efficient way to deliver business information to my users?
- ✓ How can I get my users to self-service — to create their own specified reports — even if they don't know a thing about SQL?

The following points provide solutions to these problems:

- ✓ Create a series of PerformancePoint dashboards that deliver 80 percent of what your users will use on a daily basis. You can start by taking that pile of report requests that are on your desk or that cumbersome financial report that you have to manually assemble every quarter.
- ✓ Expand the repertoire of reports beyond the tabular, and start showing users how PPS can provide better, more communicative, and more actionable data than they have seen. Interactive grids, charts, and scorecards highlight potential issues for analysts and decision makers while there is still time to take corrective action.

Executive management and decision makers

Selling executive management on an automated Business Performance Management (BPM) solution can be difficult. As so many executives can tell you, they already have a BPM solution. His name is Bob and he works down the hall. But as talented as Bob is, he cannot always deliver powerful and actionable reports in a timely fashion on the KPIs that impact your business. He can't always tell you what's good, what's bad, and what to keep your eye on. And if Bob can't tell you, you probably don't know.

PerformancePoint dashboards enable you view your KPI monitoring solution on at least a daily basis, tracking actuals to targets and identifying warnings before they become full-blown issues that put your profitability and success at risk.



Bob is a nice guy, but his time could be put to better use.

When you come into the office, grab your coffee and open your Executive Management Dashboard page. Here you can see an overview of how your business is performing. A couple of simple drop-down filters let you look at that information one division or one region at time, right online. Yellow and red graphics in your scorecard tell you that something is wrong. Don't want to find out how to navigate a PerformancePoint report to get more information? That's okay; that's what your analysts are for. But when you do come to understand the data that drives those warnings, you will be empowered like never before to make the most appropriate business decisions and take corrective action when it has the biggest impact — now.

Analysts

You are the heart and soul (and brains) of PerformancePoint. Here's why:

- ✔ You determine what dashboards to create and what reports and scorecards they contain.
- ✔ You establish the business rules that tell you and your decision makers when an issue needs to be addressed.
- ✔ You review your PerformancePoint dashboards, using their analytical capabilities to drill into the key drivers of business performance issues (and successes).
- ✔ You export your reports to presentations that your boss will get all the credit for (for now).

But that's okay. You are on the front lines of the business performance management revolution. Soldier on.

Chapter 2

Knowing What PPS Components You Need

In This Chapter

- ▶ Figuring out what applications and components you need to get started
 - ▶ Viewing the Planning and Monitoring and Analytics component architecture
-

Getting started can sometimes be the hardest part of implementing a new technology. It helps to have an idea of what needs to be installed and what components you will directly interact with. Of course, this can vary depending on whether you are planning or monitoring.

What You Need for Building a Plan

While the planning component consists of multiple parts, you will spend most of your time in Planning Business Modeler. (But you can expect to have your hand in every part of the planning component to fully build out a planning application.)

Given the breadth of functionality supported by PPS in the planning domain, you'll find a decent amount of complexity to the components.

Preparing your application infrastructure

Before launching into the meat of the Modeler tool, ensure that these pieces are in place:

- ✔ An installed and configured Planning Server
- ✔ Accessibility to Planning Administration Console
- ✔ Accessibility to data sources through the Planning Server

Most of this work should be completed by your system administrator. It involves a lot of installation and configuration, rather than designing work.

The Planning Server is a set of Microsoft Analysis Server cubes with possible connections to data sources (usually Microsoft SQL Server). The Planning Administration Console provides Web-based access to the configuration and administration of the Planning Server and the users entitled to access the Planning Server. To alter settings within Planning Administration Console, you'll need to be designated as a global administrator to perform most of the functions. However, some functionality may be granted to you as a data, user, or modeler administrator if you aren't assigned as a global administrator.

After your planning application is up and running, the budgeting and planning figures will be stored, tracked, and analyzed through the Analysis Services cubes on the Planning Server. You can then use the functionality of PerformancePoint Monitoring and Analytics to access that data for further insight and reporting.

Figure 2-1 provides a schematic for the components within the Planning component of PPS.

Within PPS Planning, data comes from two different angles:

- ✔ The Planning component provides a means to use corporate data structures to model the structure and organization of the business. That data is imported into a central data store (a Microsoft Analysis Services cube). The modeler uses that data to create a budgeting and planning framework through specialized Excel worksheets called form templates.
- ✔ The second set of data comes from the budget planners and business people. Using the form templates created by the modeler, the budget contributor enters his numbers into the forms and submits the forms back to the planning server.

The cube inherently understands how to combine and store the information for retention and reporting.

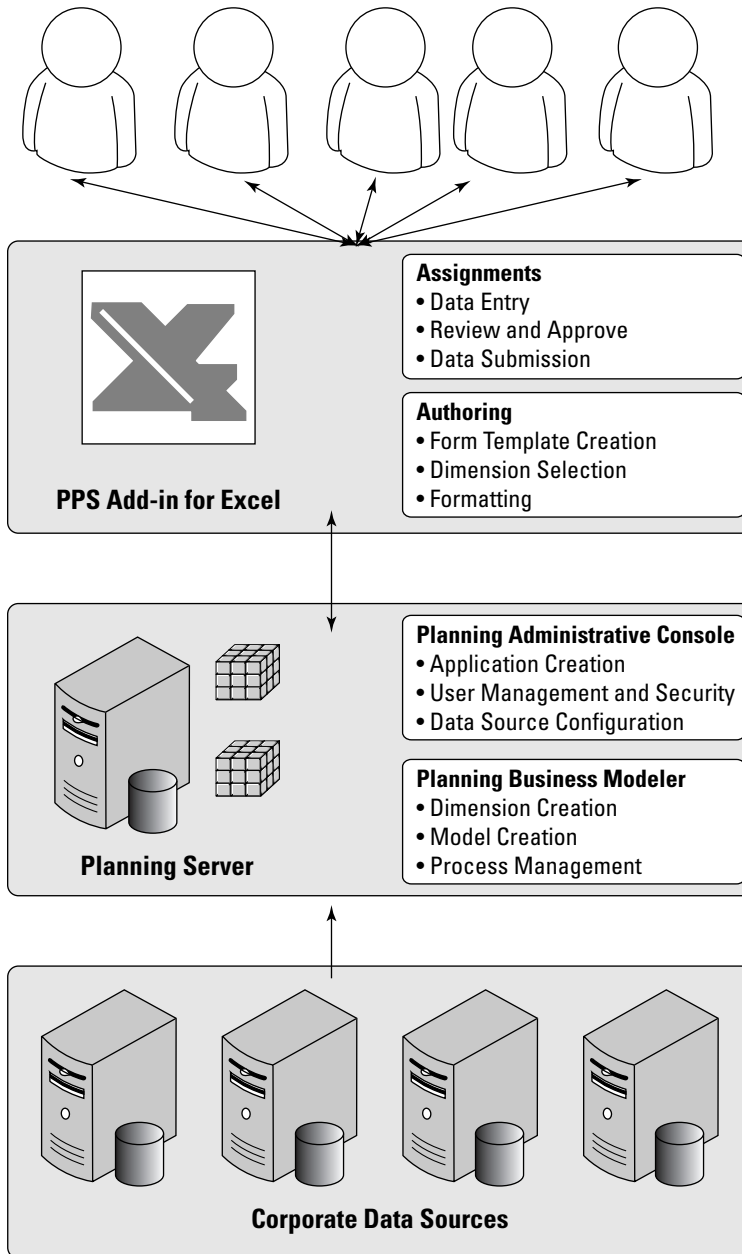


Figure 2-1:
The
Planning
architecture
stack.

Building your model with Business Modeler

Planning Business Modeler is the primary tool you will use when preparing to build a model. For Modeler to work properly, you'll need the following items:

- ✓ An instance of Planning Business Modeler on your machine
- ✓ Connectivity from Planning Business Modeler to the Planning Server
- ✓ A local copy of Excel (preferably 2007)
- ✓ The PerformancePoint Add-in for Excel for authoring form templates

If all the administrative components have been set up for you, you may only work within the world of Planning Business Modeler and Excel, but that's unlikely. Most likely, you'll need to tap the functionality of Planning Administrative Console at some point, whether to configure data sources, add new users, or perform a host of other tasks.

Planning Business Modeler is where you configure your models. You use data from external data sources to create dimensions. You mix and match dimensions to form models. And then you wrap those models with cycles, assignments, and process management to make the whole thing work like a well-oiled machine.

In the modeling phase, you'll also use the PerformancePoint Add-in for Excel to author templates for your users.

For more information on Planning Business Modeler, see Chapters 5 and 6.



Adding your data with Excel

Because Excel is the only mechanism for entering budgeting and planning data into PerformancePoint, each end user (including you) needs to have PerformancePoint Add-in for Excel installed. Users who don't have Excel cannot use your solution. The Add-in performs the following two primary functions:

- ✓ **Authoring:** Allows the Modeler to create form templates for everyone else to use. These form templates will eventually be distributed to the contributors for data entry.
- ✓ **Assignment:** Enables the contributors to see budgeting data entry tasks assigned to them; and to enter, review, and/or approve budget figures.

Adding data is accomplished through the assignment of cycles coupled with form templates. Users are notified via e-mail that forms are ready for their input. They have a certain amount of time to enter that data, and then the process management automatically distributes the results to the right folks for review and approval.



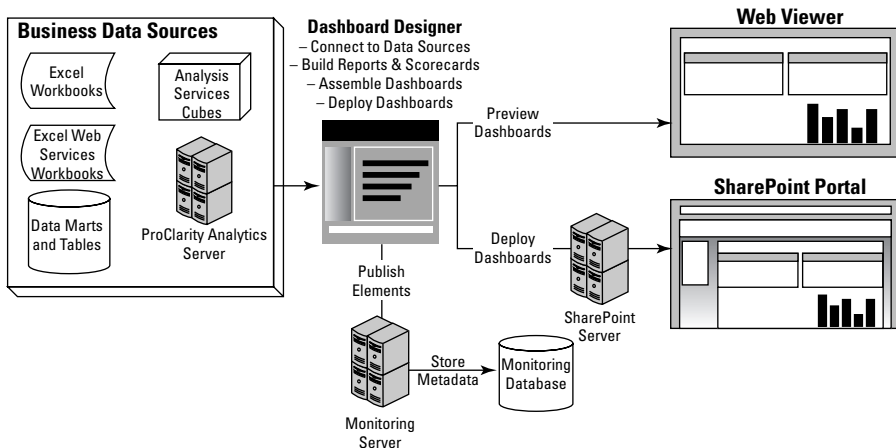
For more information on the PerformancePoint Add-in for Excel, see Chapter 7.

What You Need for Presenting and Analyzing Data

Many components for PerformancePoint Monitoring and Analytics exist behind the scenes, at least as far as you are concerned. You can find servers, databases, and services — oh my. But when someone else is done installing all of that, the following components are essential to being able to build and deploy your business performance dashboards, shown in Figure 2-2:

- ✓ Data sources
- ✓ Dashboard Designer
- ✓ Monitoring Server
- ✓ Dashboard Viewer
- ✓ Dashboard Viewer for SharePoint Services

Figure 2-2: Identifying the components you need for PPS Monitoring and Analytics.



Locating your business performance data

Business performance data is the first prerequisite for business performance management reporting. Business data exists in many formats, including the following:

- ✓ Analysis Services cubes
- ✓ Excel workbooks or Excel Web Services workbooks
- ✓ SQL Server data marts and tables

PerformancePoint even allows you to consolidate data of differing formats into one business performance solution.



Your first step is to identify where your business data is located so that you can connect to it. For more information on data sources, see Chapter 9.

Building reporting and analytics with Dashboard Designer

Dashboard Designer is the desktop application that you use to create all the pieces, or *elements*, that you need to assemble and ultimately deploy a business performance dashboard to your business users. Elements include the following:

- ✓ Data sources
- ✓ KPIs
- ✓ Scorecards
- ✓ Reports
- ✓ Dashboards



For more information about Dashboard Designer and elements, see Chapter 8.

Saving and sharing your reporting and analytics with Monitoring Server

Monitoring Server stores current and prior versions of all the elements that all your PPS developers create. You save your work to Monitoring Server by *publishing* your items from Dashboard Designer.



For more information on publishing and retrieving elements from your PPS Monitoring Server, see Chapter 8.

Viewing and testing dashboards with Dashboard Viewer



Dashboard Viewer is a Web site that allows you to preview and test your dashboards in a Web environment prior to deploying them to SharePoint.

For more information about previewing your dashboards, see Chapter 14.

Deploying dashboards to users with Dashboard Viewer for SharePoint Services

SharePoint Server is, among other things, a Web portal environment. It can be used to centralize the distribution of information from a variety of Web interfaces. SharePoint allows you to publish your PerformancePoint dashboards to your end users in a centralized, customizable, and interactive Web environment.

What's especially great about SharePoint is that it gives a more professional look and feel to your business performance reporting solution *and* it allows you to integrate into one seamless interface PerformancePoint dashboards with other Web-enabled applications that your company may use.



For more information about deploying your dashboards to SharePoint, see Chapter 14.

Making the Case with AdventureWorks

Throughout this book, you need to walk through examples to understand the intricacies of the development activities. For the most part, we would prefer to steer clear of having you manually create your own data for the exercises in the book. Instead, because all the components of PPS rely on Microsoft Analysis Services cubes, we use the AdventureWorks database included when your administrator installs Analysis Services.

AdventureWorks has some limitations, but it is available to users of PerformancePoint. Because AdventureWorks is generic enough for almost everyone to understand, it can provide a sufficient test bed for this book.

AdventureWorks supplies a wealth of commonly used concepts and data structures that you will probably find to be somewhat similar to your own business. What business doesn't sell a product of some sort, have employees, and have departments? The benefit of the AdventureWorks data is that it is well organized, full featured, and easy to understand. The availability of these common data elements is enough to justify using AdventureWorks.

Of course, while we use AdventureWorks as a foundation for the examples in this book, we fully expect you to apply the same concepts to your own data sources, whether now or in the future.

Chapter 3

Determining Your Goals by Planning the Plan

In This Chapter

- ▶ Getting chummy with budgeting and forecasting
 - ▶ Asking yourself the right questions
 - ▶ Streamlining the planning process
 - ▶ Getting ready to build your planning application
-

Although most of this book is about using the technology of PerformancePoint Server, taking a moment to think about the Planning module from a business context can provide a framework for a successful implementation. Later chapters spend plenty of time providing the how-to information for building applications and models. In this chapter, we show what you're getting into (implementing an integrated performance management solution), what you're building (a collaborative environment for monitoring and analyzing business operations), and how it can all work in the end (to drive better business outcomes).

This chapter also presents the nuts and bolts (dimensions, members, and member sets) that are the basic building blocks of a planning application. Understanding the meanings, differences, and interrelationships among these building blocks is critical in the tasks of both building a planning application from scratch and revising an existing application. Mastery of these concepts will likely be key to a meaningful, useful, adopted, and thus successful application.

Past getting to know dimensions and members is the process of translating a company's operations into a set of dimensions and members. This extension of understanding the relationship between your business and how it can be recast and described as dimensions and members is possibly the most critical part of the preparation process because all subsequent activities are centered around how these pieces can be structured, used, broken down, separated, and made to accurately depict the way the company actually runs. Without good translation, the plan cannot be useful to anyone in the company.

Basic Planning Concepts

Creating a company business plan can often be considered a harrowing and difficult task. Problems can arise during the planning process, in coordinating all efforts to gather and consolidate the data, in making the pieces and parts gel, and in ensuring that the end result actually makes sense and tells the right story. So before you can implement an effective planning process, you need a basic understanding of what planning does for your business.

Knowing what you're planning for

Planning is generally about a combination of budgeting and forecasting, which we describe as follows:

- ✓ *Budgeting* involves preparing for the almost-here-and-now by allocating and adjusting resources, shifting priorities, and seeking to accomplish near-term goals. Your budget may be influenced by what staff you have now, what you want to achieve in the next year, how much money you have to spend, how your company has performed to date, and a host of other factors. Budgets typically deal with using resources to accomplish near-term targets.
- ✓ *Forecasting*, on the other hand, involves a longer-term approach. Think of forecasting as a long-term “if-then” mind-set. By looking into and preparing for the future, your company attempts to forecast performance and ideal situations, while accounting for possible disruptions and obstacles along the way. Rather than ask “How do I spend my money in the next year to sell a thousand stereos,” you ask “If I were to sell a thousand stereos, what would my company financials look like?” Or, “If I want to achieve year-over-year growth of 15 percent, will increasing staff by 25 employees get me there?”



Consider the differences between budgeting and forecasting as you craft your plan. Good business plans address both the near- and long-term aspects of operating your business by focusing on the ways your company measures performance and rigorously including the factors that contribute to or determine that performance. And you can make sure that your planning involves both budgeting and forecasting by understanding the different processes your company undertakes when crafting both budgets and forecasts. Often, companies determine their forecasts in separate cycles compared to budgets. And thus, different factors play different roles during those periods. Capturing those differences can aid in crafting your planning application.

Knowing how your business operates

Different companies organize their performance metrics in completely different ways. How a company operates needs to be reflected in the plan. Thus, crafting a plan requires fully fleshing out the goals of the planning effort.

Here are some questions to consider when building your plan:

- ✔ Does your company measure performance by geographical region (for example, North America versus Europe versus Asia, or maybe Northeast versus Southwest)?
- ✔ How often does your company measure its results (for example, annually versus quarterly versus monthly versus daily)?
- ✔ What parts of the company are measured (for example, sales, operations, investments, projects)?
- ✔ What department or lines of businesses should be included in the plan (for example, audio equipment versus video equipment versus home appliances)?
- ✔ How can certain company goals translate into performance measures (for example, increase revenue by 20 percent through sales staff augmentation = hire six more salespeople in the Northeast and nine more in the Southwest)?

Each one of these questions shows you that certain concepts are used to *dimensionalize* the business, a process by which you break down the overall metrics within the business by distinct categories or time frames. Dimensions such as region (for example, North America versus Europe), time (for example, this year versus next year), and entity (for example, video equipment versus audio equipment) may be common to most companies, but the exact details of how these dimensions are structured and used are sure to be specific to each company.

Laying the foundation of dimensions that accurately reflect the company is paramount to building your plan.

Planning the plan from 30,000 feet

Wrapping your plan around the activities and organization of your company is the only way to ensure that your planning solution will be useful and used by your company. On the other hand, building dimensions or specifying

metrics that don't pertain to the business will just cause angst and confusion in the end. And that's why planning the plan is so important for success; the process goes something like this:

1. Dimensionalize your business operations.

Figure out all the ways to subdivide, classify, and define your business. Just because you can divide the company into dimensions (for example, region, time, and entity) doesn't mean that you've fully described how things are organized.



You can further break down dimensions into *hierarchies*. A dimension called employee subdivides to different kinds or levels of employees. You may have officers, directors, managers, associates, and so on as different types of employees.

2. Determine your business metrics.

Identify the numerical figures that are meaningful to your company. Some things you may want to consider are sales projections, revenue, shareholder value, staff head count, utilization rate, booked business, number of sales leads, or any other numerical figure that defines your business.



For planning purposes, the primary goal is to create a logical means of input (for the metrics) through forms that are broken down into the requisite parts (the dimensions).

3. Establish the relationship of the dimensions and the metrics defined in Steps 1 and 2.

Figuring out what dimensions are needed across what measures is how you start planning the plan. After you collect and flesh out these elements of your business, you can begin the process of compiling it all into a working model.

Getting a Handle on the Planning Process

Usually, companies use staff to gather planning and budget information from department heads by sending out e-mail, engaging in meetings, and making numerous phone calls across the company at periodic intervals throughout the year. Using these collections of numbers, analysts piece together and crunch numbers in spreadsheets and push out reports for review and revision, as depicted in Figure 3-1.

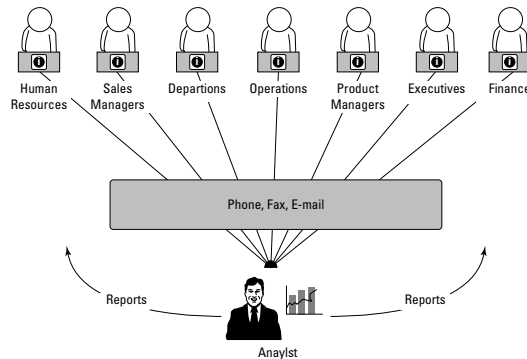


Figure 3-1:
The constantly looping budget process.

Most of the time, the resulting reports just aren't right the first time, and the process needs multiple iterations before someone at the top is satisfied. Often the process takes so long that when it's over, the information in the reports is already months old. Or the process needs to start again *immediately* to prepare for the next period's reporting. Surely, a better way must exist!

Let PerformancePoint simplify the planning process

PerformancePoint Server planning streamlines the planning process so that the task of gathering data from across the company can take place through a single system for all departments and groups. Imagine a data-gathering and -reporting process that goes like this:

1. **Everyone who supplies budget information receives an e-mail notifying him that his budget sheet is ready.**
2. **Each individual opens her form in Excel (custom-tailored with just the relevant parts) and enters and submits her numbers.**
3. **The managers look over the numbers, make adjustments, and finalize the budgets.**
4. **All the data is automatically consolidated, and reports are generated showing everyone's budgets in a variety of easily accessible and viewable reports, including custom calculations based on complex business rules.**

Throughout the process, security is layered at each step to ensure that the right users are accessing the right forms and editing only the data they should be entering. Also, PerformancePoint security measures ensure that the right levels of management can see the right breadth of data. For example, regional managers can see and enter budget numbers for their regions and no one else's regions. Additionally, national managers could be configured to not only see budget numbers entered by the regional managers, but they might also have the authority to edit and finalize the numbers. After plan numbers are entered into the system, business rules and calculations customized for the business can run to generate performance metrics or forecast figures.

Setting up the software's features to gather and consolidate your business data still takes some work to get it right. But through PerformancePoint Server planning, a single system (carefully crafted) can significantly reduce the amount of time and effort needed to solicit budget information across an organization.

Breaking down your business dimensions and metrics

The effort you make up front to identify accurate business dimensions and related metrics determines how well you set up and organize the pieces of your business model. Thoroughly fleshing out the elements of your business helps to ensure that the resulting PerformancePoint applications offer meaningful data. In other words, this effort determines how good your plan is going to be.

Many companies may divide their performance metrics by region. Regions may consist of multiple layers, eventually breaking down to the state, county, or territory level. Being able to create these structures in your dimensions is important in that your plan will be richer, more useful, and more accurate as an end product. Figure 3-2 shows an example of a well-defined region dimension.



One of the most important dimensions you will use is time. Budgets are about what you will do with your time for the next few periods, so the time dimension plays a central role in your PerformancePoint Server plan. The folks at Microsoft have already created a series of time member sets that you can choose from. Unless your company works on a lunar calendar, the time dimensions already come with everything you need.

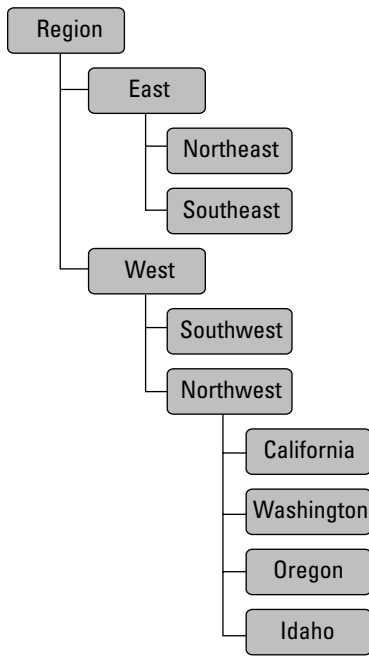


Figure 3-2:
An example
of a region
dimension.

While every dimension will probably be useful to every budget supplier in the company, not all the individuals will be interested in every part of a dimension. Thus, the head of sales in the Northwest isn't really interested in what's going on in Delaware. *Member sets manage dimensions by grouping chosen dimension elements together.* By defining member sets, you can decide to show only the lower half of a hierarchy to a user, only one state, the whole shebang, or any combination of members. So, you can tailor what each user can see and enter data for during the budgeting process.



Member sets are particularly useful for creating custom subtotals. For example, intricacies of a region dimension may call for calculating revenue totals for a Northeast region including all the states in that region. But, users from other departments may only want to see a portion of the Northeast region rather than the whole thing. By crafting different member sets, users can have access to the same underlying data, but organized in completely different ways.

Painting a picture from your data

The process of determining what you will be measuring is quite different from the process of creating dimensions. And getting these business elements to work together is what gives you information. Think of the task in terms of a report. If you were to ask business executives what kind of report they might want to see, you would expect to hear something like this: “Give me the sales projections budget by all states in the Northeast and by quarters for 2008.”

In this request, both region and time are dimensions that are used to subdivide the sales projection budget numbers. So to get the report that the executive wants to see, a user might enter sales projection figures for the Northeast region (broken down into states) for each of the quarters for 2008.



The business dimensions you define are not really numeric. For example, you can't add New York to Pennsylvania and get a meaningful result. You can't multiply these regions or take percentages of them. However, you can perform plenty of arithmetic computations on related metrics, such as the sales projection figures. You could add New York sales to Pennsylvania sales and get the aggregate figure.

Turning your Frankenstein monster into a lean, mean machine

After you've completed the process of defining the elements (dimensions and metrics) of your plan, the next step is to create your *business model*. Models can be complicated and full-featured, but for now, just think of models as a place where you link your dimensions (full of hierarchies and member sets) to your measures, wrap some business rules around them, secure them, determine how to exchange data, stage new incoming data, generate reports, distribute tasks to the contributors . . . Yikes! Here's where PerformancePoint Server planning helps you piece things together.

The wide variety of functionality offered by PerformancePoint planning means that you need to know quite a bit to build a proper plan. Unlike other kinds of software packages, you may not see anything like a finished product for a while. Pulling together all the pieces is not unlike putting together a Frankenstein monster. Each piece is needed to support the functionality of the other pieces and to build a complete package. Luckily, PerformancePoint planning provides the framework for putting all the pieces together through three nifty interfaces.

Table 3-1 shows the primary function for each interface.

Table 3-1 PerformancePoint Server Planning Interfaces	
<i>Interface</i>	<i>Functions</i>
Planning Server	<p>The technical “back end” that houses the databases with the resulting data</p> <p>Stores the business models</p> <p>Stores security for users of the system</p> <p>Points to places where you store forms and reports</p> <p>Points to data sources for your dimensions if they are located elsewhere</p> <p>Points to data destinations to push information to external systems</p> <p>Manages the proper flow of data entry and other processes</p>
Planning Business Modeler	<p>Designs dimensions and member sets</p> <p>Builds business models</p> <p>Creates business rules to incorporate assumptions and move data to other models</p> <p>Manages the process and flow of data entry to create budgeting cycles and ownership of data-entry tasks</p> <p>Creates jobs to update, synchronize, and maintain dimensions and measure data</p>
PerformancePoint Add-in for Excel	<p>Creates a matrix to support data entry for users</p> <p>Enables conditional formatting to highlight numbers that exceed user-defined thresholds</p> <p>Provides reports for users to view current values and projections</p> <p>Authors, revises, and finalizes budget data according to the process management set up by the Planning Business Modeler</p> <p>Establishes “what-if” scenarios to test budgeting assumptions</p>

In the next chapters, we guide you through the Planning Administrative Console, the Planning Business Modeler, and then the PerformancePoint Add-in for Excel.



We're assuming that you already have a model site available for you in the planning server, with administrative access to connect appropriately. If you don't, you'll need to make sure that the planning server, Business Planning Modeler, and PerformancePoint Add-in for Excel are fully installed and that you're a user on all those systems. Later sections in this chapter guide you through the process of checking to make sure that these components are installed and can communicate with each other.

Preparing to Build Planning Models

Once you have a better understanding of the kinds of ways your business engages in the planning process, the next steps involve using PerformancePoint to model that business and drive the planning activities through all of the functionality provided by the software. The next steps involve a bit of preparation to ensure that the building process runs smoothly. First, you will gain a better understanding of what you will achieve through building models, and second, you will need to check that all of the software pieces are in place so that the process of building your model will not be fraught with frustration. Verifying that you can connect to all of the necessary PerformancePoint components now will stave off headaches and frustrations later.

Understanding your business through numbers

After you have a clear understanding of the kinds of dimensions your business will be using for a plan, the next step is to determine the metrics that your business uses to conduct its activities. Metrics or measures are distinguished from dimensions and members by the fact that they are numbers. They can be dollars, percentages, counts, or any other numbers that can be used for computations, such as adding, subtracting, and multiplying. Whether you actually run calculations against these numbers isn't so important right now. Instead, try to determine all the kinds of numbers that your company uses within the planning process.

Planning numbers can come in a variety of types. Here are some sample metrics your company may rely on as part of its planning activities:

- ✔ The number of salespeople in the field and their projected output in terms of booked revenue
- ✔ The operating costs associated with various divisions within the company (for example, head count and associated salaries)
- ✔ The expected revenue from the various product lines being sold
- ✔ The associated costs to the company from internal versus outsourced activities

Each item in the list can be expressed in numerical format, whether in dollars, counts, or some other number. Even though dimensions are present in each item, the measures provide the “meat” of the breakdowns.

Compose a list of all the metrics that are relevant to your company. Each one of these metrics will eventually be the basis for a model in your application.



It may be helpful to map out a sample report or two to guide your thought process. For instance, you may create a report that looks something like Figure 3-3.

Annual Revenue Projections by Quarter		Budget Date					
Sales Manager	Sales Person	2007 Q1	2007 Q2	2007 Q3	2007 Q4	2008 Q1	2008 Q2
Jim York		1,110,000	1,180,000	1,240,000	1,250,000	1,170,000	1,270,000
	Melissa Jones	320,000	340,000	350,000	300,000	280,000	320,000
	Pamela Sanders	400,000	420,000	430,000	450,000	420,000	430,000
	Jason Rosch	190,000	200,000	210,000	230,000	210,000	240,000
	Samuel Lee	200,000	220,000	250,000	270,000	260,000	280,000
Sally Mayfield		948,000	1,013,000	1,050,000	1,080,000	1,080,000	1,100,000
	Anna Young	325,000	370,000	385,000	400,000	410,000	420,000
	Julie Park	343,000	363,000	375,000	380,000	360,000	380,000
	Benjamin Brown	280,000	280,000	290,000	300,000	310,000	300,000
John Hiram		1,000,000	1,220,000	1,300,000	1,360,000	1,260,000	1,350,000
	Eugene Hamill	175,000	280,000	300,000	310,000	270,000	300,000
	Peter Portary	210,000	280,000	310,000	320,000	290,000	310,000
	Natalie Carter	225,000	260,000	280,000	300,000	280,000	300,000
	Seth Rackley	390,000	400,000	410,000	430,000	420,000	440,000

Figure 3-3:
An example of a completed budget form.

In this example, revenue represents your measure, and salesperson and time represent your dimensions. Imagine sending a version of the projected sales revenue template to your sales organization to solicit adjustments and corrections, or to obtain projections for the following quarters.

Combining your measures properly with your dimensions enables you to build the reports and templates that will make sense to all the individuals involved in the planning process. After you understand the building blocks, you'll be ready to start the building process.



Before launching into the technical aspects of building an application, map out how your planning application needs to work from a business perspective:

- ✓ Compose a list of all the methods your company uses to break down planning information. You will use this list when you start to physically build your application. This list should include items such as
 - Companies (if your plan intends to examine different holding companies together or separately)
 - Regions (if your company examines sales or performance on a regional or geographic basis)
 - Currency (if your company works internationally)
 - Entities (if your company has multiple products)

Very likely, your planning application will have more than just these items. Think about whether the items you pick are going to be relevant and useful to the individuals using the system.

- ✓ Compose a list of the metrics that are relevant for your company. The list may include any numeric figures used within the planning process, such as budget dollars, revenue projections, head count, units sold, and utilization.

Setting up a planning framework for your company

After all the conceptual pieces have been determined, ensure that the technical components are in place to begin the process of transforming the concepts into a working application.

The following technical steps need to be completed before rolling out a finished application:

- 1. Build the application using the Planning Administrative Console.**
- 2. Create and deploy the model in the Planning Business Modeler.**
- 3. Install the PerformancePoint Add-in for Excel on each user's machine.**
- 4. Build the template reports through Excel.**
- 5. Create assignments and cycles in the Planning Business Modeler.**



The process of building an application may require you to jump between the three base components of PerformancePoint planning. We cover each step separately and break down the steps into distinct elements in the following chapters. The creation of the application requires multiple technical elements, each with multiple steps. Because the process of building a planning application is labor- and thought-intensive, be prepared to set aside more than a couple of days to work through the steps. Unfortunately, given the way the applications need to be built, you will not see the movement of data between your end users and the application until the very end.



Before starting the actual building process, make sure that you have the proper pieces installed and ready to go. Because all three technical components are required to successfully build an application, you also need to ensure that the pieces are configured to communicate with each other properly and that you have the proper access to these components.

Planning Administrative Console

The Planning Administrative Console provides you with the ability to create applications, identify data sources, manage users and access levels, and a host of other functions. In order to build models, the precursors to a model must be properly set up within the Planning Administrative Console. Most notably, you must have a configured application, and you must be a user associated with that application.

If the planning server has been installed, your system administrator should be able to provide the Web site name for you to access the site.



If the planning server has not been installed, ask your system administrator to follow the Microsoft installation guide for PerformancePoint Server planning and to provide you with the application server URL after he has completed the installation process.

To check your ability to access Planning Administrative Console, follow these steps:

- 1. In Internet Explorer, type in the Web site address provided to you.**

You should see the screen that's shown in Figure 3-4.

Notice that the status within the main panel indicates "No connection."

- 2. Type in the application server address provided to you by your system administrator.**

The port number (:46787) is added to the end of the server address. Port 46787 is the default address for the planning server. However, this port can be changed by the system administrator, so check before attempting to connect.



3. Click the Connect button.

If the connection works properly and you are a user on the system, the status will change to Connected, as shown in Figure 3-5.

Figure 3-4:
The
Planning
Admini-
stration
Console
access
screen.

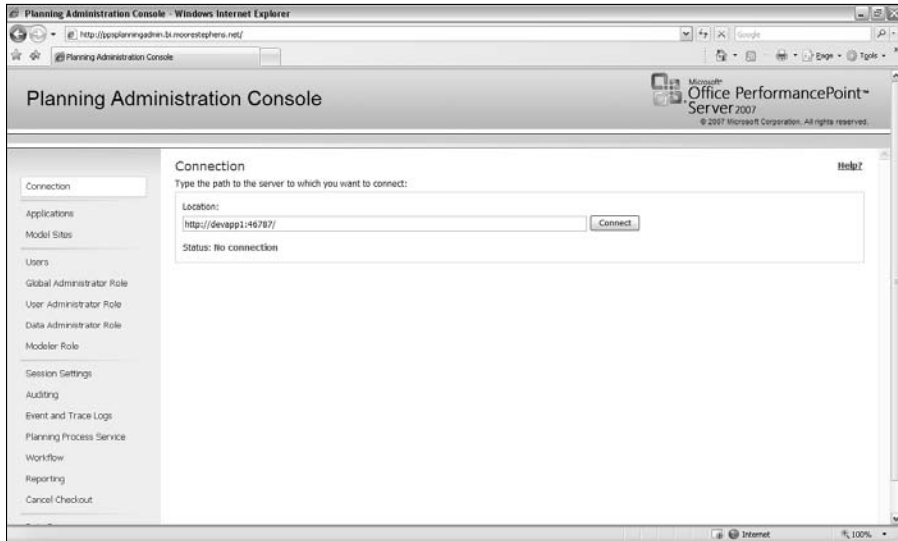
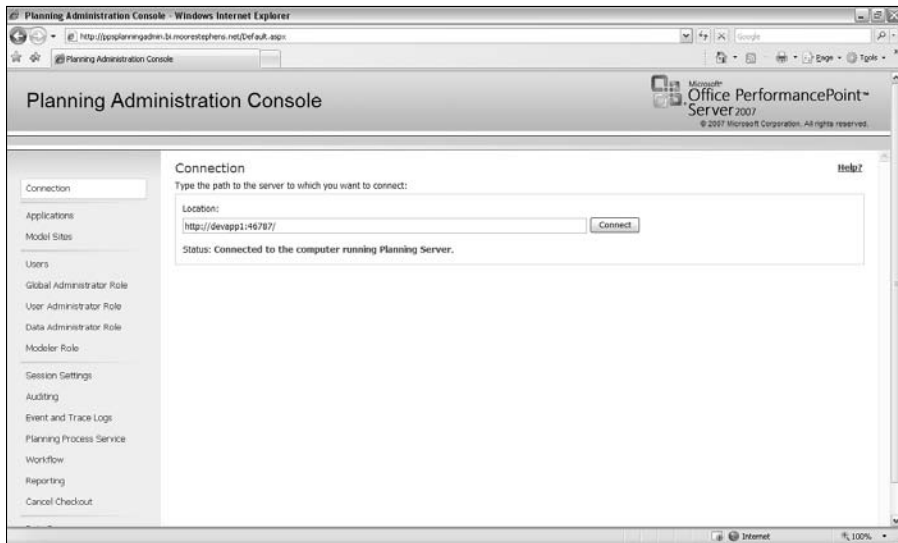


Figure 3-5:
The
Planning
Admini-
stration
Console
access
screen with
a successful
connection.





If you can't connect successfully, check with your system administrator to make sure that you have both the correct server address and the correct port. Also, check with your system administrator to ensure that you are a user in the system and that you have been granted the proper rights. It is best if you are given global administrator rights because you will most likely touch every aspect of the planning system.

If you are not a global administrator, check whether you have enough rights to fully build an application. Follow these steps:

- a. Click the Users button on the left side of the console (see Figure 3-6).
- b. Within the Find A User panel, type any identifying information for yourself and click the Find button. If an entry already exists for you, a new panel will appear below the query panel. If you are not currently a user, you need to have the global administrator or a user administrator add you to the list.

Because you will be working with multiple components, you need to have access as a user to each component. Being a user within the system does not mean that you have the right privileges to engage the functions you need. You also need to check that you have privileges as a modeler, and potentially as a global administrator, user administrator, and/or data administrator. Table 3-2 presents the capabilities of each role.

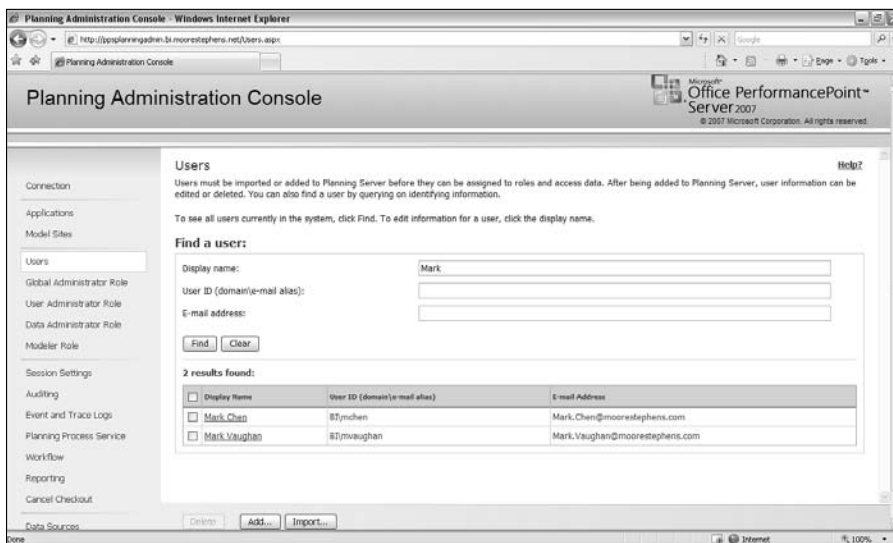


Figure 3-6:
Checking
user access
on the
server.

<i>Role</i>	<i>Functions</i>
User	Is simply a user of the system. While being a user does not constitute a specific role, users can be assigned to any of the roles within this table. Users are also the individuals who will use the PerformancePoint Add-in for Excel to work with the planning templates and forms to submit, approve, and view the work products.
Global administrator	Has full control over all aspects of the planning system, including applications, models, and roles
Data administrator	Maintains dimension data Creates and maintains models Processes and moves model data Integrates data within and between application and staging databases
User administrator	Creates new users Modifies or deletes existing users Assigns users to roles within the Planning Administration Console (global administrators, data administrators, user administrators, and modelers) Assigns business roles within a model (contributor, reviewer, or author)
Modeler	Controls the creation and maintenance of all aspects of a model, including dimensions, members and member sets, cycles, and process management

To check each role, click the role label on the left and repeat the steps to check whether you belong to that role. Figures 3-7, 3-8, and 3-9 show users already assigned to the Global Administrator, User Administrator, and Data Administrator roles, respectively. To build a model, you must be a user and belong to the modeler role. While being a modeler is necessary, having access as a Global, User, and/or Data Administrator is certainly helpful as well.

Figure 3-7:
Checking
global
admin-
istrator
privileges.

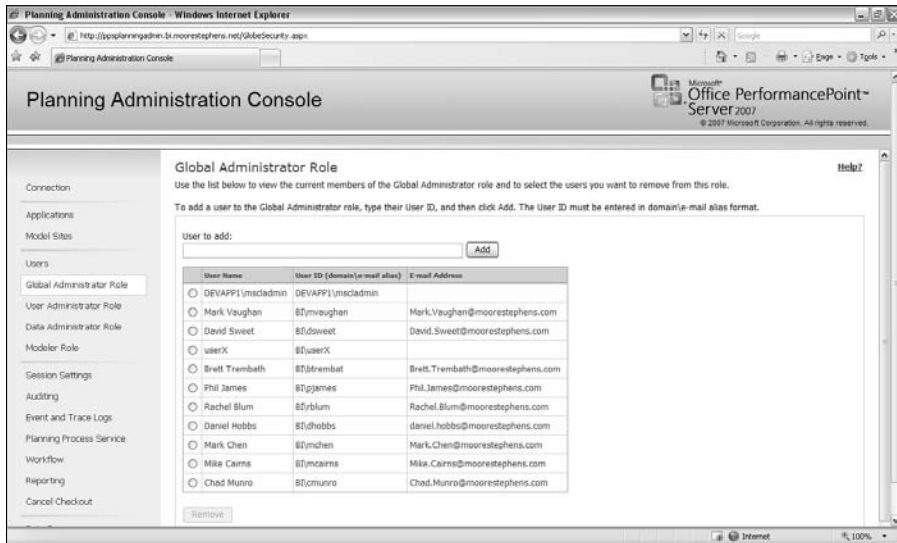
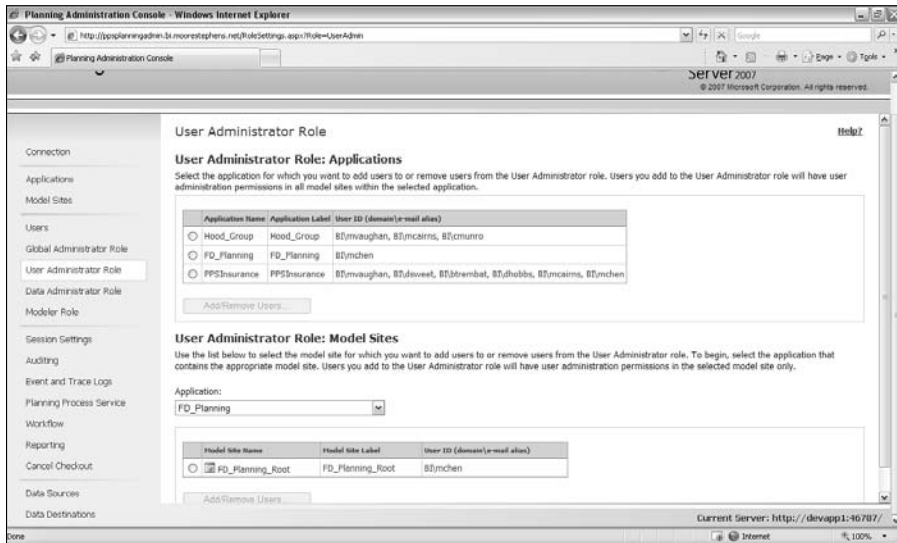


Figure 3-8:
Checking
user
admin-
istrator
privileges.



If you are a global administrator or user administrator, you can add yourself (or anybody else) to any role. If you do not belong to either of these roles, you need to ask someone who belongs to these roles to add you.

To add yourself as a modeler, follow these steps:

1. Click the **Modeler Role** button on the navigation panel.
2. Select the **planning application** where you want to add the modeler role (see Figure 3-10).
3. Click the **Add/Remove Users** button on the central panel.

Figure 3-9:
Checking
data
admin-
istrator
privileges.

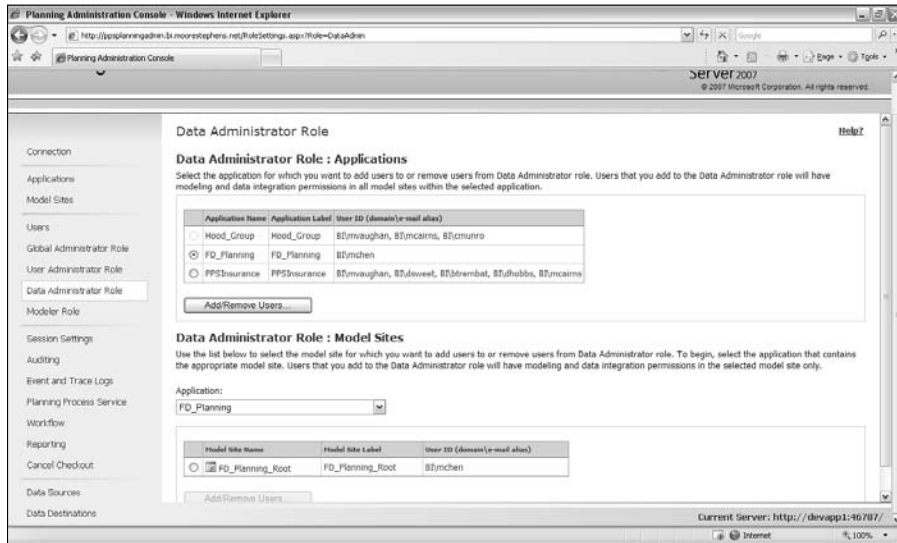
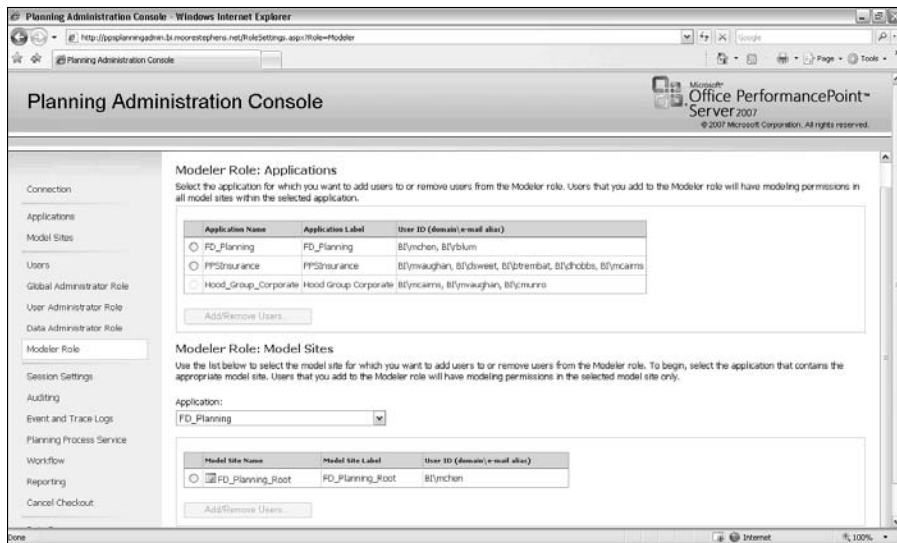


Figure 3-10:
Selecting
the proper
application
to add
modeler
privileges.



4. In the window that opens, type in the domain name and user information and click the Add button (see Figure 3-11).

Your domain name and username should appear in the window below, designating you as a modeler in the application.

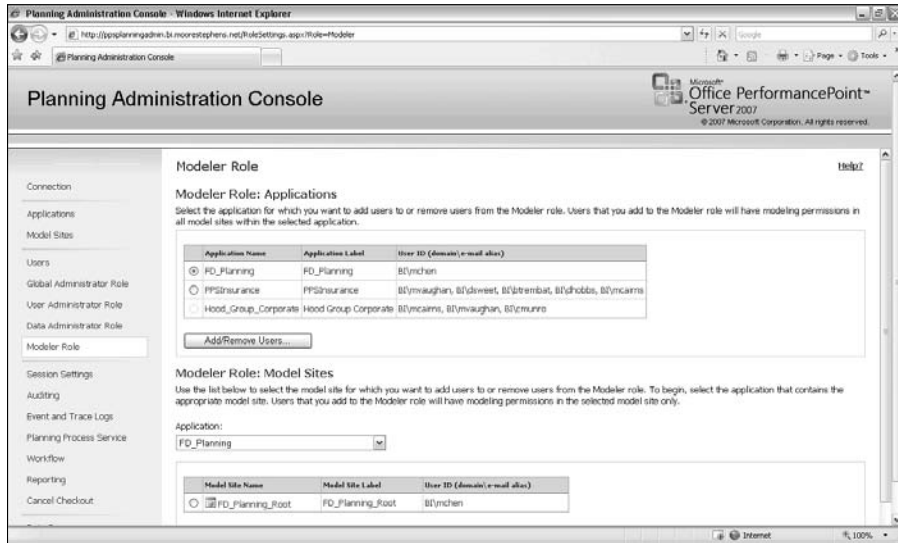


Figure 3-11:
Adding a
user to the
modeler
role.

Planning Business Modeler

To ensure that you have access to the Planning Business Modeler application, follow these steps:

1. Choose **Start** → **All Programs** → **Microsoft Office PerformancePoint Server 2007** → **Planning Business Modeler**.

If you don't have this link to launch the Planning Business Modeler, request an installation from your system administrator.

After launching the Planning Business Modeler, the primary window will be empty.

2. Choose **File** → **Connect** to connect the **Planning Business Modeler** to the **planning server**.

The Connect dialog box appears (see Figure 3-12).

3. Enter the name of your planning server as provided by your system administrator.

Your entry here may be different than the entry you provided to connect to your application server within the Planning Administration Console. If you can connect, the bottom two drop-down boxes will become enabled (see Figure 3-13).





If you do not yet have a planning application created with model sites, these two drop-down boxes will be empty. For now, simply having a connection is sufficient to know that the pieces are installed correctly and have the capability of communicating between the planning server and the Planning Business Modeler.

Figure 3-12:
Connecting
the Planning
Business
Modeler
to the
application
server.

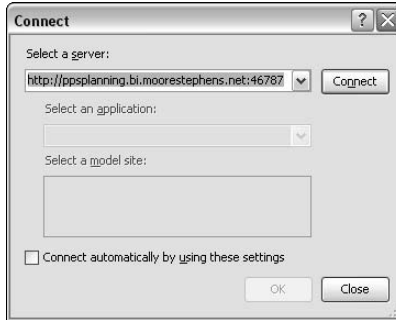


Figure 3-13:
A successful
connection
with an
existing
model site.



PerformancePoint Add-in for Excel

To create forms and template reports, you must have the PerformancePoint Add-in for Excel installed on your machine.



Excel is the only interface provided to end users to enter or adjust planning numbers, so every user of the system needs to have the Add-in installed locally on his or her computer. Before you deploy your planning application, make sure that your target audience has the Add-in installed. You don't need to install the Add-in on every machine right now, but the installation is required at some point. Depending on how computer-savvy your users are, they may need some assistance in the process.

To see whether you have the Add-in properly installed on your machine, open Excel. If you see the PerformancePoint tab along the top (as shown in Figure 3-14), you have the Add-in installed. If you do not see this tab, ask your system administrator to install the proper version on your machine.

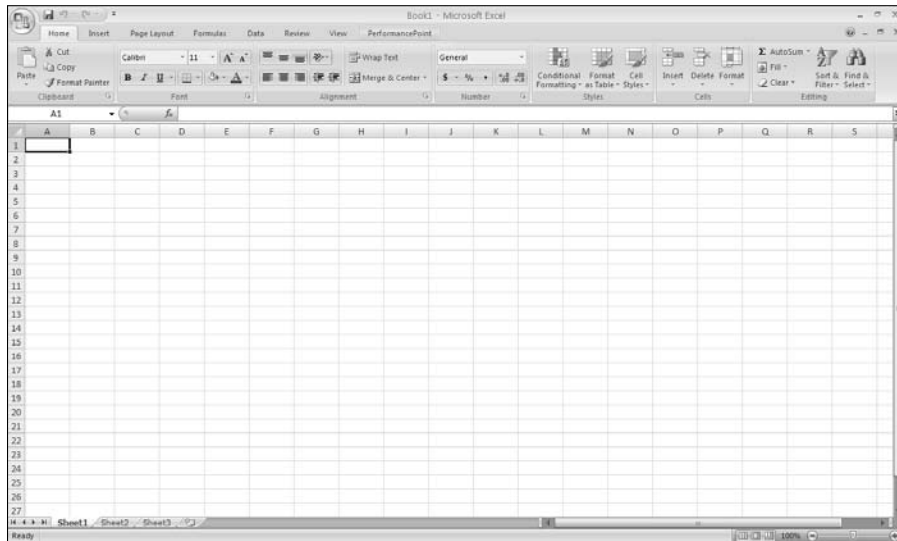


Figure 3-14:
Excel with
the Perform-
ancePoint
Add-in
installed.



Two versions of the Add-in exist, one for a 32-bit platform (x86) and one for a 64-bit platform (x64). Install the correct version for your desktop configuration. While the Add-in works for both Excel 2003 and Excel 2007, the interface and navigation are easier and nicer in 2007.

If you already have a model site built and deployed on the planning server, you can test the connection between Excel and the planning server. Follow these steps:

1. **Click the PerformancePoint tab.**
2. **Click the Connect button.**
3. **Enter the Web address to your planning application server provided by your system administrator in the dialog box (see Figure 3-15).**

This address is the same one you use to connect to the Planning Business Modeler, but it may be different from the address you use to connect to the Planning Administrative Console.

If desired, you can test the connection to ensure that the tools can communicate with each other before engaging the add-in by clicking the Test Connection button.



If this connection is one that you plan to use often, click the Add To Favorites button to store the address within Excel. This makes typing the full path unnecessary in the future. You can simply choose an existing path in the grid to connect.

Figure 3-15:
The PerformancePoint
Add-in
connection
dialog box.

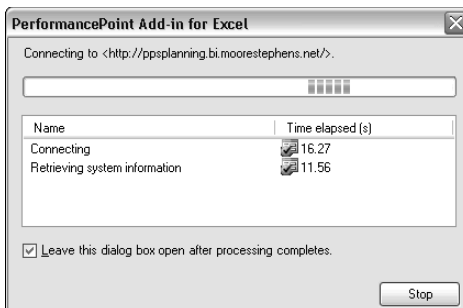


4. Click the OK button.

Excel connects with the planning server and shows its progress (see Figure 3-16).

If the connection is successful, Excel opens a new navigation console on the left side of the screen (see Figure 3-17). This panel allows you to create new templates and enter planning numbers. This topic is covered in later chapters. For now, just be assured that your connections are working and that you have all the pieces in place, technically speaking, to begin work designing your application.

Figure 3-16:
Connecting from the
PerformancePoint
Add-in to
the planning
server.



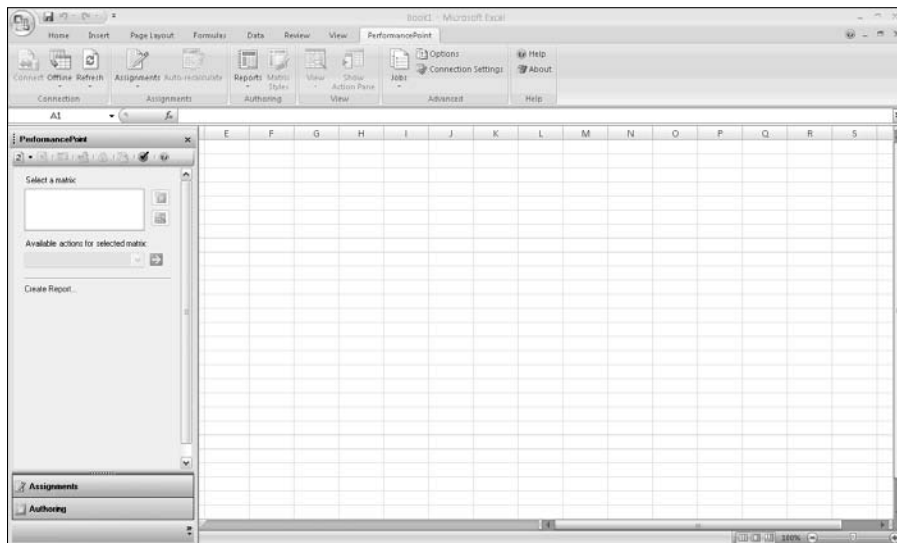


Figure 3-17:
The PerformancePoint
Add-in
navigation
panel.

Using the framework to drive company productivity

While your goal may be to craft a cool planning application, the real objective is to provide your users and your company with a tool to conduct a specific part of their business in a better way than they do it now.

For the majority of companies that already produce budgets, forecasts, and plans, improving the process means finding a means to perform these tasks faster, easier, more accurately, with better reporting, with better process management, and with less pain.

Before starting to build your Planning application, ask yourself whether the end result will achieve most of these goals as they apply to your company. If you believe your Planning application is being built for all the right reasons, read on. Otherwise, you may question

whether the cost and time associated with PerformancePoint planning are appropriate for your company.

The end goal of PerformancePoint planning is to provide the individuals in the company who are in charge of entering budget, plan, and forecast figures with an easy-to-use means of entry, and then to store and synchronize those figures in a centralized data-management system. Along the way, various tools such as user security, version management, process management, and others enhance the capabilities of the system.

Chapters 4, 5, 6, and 7 provide the step-by-step processes for building a Planning application and enabling that application to serve the needs of your company.

Part II

Applying Your Goals

The 5th Wave

By Rich Tennant



“We’re using just-in-time inventory and just-in-time material flows which have saved us from implementing our just-in-time bankruptcy plan.”

In this part . . .

In Part II, you see the steps involved in creating a fully working planning and budgeting framework. You discover the general concepts behind planning, and you find out how to build the pieces, put them together, and make them run as a process. You also discover how to implement Excel as the end-user tool for entering, managing, and consolidated the planning figures.

Chapter 4

Setting Your Goals by Creating the Plan

In This Chapter

- ▶ Getting familiar with the Planning Business Modeler
 - ▶ Configuring the time dimension
 - ▶ Configuring predefined dimensions
 - ▶ Building user-defined dimensions and member sets
 - ▶ Crafting the scenario dimension
-

After the technical pieces are in place, the real work of building your business model starts. While this may seem strange, the process of building a business model attacks an application both from the top down and from the bottom up. Top down means that you'll need to create the container that holds all the pieces of the model. Then, you'll build the individual pieces of your model one by one. Finally, you'll connect the pieces to make them work as a unit and to control how the pieces interact with each other.



Building a planning application is a little like building a living, breathing creature. Your application will have lots of parts that interact with each other, and as a whole, will interact with others around it. Additionally, over time, your application will also grow and mature as you add and enhance its intelligence and capabilities.

Creating a Place to Store Your Data: Accessing a Model Site

The first step in building a business model is opening the Planning Business Modeler. To access the Modeler, follow these steps:



1. In Windows, choose Start⇨Programs⇨Microsoft Office PerformancePoint Server 2007⇨Planning Business Modeler.

You must have the Planning Business Modeler installed on your local machine.

The Modeler interface opens to reveal a relatively blank page.

2. Choose File⇨Connect.

A Connect dialog box opens (see Figure 4-1).

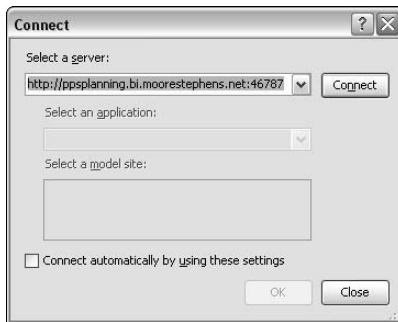


Figure 4-1:
The Connect dialog box.

3. Enter the path to the PerformancePoint planning server.

The path will look something like this: `http://ppsplanning.company.com:46787`.



The port number :46787 has been added to the end of the entry. If you are not sure that this is the correct port, check with your system administrator. Port 46787 is the default port, but your administrator may have changed the port to accommodate company standards.

4. Click the Connect button.

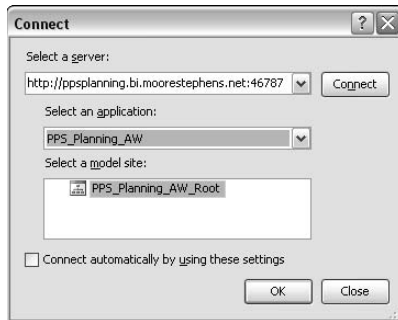
If your connection is successful, the Select An Application and Select A Model Site drop-down boxes will become available and will be populated with applications and models for which you have been given access (see Figure 4-2).



If the applications and models boxes turn white but remain empty, you either don't have an existing application or model site to use, or you have not been given access to an existing application or model site. Call your IT department, help desk, or the person who set up your installation. Check to see that an application has been created for you and that you have been given permissions as a modeler for that application.

5. If you have multiple choices in the Select An Application drop-down box, select the one that you want to work on.

Figure 4-2:
A
successful
connection
with available
applications
and model
sites.



6. Select the model site that you want to work on.

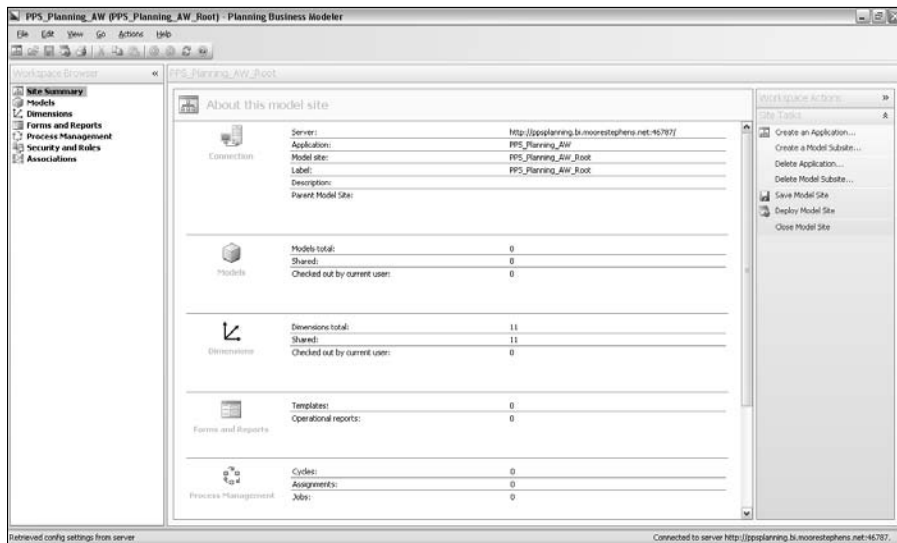
7. Deselect the Connect Automatically By Using These Settings check box.

In the future, you may want to create additional model sites or access other applications. Leaving this check box deselected gives you the option to do so.

8. Click the OK button.

The Modeler will connect to the planning server to bring back the attributes of the application and model sites to the interface (see Figure 4-3).

Figure 4-3:
The primary
Modeler
interface.



Introducing the Modeler Interface



The Modeler interface provides a single source to perform most of the duties associated with building a model.

At some point, you may need to go back to the Planning Administrative Console to engage other activities.

The Modeler interface is similar to other Microsoft development tools: The interface contains multiple panels that provide interactions among the panels.

The Modeler interface consists of the following items:

- ✓ **Workspace Browser:** On the left side of the screen, the Workspace Browser allows you to navigate among the various components of a model. Clicking any of the elements in the Browser changes the primary panel and the available items in the Workspace Actions panel. When you first make a connection to a model site, the default selection is the Site Summary, which provides you with a general rundown of all the components contained within your model. As you add parts to your model, elements may appear in the Workspace Browser to indicate changes or additions. But the main elements in bold never change.
- ✓ **Primary panel:** Generally the largest portion of the screen, the primary panel provides a space for you to conduct most of the configuration activity to build your model. Depending on which Workspace Browser selection you have made, the primary panel will change accordingly.
- ✓ **Workspace Actions panel:** The various operations that can be performed within the Modeler are dynamically presented in the Workspace Actions panel. For the most part, this panel provides the ability to initiate actions such as adding or creating items, deleting items, modifying items, or linking items. Depending on the active Workspace Browser and primary panel selections, the available Workspace Actions features will change to reflect possible activities.



Because the Modeler interface connects to the planning server to store changes, update the databases, and allow the deployment of your model, a near-constant connection to the planning server is required. During the course of working with the Modeler, you may experience a “timing out” of your connection. Simply reconnect to the planning server by choosing File⇨Connect and following the typical procedure for opening the Modeler. If your connection terminates too frequently, ask your IT administrator about increasing the connection time-out property.

Building Dimensions

Dimensions constitute the primary building blocks for models. Dimensions allow you to organize, break down, and give meaning to the data in your plan. Dimensions in PerformancePoint can be classified as either *predefined* or *user-defined*. Planning server requires that certain dimensions exist for all models.



Chapter 3 shows you how to identify the necessary dimensions for your business model.

The fact that we refer to these dimensions as *predefined* does not mean that they are static in structure. In fact, the predefined dimensions generally offer a host of customization options to fit your needs. *Predefined* simply means that they are always available for your use, and in some cases, PerformancePoint requires you to use them. Actually, these predefined dimensions come in handy because Microsoft has thoughtfully packed them full of functionality. Using the predefined dimensions correctly, a modeler can have a much easier time designing a variety of complex planning, budgeting, forecasting, and financial reporting applications. Without the predefined dimensions, the process would be truly grueling for the average user.

User-defined dimensions constitute dimensions that the Modeler creates along the way. These dimensions are useful when the Modeler determines that the model requires a dimension that doesn't fit within any of the predefined dimensions. User-defined dimensions are critical for complex models, but they do not have the advantages of the built-in intelligence contained within the predefined dimensions. You can create as many user-defined dimensions as you want.



While there is no limit to the number of user-defined dimensions that can be included in your model, be careful about creating too many, especially if some dimensions may not be useful. Your strategy should be to grow your plan rather organically, starting with just the fundamentals and then adding pieces that are really needed to make the plan suit your needs. Adding unnecessary elements can complicate the management and administration of your model.

Understanding predefined dimensions

The predefined dimensions supplied by PerformancePoint are functions common to most implementations. The functionality built into the predefined dimensions is much greater than what you can design yourself (without an incredible amount of effort) as a user-defined dimension.

Table 4-1 identifies the PerformancePoint predefined dimensions.

<i>Predefined Dimension</i>	<i>Description</i>
Account	Provides aggregation logic for a chart of accounts, enabling particular types of financial reporting needs such as balance sheets and income statements.
Business Process	A hierarchy that stores each step of a financial calculation so that tracking and auditing of complex financial computations become easier. The Business Process dimension is especially useful for domains such as share allocations and currency conversions, where understanding the progression of numbers across the course of the calculation is helpful.
Consolidation Method	For companies with multiple holdings, the process of managing share reporting can be complex. The Consolidation Method dimension offers users the means to define share allocation methods including equity, full, holding, and proportional consolidations.
Currency	A listing of currencies that are relevant to the company's business. The Currency dimension enables different members of the Entity dimension to relate monetarily to other members.
Entity	A representation of the various ways that an organization can be broken down into operational units. Breakdowns may represent things like product lines or departments.
Exchange Rate	Stores a list of conversion rates between currencies. Used in conjunction with the Currency dimension, the Exchange Rate dimension assists in various point-in-time assessments of dollar value for international transactions.
Flow	Provides tracking of cash flows and monetary amounts between time periods.
Intercompany	Interacts with the Entity dimension to establish relationships between entities for management or legal reasons. This dimension is maintained internally by PerformancePoint.
Scenario	Comprises the storage of values associated with budget, actual, and forecast values. From an Analysis Services perspective, the Scenario dimension is akin to the concept of measures in a cube. Here, the numerical components of the Scenario dimension exist against the Time dimension as snapshot figures.

<i>Predefined Dimension</i>	<i>Description</i>
Time	Comprises one of the most important dimensions for any model. The Time dimension provides a hierarchy that naturally captures the relationships inherent in a calendar, such as years, quarters, months, weeks, and days. The Time dimension is required for all models and is one of the first dimensions created through the Application Calendar Wizard.
User	Provides a means to easily manage the reporting lines and assignment and distribution as part of process management.



All models require the predefined time and scenario dimensions.

Try to map each item on your list to the items in Table 4-1. Hopefully, you'll notice some commonalities. Don't be concerned if a few of your items can't be seen in this list. That's what user-defined dimensions are for.

Getting familiar with the Dimensions panel

Upon first clicking the Dimensions link in the Workspace Browser, the primary panel presents the list of dimensions associated with your model (see Figure 4-4). Notice that the list of dimensions contains a table with the properties of each dimension including name, label, description, parent model site, sharing status, and check-out status. From here, not only do you get a catalog of all the dimensions, but you also find out whether any of the dimensions are currently being worked on by you or others.

In the Workspace Actions panel, you have the options to create a dimension, create the calendar, or synchronize your dimensions to the staging area. Additionally, you also see properties specific to the dimension that is currently highlighted in the primary panel. Clicking the row associated with a dimension in the primary panel dynamically shows the properties for that dimension in the Dimension Details table in the Workspace Actions panel.

If you click the name (highlighted in blue) on the primary panel, the primary panel changes to provide the structure of that dimension. Figure 4-5 shows the Summary tab.

You find three tabs in the primary panel. The first is the Summary tab, which provides an overview of the contents for the dimension. The Summary tab delineates the identification information for the dimension, along with the number of member sets and member views. We get to this in a moment. The other two tabs, Member Maintenance and Member Set Maintenance, enable you to edit dimension data or member set data (which we will cover later in the chapter in the section "Making your dimensions pop through member sets").

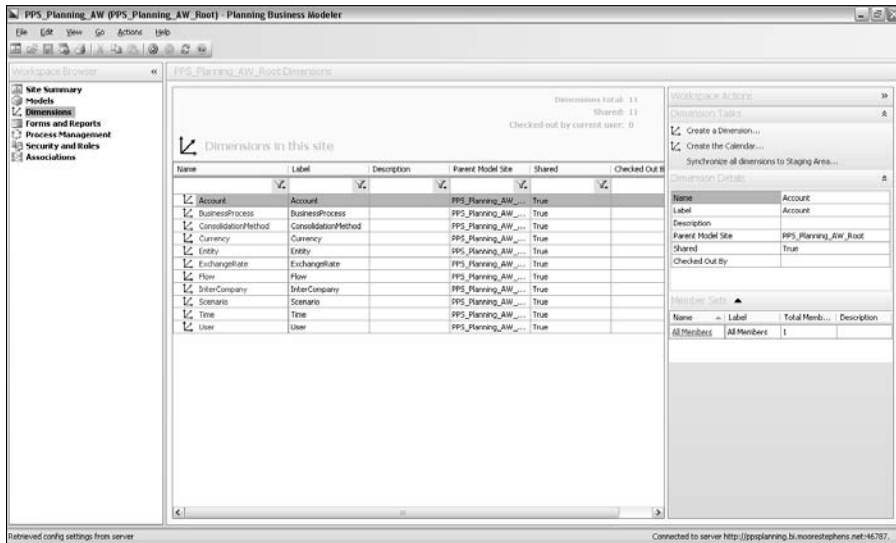


Figure 4-4:
A list of dimensions.

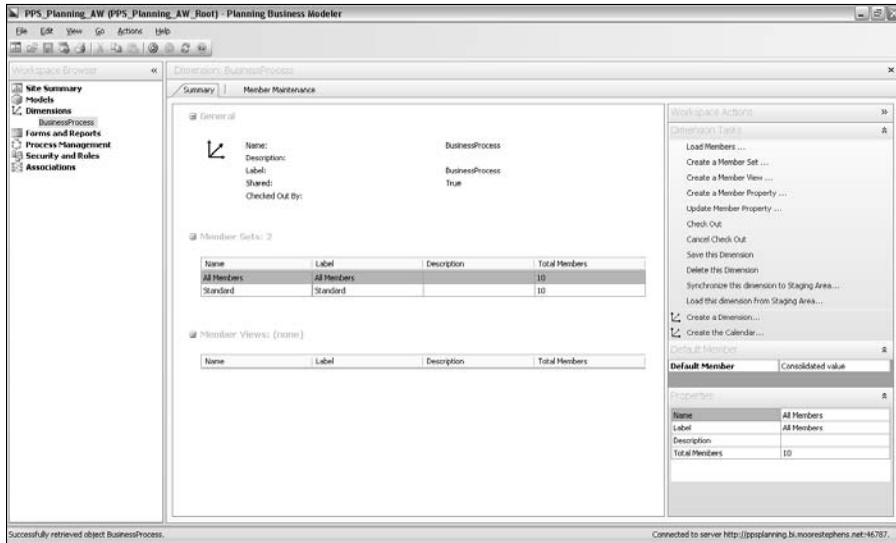


Figure 4-5:
Clicking a dimension in the primary panel shows the properties for that dimension.

In the Workspace Actions panel, a host of new actions are available for your use. The Modeler is designed as a development tool, and as such, it allows multiple users to manipulate the same model site simultaneously. Consequently, the Modeler requires that as you work on pieces of your

model, you check out the specific pieces that you want to manipulate, work on them, and then check them back in. Other users are prevented from working on pieces that are checked out to prevent simultaneous multiple changes from different users. Thus, by checking out a dimension, you prevent other users from working on that dimension at the same time. When you are done, you need to check the dimension back in to save the changes and to allow others to access the dimension for further manipulation.

Along with checking a dimension in and out, you can also add data to your dimensions, create additional structure or organization to the data, and conduct some maintenance duties such as deleting a dimension or synchronizing data to the staging area. For now, we concentrate on accessing and configuring the most important dimensions, creating some new dimensions, and figuring out how to add data to those dimensions.

Configuring the Application Calendar

The Application Calendar is perhaps the most important dimension you will build, because every company is concerned about the process of accounting for what is happening now and what will happen in the future. The time dimension provides the framework for tracking information backward and forward in time, and as such, it must be configured correctly for your company's activities.

The time dimension must be the first dimension you configure when creating a model. In fact, the time dimension is so important that PerformancePoint has provided a wizard to lead you through the process so that it is configured correctly.



Configuring the time dimension does not take long. However, the impacts of walking through the Application Calendar Wizard can shape the rest of your model. After the Application Calendar has been set, the configuration cannot be reversed. All the subsequent data that is sent to the planning server depends on attributes of the time dimension, and thus changes to the time dimension may adversely impact your deployment. In fact, if you need to change the configuration of the time dimension, it may be easier to rebuild your model from scratch. This caveat does not apply to simply extending your calendar, but it does apply if you decide to change the method chosen to track time.

The Application Calendar within the time dimension is a prebuilt mechanism for segmenting time into its component parts. Through the Application Calendar Wizard, you will define the specific kind of calendar for your model, the length of time your calendar covers, and how the date is presented on-screen.

To create your Application Calendar, follow these steps:

1. Click the Create the Calendar link in the Workspace Actions panel.

This opens the Name The Application Calendar dialog box (see Figure 4-6).

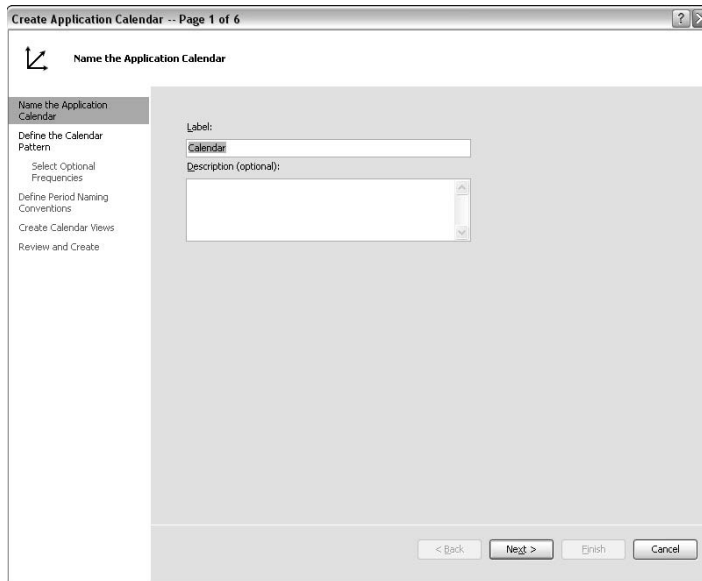


Figure 4-6:
Starting the
Application
Calendar
Wizard.

Use the default name Calendar or choose your own name for your calendar.

2. Click the Next button.

The Define The Calendar Pattern dialog box opens (see Figure 4-7).

3. Choose when your company's financial year ends.

For some companies, this may be the typical year end (12/31/2008), but for other companies, the date may be mid-year (such as 4/31/2008). The determination of the year end depends on how your company conducts its accounting.

4. Determine how your year ends by selecting the appropriate option button.

Some companies strictly follow monthly periods so that the year ends on the same day every year. In that case, select the Years Always End On The Selected Month And Day option and choose Correspond To The Calendar Months.

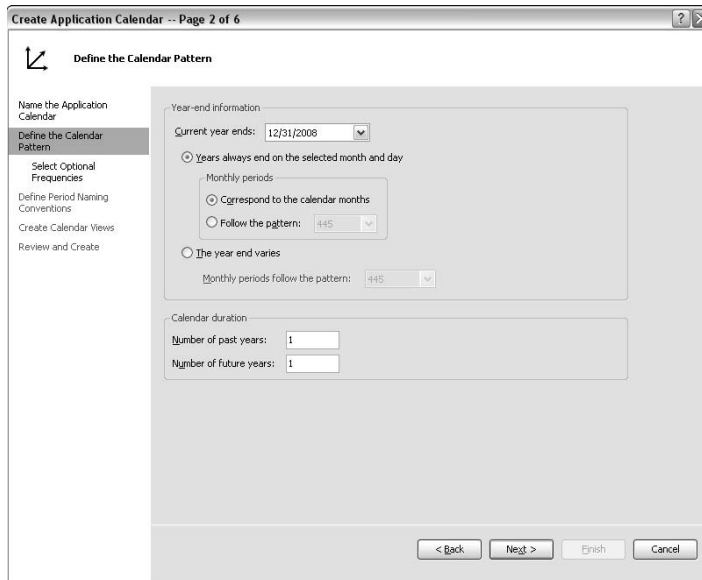


Figure 4-7:
Defining the
calendar
pattern.

Other companies disregard whether the year actually ends on a particular date and use a calendar based on full weeks. In this case, you must choose the Follow The Pattern option. Based on your company's accounting method (you may need to speak with someone in Finance to be sure), choose the proper weekly pattern. The options provided by the wizard are 445, 454, 544, 13 Equal Periods, Gregorian Calendar, or Gregorian Calendar Variation.

5. Specify the calendar duration.

Besides the current year, enter the number of prior and future years for your model. Don't worry about having to change it later. The process of extending your calendar duration is easy.

6. Click the Next button.

The Select Optional Frequencies dialog box opens (see Figure 4-8). If you want to track data outside of the default selections of Year, Month, and Day, choose the other frequencies that pertain to your company. The most common addition is Quarter, although your company may have a different emphasis.

7. Click the Next button.

The Define Period Naming Conventions dialog box opens (see Figure 4-9). Here you can change the way dates are presented to your users. This is simply a formatting function. You can prefix your dates in a particular

manner and preview what the dates will look like. For example, instead of showing the year 2008, you can make it read Yr2008, or 2008Y if you choose. (You cannot change the formatting for Month or Day.)

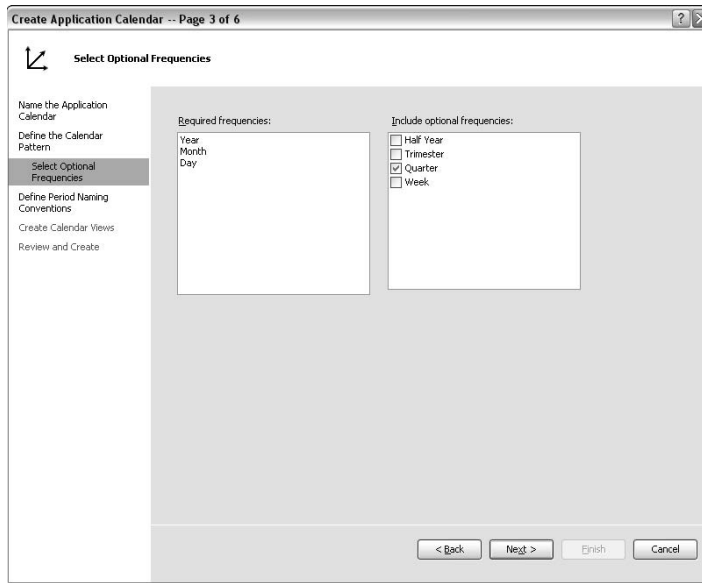


Figure 4-8:
Selecting
optional
frequencies.

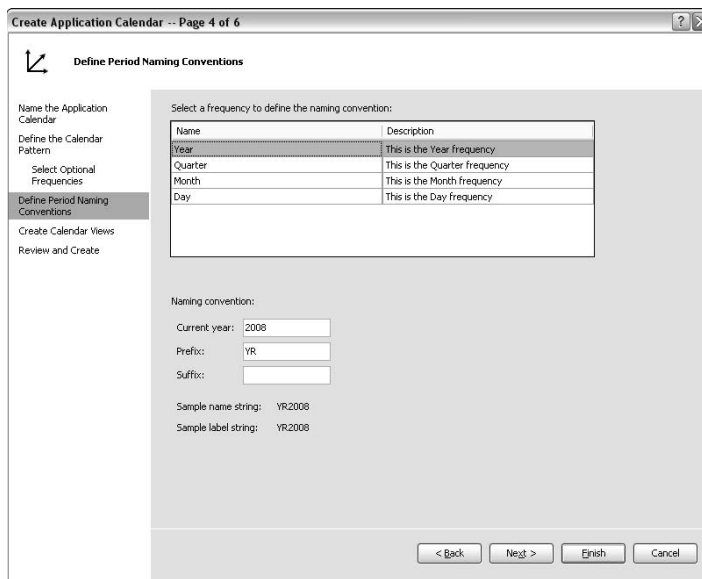


Figure 4-9:
Defining
Period
Naming
Con-
ventions.

8. Click the Next button.

The Create Calendar Views dialog box opens (see Figure 4-10). Different models you create may require different granularities of dates. For example, one set of users may require annual reports, while another may need to have years broken down into quarters, months, and weeks. Each calendar view you create provides a separate breakdown of your time dimension that you can choose to use later in your model.

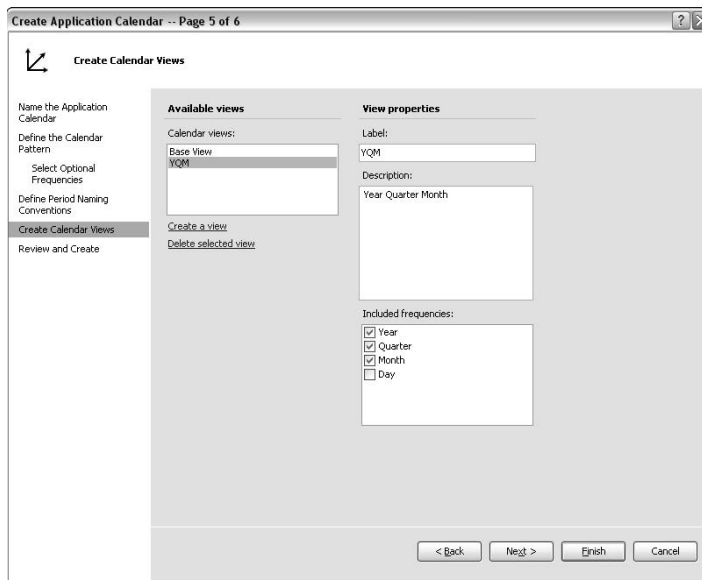


Figure 4-10:
Creating
more calen-
dar views.

Click the Create A View link. Type in a label for the view, and if you desire, you can enter a free-text description in the Description field. Select the frequencies you'd like to associate with your new view. Repeat the process for each view you need to create.

If you want to edit existing views, you can do so here. Simply select the view in the Calendar Views window and edit the properties on the right side as you see fit.

9. Click the Next button and then the Finish button.

The wizard closes.

10. Click the Check In link in the Workspace Actions panel.

Modeler saves your work to the database.

Congratulations! Your first dimension is done (and it was the most important one). It wasn't so hard, was it?

Configuring Other Predefined Dimensions

Besides the time dimension, other predefined dimensions supplied by PerformancePoint provide an easy way to configure and populate data for your model. For the most part, the predefined dimensions are already populated with values that PerformancePoint can use for internal operations, such as creating Generally Accepted Accounting Principles (GAAP) reporting, currency conversions, and other typical budgeting functions. Such prepopulated dimensions include business process, flow, consolidation method, and user. For the most part, these prepopulated, predefined dimensions do not need any alterations. In fact, it may be best to not change them because PerformancePoint will use the field names and structures behind the scenes to assist you in conducting typical planning activities.

Other predefined dimensions are convenient places to store custom data. The process involves manually inputting data or loading members through the wizard. For these empty dimensions, you have a significant amount of leeway in terms of how you want to use the dimensions. For example, the entity dimension can contain anything from product lines to departments to companies. What you choose to populate the dimension with depends greatly on your company needs and organizational structure. But the placeholder is there for you to use if you need it.

The process of populating empty predefined dimensions is just like that for user-defined dimensions. The only real difference is that predefined dimensions are already named for you.

Creating User-Defined Dimensions

For dimensions that do not fit any of the predefined dimension templates, the only other option is user-defined dimensions. While the user-defined dimension may not inherently own any of the functionality of the predefined variety, that does not limit you from extending and adding functionality that can prove useful within your model. You have multiple ways to create a dimension, and we walk through each one separately.

Generating a dimension from scratch

To create a user-defined dimension from scratch, follow these steps:

1. In the Workspace Browser, choose Dimensions.

The Workspace Actions panel changes to present you with a few options.

2. In the Workspace Actions panel, click the Create a Dimension link.

The Name The Dimension Dialog box opens (see Figure 4-11).

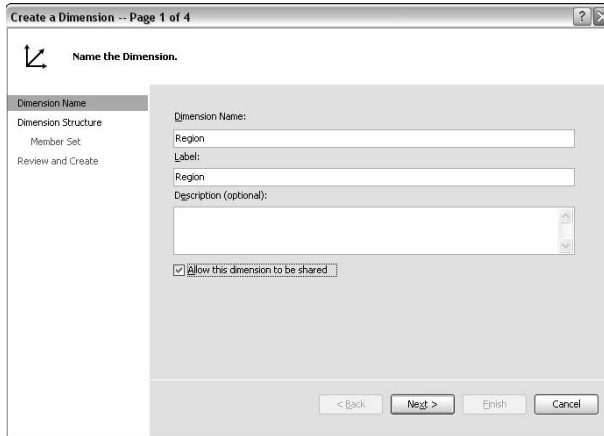


Figure 4-11:
The Name
The
Dimension
dialog box.

3. Enter a name, label, and description (optional) in the dialog box.

When you enter the dimension name, the label is automatically populated with the same text. For most cases, this is just fine.



In general, it is easier to use the same text for the names and labels for a dimension. Of course, this isn't necessary; it's just a convenience. The name represents what the user sees on-screen. A name is limited to 256 characters. On the other hand, a label represents PerformancePoint's internal reference for the dimension and must be unique within your model. You cannot have multiple dimensions with the same label. The label is limited to 40 characters.



Select the Allow This Dimension to Be Shared check box. Doing so ensures that the dimension you create will be available to all the lower-level model subsites you'll build later.

4. Click the Next button.

The Select Dimension Structure Source dialog box opens (see Figure 4-12). In this case, because we're building a dimension from scratch, select the Create New Dimension Structure option.

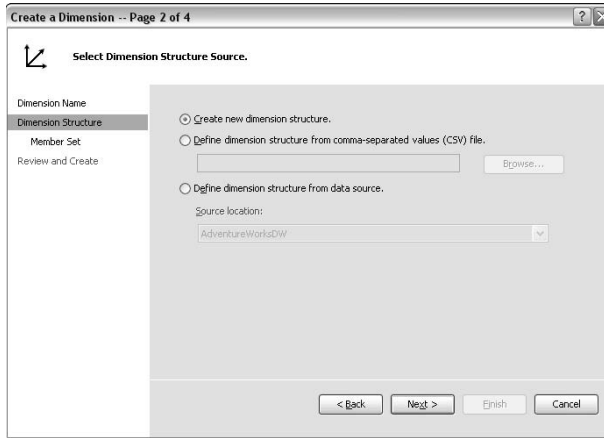


Figure 4-12:
The Select Dimension Structure Source dialog box.

5. Click the Next button.

The Define Member Creation dialog box opens (see Figure 4-13). Here you can create your members now if you choose. Because you may not have all the data at hand right now, you can also leave this task until later. For now, choose the Define Members Later option.

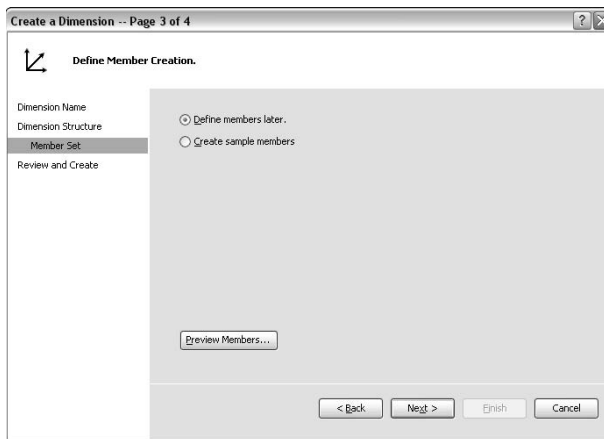


Figure 4-13:
The Define Member Creation dialog box.



Choosing the Create Sample Members option isn't really useful. All it does is add ten dummy records to your dimension that you'll have to adjust later. It's best to choose the Define Members Later option.

When you are done building your dimension, you'll have the opportunity to add the members then.

6. Click the Next button.

The Review And Create dialog box opens to present you with a summary of your work (see Figure 4-14).

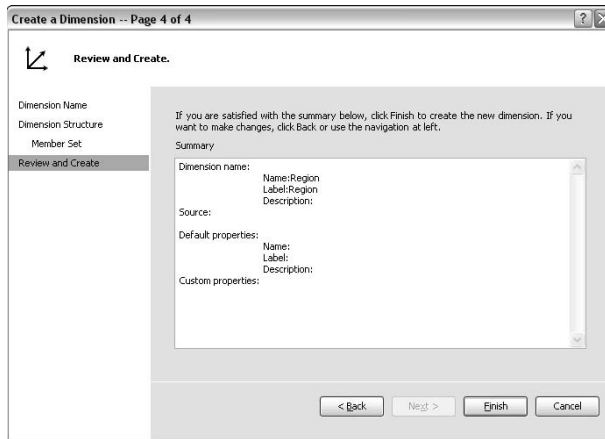


Figure 4-14:
The review
and create
summary.

7. Click the Finish button.

The wizard closes, and the primary panel adjusts to present your new empty dimension (except for the No Member member — see Figure 4-15). You can load this dimension with data from your data sources or from a CSV file, but because we're building this dimension from scratch, we'll do it manually (just once).

8. Right-click the space below the No Member member in the primary panel.

Select Add New Sibling. A new row is added to your dimension member list.

9. Edit the new row by clicking the Name entry and typing in the name of your new member.

Do the same for the label and description (see Figure 4-16).

10. Repeat Steps 8 and 9 to enter each member to your dimension.**11. In the Workspace Actions panel, click the Check In link.**

Your work is saved to the planning server, and the dimension is available to other users for editing and configuring.

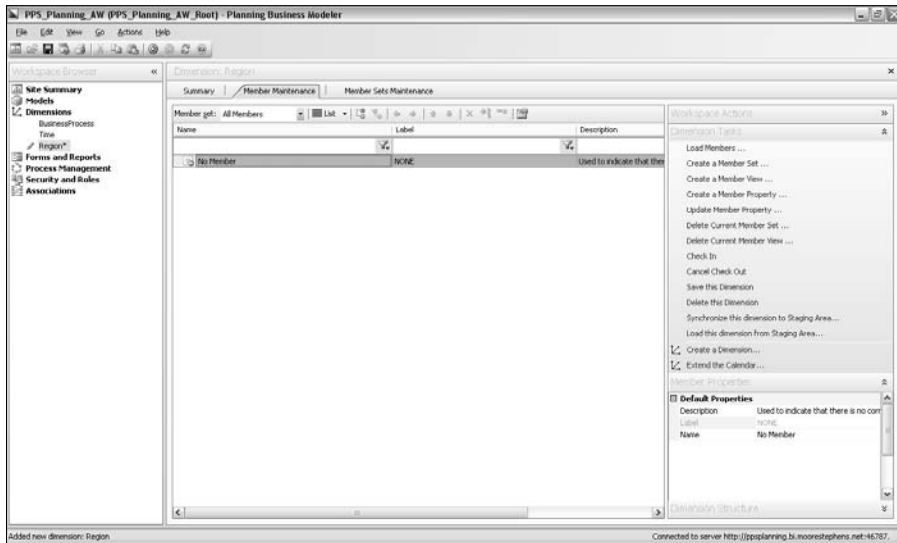


Figure 4-15:
A new
empty
dimension.

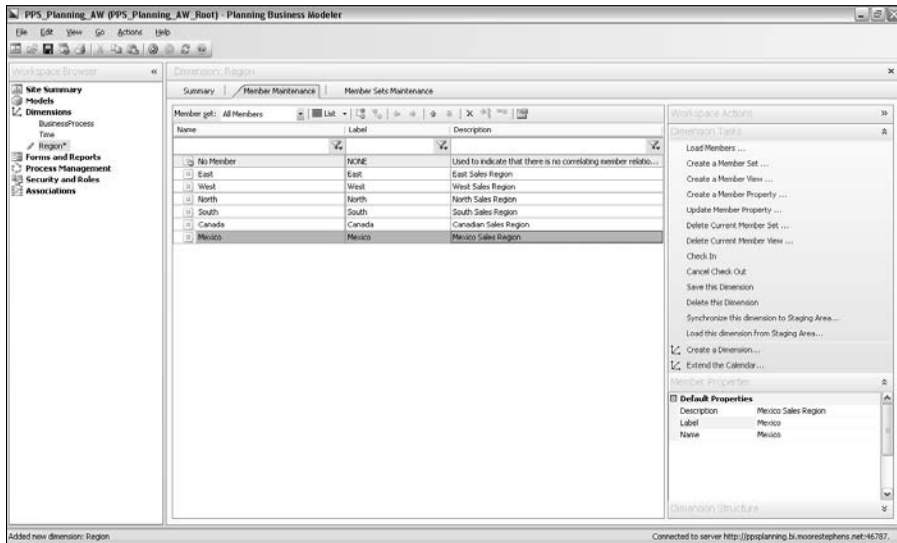


Figure 4-16:
Editing data
directly
in the
dimension.

Adding a member property

By default, creating a dimension yields a long list of values with associated labels and descriptions. But sometimes having a flat dimension with just one

long set of records isn't quite right. You may want to include more than just the name to your dimension. In this case, adding a member property gives you what you want.

To add a member property, follow these steps:

- 1. In the Workspace Actions panel, click the Create a Member Property link.**

The associated dialog box opens (see Figure 4-17).

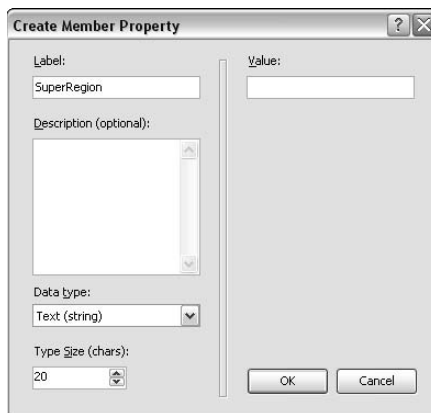


Figure 4-17:
The Create
Member
Property
dialog box.

- 2. Enter the label for your new column, and specify the type of data it is.**

You can choose from a number of different data types. For our example, we use Text. (For the Text option, you need to specify the maximum number of characters you want for the column.) You can leave the Value box blank.

- 3. Click the OK button.**

The Modeler returns you to your dimension. Notice that a new column has been added to the end of your dimension members. You can now edit those entries, keeping within the constraints of the data type you specified in Step 2.

- 4. In the Workspace Actions panel, click the Check In link.**



You can always make changes to your user-defined dimensions by checking out the dimension and manually editing the members. You can also add or change member properties by clicking the Create A Member Property or the Update Member Property link. However, after you add a member property to a dimension, you cannot remove it without a ton of effort. Usually, you can simply ignore the extra data in the dimension without a problem (as you'll find out when creating member sets).

Using a CSV file to build a dimension

Building a dimension from a CSV file is easier than building one from scratch. The primary difference is that no manual data entry is required. A CSV file is simply a comma-separated values file that can be generated from common applications like Microsoft Excel. Certainly, many other applications can also be used to generate a CSV file.

If you open a CSV file using Notepad, you can see rows of data with individual data fields separated by commas. The Modeler can use these commas to cast the individual data elements into the right fields of a dimension.

One limitation of using a CSV file to build a dimension is that the Modeler is picky about the format of the CSV file. To ensure that the file can be read correctly, your CSV file must have the following requirements:

- ✓ The first row of the file must contain column headers.
- ✓ The column headers must begin in exactly this order:
 - Label
 - Name
 - Description
 - Other Optional Properties

Yes, Label and Name are reversed from what you see in the resulting dimension layout in the primary panel.

- ✓ Each field must be separated by commas.



An example of an acceptable CSV file can be seen in Figure 4-18.



If you use a CSV file to build a dimension, be wary of generating the file when your data fields inherently have commas in them. For instance, address data often has commas (for example, 16 Main St., NW has a comma embedded in the street address). CSV files balk at the extra comma, and the resulting file will have an extra stealth comma embedded in that row. Methods are available to get around issues with CSV files (using text delimiters), but the key is recognizing that your data could have issues before you start pulling your hair out trying to figure out what went wrong.

To create a user-defined dimension using a CSV file, follow these steps:

- 1. Follow Steps 1–3 in the section “Generating a dimension from scratch,” earlier in this chapter.**

2. Click the Next button.

The Select Dimension Structure Source dialog box opens (see Figure 4-19). In this case, because we're building a dimension from a CSV file, select the Define Dimension Structure from Comma-Separated Values (CSV) File option.

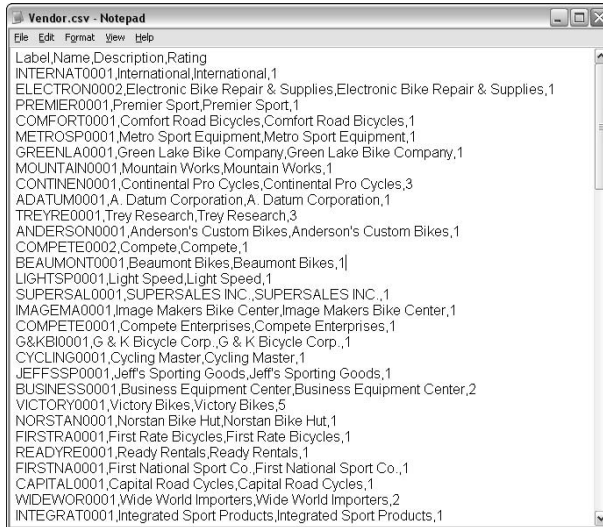


Figure 4-18:
A properly
formatted
CSV file.

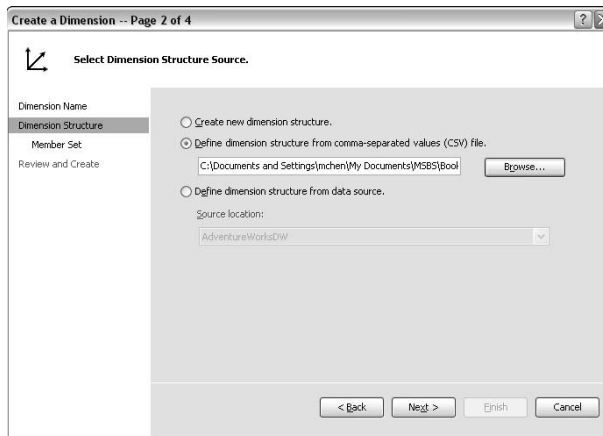


Figure 4-19:
The Select
Dimension
Structure
Source
dialog box.

3. Click the Browse button.

Find the location of the CSV file on your hard drive or network location. (The CSV file for this example was created from the Vendor table in the AdventureWorks database.)

4. Click the Next button.

The Define Member Creation dialog box opens (see Figure 4-20). Because you have already identified your CSV file, the wizard should have already selected the Import Members From The Selected Source option.

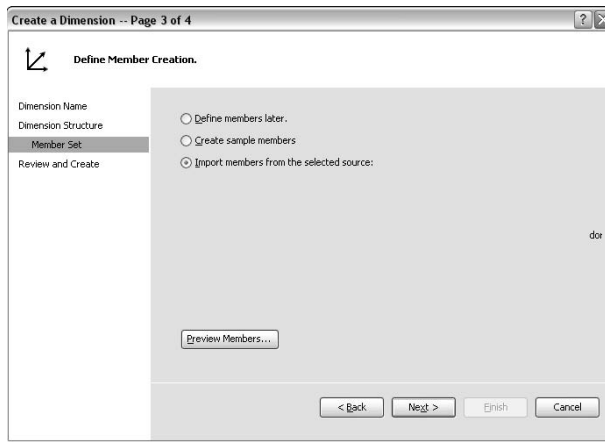


Figure 4-20:
The Define Member Creation dialog box.

5. Click the Preview Members button to see how the CSV file will be mapped to your dimension.

Hopefully your file will be mapped correctly to the fields in your dimension (see Figure 4-21). If not, try to regenerate or edit your CSV file to ensure that all the requirements are met for a proper CSV file, and then run through this process again.

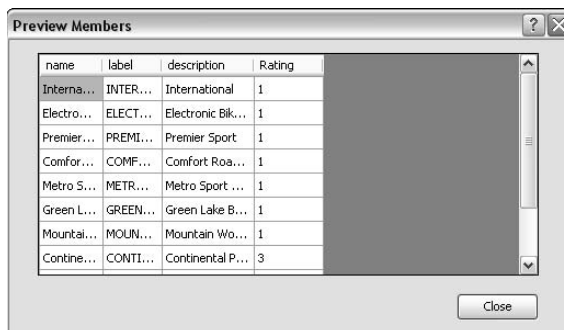


Figure 4-21:
Previewing a CSV file import.

6. Click the Close button.

The Review And Create dialog box opens to present you with a summary of your work.

7. Click the Finish button.

The wizard closes and the primary panel adjusts to present your new dimension, with the data from your CSV file already populated (see Figure 4-22).

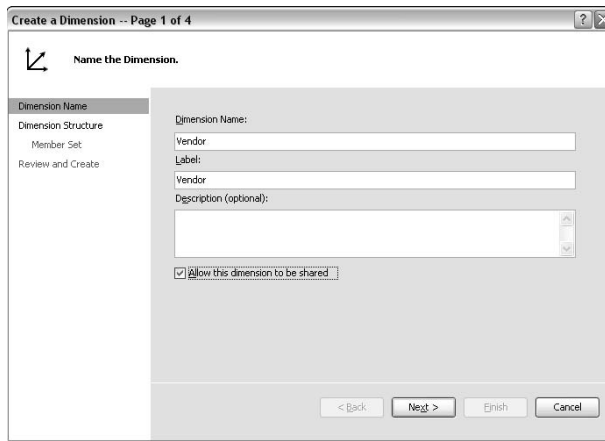


Figure 4-22:
A finished
CSV file
import.

Data from the fourth column of the CSV file (the Rating column) has also been included in your dimension. Any columns beyond Label, Name, and Description are automatically loaded as part of the CSV file.

8. In the Workspace Actions panel, click the Check In link.

Your work is saved to the planning server, and the dimension is available to other users for editing and configuring.

Leveraging a data source to build a dimension

Building a dimension from a data source is easier than building one from scratch or building one from a CSV file. You aren't subjected to manual data entry, and you don't need to ensure that your file is formatted in the strict CSV format. However, pulling data from a data source requires your application to have a connection to the data source configured.

A data source for your application must come from a source that PerformancePoint can read. Data source generally equates to a database, and in Microsoft's case, that means an SQL Server database. If you are using SQL Server, you are not limited to tables. You can also use views as a data source.

If you choose to use a data source to build a dimension, make sure that the data source has already been identified in the Planning Administrative Console. Looking at the screens in the Modeler will provide you with no clue about whether you have access to a data source until you actually attempt it. If you are not sure whether you have a connection, check with your system administrator to find out whether a data source has been configured for your specific model site.



If you or your system administrator has trouble connecting to a data source, make sure that you have the proper security settings for the data source. The PPSService user should have db_datareader access to your database.

To create a user-defined dimension using a data source, follow these steps:

1. Follow Steps 1–3 in the section “Generating a dimension from scratch,” earlier in this chapter.
2. Click the Next button.

The Select Dimension Structure Source dialog box opens (see Figure 4-23). In this case, because we're building a dimension from a data source, select the Define Dimension Structure From Data Source option.

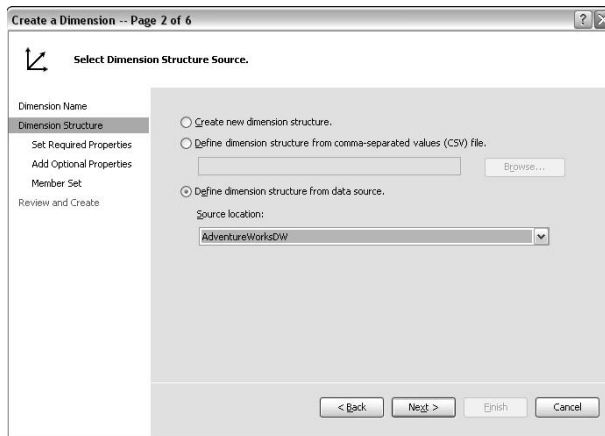


Figure 4-23:
The Select Dimension Structure Source dialog box.

3. From the drop-down box, select the data source you would like to use.

If the drop-down box is blank, you do not have data sources associated to your model. Contact your system administrator to add a new data source through the Planning Administrative Console.

4. Click the Next button.

The Specify Values For Required Properties dialog box opens (see Figure 4-24). From the drop-down box, select the table or view you would like to use as a source. Then, for each empty Value box, click the down arrow and select the field that corresponds to the Name and Label items. If you would like to have the name and label come from the same field, that is fine. The Description value is optional.

Figure 4-24:
The Select
Values For
Required
Properties
dialog box.



If you get an error message when you try to click the down arrow in the Value column, you may be attempting to use a data source that contains multiple schemas. The current version of PerformancePoint is unable to recognize fully qualified field names that include the schema name. PerformancePoint can only use those tables or views that belong to the default schema.

5. Click the Next button.

The Select Additional Properties dialog box opens (see Figure 4-25). While the Name, Label, and Description fields might be sufficient for some dimensions, you may want to have additional information within the dimension. In this case, you can add columns to the table by selecting the check boxes next to the items that you would like to include in your dimension.

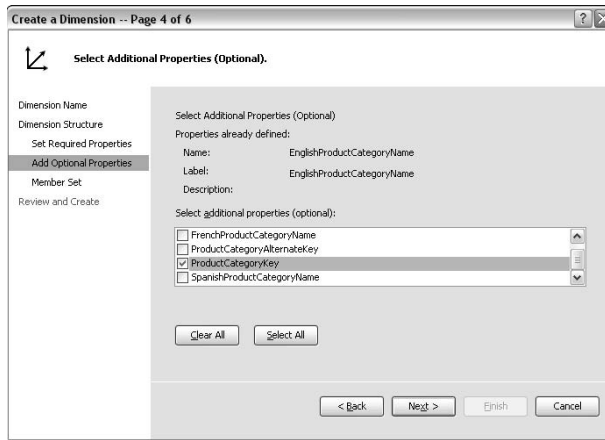


Figure 4-25:
The Select Additional Properties dialog box.

6. Click the Next box.

The Define Member Creation dialog box opens (see Figure 4-26). Select the Import Members From The Selected Source option.

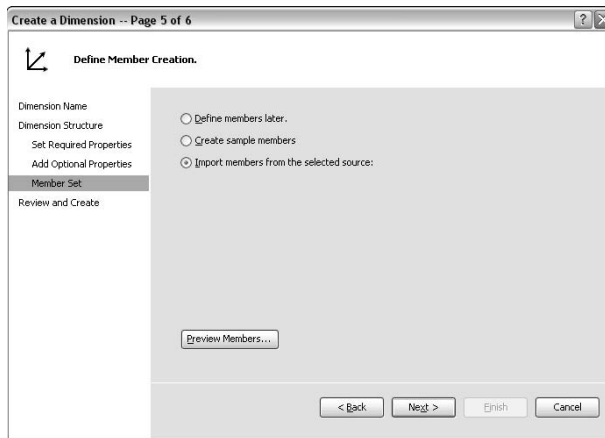


Figure 4-26:
The Define Member Creation dialog box.

7. Click the Preview Members button to see how the data from your data source file will be mapped to your dimension.

Hopefully your file will be mapped correctly to the fields in your dimension (see Figure 4-27).

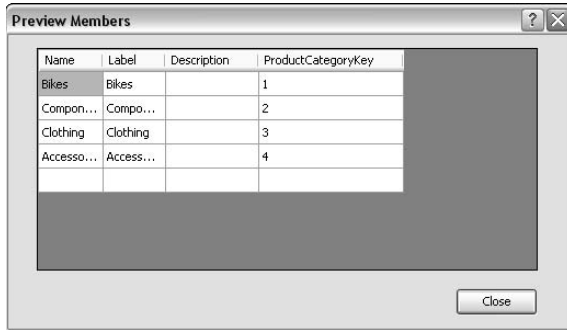


Figure 4-27:
Previewing
a data
source
mapping.

8. Click the Close button.

The Review And Create dialog box opens to present you with a summary of your work.

9. Click the Finish button.

The wizard closes and the primary panel adjusts to present your new dimension with the data from your data source already populated (see Figure 4-28).

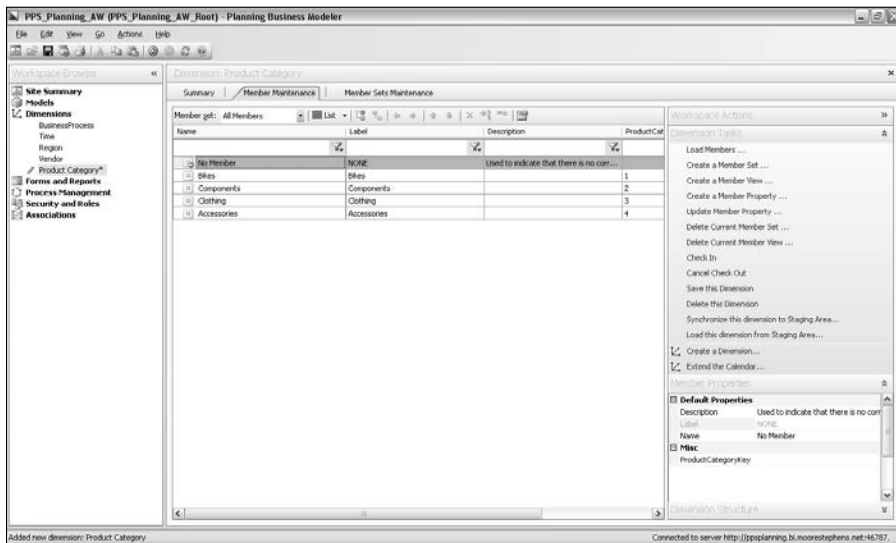


Figure 4-28:
A finished
data source
import.

10. In the Workspace Actions panel, click the Check In link.

Your work is saved to the planning server, and the dimension is available to other users for editing and configuring.

Sometimes, you may face data that is not ready for import into your dimension. Specifically, dimensions require that each row of data is completely unique. In the case of the AdventureWorks database, we'd like to import information from the product table. Unfortunately, while this data can prove to be useful throughout the rest of the book, getting it into a workable dimension takes an additional step. We'll create a better copy of the table that ensures the rows are unique, and at the same time, use more meaningful labels to make sense of the data.

If you need help executing the following steps, feel free to call your database administrator for help.

- 1. Within SQL Server Management Studio, open the AdventureWorksDW database.**
- 2. Create a new view using the following text:**

```
SELECT a.ProductAlternateKey, a.EnglishProductName AS Product,
       a.StandardCost,
       a.Color, a.ListPrice, a.Size, a.ModelName,
       b.EnglishProductSubcategoryName AS ProductSubCategory,
       c.EnglishProductCategoryName AS ProductCategory
FROM   dbo.DimProduct AS a INNER JOIN
       dbo.DimProductSubcategory AS b ON a.ProductSubcategoryKey =
       b.ProductSubcategoryKey INNER JOIN
       dbo.DimProductCategory AS c ON b.ProductCategoryKey =
       c.ProductCategoryKey
WHERE  (a.EndDate IS NULL)
```

Executing this code creates a single view containing product data, along with associated product category and product subcategory information. You can use this view as a data source to build a product dimension, along with a product hierarchy member set (with the category and subcategories serving as the group by order).



Because you've added a view to your data source, you need to update the available tables/views in your data source in the Planning Administrative Console. Make sure to add your new view before attempting to build the dimension from the data source.

Making Your Dimensions Pop through Member Sets

While crafting dimensions is a central aspect of your model, keeping your dimensions in a rather flat form limits the possibilities of usefulness for your model. Dimensions become much more representative of an organization when hierarchies can be incorporated. Those hierarchies are called *member sets*. Member sets are a means of building hierarchies within dimensions. These nested representations of your data provide a means of aggregating metrics to gain insight into whole departments, regions, product lines, or other dimensions.

At the unmodified level, dimensions consist of *leaf-level* members. These members are considered leaf-level using the analogy of a tree. The leaf-level members represent the most granular level of data. In a geography dimension, the leaf-level member might be U.S. zip codes. Higher-level members would be counties and then states. Member sets, budgets, and plans could be conducted at the zip code level, but users of the reports would be able to see how the zip codes aggregate to counties and then from counties to states.

As an example, here's a member set on the Region dimension built earlier within the model:

- 1. From the Workspace Browser, select Dimensions.**
- 2. From the primary panel, click the Region dimension.**
- 3. From the Workspace Actions panel, click the Check Out link.**

A pencil should appear next to Region in the Workspace Browser to indicate that you are working on the dimension.

- 4. From the Workspace Actions panel, click the Create A Member Set link.**

The Create A Member Set dialog box opens (see Figure 4-29). Enter the name and label you would like to use for your member set (pressing Tab after entering the name automatically populates the same label entry, which is fine.)

- 5. Click the Next button.**

The Select Member Set Creation Option dialog box opens (see Figure 4-30). For this example, choose the Create An Empty Member Set option.

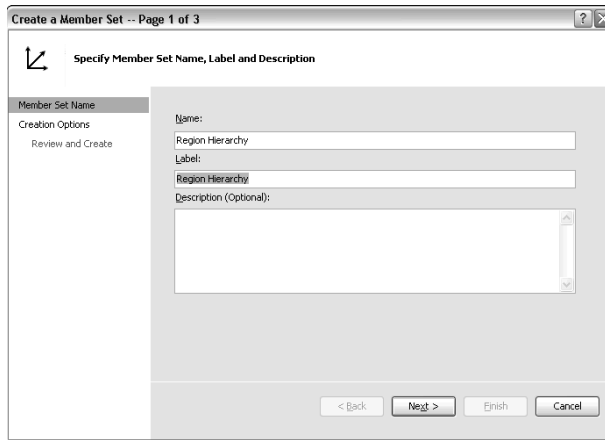


Figure 4-29:
Starting the
Member
Set Creation
Wizard.

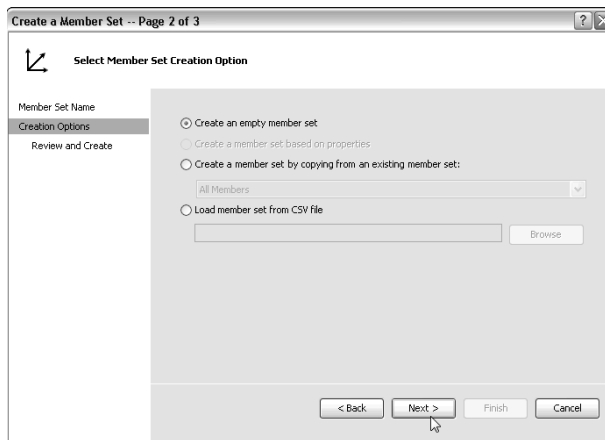


Figure 4-30:
Choosing
a member
set creation
option.

6. Click the Next button.

The Review And Create dialog box opens. This presents you with a summary of the configuration actions you have taken to create the member set.

7. Click the Finish button.

Notice that the Modeler creates a new empty member set with a label within the primary panel. If you click the Member Set drop-down box, you can see a list of the available member sets. Besides the default All Members set, you now have the Region Hierarchy member set (see Figure 4-31).

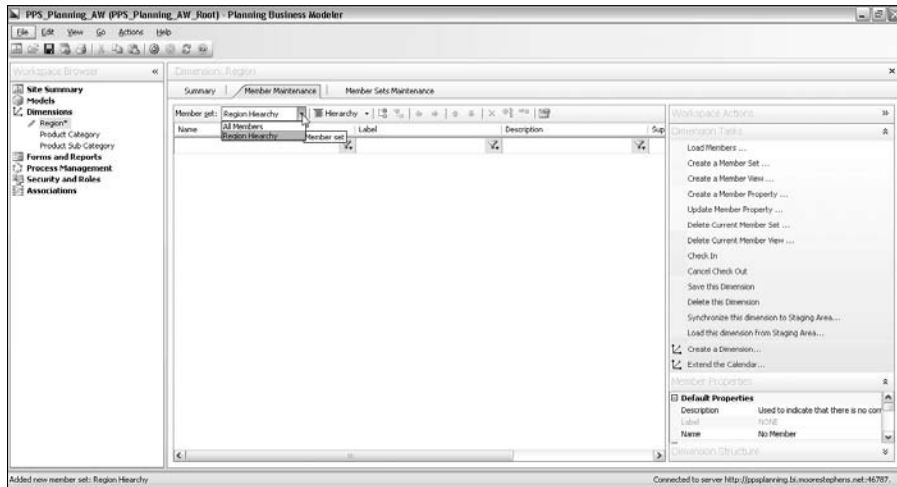


Figure 4-31:
Selecting a
member set.

8. Click the Member Set Maintenance tab in the primary panel.

The destination member set is placed next to the source member set on-screen.

9. Right-click the empty space within the Destination Member Set panel and select Add Sibling.

This creates a new default member.

10. Click the name of the new default member and type in USA.

Repeat again for the label.

11. Within the source member set, right-click South and select the Add As Child option.

This moves the South entry to the destination member set nested beneath the USA member. Repeat this process for all the USA source members. One by one, the members move from source to destination. The Destination Member Set panel should grow to look like Figure 4-32.

As an alternative, you can also drag and drop members from the source to the destination.

12. Repeat the process for the International entries.

Again, right-click the Destination Member Set panel and add a new sibling. If the new default member appears at the same level as one of the leaf-level members, you can right-click the default member and select Outdent to move it to the same level as USA. Then, with International selected in the Destination Member Set panel, add the two remaining members nested beneath it, as in Step 11.

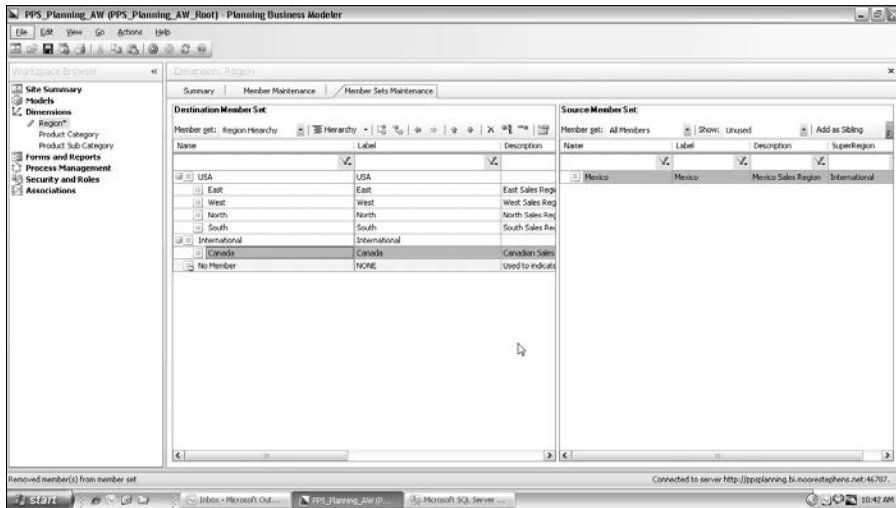


Figure 4-32:
Previewing
a data
source
mapping.



TIP

It's not always necessary to move all the members into a member set. In some cases, you may want to move only a portion of the members into a set. For instance, in the current example, you may want to create an additional member set that only includes the USA items. The configuration and number of member sets are up to you and the needs of your model.

13. Move the No Member entry to the destination member set by right-clicking No Member and selecting Copy.

Then right-click the Destination Member Set panel and select Paste.

14. Select the Member Maintenance tab in the primary panel.

In the Workspace Actions panel, click the Check In link.

You've now created your first member set. You can leverage member sets to aggregate figures within a dimension to arrive at totals and subtotals. When it comes to presenting results, doing so in a hierarchical fashion can be extremely compelling.

Configuring the Scenario Dimension

The scenario dimension is another key dimension within PerformancePoint. While other dimensions are used in the classical sense of breaking down or

cutting data into segments, the scenario dimension just catalogs the various numbers and metrics of interest within your model.



In some ways, the scenario dimension isn't really a dimension. But by classifying different kinds of numbers (such as budget, actual, forecast, and/or head count), PerformancePoint can provide an additional degree of flexibility in building reports and models.

The scenario dimension must use numerical amounts and cannot accept text-based data. The opposite is true of all other dimensions. Typically, dimensions generally accept only text-based data. Even if a dimension uses numbers for labels, the numbers within the labels cannot be added, subtracted, multiplied, or used in calculations. On the other hand, the numbers of the members of the scenario dimension are perfect for aggregating, averaging, and comparing.

Thus, every model must have a defined scenario dimension. Follow these steps to define one:

- 1. Select Dimensions from the Workspace Browser.**
- 2. Select Scenario in the primary panel.**
- 3. Click the Check Out link.**
- 4. Right-click the space beneath the No Member member in the primary panel.**

Select Add New Sibling. A new row is added to your dimension member list.

- 5. Edit the new row by clicking the name entry and typing in the name of your new member.**

Do the same for the label and description (see Figure 4-33). Common entries for names and labels might be Actual, Budget, Forecast, Plan, and Head Count.

- 6. Repeat Steps 4 and 5 to add each member to your dimension.**
- 7. In the Workspace Actions panel, click the Check In link.**

Your work is saved to the planning server, and the dimension is available to other users for editing and configuring.



Chapter 5 shows you how to use the dimensions to create models.

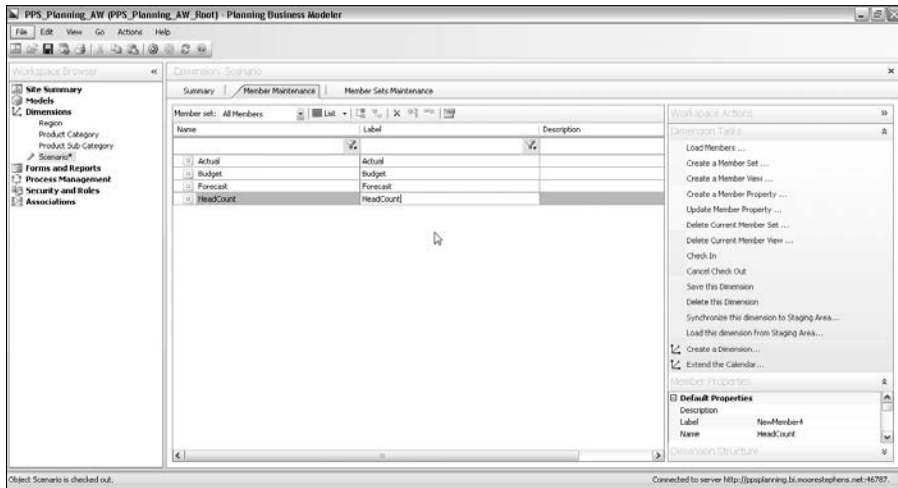


Figure 4-33:
Editing
scenario
dimension
members.

Chapter 5

Bringing the Pieces Together: Building a Model

In This Chapter

- ▶ Building a model from dimensions
 - ▶ Updating and scheduling your current periods
 - ▶ Associating additional models
 - ▶ Spawning new model subsites
-

Upon completion of the dimensional building blocks, the next step is to start building the model itself. While building dimensions can be painstaking and lengthy, your hard work will now pay off as you watch the pieces come together into a consolidated whole.

Technically speaking, a *model* is simply a container for your dimensions with some logic to connect dimensions together into a working whole. Then again, models also contain a significant amount of functionality to drive and facilitate the creation of reports that will be useful to end users. Models can be endlessly configurable, but the point isn't to make highly complex models. The main objective is to craft a model that is most useful for your users. With this in mind, you should seek to determine the level of complexity for your models that will be appropriate for your company.

Each model you create can also spawn additional model subsites. A *model subsite* leverages shared dimensions created in the root model site to enable the creation of different model versions. These smaller versions can accommodate a subset of the dimensions, or subsets within dimensions to be tailored for specific user groups. For example, a model subsite can be created just for the Finance department if necessary. Alternatively, a model subsite may service a specific product line, or a subsite might be a particular combination of dimensions. The number of model subsites is up to you and is dependent on the needs of your company.

Understanding the Different Types of Models

Planning Business Modeler is preloaded with a number of different model types to help you create common models. These predefined *model types* work in a similar fashion to predefined dimensions: Much of the structure is already built for you, and much of the functionality that drives the logic is already embedded in the underlying code. Predefined model types save you lots of work if you can use the out-of-the-box functionality.



Predefined models are provided for your convenience. You can mimic these models by configuring a generic model (with lots of effort). Use the predefined models when you need them. Otherwise, use the generic models.

Table 5-1 presents the predefined model types included with Planning Business Modeler.

<i>Pre-Defined Dimension</i>	<i>Description</i>
Generic	The most basic model type and can be used along with any other model type. Contains no predefined rules for accounting logic. More than likely the best candidate for most applications.
Global Assumptions	Used for baseline data that will apply throughout a business, such as headcount, inventory, or price list information or for business drivers in a financial model, such as revenue and expenditure assumptions. To be useful, the Global Assumptions model must be used in conjunction with other model types.
Exchange Rate	A special-purpose assumption model that tracks foreign exchange values by period and exchange type for all currencies in your system. Because Exchange Rates cannot be aggregated, each granularity of time (e.g., day, month, quarter) requires a separate Exchange Rate model. Like a Global Assumption model, the Exchange Rate model must be used in conjunction with other model types.
Financial Model without Shares Calculation	Includes built-in logic to perform consolidations without shares calculations. If you have one entity, or multiple entities that are analyzed individually, use this model type. For example, this model is correct when all of the companies are completely owned by a single parent. The model provides intercompany eliminations, and jobs for consolidations.

<i>Pre-Defined Dimension</i>	<i>Description</i>
Financial Model with Shares Calculation	Includes built-in logic to perform consolidations that include shares calculations. For example, if you have multiple entities partially owned by other businesses, then the inclusion of share calculations may be very relevant to your application. This model provides all of the features of the “without shares” version with the additional of jobs to support intercompany eliminations.
Exchange Rate	The Exchange Rate dimension stores a list of conversion rates between currencies. Used in conjunction with the Currency dimension, the Exchange Rate dimension assists in various point-in-time assessments of dollar value for international transactions.
Flow	The Flow dimension provides tracking of cash flows and monetary amounts between time periods.
Intercompany	Intercompany dimensions interact with the Entity dimension to establish relationships between entities for management or legal reasons. This dimension is maintained internally by PerformancePoint
Scenario	The Scenario dimension comprises the storage of values associated with budget, actual, and forecast values. From a Analysis Services perspective, the Scenario dimension is akin to the concept of measures in a cube. Here, the numerical components of the Scenario dimension exist against the Time dimension as snapshot figures.
Time	The Time dimension comprises one of the most important dimensions for any model. The Time dimension provides a hierarchy that naturally captures the relationships inherent in a calendar, such as Years, Quarters, Months, Weeks, and Days. The Time dimension is required for all Models and is one of the first dimensions created through the Application Calendar Wizard.
User	The User dimension provides a means to easily manage the reporting lines, and assignment an distribution as part of Process Management.



Each predefined model type may require different dimensions. The presence of the required dimensions casts light on why many of the predefined dimensions from Chapter 4 are so tightly preconfigured. Because the kind folks at Microsoft want to provide you with a technical framework for composing easy common models, the requirement is that to use these framework models, you must comply with the required structures. The predefined model types need a very particular type of input to work properly. That input comes from the tightly controlled predefined dimensions.



Microsoft fully expects you to add your own dimensions to the model to tailor to fit the model to your needs. However, you must add the required dimensions.

For the purposes of illustration, the following sections utilize a generic model that allows you to build a model from scratch. As an optional section, you have the opportunity to build an assumption model to link to the generic model for additional functionality. Let's get going!



We're using the example of forecasting here, but we could replace forecasting with budgeting, planning, or any other metric. In fact, we could combine some of these metrics for a rather grand model. For now, we'll keep it on the simple side.

Building a Model

Generally, the process of creating the different kinds of models available within Planning Business Modeler doesn't differ significantly. The primary difference in the methodology of creating these models lies in the particular dimensions that must be configured for the predefined models. How those dimensions are configured really depends on you.

Assuming that you have Planning Business Modeler open, use the following steps to create a new generic model:

- 1. From within Planning Business Modeler, navigate to the Models link in the Workspace Browser panel.**
- 2. Click the Create A Model link in the Workspace Actions panel.**

This launches the Create A Model Wizard (see Figure 5-1).

Figure 5-1 shows the 'Create a Model' dialog box, Page 1 of 5. The dialog is titled 'Name the Model' and contains a sidebar with navigation options: 'Name the Model', 'Select Data Source and Type', 'Define Dimensions and Member Sets', 'Specify Assumptions (Optional)', and 'Review and Create Model'. The main area has fields for 'Name:' (Sales Planning), 'Label:' (Sales Planning), and 'Description (optional):'. There is a checkbox for 'Allow this model to be shared' which is checked. At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

Figure 5-1:
The Create
A Model
dialog box.

3. Enter a name and label for your model.

By entering a name and pressing Tab, your name will be replicated in the Label field as well. Make sure to select the Allow This Model To Be Shared check box.

4. Click the Next button.

The Select Data Source And Type dialog box opens (see Figure 5-2). Choose Create A New Model. From the drop-down list, choose a model type to build. For this example, we're using the generic model.

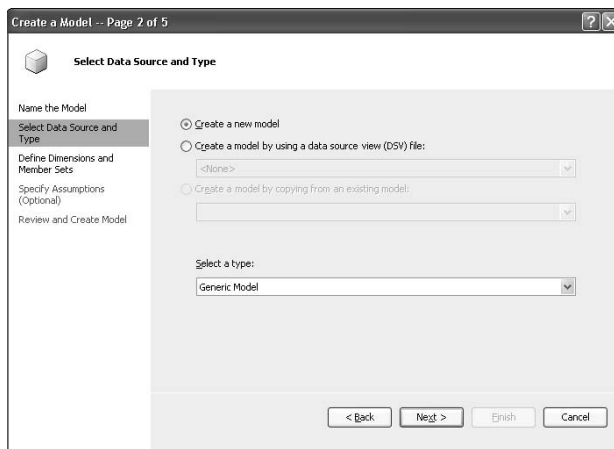


Figure 5-2:
The Select
Data Source
And Type
dialog box.

5. Click the Next button.

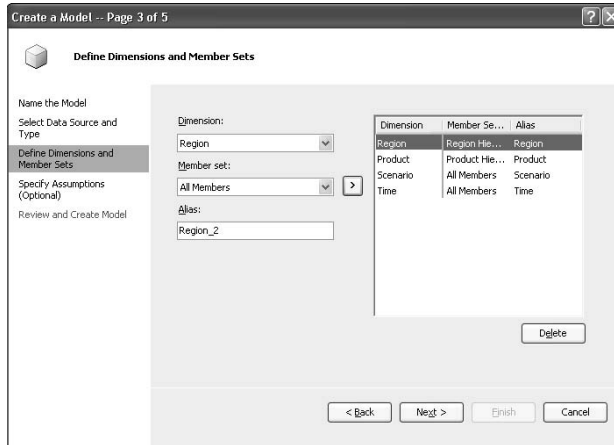
The Define Dimensions and Member Sets dialog box opens (see Figure 5-3). You have the option of adding dimensions to the model beyond the ones that accompany your selected model by default. For this example, we add two dimensions that we created in the previous chapter.

To add the product category dimension, select Product Category from the Dimension drop-down list. In the Member Set drop-down list, we can add the All Members member set. If you want to call this member set something else, enter the name in the Alias text box. For this example, we leave the default entry in the Alias text box.

6. Click the right-facing arrow next to the Member Set drop-down box to add the dimension or member set to the model.

Repeat the process for each dimension you want to include in your model. For this example, the product category dimension is sufficient.

Figure 5-3:
The Define
Dimensions
and
Member
Sets dialog
box.



7. Click the Next button.

The Specify Assumptions dialog box opens. Specifying assumptions requires the availability of another model site. Because we haven't created one yet, we need to skip this step for now.

If you did have an assumptions model to use, the Specify Assumptions dialog box would allow you to use data from that other model site to drive the numbers in the current model site.



Later in the chapter, in the section “Linking to an Assumption Model,” we build an assumption model and demonstrate how to connect it to your current model.

8. Click the Next button.

The Review and Create Model dialog box opens. This page summarizes the configuration actions you've taken through the wizard.

9. Click the Finish button.

The wizard closes, and you are brought back to the Models workspace in the primary panel.

10. Within the Workspace Actions panel, click the Check In link.

Your new model with all the associated configurations are saved and stored on the planning server.

Congratulations! Not so difficult, right? Actually, before you get too excited, we still have a significant amount of work to do before you have a fully built solution. Remember, the model is really just a container that connects the pieces (the dimensions) together. Now we need to really make your model function like a model. You'll do that by

- ✓ Adding more dimensions to your model
- ✓ Using time intelligence to schedule periodic current period updates
- ✓ Creating model subsites

You can also link your model to an assumptions model for added capabilities.

Adding Dimensions to an Existing Model

Just because you already created a handful of dimensions while building your initial model, you may want or need to add more dimensions to the model in the future.

To add more dimensions, follow these steps:

1. Select the Manage Model Dimensions option.

This brings you back to the same dialog box you used in the Define Dimensions and Member Sets step when building the initial model.

2. Select the dimension you want to add from the dimensions dropdown list.

Also, select the member set from the dimension that is to be added. Click the right-facing arrow so that the dimension appears in the table on the right.

3. Click the Check In link after completion.



Using the Manage Model Dimensions option, you can also delete dimensions from your model. Rather than clicking the right-facing arrow to move a dimension to the table on the right, you can select an existing dimension in the table and click the Delete button. This removes the selected dimension from your model.

Scheduling Periodic Updates

By default, your model contains a definition of the *current period* that you specified during the configuration of the time dimension through the Calendar Wizard. This current period defines the scope of time that comprises the focus of data-entry work. Essentially, the current period pertains to the data you want your users to be concentrated on now. However, your current period needs to move at some point down the line so that your users can work on the next cycle. To shift the current period, you have the option of defining when and how that period shifts by using a specific function in your model.



The current periods you schedule for your models don't necessarily need to be consistent. The current period for sales models may occur twice a year, while your forecasting and resourcing models may be more frequent or less frequent. Scheduling your current periods is conducted at the model level. If you have multiple model sites, you can have a single current period schedule for each.

To schedule current period updates, follow these steps:

1. **Within the Workspace Browser pane, select Models.**
2. **Click the generic model you created and click the Check Out link in the Workspace Actions panel.**
3. **In the Workspace Actions panel, click the Schedule Current Period Updates link.**

The Schedule Current Period dialog box opens (see Figure 5-4).

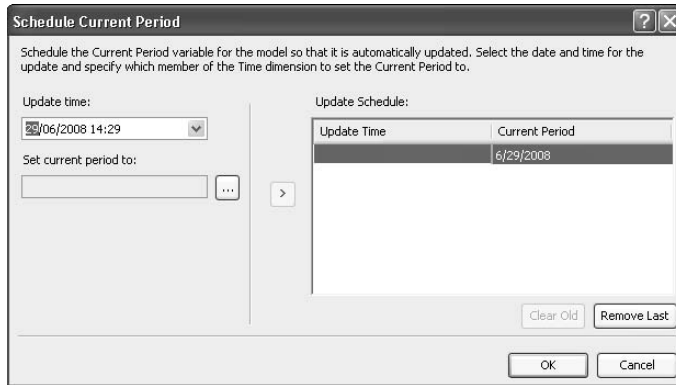


Figure 5-4:
The
Schedule
Current
Period
dialog box.

4. **In the Update Time box, enter the date information for your current period to change.**

This is the date and time when you want the current period to change from the current one to the next one. When the server matches the actual time to the time you specify, a new current period will begin.

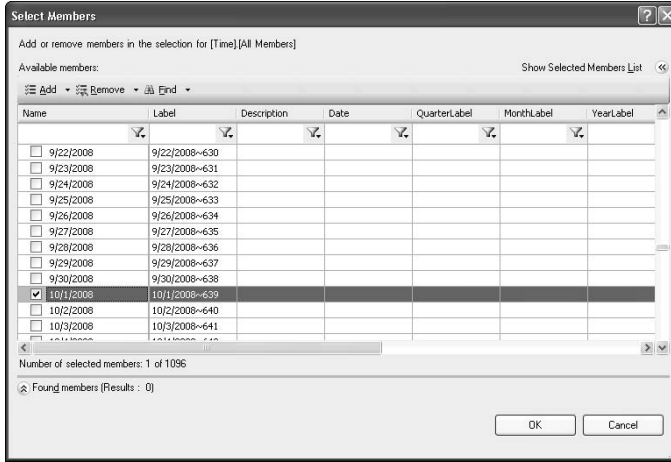
You can also use the calendar pop-up tool to select your current period end point.



5. **Click the Ellipsis button next to the Set Current Period To box (see Figure 5-5).**

The Add Or Remove Members to Include Them In The Selection For dialog box opens.

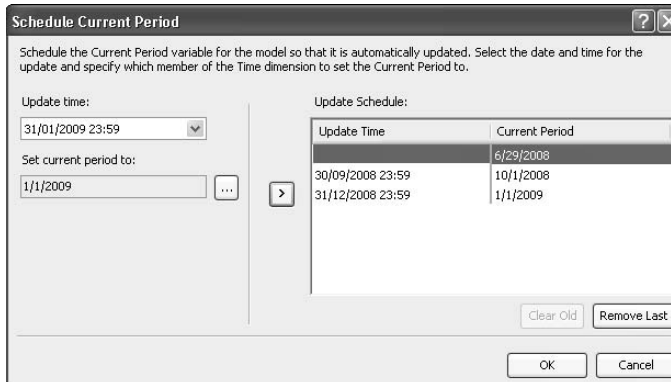
Figure 5-5:
Setting the
Current
Period.



6. Select the new current period by selecting the check box next to the desired time dimension member.
7. Click the OK button.
8. Click the right-facing arrow to add the new scheduled update to the Update Schedule table (see Figure 5-6).
9. Click the OK button.

Done! As the system date adjusts, the current period will automatically adjust as well.

Figure 5-6:
Adding a
scheduled
update.



Linking to an Assumption Model

While not always necessary, linking an assumption model to a generic model can yield a tremendous amount of functionality to your resulting application. The presence of a global assumption model provides a catalog or baseline of figures (whether they are such values as product prices, shipping costs, manufacturing costs, or interest rates) that can serve as the basis for projecting and modeling other numbers within your generic model.

Think of assumptions as baseline data that can be used throughout a business or a financial model. For example, in a sales planning model, you can use data items such as product costs, shipping costs, exchange rates, and predicted shipment times. Organizing assumption data into a separate model allows other models to use the assumption data easily. For example, to use product pricing data, you simply connect the pricing assumption model to the sales planning model.

One powerful feature of assumption models is that they can be used globally. Specifically, a single assumption model can feed data and utility for multiple other models. For example, a single assumption model can contain product pricing data that can be linked to a sales planning model, a profitability forecasting model, and a corporate expense model simultaneously.

Assumption models aren't limited to a single set of numeric figures. Multiple sets of data can be contained within a single assumption model. For example, your assumption model may contain product pricing, head counts, unit costs, and growth rates. Thus, assumption models serve as a repository for baseline data that can be used globally.

The advantage of an assumption model is that all the data serving as a baseline for other models can be maintained in a single model. You don't need to synchronize data within multiple distinct models. Change the assumption model, and all the models connected to the assumption model can automatically adjust as well.

To link an assumption model, the first step is to create an assumption model. Follow these steps:

- 1. Follow the instructions in the section “Building a Model,” earlier in this chapter, to build a generic model.**

Enter a name and label for your model (see Figure 5-7). By entering a name and pressing Tab, your name is replicated in the Label field as well. Make sure to select the Allow This Model To Be Shared check box.

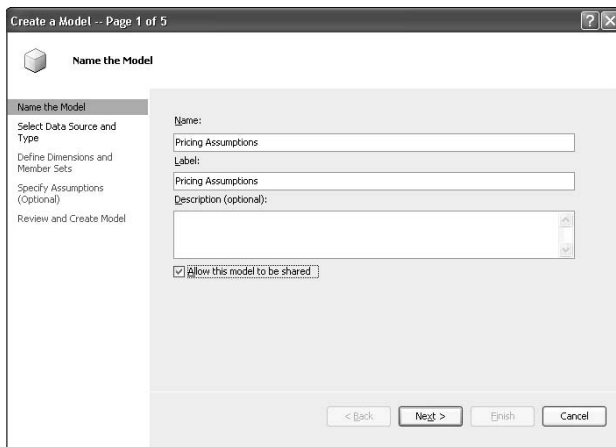


Figure 5-7:
The Name
the Model
dialog box.

2. From the **Select Data Source And Type** dialog box, choose the **Global Assumption Model** option from the **Select A Type** drop-down list (see **Figure 5-8**).
3. Select a dimension to include in the model that contains baseline data (see **Figure 5-9**).

For this example, choose the Product dimension, which contains information on list prices and dealer prices.

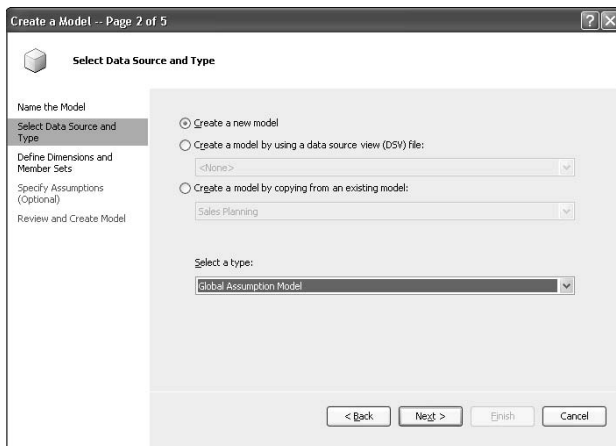


Figure 5-8:
The Select
Data Source
And Type
dialog box.

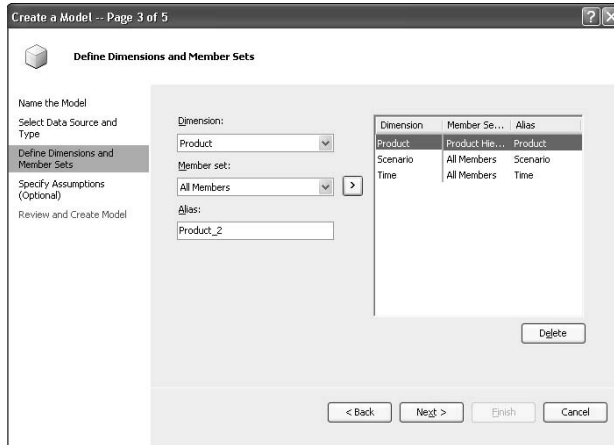


Figure 5-9: Selecting the dimensions that contain assumption data.

4. Click the Next button.
5. Click the Check In link to save and post your new assumptions model to the planning server.
6. Within the Workspace Browser panel, select Models.
7. Within the primary panel, choose your generic model (in this case, the Sales Planning model).
8. Within the Workspace Actions panel, click the Manage Assumptions link. The Manage Assumptions dialog box opens.
9. Select your newly created Pricing Assumptions model in the left panel and move it to the right panel by clicking the right-facing arrow (see Figure 5-10).

Your Sales Planning model is now linked to the Pricing Assumptions model.

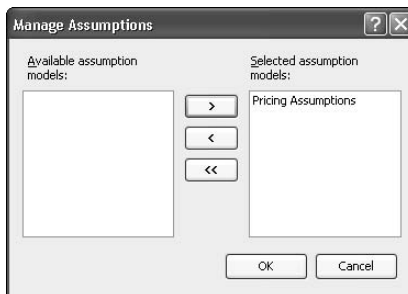


Figure 5-10: The Manage Assumptions dialog box.

Creating a Model Subsite

Model subsites provide the ability to segment and narrow the scope and breadth of a model to tailor and restrict access to particular dimensions. Model subsites inherit the attributes of the parent model site when the particular attributes have been selected for sharing during dimension and model creation. If the dimensions and relationships established in the parent model site change, the downstream model sites continue to inherit the changes as well. Thus, the primary benefit to model subsites is that the maintenance of the underlying data within your parent model site can be managed in a single location, and any subsequent changes can automatically flow through to the model subsites.

You can create as many model sites as you want. As an example, you can create a model subsite using the Sales Planning model that also inherits its link to the Pricing Assumptions model. In this new model subsite, you will restrict the region dimension to only include regions within the USA member. Thus, users accessing this new USA Sales Planning model will only need to deal with data pertaining to relevant regions.

To create a model subsite, follow these steps:

- 1. From the Workspace Browser panel, select Models.**
- 2. From the Workspace Actions panel, select the Create a Model link.**
The Create a Model Wizard opens.
- 3. Type the name and label for your model subsite (see Figure 5-11).**
For this example, enter **USA Sales Planning** for the name and label. Also, select the Allow This Model To Be Shared check box. Click the Next button.
- 4. From the Select Data Source And Type dialog box, select the Create A Model By Copying From An Existing Model option (see Figure 5-12).**
Choose the Sales Planning model you created earlier. Click the Next button.
- 5. Click the Next button through the remaining wizard screens to accept the default options.**

You've created a new model subsite called USA Sales Planning. However, the model subsite is exactly the same as the original Sales Planning model. You've also inherited the Pricing Assumptions model association that existed before against your generic Sales Planning model.

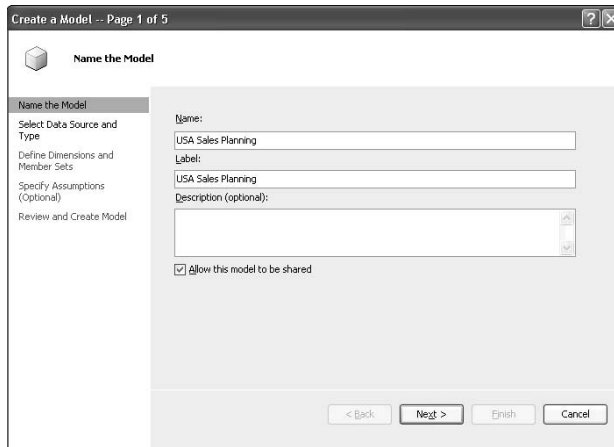


Figure 5-11:
The Name
The Model
dialog box.

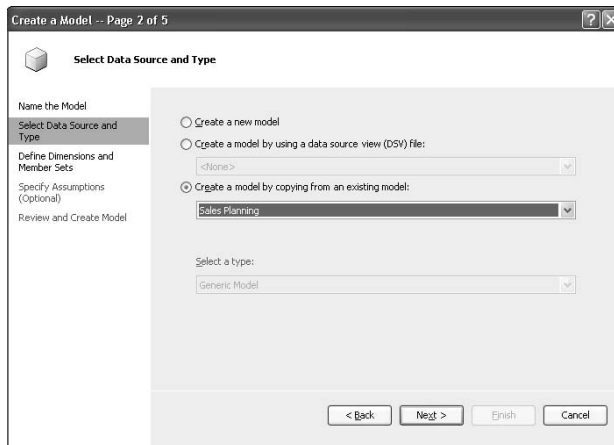


Figure 5-12:
The Select
Data Source
And Type
dialog box.

To restrict the data only to U.S. regions, follow these steps:

- 1. Within the primary panel, go to the Summary tab within the USA Sales Planning model. See Figure 5-13.**
- 2. Double-click the Region dimension.**
The primary panel adjusts to show the contents of the Region dimension.
- 3. Within the Workspace Actions panel, click the Create A Member Set link.**

The Create A Member Set dialog box opens. See Figure 5-14.

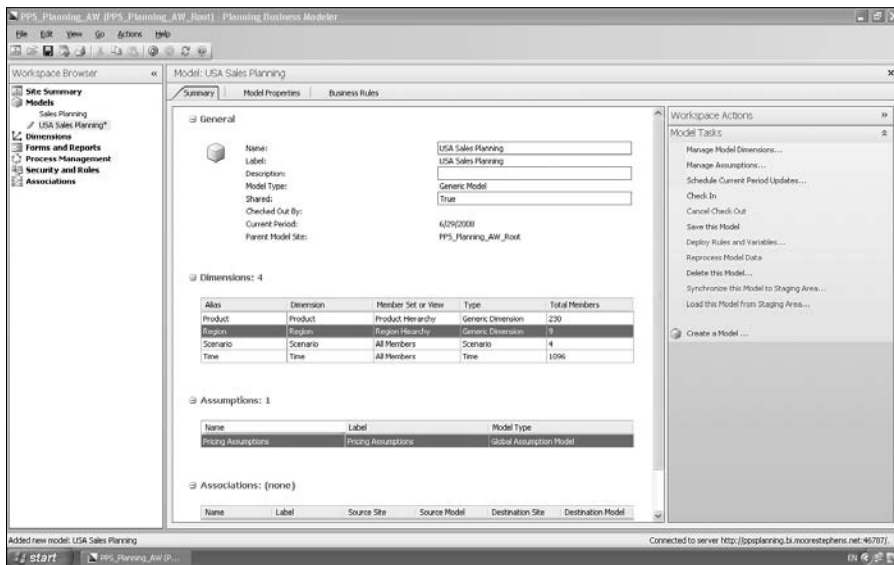


Figure 5-13:
The Models
Summary
tab.

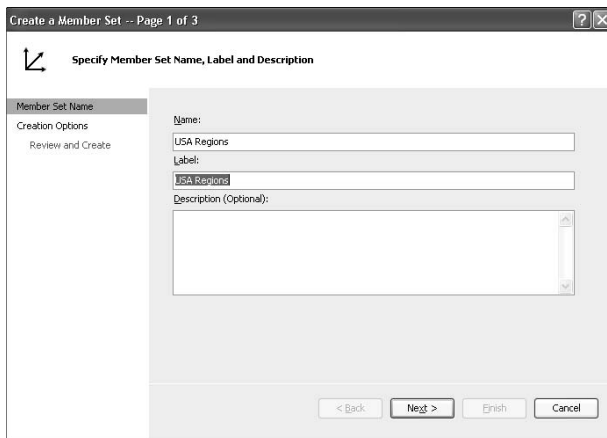


Figure 5-14:
The Create
A Member
Set dialog
box.

4. Type a name and label for your member set.

For this example, type **USA Regions**. Click the Next button.

5. Within the Select Member Set Creation Option page (see Figure 5-15), select the Create A Member Set By Copying From An Existing Member Set option and choose Region Hierarchy.

Click Next.

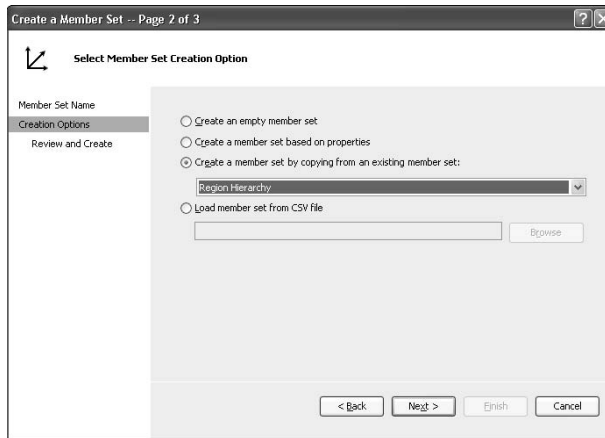


Figure 5-15:
The Select
Member
Set Creation
Option
dialog box.

6. Click the Next button again to open the newly created USA Regions hierarchy.

7. Right-click the International member and select Delete Member.

All the members contained within the International category and the category itself will be removed from the hierarchy, leaving only the USA category and its contents and the No Member member.

Done! You've now created a USA Sales Region hierarchy within your USA Sales Planning model subsite. Users who access the USA Sales Planning model subsite can concentrate on U.S. regions without having to deal with the international regions.

Chapter 6

Shoring Up Your Model with Security and Process

In This Chapter

- ▶ Adding cycles
 - ▶ Creating assignments
 - ▶ Building processes
 - ▶ Adding business rules and calculations
 - ▶ Configuring security and access
-

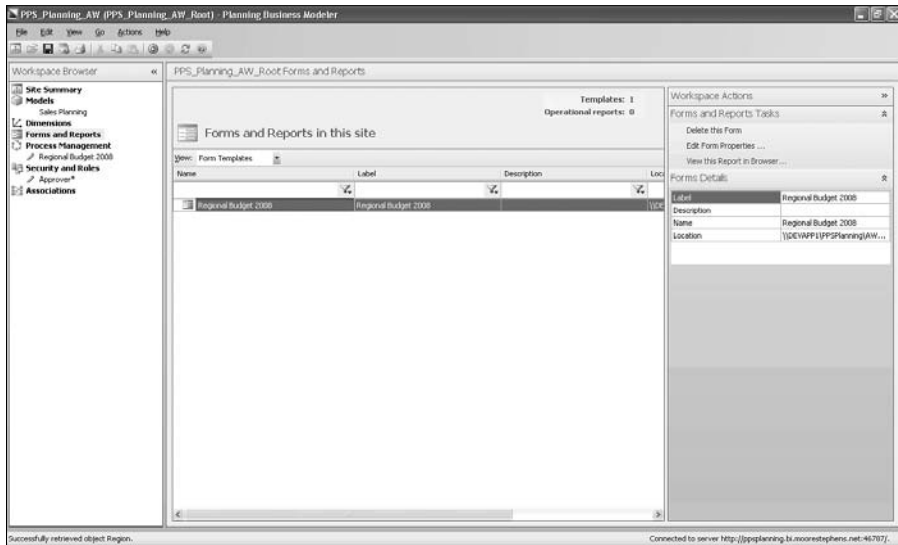
With a set of dimensions in place and consolidated into a model, you're most of the way through the process of building a running application. From here on, the goal is to increase the usability and appropriateness of your model to your users.

Understanding Forms and Reports

Selecting the Forms And Reports link in the Workspace Browser panel in Planning Business Modeler shows all the forms and reports stored in the repository. The repository for all the forms and reports is tied to folder locations specified in the Planning Administrative Console configuration for the associated application.

If you open Planning Administrative Console and navigate to your application, click the Edit button and you can see exactly where your reports will go as you create them (see Figure 6-1).

Figure 6-1: The application settings for Planning Administrative Console show the locations of your forms and reports.



The main function of the Forms And Reports link in Planning Business Modeler is to inform you about what forms and reports already exist. You can administer the reports through Planning Business Modeler by deleting items that users no longer want or by controlling access to those forms.



Chapter 7 digs into the concept of forms and reports. But you will need a form or two already in place to get through this chapter.

Getting to Know Process Management

Think of process management within PerformancePoint as if you were conducting an orchestra. While you have the score in front of you consisting of all the parts for all the instruments, you still need a way to direct the parts to work together in synchrony. As the conductor, you control which instruments will be playing, when those instruments start and stop, and how many instruments play for each part.

In much the same way, PerformancePoint provides similar orchestration through the process management tools in Planning Business Modeler. You control when your users get access to the model, how much of that model they get to see, how much time they get to see it, and how much control they have to change it. By controlling these aspects of the flow of information, you assist in the synchronization and organization of information to and from the model.

The process management component of Planning Business Modeler allows you to manage three distinct aspects of a model:

- ✓ **Jobs:** A *job* constitutes a system task that doesn't require user interaction, such as loading data, running rule sets, or sending notifications. In Planning Business Modeler, jobs can conveniently be created as part of a process schedule inside a cycle. They can also exist independently of a cycle. For the purposes of this chapter, we discuss jobs within a cycle (the easiest example being sending notifications).
- ✓ **Assignments:** An *assignment* can be created within Planning Business Modeler to associate a particular cycle task to a user. Assignments appear as worksheets in the PerformancePoint Add-in for Excel. The assignments are routed to the appropriate users, who are responsible for adding the requested information and submitting it to the computer that is running Planning Server. Each assignment has a start date; submission and approval deadlines; and a submission, review, and approval process. Together, the dates, processing requirements, and jobs are called a *cycle*.
- ✓ **Cycles:** A *cycle* defines the date that a job will occur on or when an assignment is due. A cycle might be a one-time occurrence, or it might be scheduled to recur repeatedly over a span of time or a specific number of instances.

By creating cycles containing forms, jobs, and assignments, the implementation of a model becomes smoother. Rather than call multiple contributors on the phone to have information entered into a spreadsheet, you can notify them automatically through an assignment. Wrap those assignments with time-based constraints so that the users are notified at the right time to enter the data, and give them a specific amount of time to do that. If your users are late entering the numbers, notify them automatically that they are late, or control how the system manages that tardiness. You can also implement a structure to repeat the cycle at regular intervals. Why waste time managing the input process when it can be managed automatically after you set up process management properly?

The general methodology for configuring process management is to

1. **Create a cycle.**
2. **Associate specific jobs to the cycle (including notifications).**
3. **Assign users to the cycle for data entry.**

Let's get going!

Creating a cycle

Cycles are a critical component of planning models in that the regulation and administration of information coming from users must be a managed process. Cycles constitute the primary mechanism through which regulated processing of user-provided data is achieved.

Follow these steps to create a cycle:

- 1. In the Workspace Browser panel, select Process Management.**
- 2. In the Workspace Actions panel, select the Create A Cycle link.**
The Cycle Wizard dialog box opens.
- 3. In the Name The Cycle dialog box, enter a name and label for your cycle. Click the Ellipsis button next to the Owner option.**

The Select Owner dialog box opens (see Figure 6-2).

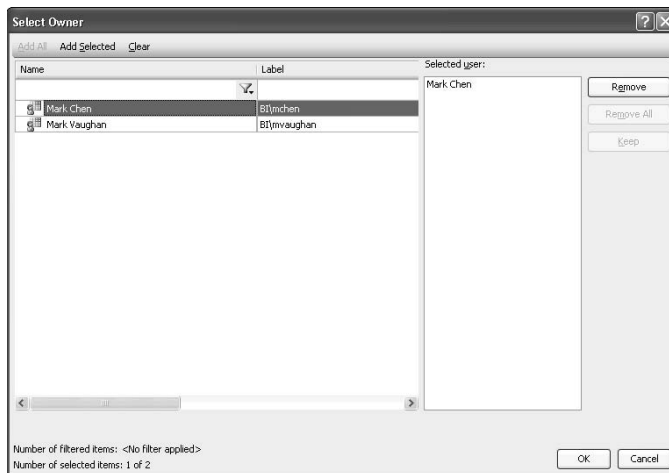


Figure 6-2:
Selecting an
owner for
the cycle.

Each cycle created can have only one owner. The list of owners is inherited from users configured within Planning Administrative Console. Only the owner has the power to change the status of a cycle.

Choose the owner of the cycle by double-clicking the name. The entry appears in the right panel.

- 4. Click the OK button.**

The Select Owner dialog box closes, and you are returned to the Name The Cycle dialog box (see Figure 6-3). Click the Next button.

The screenshot shows a dialog box titled "Create a Cycle -- Page 1 of 6". The main heading is "Name the Cycle". On the left, a vertical list of steps is shown: "Name the Cycle" (highlighted), "Select a Model", "Define Data-Entry Scope", "Start and End Date", "Notification", and "Review and Create". The main area contains the following fields and instructions:

- Instruction: "Enter a name, label, and description (optional) for the cycle, and then specify a cycle owner. The cycle name does not have to be unique within the model site; however, the cycle label must be."
- Field: "Name:" with the value "Regional Budget 2008".
- Field: "Label:" with the value "Regional Budget 2008".
- Field: "Description (optional):" with an empty text area.
- Field: "Owner:" with the value "BTynchen" and a selection icon.

At the bottom, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Figure 6-3:
Back to
the Name
The Cycle
dialog box.

5. Within the Select A Model dialog box, choose the model from the drop-down list for which the cycle is to apply (see Figure 6-4).

You can only choose one model per cycle.

The screenshot shows a dialog box titled "Create a Cycle -- Page 2 of 6". The main heading is "Select a Model". On the left, a vertical list of steps is shown: "Name the Cycle", "Select a Model" (highlighted), "Define Data-Entry Scope", "Start and End Date", "Notification", and "Review and Create". The main area contains the following fields and instructions:

- Instruction: "Cycle contain form assignments that allow contributors to submit data that is then written to a particular model. Select the model that form assignments in this cycle will submit data to."
- Field: "Model to which data will be submitted:" with a dropdown menu showing "Sales Planning".

At the bottom, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Figure 6-4:
Selecting
the model.

6. Click the Next button.

The Define Data-Entry Scope dialog box opens. The data period represents the boundaries of the time dimension for which you want your users to enter data.

If you choose 6/30/2008 as a start date and 9/30/2008 as an end date, your users can enter data for all the time buckets during that interval. Essentially, setting the data period selects the time-level entries open for data entry for the current cycle.

7. Click the Edit button next to the Start box.

The Select Members dialog box opens (see Figure 6-5). Select the date for the start of your cycle data. Click the OK button.

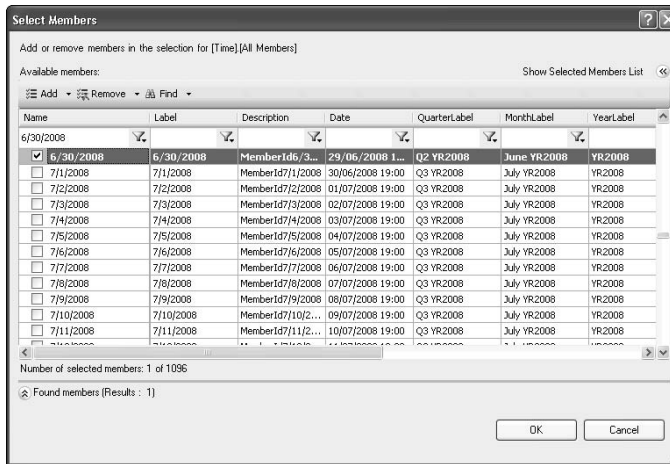


Figure 6-5:
Selecting
cycle data
start date.

8. Repeat Step 7 to select the end date.

9. Click the Edit button to choose a scenario.

Within the Scenario selector, choose the scope of the cycle by navigating to the particular member for your data entry (see Figure 6-6). The available items are inherited from the scenario dimension you created in Chapter 4.

10. Click the Next button.

The Start And End Date dialog box opens (see Figure 6-7).

From the drop-down boxes, choose when you want to allow your users to start and stop entering budget information.

Figure 6-6:
A defined
data-entry
scope with
a scenario
selected.

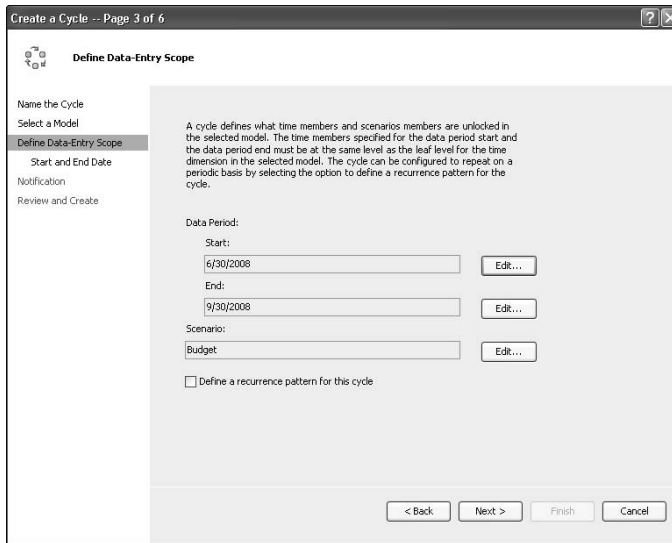
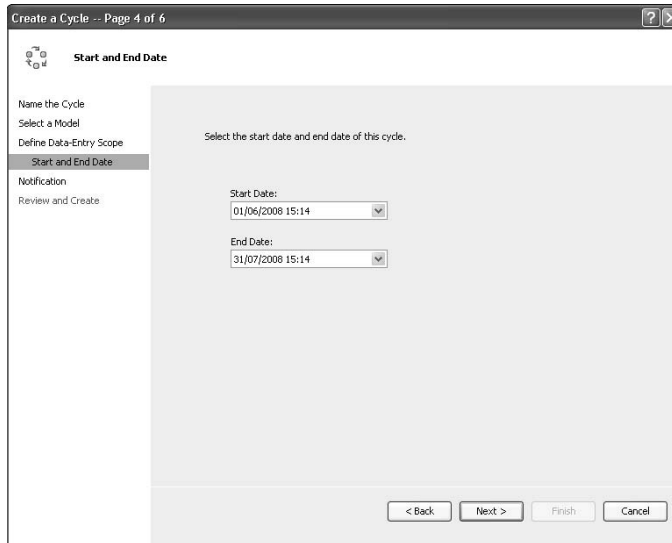


Figure 6-7:
Selecting
the start and
end dates
for data
entry.



While the start and end dates for Step 6 represent the boundaries of the data resident in the cycle, here the start and end dates represent the amount of time your users have to actually enter the data. For example, you may schedule a Q3 budget to be entered two months prior to the beginning of Q3. You can set when that data-entry period starts and ends here. Click the Next button.

11. Ensure that the Enable Notifications check box is selected.

When the data-entry period begins, PerformancePoint will notify users with assignments through e-mail that tasks have been initiated.

12. Click the Next and Finish buttons.

Your first cycle has been created. You can always go back and edit your cycle by accessing the cycle and then selecting the Edit Cycle Properties link in the Workspace Actions panel. However, there's more to be done with cycles to make the machine run.

Associating forms and assignments to a cycle

After your cycle has been configured, the next step is to create the catalog of forms that users can access to enter their numbers. The process of associating forms and creating assignments happens in the same series of steps in Planning Business Modeler. This makes sense given that cycles depend on the combination of forms and the users entering data into those forms.



To assign forms, you need to have some forms ready. The best way to create forms is through the PerformancePoint Add-in for Excel. You can skip to Chapter 7 to read about creating forms. After you have a form or two published, return to this section to associate the form to your cycle.



The full configuration of cycles requires the availability of users who have been assigned to roles through the security module of Planning Business Modeler. Even if you choose individual users, they still need to have been assigned to the model through the security components. See the section “Configuring Security,” later in this chapter, to understand how users are assigned to roles.

The process of assigning forms is relatively straightforward. Follow these steps:

1. With your cycle selected in the Workspace Browser, click the Assign Forms link in the Workspace Actions panel.

The Create An Assignment Definition dialog box opens (see Figure 6-8).

2. Enter a name and label for your assignment. Click the Next button.

The Data Submission page opens.

The screenshot shows a dialog box titled "Create an Assignment Definition -- Page 1 of 5" with a sub-header "Name the Assignment". On the left, there is a navigation pane with options: "Name the Assignment" (selected), "Data Submission", "Submission Period", "Review And Approval", and "Assignment Summary". The main area contains the following fields:

- Name:** A text box containing "Regional Sales 2008 Assignment".
- Label:** A text box containing "Regional Sales 2008 Assignment".
- Description:** A large empty text area.

At the bottom, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Figure 6-8:
Naming the assignment.

3. Select the check box associated with Contributors and click the Edit button.

Here you have some flexibility in what you want to choose. You have the option of choosing roles or users (or both) to have access to the data. After choosing the users (or roles), click the Add Selected link (see Figure 6-9).

The screenshot shows a dialog box titled "Select Contributor". At the top, there are three buttons: "Add All", "Add Selected", and "Clear". Below these, there are two dropdown menus: "View: Business Roles and Users" and "Pivot by: Role". The main area is a table with columns "Name", "Label", and "Description". The "Contributor" row is selected. To the right of the table is a "Selected user/role:" list with a "Contributor" entry and buttons "Remove", "Remove All", and "Keep". At the bottom, there are two status lines: "Number of filtered items: <No filter applied>" and "Number of selected items: 1 of 13". There are "OK" and "Cancel" buttons at the bottom right.

Name	Label	Description
Approver	Approver	
Annie Rocco	BI\arocco	
Daniel Hobbs	BI\dhobbs	
Mark Chen	BI\mchen	
Rachel Blum	BI\rlblum	
Contributor	Contributor	
Bonnie Sinclair	BI\bsinclair	
Julie Olson	BI\jolson	
Nehama Strassberg	BI\nrassberg	
Seth Rachlin	BI\srachlin	
Management	Management	
David Sweet	BI\dsweet	
Mark Vaughan	BI\mvaughan	

Figure 6-9:
Choosing users for the assignment.

4. Back on the Data Submission page, click the Edit button associated with Forms.

Select the form template to be used by contributors and click the right-facing arrow to move it from the left panel to the right panel (see Figure 6-10).

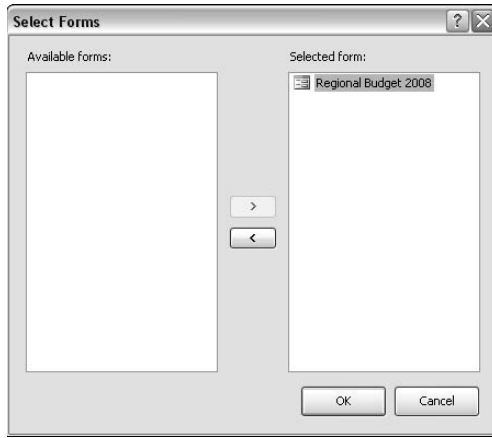


Figure 6-10:
Selecting a form.

5. Click the OK button.

The Submission Period dialog box opens (see Figure 6-11). Select the priority, start, and end dates for the submissions. Alternatively, you can choose the no-submission option.

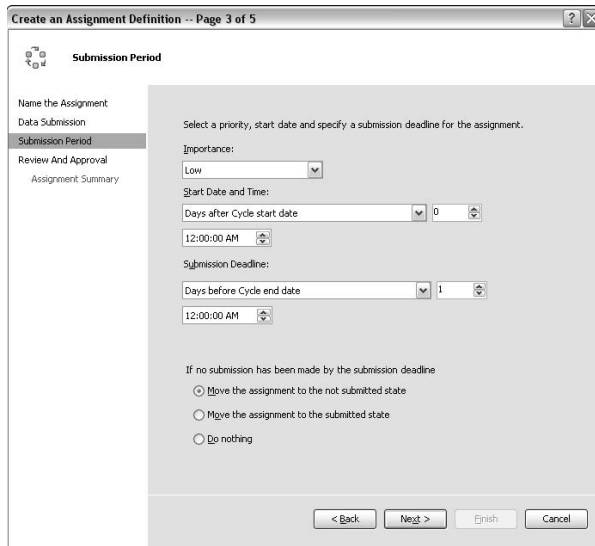


Figure 6-11:
Configuring the submission period.

6. Click the Next button.

The Review And Approval dialog box opens (see Figure 6-12).

Specify the method for how a submission needs to be approved (if at all). The approval process can involve submission by a contributor, followed by checking of the submission by a reviewer, with final say provided by an approver. The nature of the review or approval depends on the structure of your company and the process required to ensure quality in the budgeting process. You may skip reviewers or approvers altogether, or you may choose to include just a portion of the process.

7. Click the Next button.

Depending on the options selected in the previous step, either the Review dialog box opens or the Approval page opens (see Figure 6-13). In either case, you must select the individuals or roles that are to fill the responsibilities for reviewing or approving submissions. While both roles can modify submission entries, the hierarchy between the roles dictates that contributors are checked by reviewers, and reviewers are checked by approvers. The process of assigning users to each role is the same for each step.

8. Click the Next button.

After reviewing the summary page, click the Finish button. Multiple assignments can be made for a given cycle. Simply repeat the preceding steps to create more assignments.

While the previous steps create the assignment, one more step needs to be taken to put the assignments into effect.

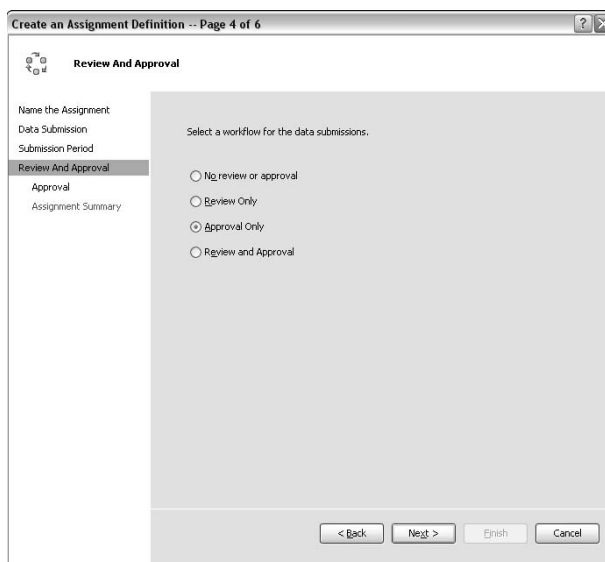


Figure 6-12:
Selecting
a workflow
type.

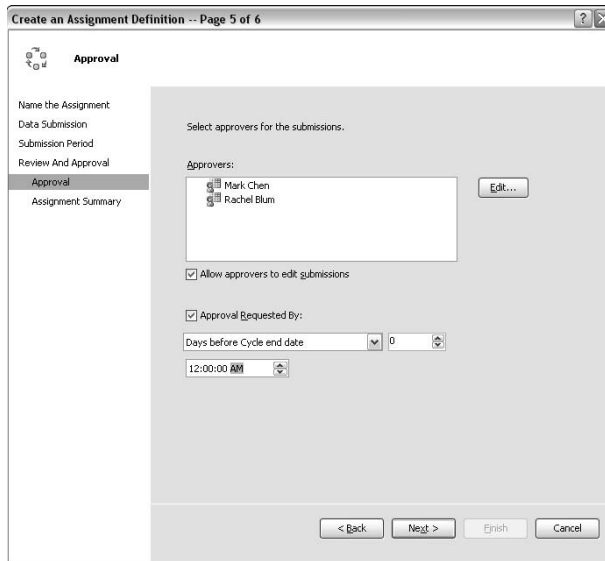


Figure 6-13:
Selecting
approvers.

9. From the **Workspace Actions** panel, click the **Available Actions** link.
10. Select **Instantiate** from the drop-down box (see Figure 6-14).
11. Set the **User** value to **True**.

This engages the assignments for all users (or for specified users if selected). To view the instantiated assignments, you must refresh Planning Business Modeler.

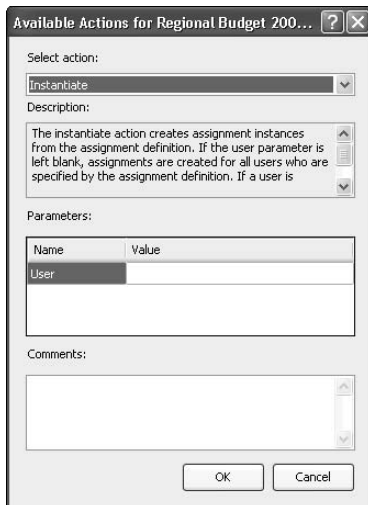


Figure 6-14:
Instantiating
the cycle.

Configuring Security

Ensuring proper access to data within an organization is always a priority. When dealing with corporate forecasts and budgets, that emphasis on security and access becomes heightened dramatically. The sensitivity of budgetary figures can weigh heavily on the minds of executives and directors when the possibility exists that such figures could be compromised. With that in mind, PerformancePoint provides a relatively robust methodology for ensuring that planning data is distributed to the right folks within an organization by creating a security framework.

The security framework consists of a layered approach using user-based and role-based security. Identified users have access to particular data elements as dictated by their membership in roles. Who belongs to what role is determined by a system administrator.

Configuring security in PerformancePoint resides in two places. The first is Planning Administrative Console, where users can be added to the system and provided access to various component administrative functions (such as data administrator, modeler, and global administrator).

Within a model, security is managed within Planning Business Modeler leveraging the user security from Planning Administrative Console. In this way, PerformancePoint provides a two-tier security method. You need to be a user in Planning Administrative Console, and then you need to be assigned to a model security configuration in Planning Business Modeler.

Assuming that users already exist in Planning Administration Console, you need to assign users to roles in Planning Business Modeler. First you need to create the roles for your security framework. Follow these steps:

- 1. Within the Workspace Browser panel, select Security And Roles.**

The primary panel is empty because no business users are currently tied to the model.

- 2. From the Workspace Actions panel, click the Create A Business Role link.**

The Create A Role dialog box opens (see Figure 6-15).

- 3. Enter a name and label for the role.**

Typically, the types of roles should be along the lines of approver, reviewer, contributor, manager, director, and so on.

Select the level of access the role should have. Modeler allows three levels of security: no access, read-only access, and read-write access.

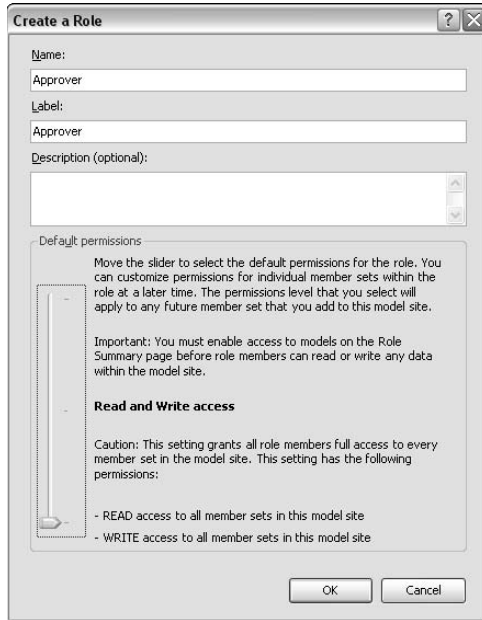


Figure 6-15:
Creating
a role.



The level of security applies across the created role. However, you can further restrict access within the role at the user level down to the member set. For example, John Doe may be a user within the approver role, which grants him read-write access to the model. Later on, you can restrict his read-write access only to the East region of the region hierarchy.

4. Click the OK button.

The Create A Role dialog box closes, and you are returned to the summary page for your newly created role (see Figure 6-16).

You can repeat the preceding steps for each of the different roles you want to create.

In most companies, the number of roles created doesn't extend beyond three levels. A company with more than three levels indicates a level of planning and budgeting rigor that is fairly complex and involved.

Next, you need to assign users to your roles. Follow these steps:

1. **With the summary page for your role still open, select the role you want to fill with users.**

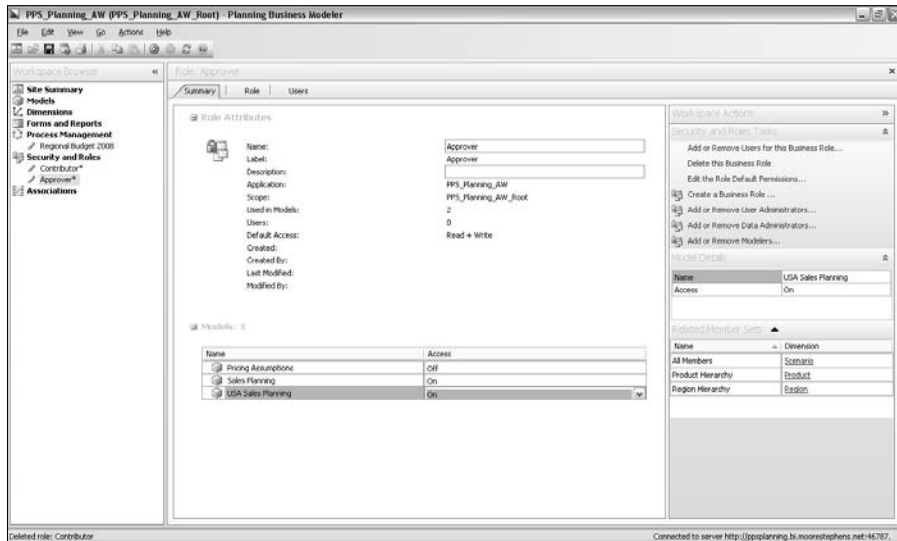


Figure 6-16:
The role
summary
page.

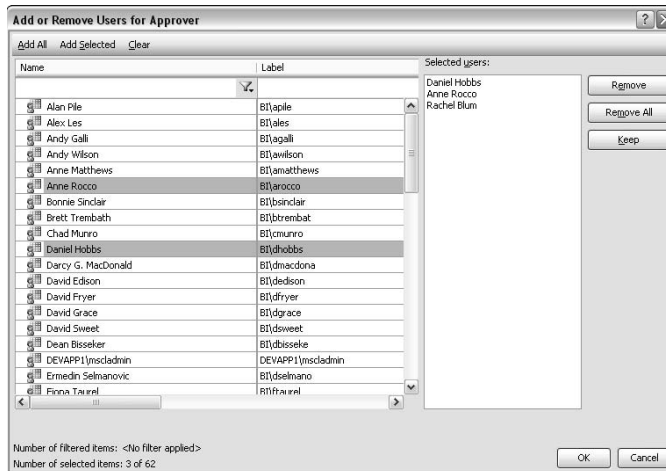


Figure 6-17:
Selecting
users for
the role.

2. Click the Add Or Remove Users For This Business Role link in the Workspace Actions panel.

The Add Or Remove Users dialog box opens (see Figure 6-17).

3. Select the users from the left panel you want to add to the role. Click the Add Selected link.

Your selected users now appear in the right panel.

4. Click the OK button.

The Access For panel takes precedence in the primary panel. Here you have the option of altering the access to particular member sets by roles. See the following section for how to adjust access to member sets by role.

At the conclusion of these steps, you've built roles for your model (potentially with a user hierarchy in mind) and assigned users to those roles. Remember that your configuration of roles and the users within them are completely flexible. A user in one model may have a different role than the same user in a different model. Also, the particular hierarchy of roles may change from model to model. You may craft some models with one role, while others may have three or four roles.

Restricting Access to Member Sets by Role

While associating users to roles and roles to assignments within a model site may seem sufficient, sometimes you need to restrict the scope of access that a user or role can have within a model. For example, you may want to ensure that some users only have read-write access to specific members of a dimension. Or, you may want everyone to be able to view all the figures within a member set, but only be able to add or alter numbers for a particular portion of a member set.

Planning Business Modeler allows you to configure access to a member set right down to the leaf level. Here's how to do it:

1. Within the Workspace Browser panel, choose Security And Roles.**2. Within the primary panel, select the role you want to alter.**

The primary panel switches to the Access For window (see Figure 6-18).

3. From the drop-down box for Filter Member Sets By Model, choose the model for your alterations.**4. In the top half of the primary panel, select the dimension to alter.**

The bottom half of the primary panel adjusts to show the contents of that dimension.

5. In the Workspace Actions panel, select the Customize User Permissions check box.

Click the Yes button to continue.

6. Click either the Read Access Edit button or the Write Access Edit button.

The Read Access Edit button allows you to customize what data can be viewed by the role. The Write Access Edit button customizes what data can be entered or altered by the role (see Figure 6-19).

Figure 6-18: The Access For window.

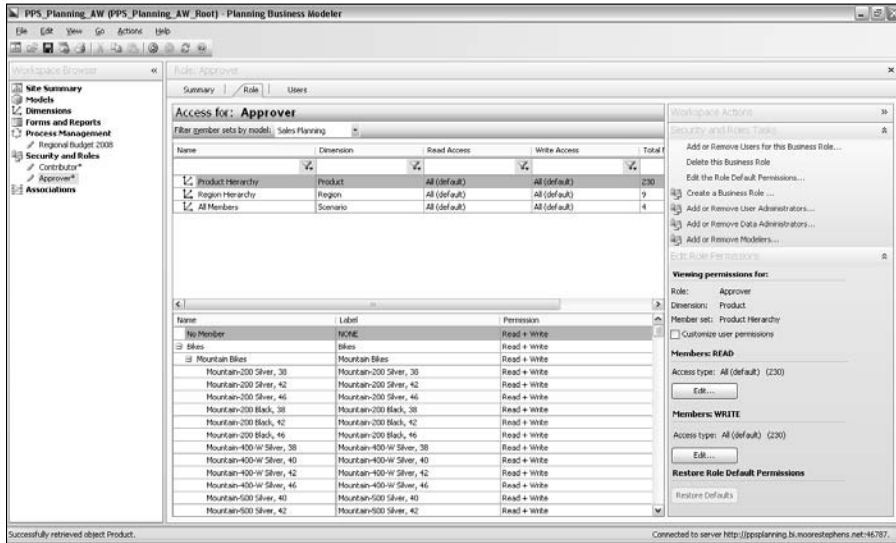
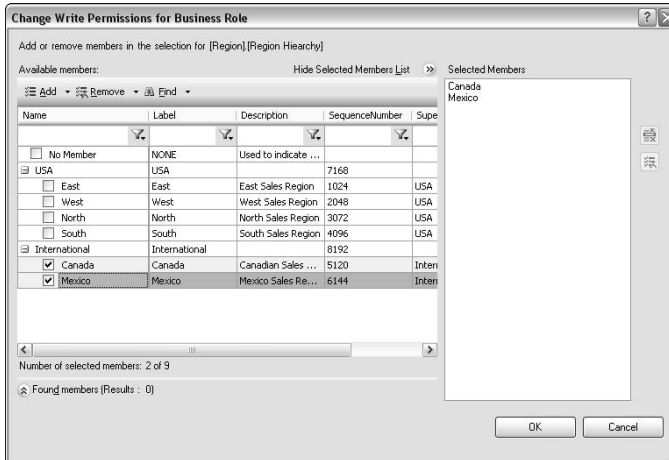


Figure 6-19: Editing access rights for the role.



7. **Deselect the check boxes that correspond to the members that you want to deny read or write access for the role.**

The Selected Members panel on the right automatically adjusts to present the items for which the role has access.

8. **Click the OK button.**

Notice that the bottom half of the primary panel now displays the changes you made in the Permission column.



You can repeat this process for each role within each model in your application if needed.

Chapter 7

Crafting Forms and Reports with Excel

In This Chapter

- ▶ Connecting to a planning application through Excel
 - ▶ Developing form templates through a matrix
 - ▶ Publishing form templates to the server
 - ▶ Using assignments to submit planning and budget figures
-

The last piece of the PerformancePoint planning puzzle resides in the PerformancePoint Add-in for Excel. While all your work so far has centered on Planning Administrative Console and Planning Business Modeler, it is not time to embark on the Excel Add-in journey. The Excel Add-in supports two primary purposes.

The first function is to allow the modeler to develop form templates. These templates are stored on the planning server as blank forms, with the basic structure consisting of dimensions and scenarios. As a modeler, you develop form templates within the Excel Add-in and publish them to the planning server. From Planning Business Modeler, you can create assignments to direct form templates to your users for data entry in a workflow framework. After an assignment is made, the form template becomes a form.

The second function of the Excel Add-in is to provide a familiar means for users to complete assignments by filling out the numbers within the forms. As assignments are created within Planning Business Modeler, users connect to the form through Excel, enter the numbers, and then submit the entries back to the planning server for consolidation with other user numbers and reporting.

Thus, the Add-in simultaneously addresses an authorship function as well as an assignment fulfillment function.

Connecting to the Planning Server through Excel

The first step to using the PerformancePoint Add-in for Excel is to properly connect to the planning server through Excel. For the following discussions, we will be referencing Excel 2007. See the online help files if you are using Excel 2003.

To connect to the planning server, follow these steps:

1. Launch Excel 2007.

If you have already installed the PerformancePoint Add-in for Excel, you should have a PerformancePoint tab on the menu bar at the top of the page (see Figure 7-1).

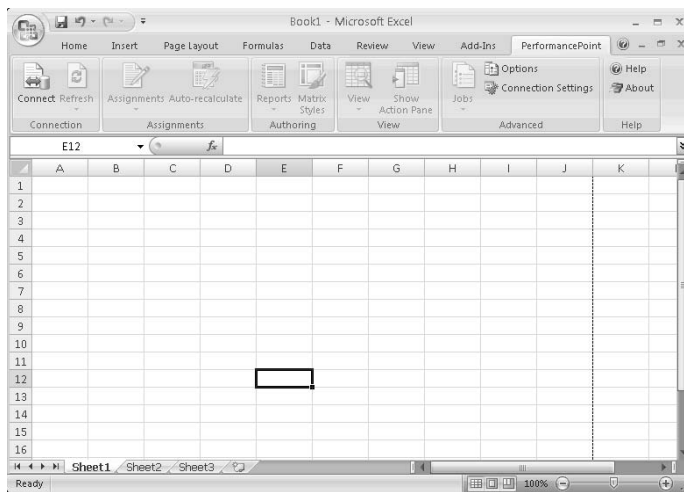


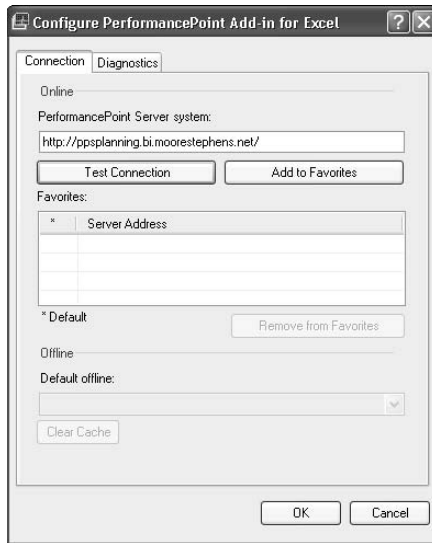
Figure 7-1:
Excel 2007
with the
PerformancePoint
Add-in
installed.

2. Click on the PerformancePoint tab to switch the menu bar to the PerformancePoint items.

3. On the ribbon bar, click the Connect icon.

The Configure PerformancePoint Add-in For Excel dialog box opens (see Figure 7-2).

Figure 7-2:
The
connection
configura-
tion dialog
box.



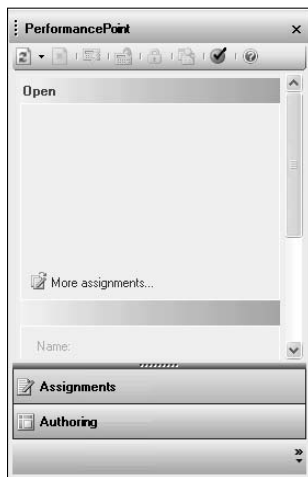
4. Enter the address of your planning server URL.

You can test the connection by clicking the Test Connection button. Excel attempts to access the site.

5. Click the OK button.

After it is connected, Excel opens a PerformancePoint action pane window with Assignments and Authoring as possible options (see Figure 7-3).

Figure 7-3:
Establishing a
connec-
tion to the
planning
server.



You have now linked Excel to the planning server and are ready to proceed to create form templates for your users.

Authoring Form Templates in the Excel Add-in

Creating form templates with the Excel Add-in is relatively straightforward. Form templates are generally composed of matrices using combinations of dimensions and member sets for the columns, and rows and scenario dimensions for the numeric cells of the template.



PerformancePoint distinguishes forms from form templates. *Form templates* are the user-entry mechanisms you create to be used as frameworks for your users to enter data. *Forms* are the physical instantiation of the form templates when assigned to specific users. Thus, as a modeler, you build form templates, while your users enter data into forms assigned to them.

The great thing about the Excel Add-in is that you have a tremendous amount of flexibility in how you can configure your form templates. Besides the contents of the template, you can add calculations, formulas, and formatting (fonts, borders, colors, and so on) to make the template more functional and easier to use and understand.

You have two options in building form templates. First, we run through building a form using the Report Wizard. Later, we use some of the basic functionality found in manual matrix creation. Both methods are acceptable, and you may find that one suits your style better than the other.

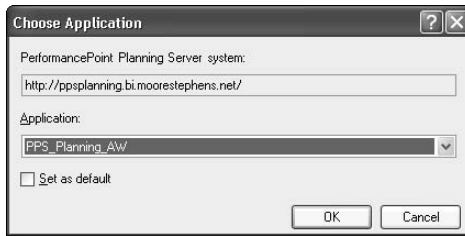
Using the Report Wizard to build a form template

Follow these steps to build your first form template:

- 1. With a connection to the planning server established, click the down arrow below the Reports icon on the ribbon bar. Select Report Wizard.**

The Choose Application dialog box opens (see Figure 7-4).

Figure 7-4:
The Choose
Application
dialog box.



2. From the Application drop-down box, select the model to serve as the basis for your form template.



By selecting the application, you are selecting the root site for the model. All associated model subsites will be available for template creation going forward. The wizard launches.

3. Within the Define Report Properties dialog box (see Figure 7-5), enter a name for your new report:

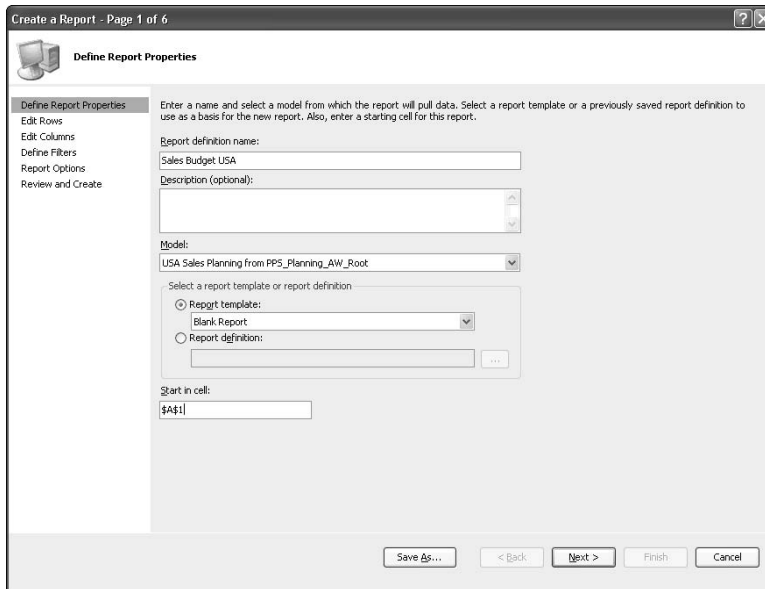


Figure 7-5:
Naming
your form
template.

- From the Model drop-down box, select the model for which you want to link the form template. Note that you can only choose a single model to be associated with a single report.

- In the Select A Report Template Or Report Definition section, choose Report Template and select Blank Report from the drop-down box.

If you have financial models, currency exchange models, or other pre-defined models, you can leverage some of the Excel report templates to make the process of creating commonly used reports easier.

- Enter **\$A\$1** in the Start In Cell box to start your report in the upper-left corner of the spreadsheet. You can start your report in any cell of the worksheet. Consider whether you will be inserting titles or other information into the form. If so, you can change the starting cell to something different than \$A\$1.

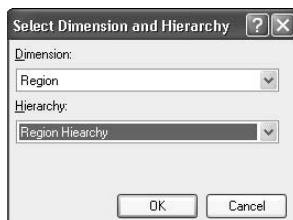
4. Click the Next button.

The Edit Rows dialog box opens. Here, you select the dimensions and/or member sets that will end up in the rows of your form. While in some cases, you may choose a single dimension, you can also create form templates with multiple dimensions/member sets in the rows. Specifically, you can use a nested structure to provide finer-grained data-entry capabilities for your users.

5. Click the Dimension/Hierarchy box and then click the ellipsis button within the box.

The Select Dimension And Hierarchy dialog box opens (see Figure 7-6). Choose which dimension and member set within that dimension that you would like to show down the rows of your form.

Figure 7-6:
Selecting a
dimension
and
hierarchy.



6. Click the OK button.

7. Within the Member Selection box, select the contents of the cell and click the ellipsis button to open the Select Members dialog box (see Figure 7-7).

Select each member that should be included in the form template. Click the OK button.

8. Within the Edit Rows dialog box, type in a label for your selected dimension in the Label box.

If you would like to add more dimensions to the rows, click the Insert button above the entry boxes and repeat Steps 5–7.



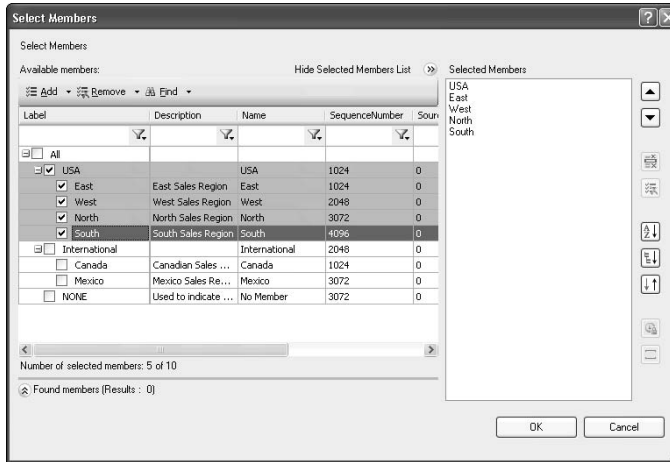


Figure 7-7:
Selecting
members for
a row.

9. Click the Next button.

The Edit Columns dialog box opens (see Figure 7-8). In the Column Template drop-down box, you find a host of different time-based ways to organize your template.

If you choose a column template such as Current Month and Year To Date, Excel adjusts the grid to reflect the selection. Thus, in this case, the columns would be configured to contain two main columns, one for the current month and one for the year-to-date figures.

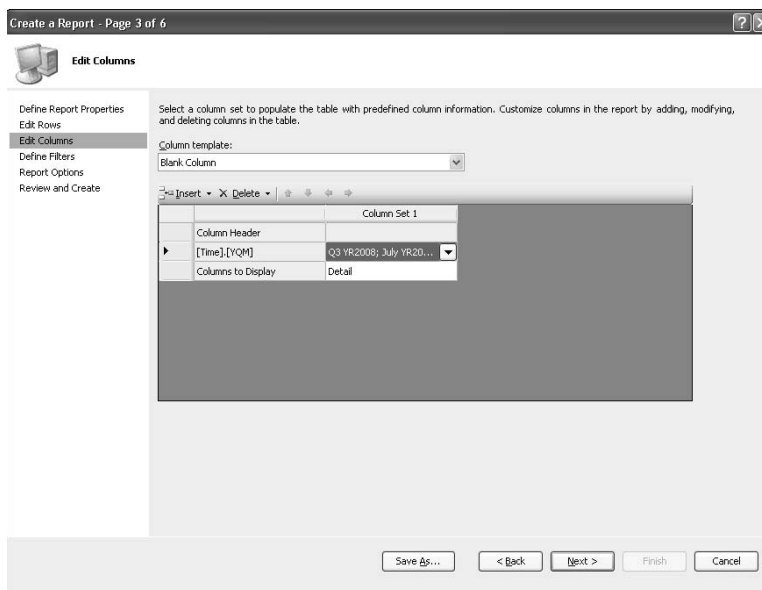


Figure 7-8:
Selecting
time
members.

For now, choose Blank Column (the default) from the drop-down box.

10. Select the cell below Column Header and click the ellipsis button.

Select the dimension that you would like to constitute the columns of your form template. Additionally, select the hierarchy/member set for that dimension. Click the OK button.

11. Select the members of the member set that apply to the form template you are creating (see Figure 7-9).

You may select all the members or any subset that suits your template needs. Click the OK button.

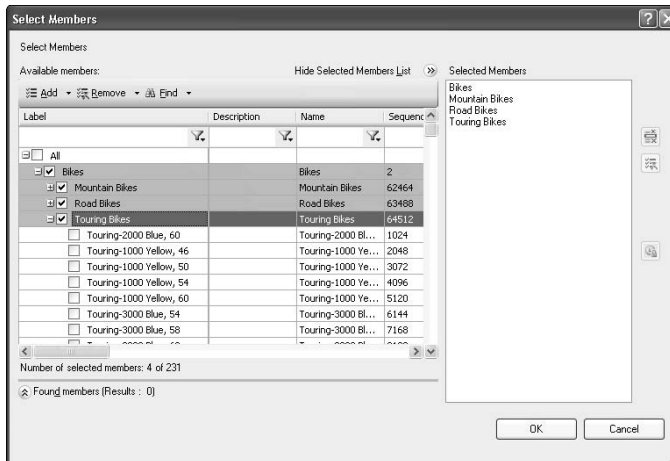


Figure 7-9:
Selecting
column
members.

12. Within the Define Filters dialog box, edit the items that can be used to constitute filters within your form (see Figure 7-10).

A filter provides a method to restrict the displayed data within a report to a specific member. Thus, if you define a filter based on the Bikes member of the Product Hierarchy member set, you can set the report to show just a single set of products and product categories one at a time.

You can also delete the default selections for the filters by clicking the Delete button at the top of the dialog box.

13. Click the Next button.

The Report Options dialog box opens (see Figure 7-11). Here you can configure a number of settings for the template. In most cases, you can leave the default settings in place. Later, we explore some ways to enable certain options to enhance the functionality and usability of some of your form templates.

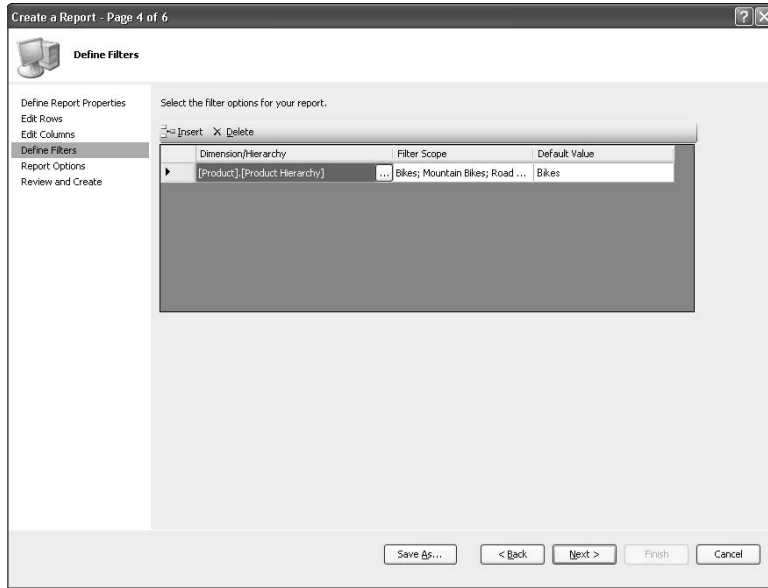


Figure 7-10:
Defining filters.

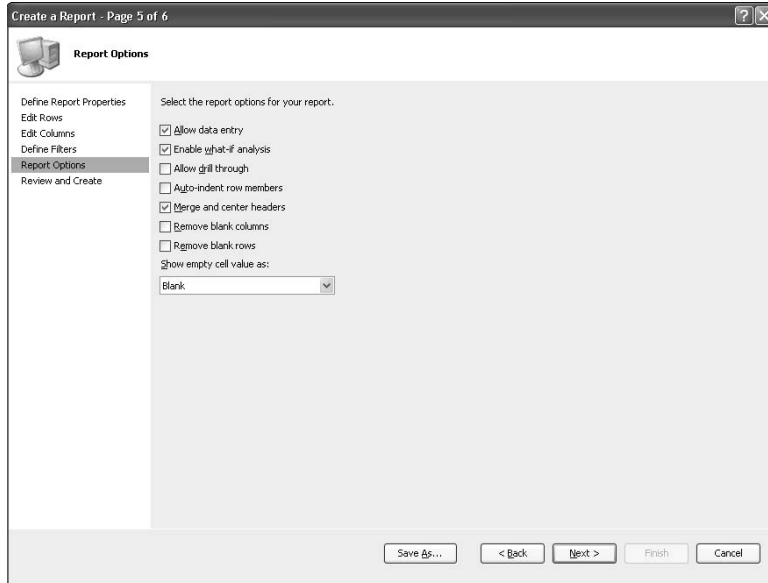


Figure 7-11:
Setting report options.

14. Click the Next button.

The Review And Create dialog box opens, providing a summary of your configurations.

15. Click the Finish button.

The report you configured is generated and surfaced within Excel (see Figure 7-12).

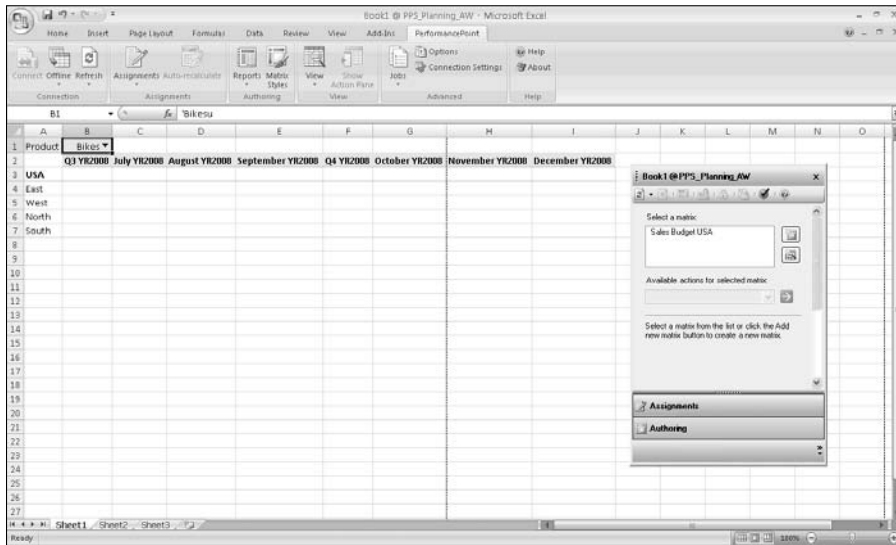


Figure 7-12:
An Excel
form
template.



The worksheet you just created constitutes a template that can be used by multiple users to enter data after an assignment is created. For now, the report contents are missing — and that's fine.

Publishing a form template

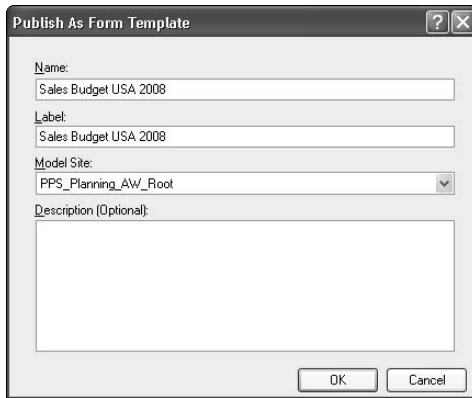
After you have created a form template, you need to publish the template back to the planning server for retention and distribution. A published form template resides on the server, not on your workstation. If you only save the template on your hard drive, the planning server cannot access the template.

To publish the form template, follow these steps:

- 1. Within the ribbon bar, click the down arrow below Reports in the Authoring section.**

Select **Publish** → **As Form Template**. Name the report as you want it to appear within Planning Business Modeler (see Figure 7-13). Also, select the appropriate model for the template.

Figure 7-13:
Publishing a
form
template to
the planning
server.



2. Click the OK button.

The format, contents, and configuration of the report are saved on the planning server.

If you access the Forms And Reports section of Planning Business Modeler, you can now see the report you just created listed in the primary panel.

You can also save the form template locally on your computer. However, saving the template to your local computer has no impact on the version saved on the planning server. If you change your local version, you will not be automatically making changes to the server version.

Using a matrix to build a form template

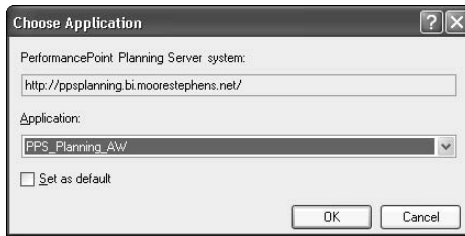
An alternative method of building a form template is to use a matrix. Follow these steps:

- 1. From Excel, connect to the planning server as in Step 1 from the previous section.**
- 2. After you are connected, from the PerformancePoint control window, click the Create a Report link.**

The Choose Application dialog box opens.

- 3. From the Application drop-down box, select the model for the form template (see Figure 7-14).**

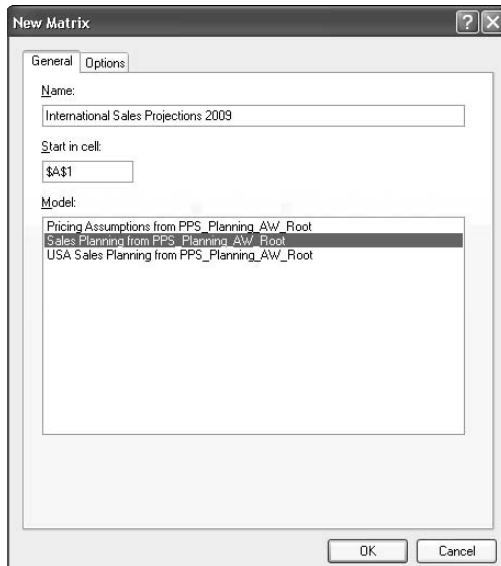
Figure 7-14:
Selecting an application.



4. Click the **Add New Matrix** icon within the PerformancePoint control window.

The New Matrix dialog box opens (see Figure 7-15).

Figure 7-15:
Configuring basic matrix attributes.



5. Specify a name for your report template, the starting cell for the form, and the model site to be used as the basis for reporting.

If you click the Options tab, you can investigate the same general options that were available in the Report Options dialog box using the wizard method.

6. Click the **OK** button.

Your newly created (somewhat empty) matrix is listed in the PerformancePoint control window.

7. Click the **green arrow** next to **Select Dimensions**.

Here you need to specify which dimensions are to be included as rows, columns, and filters. Select a dimension from the left panel, and click the appropriate icon to assign it as a row, column, or filter (see Figure 7-16). Click the OK button.

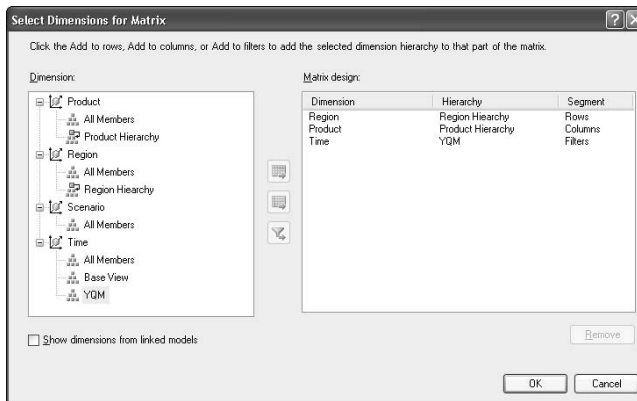


Figure 7-16: Selecting rows, columns, and filters for the matrix.

8. If you selected a filter in the previous step, the Select Filters dialog opens (see Figure 7-17). Click the down arrow in the Value box associated with the filter.

Navigate to the members you would like to include in the report.

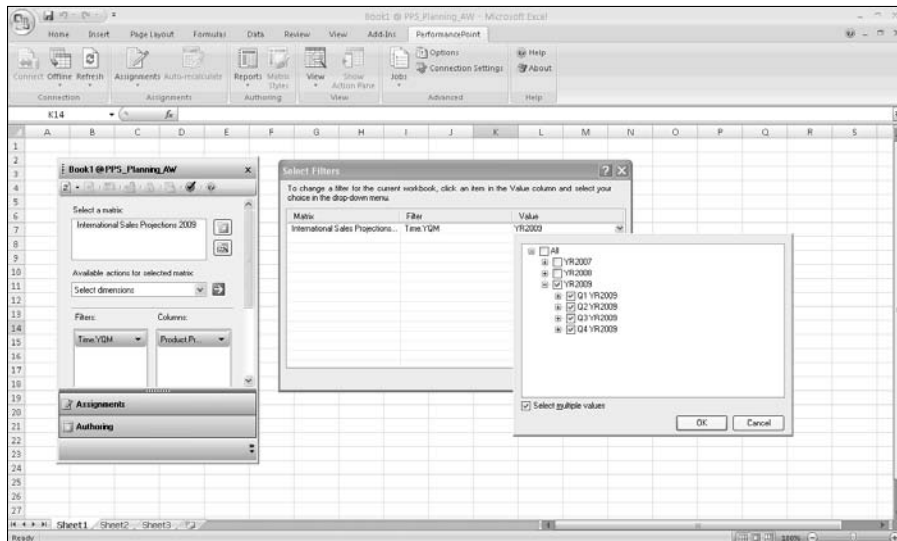
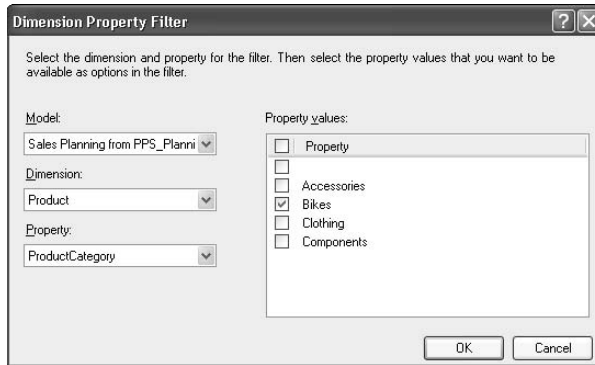


Figure 7-17: Selecting members for the filter.

- 9. If you need to further restrict the data for a dimension, select Add a Property Filter from the Available Actions drop-down box in the control window and click the right arrow.**

The Dimension Property Filter dialog box opens (see Figure 7-18).

Figure 7-18:
Selecting filter property values.



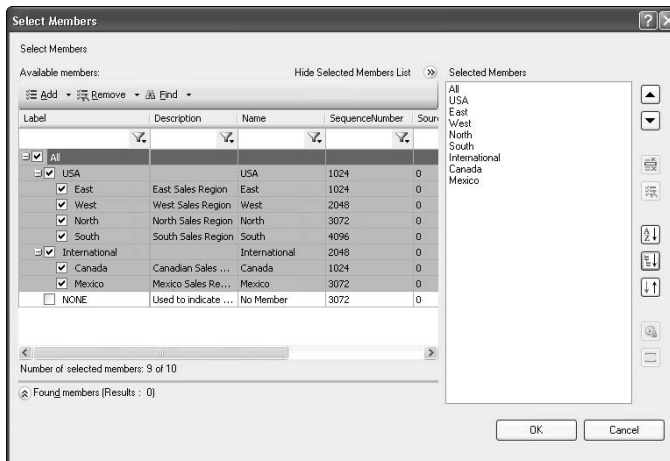
- 10. Select the dimension, the property, and the items within the property values that should be available to users. Click the OK button.**

After a dimension property filter is selected, you must specify the values for the filters, just as you did in Step 8.

- 11. To expand the rows and columns from the All member to something more specific and descriptive, click the down arrow next to the item in the Row Or Column box. Choose Select Members.**

The Select Members dialog box opens (see Figure 7-19).

Figure 7-19:
Selecting dimension members.



12. Select the members that you would like to see within the rows or columns. Click the OK button.

13. In the control window, click the Refresh button.

The newly selected members are presented within the form template. Repeat the process for each dimension you would like to expand.

You have created a report using the matrix method. You can further refine your report and publish it to the planning server just as you would using the wizard approach.

Refining the form template

Beyond creating a form template, enhancing the look, feel, and usability of the form template can make the experience easier and more enjoyable for your users. Simple adjustments to the organization and functionality of the form templates are not difficult. While the available options are numerous, the following sections describe a few that should be at the top of your list.

Choosing a matrix style

While in some cases, using the default style for your matrix may be sufficient, adding a splash of color or organizing the data in an easier-to-read way enhances the user experience.

To choose a different matrix style, follow these steps:

1. Click the Matrix Style icon on the ribbon bar.

The Matrix Styles dialog box opens (see Figure 7-20).

2. Select a style from the list.

Highlighting an entry provides a preview on the right side of the dialog box. The bordering, column and row formats, and colors change with each selection. Choose one that suits your needs.

Leave the row and column headers options selected.

You have the option of banding the rows and columns. If you have long lists of information in your form template, some form of banding may help users quickly identify for which header entries they are entering data.

You can set a particular style as a default so that subsequent form templates you create stay consistent without additional configuration.



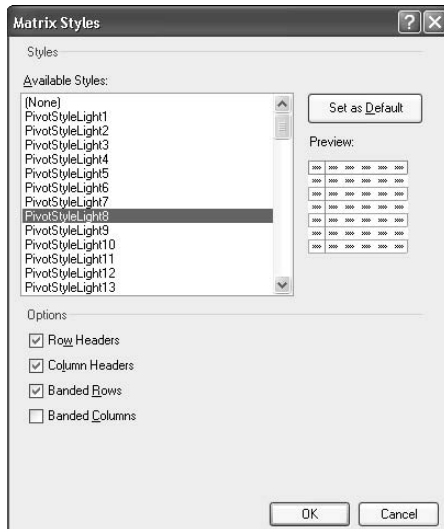


Figure 7-20:
Selecting a
matrix style.

3. Click the OK button.

Automatically indenting member sets in the rows

Another means of making reports easier to visualize is to indent the row headers to bring out the hierarchical nature of the dimensions. Follow these steps:

1. Click the down arrow below Reports on the ribbon bar. Select Properties.

The Properties dialog box opens. Expanding the workbook item in the left panel allows you to navigate the components of your form template (see Figure 7-21).

2. Navigate to your form template under Workbook and Sheet1.

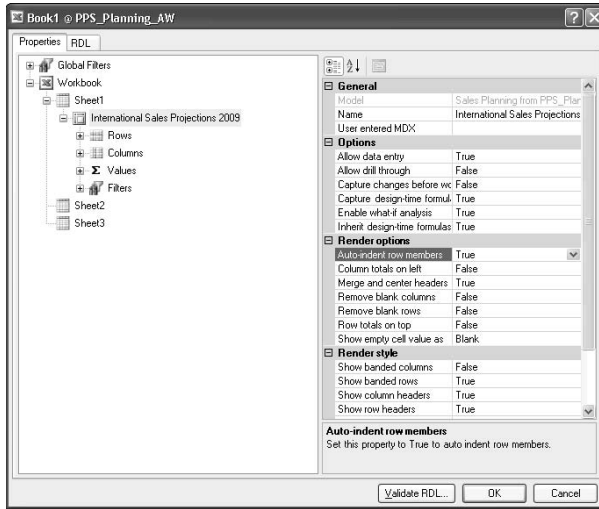
Selecting your form template exposes a variety of properties in the right panel.

3. Click the down arrow for the item labeled Auto-indent Row Members. Ensure that the value is set to True.

You have plenty of other additional options. For the most part, the default settings provide a good amount of flexibility. However, you can change any of these options to suit your needs.



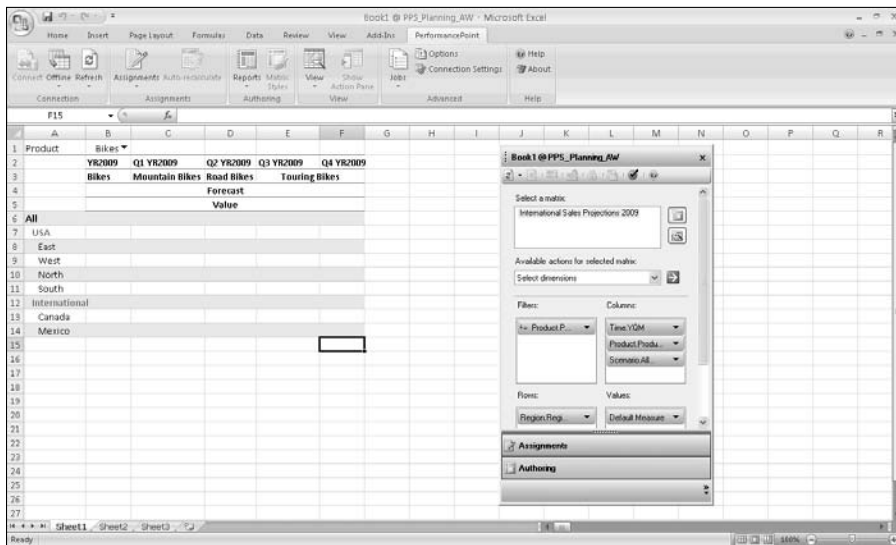
Figure 7-21:
Setting form
template
properties.



4. Click the OK button.

Your form template automatically creates an additional indentation of the row for each level of the dimension member set (see Figure 7-22).

Figure 7-22:
Indented
row
headings.



Enabling autospreading

As a default, most users will enter data into the forms at the leaf level. That is, most budget and forecast figures will be conducted at the most granular level. However, users may prefer to enter data at a higher level and may want to see the numbers projected or broken down into the granular, leaf-level items. For instance, instead of allocating budget dollars for each state, a contributor may want to create one entry for the region and have the form automatically subdivide the entry into the states using some methodology.

By configuring your application to accept this form of data entry, you can save these users from having to back into their numbers manually. Follow these steps:

1. On the ribbon bar, click the Options button.

The Options dialog box opens (see Figure 7-23).

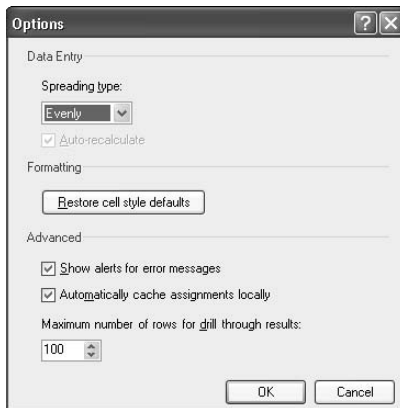


Figure 7-23:
Enabling
auto-
spreading
functionality.

2. If the Spreading Type box is enabled, change the entry to Evenly or Ratio, depending on your needs:

- Evenly spreads the aggregate amount evenly across the leaf-level members.
- Ratio uses a separate column to determine how much of the amount to allocate to each leaf-level member.

You won't see a change in the way your form template looks, but the change will be stored in the planning server, and the template will work differently after it is accessed by assigned users.

Fulfilling Assignments through the Excel Add-in

After your form templates have been authored and published to the planning server, users can access their assignments by configuring the Process Management section of Planning Business Modeler.



Each user — whether contributor, reviewer, or approver — requires PerformancePoint Add-in for Excel to be installed on the computer where he or she will be executing the assignment.

The process management component alerts contributors through e-mail when data-entry cycles have begun.

To access the assignment, users simply open Excel, connect to the planning server, and then click the Assignments button on the ribbon bar or in the control panel. Any assignments directed toward the user are accessible in the control panel list.

After a form is selected, users can add and adjust numbers in the form. Based on the configuration of the form as stored in Planning Business Modeler, users may have access to only certain portions of a form. Cells that are available for editing are highlighted to indicate access.

If Spreading has been enabled, users may enter data into the higher-level heading rows to allocate numbers to the leaf-level members.

After the data entry is complete, the user has a number of options to submit the data back to the planning server. On the Actions tab in the control panel, users can do the following:

- ✓ **Save Privately:** Save the data on the workstation without submission to the planning server.
- ✓ **Submit Draft:** Save the data to the planning server with the intention of returning to make additional changes before finalization.
- ✓ **Submit Final:** Save the final version to the planning server. After data is submitted using the Submit Final option, the user can no longer make changes to the form.

As soon as the finalized data is submitted to the planning server, the process management component automatically directs the form with the data to the next level in the workflow. If a reviewer or approver is slated to receive the

data, an e-mail is sent to that recipient to notify him of the availability of an assignment. Depending on the configuration of the process management, this workflow may repeat again, sending the completed form first to a contributor, then to a reviewer, and finally to an approver (or as many levels as you've set up). Reviewers and approvers may be able to adjust the data in the forms, add annotations, and/or reject the form. If a rejection occurs, the form is reassigned to a contributor for adjustment.

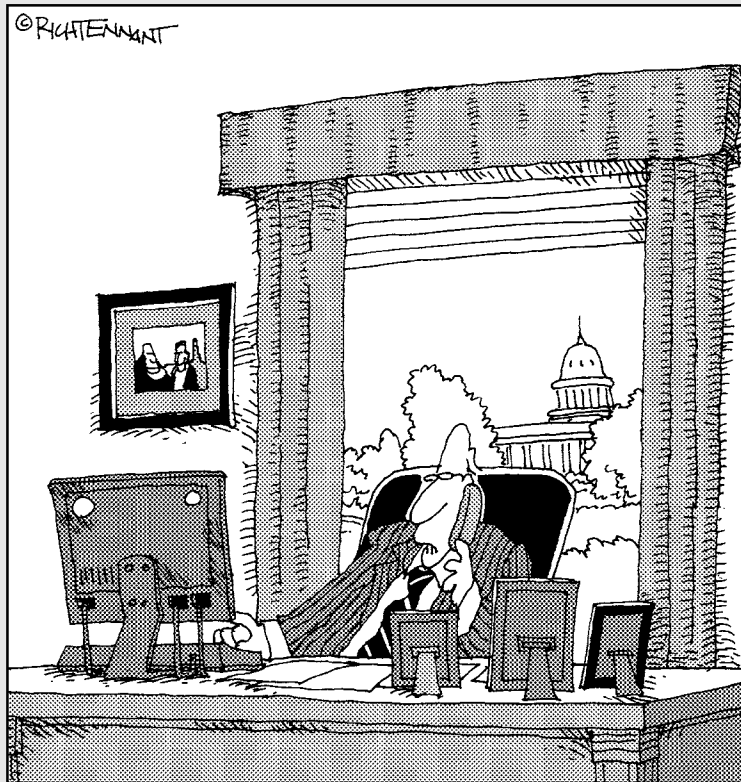
After the form is finalized through all stages of process management, the numbers are posted to the planning server and considered final.

Part III

Building Your Business Reports

The 5th Wave

By Rich Tennant



“Yes, I know how to query information from PerformancePoint, but what if I want to leak it instead?”

In this part . . .

Part III describes the components of a dashboard and shows you how to build them. From connecting to data sources, setting up graphic indicators and key performance indicators, and creating scorecards and reports to assembling these components into a dashboard, you'll go from 0 to 60 faster than you can say Dashboard Designer.

Chapter 8

Getting Started with PPS Monitoring & Analytics

In This Chapter

- ▶ Introducing the elements that you'll use to build your dashboards
 - ▶ Navigating your reporting interface — figuring out what is where
 - ▶ Getting shared elements from the server and sharing back
-

Historically, the tools used to create and distribute reports have not been very centralized. So, you need to learn and use one tool to build standard or static reports, another tool to build ad hoc or analytical reports, and yet another tool to create scorecards. Then of course comes the task of distributing all this information to your users: printing and distributing stacks of hard-copy reports; or e-mailing Adobe Acrobat files, Excel spreadsheets, or links to shared directories. Of course, distribution methods have improved over time. You can often publish your reports to a Web server, such as Reporting Services Manager or ProClarity Analytics Server. But now you still have your standard reports in one place and your analytical reports in another. This is where a portal tool like SharePoint stepped in and allowed you to consolidate reports created in various tools (for example, ProClarity, Reporting Services, and Excel Web Services) into a unified user interface. But you have yet another tool to learn. This is where PerformancePoint takes the cake, by providing Dashboard Designer, a centralized dashboard development and deployment environment.

Understanding the Building Blocks of PPS Reporting

Dashboard Designer is the report development platform for PerformancePoint Monitoring and Analytics. Dashboard Designer simplifies your business performance management implementations by:

- ✓ Providing one environment for developing your static, analytical, and scorecard reports
- ✓ Enabling you to easily consolidate these reports into dashboards
- ✓ Allowing you to easily publish these dashboards to your users

It really makes it easy for even an inexperienced report developer to dive in and quickly create exciting and powerful business performance dashboards. PerformancePoint Dashboard Designer is where the magic happens.

Getting to your reporting interface: Dashboard Designer

To get to Dashboard Designer, choose Start→Microsoft Office PerformancePoint Server 2007→Dashboard Designer. See Figure 8-1. At this point, you briefly see a dialog box that states “Verifying application requirements” and then your application should launch.

Figure 8-1:
Getting to your Dashboard Designer.



If you don't have this application listed in your Start menu, you probably haven't downloaded the link to your Start menu yet. You can access the download from your organization's central PPS monitoring site. The link should look something like this:

<http://ppsmonitoring.yourcompanyname.net/Central>

A typical site is shown in Figure 8-2.

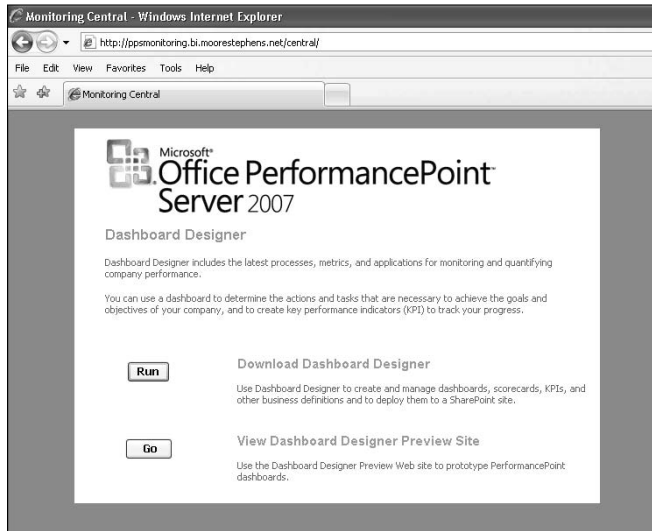


Figure 8-2:
Down-
loading
Dashboard
Designer.

To download the application, follow these steps:

1. **Copy your PPS central link (that is, `http://ppsmonitoring.yourcompanyname.net/Central`) to your Web browser and press Enter.**

The page shown in Figure 8-2 opens.

2. **Click the Run or the Go button.**

By doing this, you both launch Dashboard Designer and add a link to your Start menu.

Getting around your workspace: The layout of your screen

Your Dashboard Designer workspace is composed of three frames and a toolbar (see Figure 8-3):

- ✓ **The frame on the left is your Workspace Browser.** This is where you can view existing *elements* (see the section “Elements: The Building Blocks of Reporting,” later in this chapter) and create new elements. Element types include the following:

- Dashboards

- KPIs
 - Scorecards
 - Reports
 - Data sources
 - Indicators
- ✓ **The frame in the middle is your workspace.** This is where you build and configure your business performance reports and dashboards.
- ✓ **The frame on the right contains details.** Details may consist of the following:
- Other elements that are related to the one in your workspace
 - A list of fields, dimensions, measures, or filters that you can add to the elements in your workspace
- ✓ **Up top, you have a toolbar with these three tabs:**
- The Home tab (shown in Figure 8-3): Contains some workspace-level tools, including the essential Refresh and Publish All buttons.
 - The Edit tab: Can change depending on what type of element you are working on and provides tools to configure items in your workspace. We highlight element-specific tools in the element-specific sections that follow.
 - The Create tab: Includes icons that you can click to generate new elements. We right-click element folders within the Workspace Browser to do this (it's just faster than opening the Create tab when we want to create), so we probably won't mention this tab again.

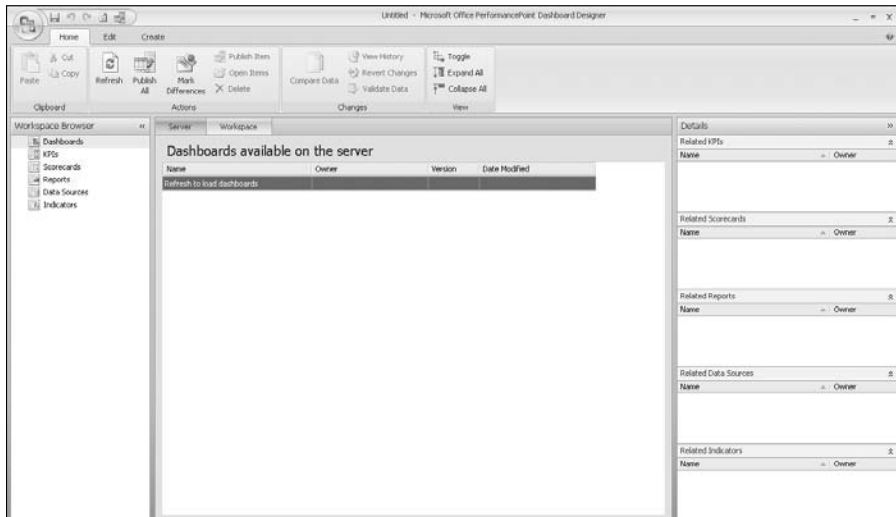


Figure 8-3:
Dashboard
Designer:
Where the
magic
happens.

Understanding workspace versus server

All over Dashboard Designer, you can see references to *workspace* and *server*. But what do these terms mean exactly? Does workspace mean that you are working locally (like on your hard drive) and server mean that you are working online? Not necessarily. You might be working with the following four tiers, as shown in Figure 8-4:

- ✓ **Local (possibly offline):** You can work on your elements locally and offline by opening a `.bswx` Dashboard Designer file. You are still using your workspace, but if you are not connected to your PPS server, you cannot
 - Connect to data sources
 - Publish elements
 - Preview or deploy dashboards
- ✓ **Workspace:** Your workspace is the tier that hovers between local and server; it is literally the space where you do your work:
 - You can be connected to your PPS server, but you don't have to be.
 - You must save items in your workspace to a local `.bswx` file or publish them to your PPS server to preserve any changes you make.

Edits made in your workspace are not saved unless you either save or publish them.
- ✓ **Connected to your PPS server:** If you can connect to your PPS server, you can retrieve server elements, connect to data sources, publish elements, and preview dashboards.
- ✓ **Connected to your SharePoint server:** Your SharePoint server is where you will deploy your dashboards. This server will likely have a different URL than your PPS server.

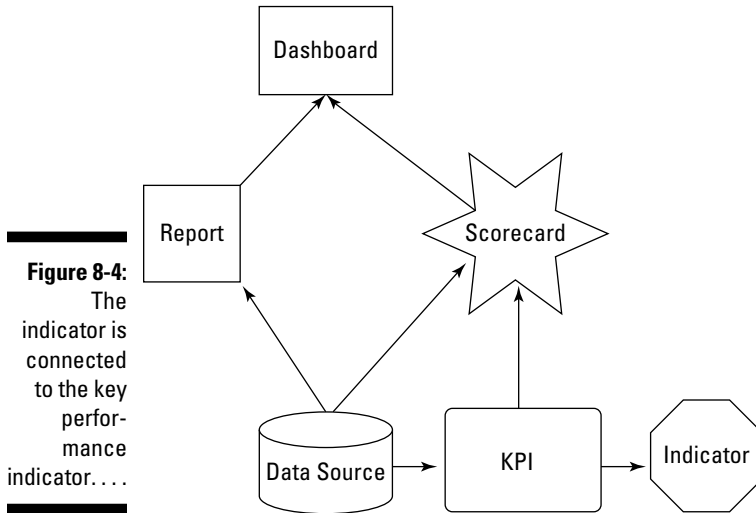


Elements: The Building Blocks of Reporting

As we mention many times throughout this book, dashboards are just Web pages that display a couple of reports. PerformancePoint dashboards look like they take a lot of effort to build. That's great — you'll appear to be extremely talented (as we're sure you are). But building a dashboard is not difficult at all; you just need to take it one step — or element — at a time.

A PerformancePoint *element* is a piece of content or component that is needed to construct a dashboard. Personally, we would have gone with another metaphor, but no one asked us.

Anyway, you need some elements to generate other elements. For example, you need an indicator to generate a key performance indicator (KPI), you need a key performance indicator to generate a scorecard, the knee bone's connected to the thigh bone, and . . . well, you get it. Figure 8-4 shows the necessary dependencies for generating elements.



The indicator is connected to the key performance indicator

Indicators are the graphics that accompany a key performance indicator. These are the gauges, stoplights, thermometers, and smiley (or frowning) faces most often associated with scorecards.

See Chapter 10 to find out how to create an indicator.

The key performance indicator's connected to the scorecard

A *key performance indicator* shows how your organization is performing against its objectives. It is the combination of

- ✓ A data source for actual and target measures
- ✓ An indicator

The KPI element is the comparison of the actual measure (like sales amount) to the budget measure (like sales amount quota) that generates the KPI value and tells the system which indicator value (good, bad, or borderline) to show.

See Chapter 11 for information on how to create a KPI.

A brief interruption to bring you: The data source

A *data source* is a connection to where your data is (for example, your database, Analysis Services cube, or Excel spreadsheet). This is the data you will use to populate your other elements such as reports and KPIs. Our favorite data source is an Analysis Services cube.



See Chapter 9 for more information on how to create a data source.

The scorecard's connected to the dashboard . . . and so is the report

A *scorecard* is a grid that displays one or more KPIs in combination with additional data dimensions or filters (see Chapter 12). Scorecards are designed to provide a view of your organization's performance against goals across a number of metrics. Scorecards require the following:

- ✓ A KPI
- ✓ A data source

A *report* is a grid or chart that displays business performance information (see Chapter 13) and requires a data source.



Reports, both grids and charts, give you a lot of bang for your buck. That is, you can build them easily and quickly, and they can convey a significant amount of information to your business users. Scorecards serve their purpose, but *don't underestimate the power of a simple report*.

Dashboard pages provide you with an at-a-glance view of your business performance by combining a couple of highly informative reports and scorecards onto one Web page. A dashboard is a Web page that contains one or more

- ✓ Scorecards
- ✓ Reports

For more information on dashboards, see Chapter 14.



You cannot *deploy* (publish to SharePoint for users to see) a report or scorecard to SharePoint unless it is first added to a dashboard page. The dashboard is what gets deployed.

Elements are not monogamous

Elements have a many-to-many relationship with each other. That is, you can do the following:

- ✓ Use an indicator in many KPIs and have a KPI use many indicators
- ✓ Use a KPI in many scorecards and have a scorecard use many KPIs

- ✔ Use more than one data source in some reports and scorecards, and have more than one report or scorecard use the same data source
- ✔ Use the same scorecards and reports in many dashboards



Elements are reusable — you build them once and use them repeatedly. Now, that's efficient.

To build a dashboard very quickly, you can do the following:

- ✔ **Connect to a data source (see Chapter 9):** Try a nice Analysis Services cube.
- ✔ **Create a few reports (see Chapter 13):** Analytics grids and charts are easy to work with and deliver a lot of business value quickly.
- ✔ **Create a dashboard from those reports (see Chapter 14):** Assemble the reports on the page, deploy to SharePoint, and boom, you're done.

Even faster, skip the first two items and use reports that others have already built — and go straight to the last item.

Managing Your Elements

Typically you will be working in Dashboard Designer while connected to your PPS server. This allows you to view what elements you or others have published to the server, to retrieve desired elements to your workspace and to publish elements back to this shared environment.

Seeing what elements are already on your server

So, when you first open Dashboard Designer, it doesn't look like much is there — some empty frames and an empty workspace. Well, not for long.

To view all the elements on your PerformancePoint server (that is, elements that other users or you have created and saved), follow these steps:

1. Click the Refresh icon on the Home tab of the toolbar.

This icon is shown previously in Figure 8-3. A dialog box opens, showing you the progress of the refresh. When that's done, you see a list of all of the dashboards on your PPS server.

In Figure 8-5, we clicked the Refresh icon, and now we are looking at a list of all the dashboards on our PPS server.

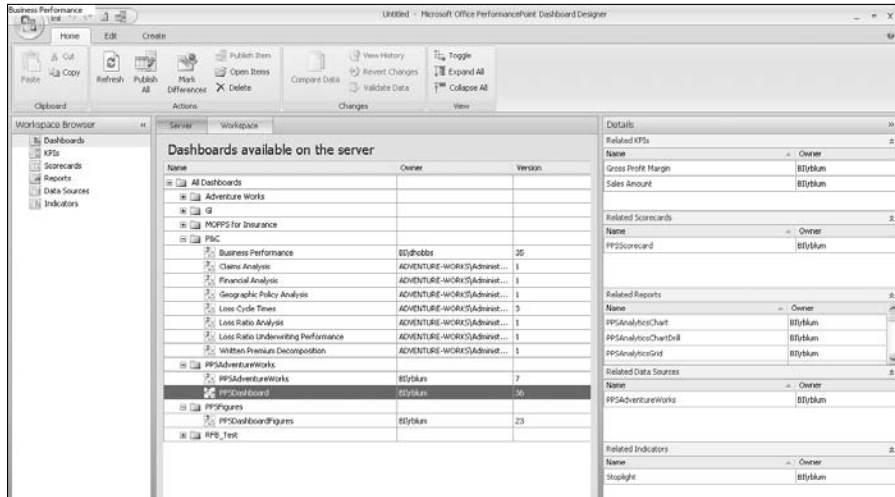


Figure 8-5:
Seeing all
your shared
elements.

2. Click the name of the dashboard you want to examine.

The Details frame now shows you all the other elements associated with that dashboard.

In Figure 8-5, we select PPSDashboard in the PPSAdventureWorks folder. The Details frame now shows all the related KPIs, scorecards, reports, indicators, and data sources.



Your PerformancePoint Server settings (including connection URL, cache and row limit options, permissions, and some defaults) can be found by clicking the Windows Office button at the upper-left corner of your screen and then clicking the Options button in the lower-right corner of the Office menu. You will need administrative access to PPS to access/change some of these settings.

Viewing your elements in Workspace Browser

Now you have determined which dashboard or dashboards you want to bring into your workspace. Bringing a dashboard into the workspace means that you are also bringing in the dashboard itself, with all its related elements.

You can bring into your workspace as many dashboards as you like. If you have elements that are related to more than one dashboard, that's okay; the elements will only show up once.

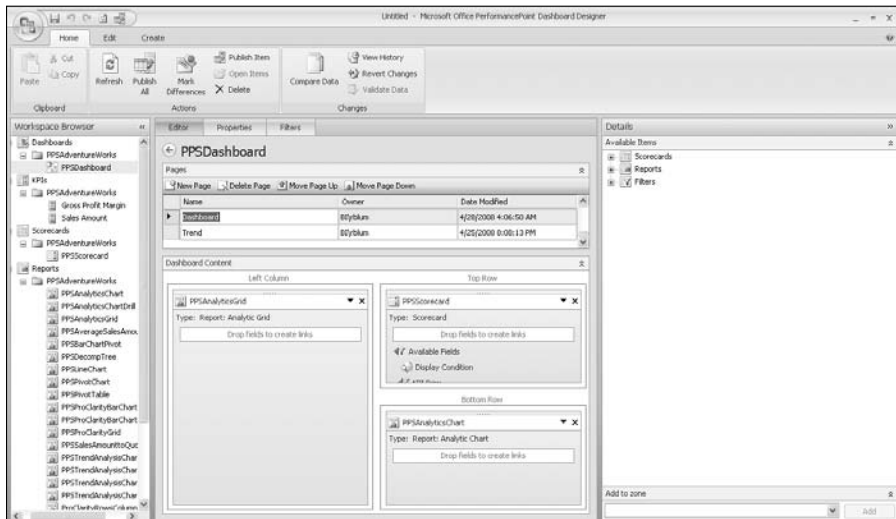
When you determine which dashboard(s) you want to bring into your workspace, follow these steps:

1. **Double-click the name of the dashboard you want to work on.**

The dashboard and all the related elements are loaded to your Workspace Browser.

In Figure 8-6, we double-click PPSDashboard and can now see all our PPSDashboard elements in the Workspace Browser.

Figure 8-6:
Viewing
elements
in your
workspace.



2. **Double-click an individual element to open it in your Workspace Browser.**

In Figure 8-7, we double-click PPSAnalyticsChart in the PPSAdventureWorks folder of the Report group. The chart opens in the Workspace Browser, and the Details frame now shows Available Items, or data elements that we can add to our chart.



Some elements will show different information in the Details frame. For more information on this, see Chapters 9–14 for element-specific Details frame information.

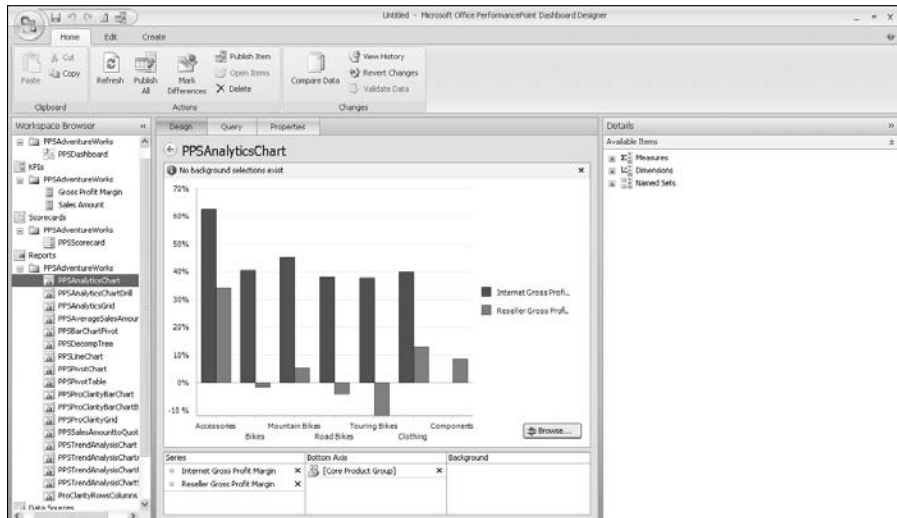


Figure 8-7:
Opening an
element
in your
workspace.

When your element is open in the Workspace Browser, you can modify or edit it if you want. For more information on working with elements, see Chapters 9–14.

Saving your elements

You have the following three ways to save your workspace or any changes that you have made to your elements:

- ✔ You can save a workspace file to a directory.
- ✔ You can publish all your element changes back to the PerformancePoint server.
- ✔ You can publish a specific element change back to the PerformancePoint server.



Saving your workspace file to a directory is good for working on drafts of dashboards and other elements and for working locally (that is, while not connected to your PPS server). However, saving different versions locally of the same elements that are stored on the server can create conflicts (see the section “Determining differences between workspace and server versions with the Compare Data feature,” later in this chapter). These conflicts are resolvable, but it’s just easier to publish everything to the server all the time and retrieve everything from the server to work on it.

Also, you have to publish your elements to the server to preview and deploy them (see Chapter 14).

Saving your workspace file to a directory

Follow these steps to save your workspace file to a directory:

1. Click the Office button.

You are given the following options, as shown in Figure 8-8:

- New
- Open
- Save
- Save As
- Close

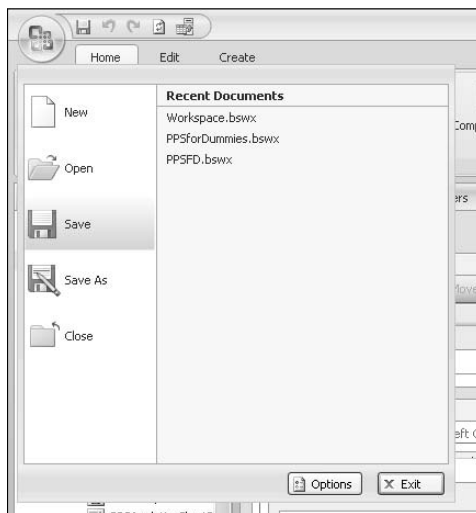


Figure 8-8:
Saving your
workspace

2. Select Save or Save As.

If you are saving your workspace for the first time, or using Save As, you are prompted to enter a name for your workspace.

3. Browse to your desired directory and type in a name for your workspace file.

The extension for a workspace file is `.bswx`.

4. Click the OK button.

Your workspace file is saved.

Saving (publishing) elements to your PerformancePoint server

To save an element to the PerformancePoint server, you have to *publish* it. You can choose to publish just one or all changed elements to your PerformancePoint server.

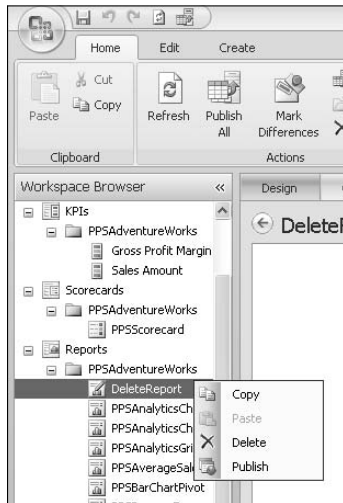
To publish all items, click the Publish All icon on the Home tab, as shown in Figure 8-3.

To publish just one element, follow these steps:

- 1. Right-click the element that you want to publish in your Workspace Browser.**

An element options menu opens, as shown in Figure 8-9.

Figure 8-9:
Using the
element
options
menu to
publish
items.




- 2. Choose Publish.**

Your element is published to your PerformancePoint server.

Deleting elements

You can delete elements from two places: your current workspace or your PerformancePoint server.

Be careful about what you delete. Note the following:

-  Try not to delete someone else's stuff from the server.

- ✓ Try not to delete something you don't want to have deleted.
- ✓ Make sure that the element you are deleting is not currently part of another element that you don't want to delete. That is, don't delete a data source that is being used by a report or scorecard, and don't delete a report or scorecard that is part of a dashboard.
- ✓ If you delete an item from your Workspace Browser, it is not deleted from your server.

To delete an element from your Workspace Browser (local), follow these steps:

1. Right-click the element that you want to delete.

An element options menu opens, as shown in Figure 8-9.

2. Choose Delete.

The element is deleted from your Workspace Browser.

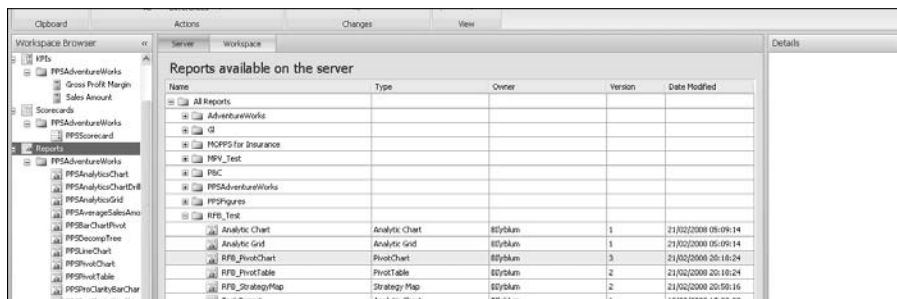
To delete an element from your PerformancePoint server, follow these steps:

1. Select an element header (Dashboards, Scorecards, Reports, KPIs, or Indicator Data Sources) in your Workspace Browser.

Your workspace now shows you a list of all the elements under the selected element header that are available on the server.

In Figure 8-10, we clicked the Reports element header in the Workspace Browser. Our workspace is showing all reports available on the server.

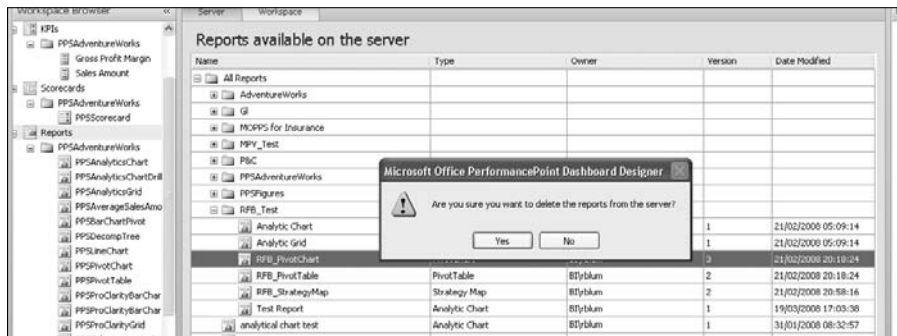
Figure 8-10:
Deleting
items from
your PerformancePoint
server —
Be careful!



2. Click the element in your workspace that you want to delete.

A dialog box opens to confirm your deletion, as shown in Figure 8-11.

Figure 8-11:
Confirming
your
deletion.



3. Click the Yes button in the dialog box.

Your element is deleted from the server.



If you delete an item from your server, but it's still in your workspace, you can publish it back to the server.

If you delete an item from your workspace, you can refresh it to your workspace from the server (see the section "Seeing what elements are already on your server," earlier in this chapter).

To delete an element entirely, you can delete it from both your workspace and your server.

Determining differences between workspace and server versions with the Compare Data feature

Sometimes you will have a different version of an element in your workspace than you have on your server, and often this is intentional. You will refresh your workspace from your PerformancePoint server, edit reports or dashboards, and then publish them back to the server.

But sometimes you may find that you have a different version of an element on your server than you have on your workspace, and you may not know why or what the difference is. This happens when you open a local workspace file, edit an element, and then publish that element when another version of that element already exists on the server. Or more simply, your workspace elements and server elements are out of sync.

The Compare Data feature lists the differences between versions. It can tell you the following:

- ✔ The dates the disparate versions were last saved
- ✔ Who saved the versions
- ✔ What field or fields vary
- ✔ The value that was changed and what it was changed to

To compare two versions of an element, follow these steps:

- 1. Select the element you want to analyze in your Workspace Browser.**
- 2. Click the Compare Data icon on the Home tab of the toolbar.**

The Compare Workspace Version with Server Version information box opens.

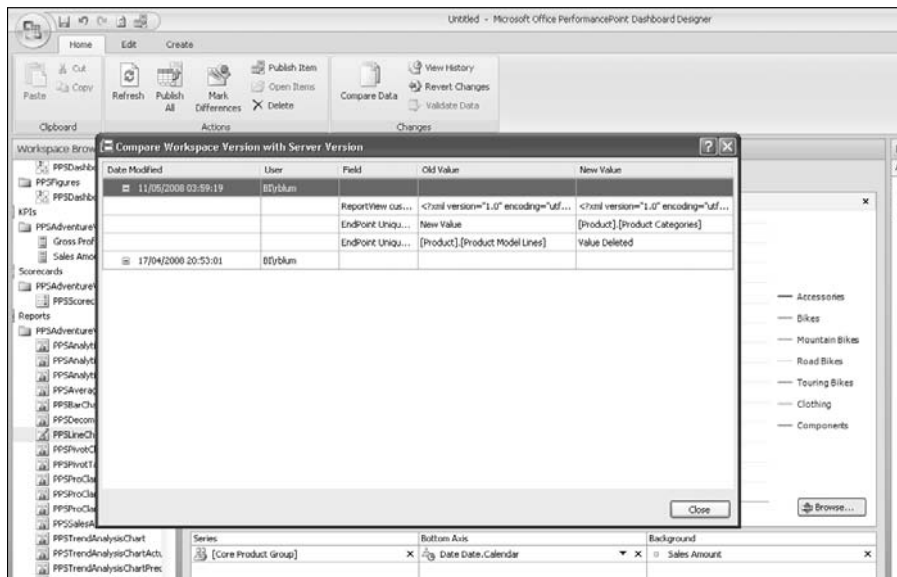
In Figure 8-12, we selected the PPSLineChart report (not shown) and clicked the Compare Data icon. The dialog box indicated that the workspace version was last saved on May 11, 2008, and the server version was saved on April 17, 2008. BI\rlblum saved both versions, and the following three fields have changed:

- **ReportView Custom Data:** This refers to the how our report is displayed. (In this case, we drilled down on the series from All to Product Lines, but you can't really tell that from the information you are given here.) The operation compares the underlying report code (in XML, or Extensible Markup Language). So the Old Value/New Value information we get back is just a snippet of XML, not enough to tell you anything, even if you can read and understand the XML.
- **EndPoint UniqueName (First One):** This indicates that we have added a new value and shows what the new value is — [Product].[Product Categories].
- **EndPoint UniqueName (Second One):** This indicates that we have deleted a field — [Product].[Product Model Lines].

Now you can either choose to do any of the following:

- ✔ Do nothing (but that's no fun).
- ✔ Publish your workspace version to the server by clicking the Publish Item link (see the section "Saving your elements," earlier in this chapter).
- ✔ Go back to the current server version by clicking the Revert Changes icon on the toolbar.

Figure 8-12:
Comparing
report
versions
between
your
workspace
and server.



To revert to the current server version, follow these steps:

1. Click the element that you want to revert in your Workspace Browser.
2. Click the Revert Changes icon on the Home tab of the toolbar.

A History dialog box opens.

3. Click the OK button.

Your element reverts to the current server version.

Changing back to an older version of your element

Business users have been known to continually change their reporting requirements enough times to make your head spin. No matter how good you are at documentation and signing off on requirements, the bottom line is that you want to create the best report for your business users to do their work. So report development tends to be very iterative in nature.

Perhaps you are new to PerformancePoint and you might try to do something that doesn't quite work out like you had hoped. You want to test functionality and try different things. And you should — but without the risk of breaking something that's already working.

In addition, you may be working collaboratively with other developers on the same elements. One of the great benefits of a server-based development application like PerformancePoint is that you can work with other developers in a shared environment. But certainly a risk exists that another user might make a change to an element that you want to change back.

PerformancePoint makes this really easy because it retains all published versions of each element with its own internal source control. At any time, you can revert to any version of any element.

To revert to an older version of an element, follow these steps:

- 1. Select an element in your Workspace Browser.**

The element opens in your workspace.

- 2. Click the Revert Changes icon.**

Nothing happens yet, except that a dialog box opens, listing all the versions that have been published and indicating who published them.

Figure 8-13 shows a list of all the published versions of the scorecard (PPSScorecard) that are currently in our workspace.

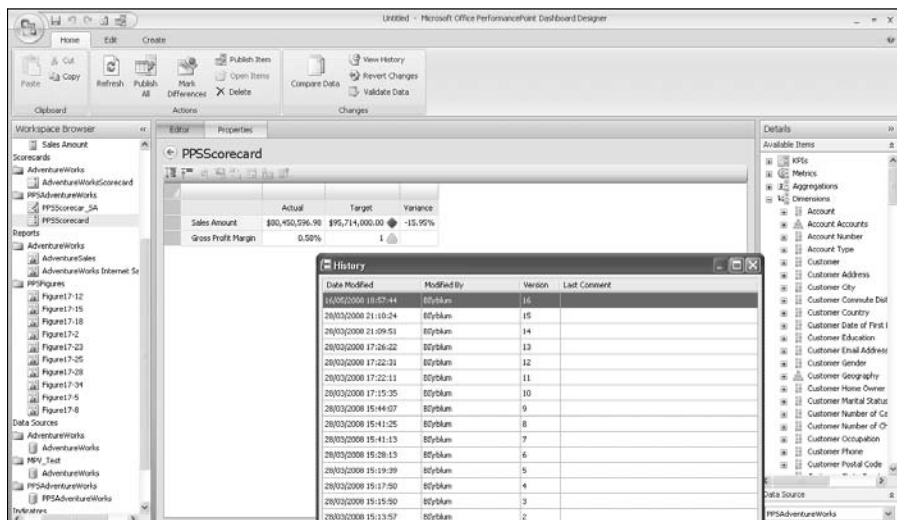


Figure 8-13:
Reverting
to an older
version
of the
scorecard.

- 3. Select the version to which you want to revert (it is highlighted in blue) and click the OK button.**

Your report reverts to your selected version.

In this case, we select version 16, and version 16 of our scorecard opens, as shown in Figure 8-14.

The screenshot shows the Microsoft Office PerformancePoint Dashboard Designer interface. The main area displays a report titled "PPSScorecard" with a table of data. The table has columns for "Actual" and "Target" for "CY 2002" and "CY 2003". The data is organized into rows for "Sales Amount" and "Gross Profit Margin", each broken down by region: "Europe", "North-America", and "Pacific".

	CY 2002		CY 2003	
	Actual	Target	Actual	Target
Sales Amount	\$24,144,429.65	\$25,099,000.00	\$22,252,669.43	\$26,702,000.00
Europe	\$1,496,580.94	\$4,142,000.00	\$5,432,814.25	\$6,376,000.00
North-America	\$22,445,548.71	\$24,204,000.00	\$25,722,421.91	\$27,172,000.00
Pacific			\$897,430.96	\$867,000.00
Gross Profit Margin				
Europe	4.10%	1	-3.32%	1
North-America	1.13%	1	0.46%	1
Pacific		1	-11.53%	1

Figure 8-14:
Viewing an
older report
version.

4. Publish your changes.

When you publish this element now, it becomes the most current version.

In this case, because version 16 was the latest version, this becomes version 17.

5. To revert to your most current version, repeat Steps 1 and 2, and in Step 3, select the most current version.

In this case, we would select version 16 and click the OK button.

Chapter 9

Making the Connection to Your Business Data

In This Chapter

- ▶ Understanding the different types of reporting data sources
 - ▶ Setting up a new data source connection to an OLAP cube, database, or Excel spreadsheet
 - ▶ Figuring out which data source properties you need to set up
 - ▶ Letting other developers use or edit your new data source element
-

If you receive pages of monthly or quarterly reports, or if you are the one who is creating these reports, you know that your company has a lot of data. Perhaps you were involved in deploying a very expensive administration system or data-warehousing implementation, so you know your company has a lot of data. Having the right data isn't often an issue for organizations. In fact, many organizations capture vast amounts of significant and timely information. But what they don't have are the right tools to tap into that information efficiently and effectively to enable proper performance management.

Getting to your organization's business performance data is the first step in being able to compile, report, and distribute that information for users to monitor and analyze — and start making business decisions.

Where's the Data?

So, if you have so much data available, why is it such a time-consuming, slow, and costly process to access this data, to make it actionable for your business users? It's because your data is not stored correctly for performance reporting.

Getting the data from your operational (transactional or administration) systems to a proper reporting data environment requires the following:

- ✓ A lot of planning, both short-term and long-term, to ensure that the system will be scalable (can grow in volume) and extensible (can grow in content)
- ✓ Rationalization of multiple business sources into a cohesive and meaningful combined data structure
- ✓ Proper design to ensure that the system can quickly and accurately provide actionable business performance data

Bringing operational sources together for business performance reporting

An organization has to go through a couple of steps to get its operational data into the proper format for business performance reporting. Operational data is the information that comes from an organization's administration systems. Multiple systems may be collecting data. For example:

- ✓ Insurance companies have claims administration systems and policy administration systems, among others.
- ✓ Banks have retail administration systems and perhaps credit administration systems, among others.
- ✓ Retail organizations may have sales administration systems and inventory/purchasing administration systems.

In addition to the administration systems, the following other sources of useful data may exist:

- ✓ Planning and budget databases or spreadsheets
- ✓ External data sources that provide demographic and economic information on businesses, customers, or prospects

So you have a lot of data. But the issue is that you can't build business performance management systems off of operational data. Why, you may ask? The answer lies in the following points:

- ✓ Operational data is just not structured and stored for optimal reporting. You know how you have these online reports that run for hours or just hang and are very frustrating? This is largely due to how the underlying data is being stored and consolidated for your report.

- ✔ Data from multiple systems (like claim to policy) is not joined, so you can't analyze the metrics together. You lose a lot of analytical capabilities when your data is disjointed or, we should say, you gain significant amounts of knowledge when you can join data across systems.

So two lessons can be learned:

- ✔ If you want to create reports, you should use a data source that is optimized for reporting. See the following section for more information.
- ✔ This data source should optimally have already consolidated data from multiple sources.

Knowing which data source types to use for performance reporting

Business performance source data can take many forms, including the following:

- ✔ **Analysis Services cubes:** Analysis Services is a multidimensional database. It stores data in a structure called a *cube*, which contains *measures* (numeric values that quantify how your business is performing) that can be *sliced and diced* (viewed) by dimensions that contain *attributes* (values that define a characteristic of the measure) and *hierarchies* (a set of attributes that are related to each other in a multilevel parent-child association).
 - Analysis Services stores data in a structure that is highly optimized for querying, so it's really fast.
 - It gives you a consolidated view of all your dimensions and measures, so it's great for creating grids and charts and for the majority of your business performance management reports.
 - You need an Analysis Services cube to build analytics charts, analytics grids, and trend analysis charts. Other data sources don't work for these report types. You can also use Analysis Services as a source for dashboard filters and KPI data. Basically, *everything you need to do in PPS, you can do with an Analysis Services data source.*
 - Cubes enable you to easily build KPIs and scorecards.
- ✔ **SQL Server tables:**
 - If you don't have an Analysis Services cube, you can also use an SQL table or view right off of your data mart or data warehouse.
 - You can use SQL tables to build dashboard filters. For example, to source a list of values, a user could select from a dashboard or report drop-down menu. You can also use SQL as a source for KPI data, actual or budget.

Because tables can't be joined in Dashboard Designer, make sure that all the data you need to build a given report is in one table or view (flat as opposed to relational or dimensional).

✓ **Excel spreadsheets:**

- Lots of business users keep their business performance data in Excel spreadsheets. While this is not a practice we recommend (performance can be poor, and spreadsheets are not robust and secure enough to be productionized), it is almost inevitable that users will have some data, like budget numbers, in Excel.
- Optimally, you want to get this data into an SQL table and then into an Analysis Services cube. But (nonoptimally) using Excel as a data source is an option.
- You can access Excel data through Excel Services or Excel 2007.
- You can manually enter data into an Excel spreadsheet from PerformancePoint. There are probably lots of cool uses for this. It's not very productionized, but it's cool.
- You can use Excel spreadsheets as a source for dashboard filters and KPI data, actual and/or budget.

✓ **Other sources:** You can also connect to other data sources through an ODBC (Online Database Connection) or even a SharePoint list. We don't go into much detail on these for the following reasons:

- You are probably going to be using one of these options: Analysis Services, an SQL table, or Excel.
- Using one of these other data sources is more limiting than those noted. For example, you can only return one value with an ODBC, as opposed to an entire cube or even an SQL table or view. So, ODBC might be good for setting up a data source for a filter list but not much good for business performance reporting.



If you want to build a pivot table or chart, you set up the data source for that when you create the report itself. For more information, see Chapter 13.

Using Your Existing Data Sources

The easiest way to get started building reports and dashboards is to leverage an existing data source, like one that you retrieve from your PerformancePoint Server when you refresh (see Chapter 8).

Analysis Services rocks

In case you didn't notice, we recommend Analysis Services as your underlying data structure, for the following reasons, if it's built correctly:

- ✔ **It's fast.** Users who are used to waiting 10 minutes (minimally) for their online query to run (if it didn't hang or crash) will be very pleased with the response they get — in seconds — from Analysis Services.
- ✔ **It supports complex associations (like many-to-many relationships) between data attributes and always gives you the "right" answer.** The classic example of this in banking is the customer who has many accounts and the account that has many customers. If you are looking at a report that contains two customers who share a joint account, and looking at all the account balances those customers own, you will be looking at the same balances more than once. That's fine, but the problem is including those balances more than once in the Total line of your report. Analysis Services manages how measures should be correctly represented and summed, counting the same balance only once in the total.
- ✔ **You can prebuild hierarchies,** which are attribute layers that are associated with each other in a parent-child relationship.
- ✔ **You can generate calculated fields like ratios and percentages at varying levels of summarization,** for example, as you drill up and down a hierarchy.
- ✔ **You can build a PerformancePoint Server dashboard soup to nuts (or data source element to dashboard element, as it were)** with just one Analysis Services data source — not so for the other data source types.



TIP You do not need to bring the data source into your workspace to use it for reports or KPIs. When you create a report or KPI and point to a server data source, PPS automatically brings the data source into your workspace for you. You may, however, want to bring the data source into your Workspace Browser so that you can edit it or view its properties.

Connecting to Your Data by Creating a New Data Source

Your primary data sources will be Analysis Services cubes, SQL Server tables or views, and Excel spreadsheets.

The majority of examples in this book focus on the implementation of PPS with an Analysis Services data source, namely the Adventure Works DW Analysis Services cube that comes with SQL Server Analysis Services. If it's not already installed on your server and you want to download it, see Appendix 1.

But while the rest of the book mostly uses an Analysis Services data source, you may want to leverage SQL or Excel, so connecting to these sources is covered here.

Creating an Analysis Services data source

Creating a new data source element is not actually creating the data source itself (like an SQL table or Analysis Services database), but rather creating a connection to an existing data source.

To create a new Analysis Services data source element, follow these steps:

1. Right-click the Data Sources element header.

The data source options menu opens, as shown in Figure 9-2.

2. Select New Data Source from this menu.

The Select a Data Source Template dialog box opens, as shown in Figure 9-3.

Figure 9-2:
Creating a
new data
source
element.



3. Select a data source template by choosing the following:

- Category: Multidimensional
- Template: Analysis Services

Your data source options also include the following categories:

- Standard Queries: Template - ODBC
- Tabular List: Template - Excel Services
- Tabular List: Template - Import from Excel 2007
- Tabular List: Template - SharePoint List
- Tabular List: Template - SQL Server Table

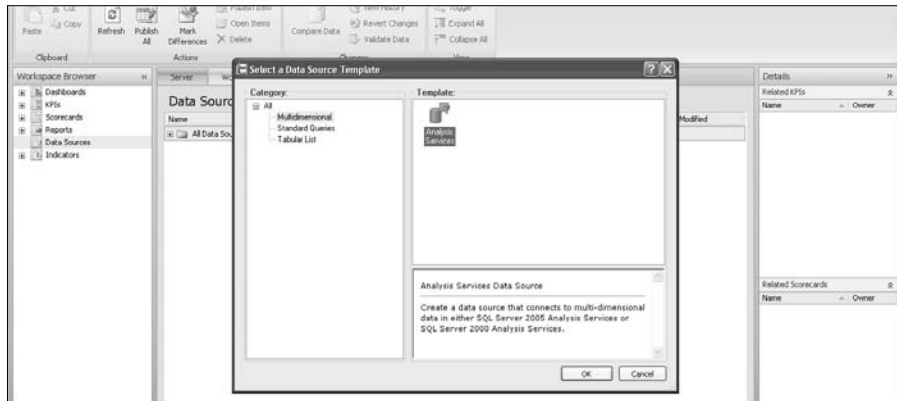


Figure 9-3:
Selecting your data source template.

4. Click the OK button.

The Create a Data Source dialog box opens, as shown in Figure 9-4, although the Name and Display Folder fields will be blank.

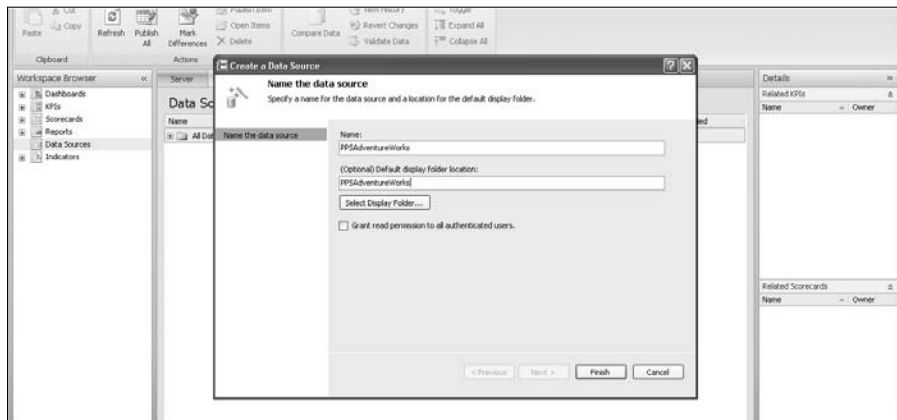


Figure 9-4:
Naming your data source element.

5. Enter a name for your data source.

If you want to store the data source in a folder, you can create a folder by typing the name in the Display Folder Location field (or click the Select Display Folder button to select an existing folder).

In Figure 9-4, we enter **PPSAdventureWorks** as the name of the data source element and create a folder called PPSAdventureWorks.



Tip Folders are very helpful for keeping your elements organized — by user, by project, or even by data source type.

6. Click the Finish button.

Your data source properties tab is now open in your workspace, and your data source element is added to your Workspace Browser.

Figure 9-5 shows our new data source, PPSAdventureWorks, in the workspace open to the Editor tab.

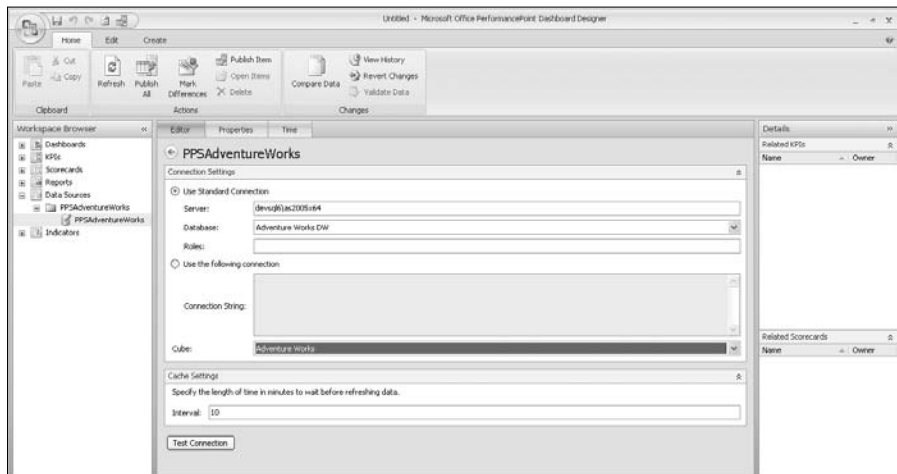


Figure 9-5:
Making a
connection
to your data
source.

7. Select the Use Standard Connection option in the Connection Settings section and enter the server name.

As shown in Figure 9-5, we enter the server name `devsql6\as2005x64`.

8. Click the Database drop-down arrow to select a database from the server you entered in Step 7.

In Figure 9-5, we select Adventure Works DW.

9. Click the Cube drop-down arrow to select a cube from the Analysis Services database you selected in Step 8.

In Figure 9-5, we select the Adventure Works cube.



Test your connection at this point, making sure that you can connect properly to your data source, by clicking the Test Connection button at the lower-left corner of the Editor tab. If you have connection problems, contact your IT department or help desk.

10. Publish your item to your PPS server (see Chapter 8 for more information on publishing elements).

When you publish your new data source, the little pencil graphic on your data source icon in Workspace Browser disappears, as shown in Figure 9-6.



You can also save your workspace, but if you plan to publish reports based on your new data source, and then preview or deploy dashboards based on the scorecards, you need to publish the item.

You are now ready to create some reporting or KPI elements with your Analysis Services data source.

Figure 9-6:
Your data source is published. Yay!



Creating an SQL table data source

To define your SQL table connection, follow these steps:

1. Right-click the Data Sources element header.

The data source options menu opens, as shown in Figure 9-2.

2. Select New Data Source from this menu.

The Select A Data Source Template dialog box opens, as shown in Figure 9-3.

3. Select a data source template by choosing the following:

- Category: Tabular List
- Template: SQL Table

4. Click the OK button.

The Create A Data Source dialog box opens, as shown in Figure 9-4, although the Name and Display Folder fields will be blank.

5. Enter a name for your data source.

If you want to store the data source in a folder, you can create a folder by typing the name in the Display Folder Location field (or click the Select Display Folder button to select an existing folder).

We named this connection **PPSQLTable** and added it to the PPSAdventureWorks folder.

6. Click the Finish button.

Your data source properties tab is now open in your workspace, and your data source element is added to your Workspace Browser.

Figure 9-7 shows our new data source, PPSQLTable, in the workspace open to the Editor tab.

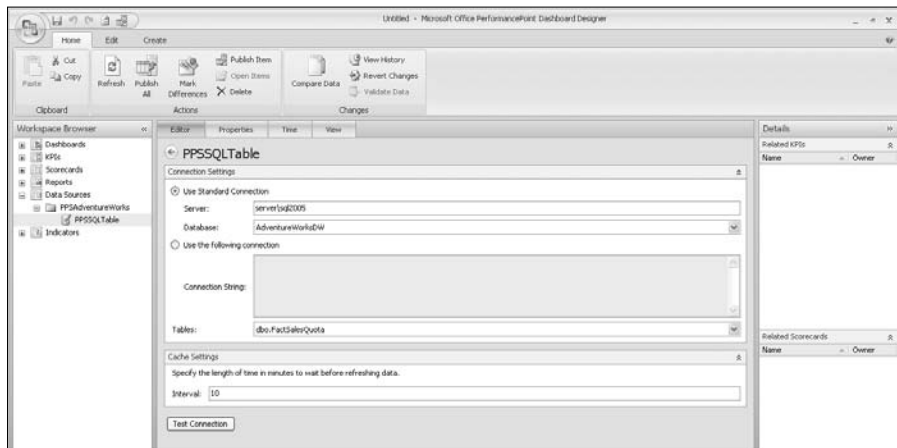


Figure 9-7:
Making a
connection
to your SQL
Server data
source.

7. Select the Use Standard Connection option in the Connection Settings section and enter the server name.

As shown in Figure 9-7, we enter the server name **server\sql2005**.

8. Click the Database drop-down arrow to select a database from the server you entered in Step 7.

In Figure 9-7, we select AdventureWorksDW.

9. Click the Tables drop-down arrow and select the table or view you want to use.

In this example, we select **dbo.FactSalesQuota**.

You might want to test your connection at this point by clicking the Test Connection button.

10. Publish your item to your PPS server (see Chapter 8 for publishing instructions).

Your item is now published to your PPS server and is ready to use for reports or filters.



If you want to use an SQL table or view, it should have all the information you want to create the report or filter list that you plan to create from it. Without getting into the details of database architecture (you're welcome), any given table will probably have some information you want (like some measures) and a bunch of IDs that mean nothing without their associated dimension or lookup tables. What you need is a view that joins multiple tables so that instead of IDs you get actual dimension values that are meaningful to a business user. You need to create or use a "flat" SQL table from your relational or dimensional structure. This view of your data should be created in SQL Server, not in PerformancePoint.

Creating an Excel 2007 data source

What's a little bit different about creating an Excel 2007 data source is that you are not actually connecting to a spreadsheet and maintaining that connection. Rather, you are importing the Excel 2007 data into PerformancePoint's Excel and publishing that data to the PerformancePoint server. So, editing that original spreadsheet will have no impact on the data unless you re-import it, but you don't have to re-import the spreadsheet to edit your data (see the section "Editing your Excel data set," later in this chapter).

You can also use the Excel 2007 data source type to enter your own data into PerformancePoint's Excel to use for filters or reports.

And when you publish your data to PerformancePoint server, it is stored there in versions just like other data source elements (see Chapter 8.)

Importing data from an existing Excel 2007 workbook

To import Excel 2007 data, follow these steps:

- 1. Right-click the Data Sources element header.**

The data source options menu opens, as shown in Figure 9-2.

- 2. Select New Data Source from this menu.**

The Select a Data Source Template dialog box opens, as shown in Figure 9-3.

- 3. Select a data source template by choosing the following:**

- Category: Tabular List
- Template: Import from Excel 2007 Workbook

4. Click the OK button.

The Create a Data Source dialog box opens, as shown in Figure 9-4, although the Name and Display Folder fields will be blank.

5. Enter a name for your data source.

If you want to store the data source in a folder, you can create a folder by typing the name in the Display Folder Location field (or click the Select Display Folder button to select an existing folder).

We enter **PPSExcel2007** as the name of the data source element and enter **PPSAdventureWorks** as the folder name. Alternatively, we can click the Select Display Folder button next to the folder entry to find the appropriate folder.

6. Click the Finish button.

Your data source properties tab is now open in your workspace, and your data source element is added to your Workspace Browser.

Figure 9-8 shows our new data source, PPSExcel2007, in the workspace open to the Editor tab.

7. Click the Import button to import an existing Excel 2007 spreadsheet.

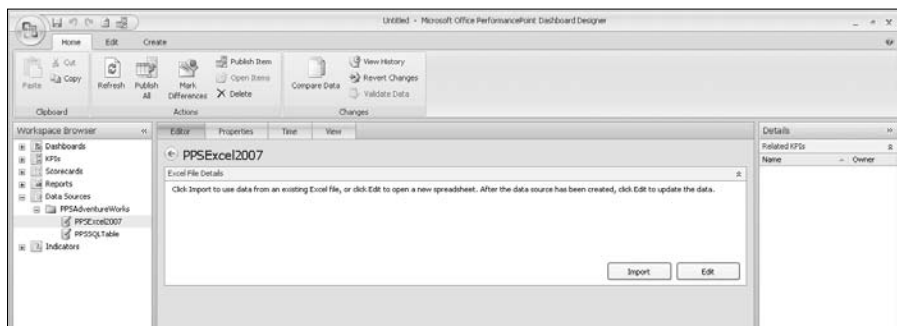
A dialog box opens to allow you to select your Excel 2007 workbook from your directory.

8. Browse to find your workbook, and click the OK button.

The View tab of your workspace opens to show your data set.

Figure 9-9 shows the browsing dialog box. We select PPSExcel2007WorkbookData from the PPSforDummies directory and click the OK button.

Figure 9-8:
Editing your
Excel 2007
data source.



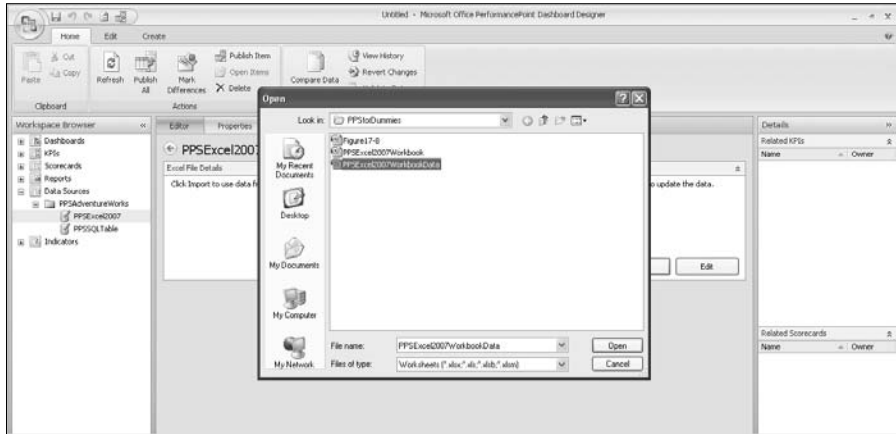


Figure 9-9:
Importing
your Excel
2007 data.

9. To preview your data, click the View tab in your workspace.

Figure 9-10 shows a view of our `PPSExcel2007Workbook.xlsx` data set. The data shows budgetary goals by division, region, and director for sales amount and gross profit margin.

10. Publish your new data source element (see Chapter 8 for information on publishing).

Your data is now stored on the PerformancePoint server.

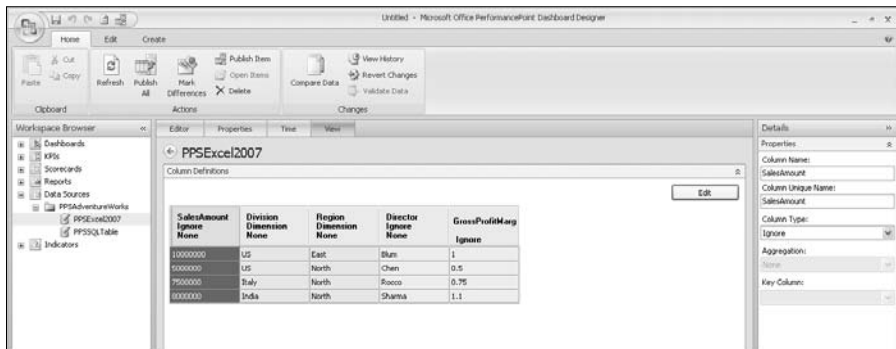


Figure 9-10:
Viewing
your Excel
2007 data.

Editing your Excel data set

So, perhaps you have imported your Excel data, you view it, and you notice something is wrong, or something is missing. What's great is that you don't have to go back, edit the Excel spreadsheet, and re-import. You can edit your imported data right in PerformancePoint.

IT people are currently cringing at the thought of developers being able to manually edit business performance production data, but it's still pretty darn useful if not entirely secure.

To edit your Excel data set, follow these steps:

1. Click the Edit button in the upper-right corner of the Column Definitions pane on the View tab.

An instance of Excel 2007 opens, showing your Excel data.

You can see the Edit button in Figure 9-10.

2. Edit your data as necessary.

Figure 9-11 shows our Excel data opened into an instance of Excel 2007.

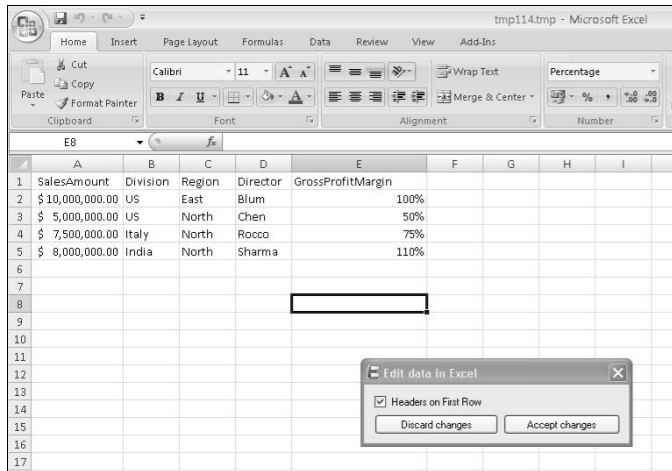


Figure 9-11:
Editing your
Excel 2007
data.

In this case, we want to do the following:

- Change Chen's division from US to Taiwan in row 3.
- Add another row of data for our new director, Olson, from the Midwest Region of the US Division in row 7.

In Figure 9-12, we enter these changes.

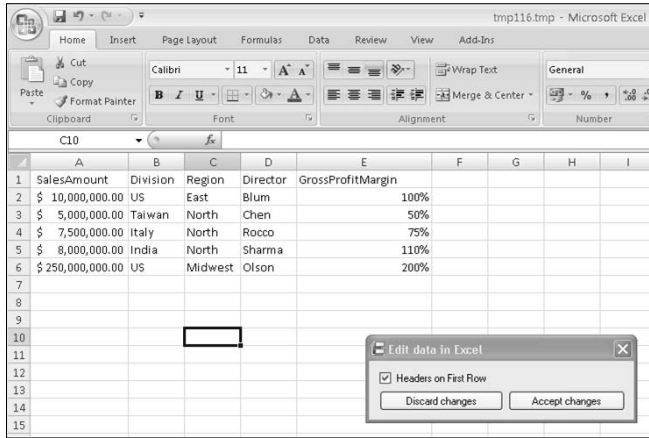


Figure 9-12:
Making your
Excel 2007
data edits.

3. Click the Accept Changes button in the Edit Data In Excel dialog box.

Excel closes, you are back to your Dashboard Designer interface, and your changes are saved.

Figure 9-13 shows that our changes have been entered. Chen is now the director of the Taiwan Division, and Olson has been added as director of the US/Midwest Division/Region.

4. Publish your item.

See Chapter 8 for more information on publishing. Your data is now stored on the PerformancePoint server.

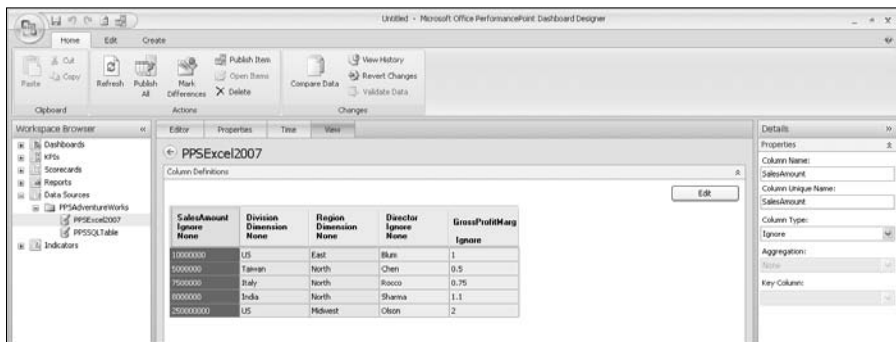


Figure 9-13:
Seeing your
Excel 2007
edits.

Creating your own data set in PerformancePoint

If you need to create your own data set for a lookup or just to create some test data, you can create a data set right in PerformancePoint using the Excel 2007 data source type. You can do this by combining the steps for creating an Excel 2007 data set and editing an Excel 2007 data set, by essentially creating an empty data set to which you can manually type in or copy in some data.

To create your own data set in PerformancePoint, follow these steps:

- 1. Follow Steps 1 through 6 from the section “Creating an Excel 2007 data source,” earlier in this chapter.**

When you complete these steps, you will have an Excel data source element with no data in it.

- 2. Click the Edit button in the upper-right corner of the Column Definitions pane on the View tab.**

An instance of Excel 2007 opens, showing your Excel data.

The spreadsheet will be blank because you haven't imported any data.

- 3. Type or copy some data into your Excel spreadsheet.**

Add some headers so that your data has field names (such as Sales Amount, Division, and Region, as shown in Figure 9-12), and then insert your data under that header row. If you add headers, make sure that the Headers On First Row check box in the Edit Data In Excel dialog box is selected, as shown in Figure 9-12.

- 4. Click the Accept Changes button.**

Excel closes and you are returned to your Dashboard Designer workspace.

Now you can see your data on the View tab, as shown in Figure 9-13.

- 5. Publish your data source element (see Chapter 8).**

Your data is now stored on the PerformancePoint server.

Creating an Excel Services data source

If your organization has Excel Services installed, this is another great option for reading Excel data. Excel Services is a server-based application that allows you to display an editable Web version of an Excel 2007 spreadsheet.

Because Excel Services itself is server based, you are not actually importing the data into PerformancePoint like you do in the preceding section, but rather you are connecting to the Excel Services spreadsheet on the Excel Services server. So in this case, if you edit the Excel Services spreadsheet, your data will change.



A nice feature of this method of leveraging Excel data is that you can provide a centralized Web-based environment for allowing business users to edit and enter Excel data. And this data can be retrieved on a more “real-time” or “run-time” basis, such as when a report is run or when a cube is processed. This method reduces the step of the middleperson (that would be *you*) in getting Excel data into your dashboard environment.



To use an Excel Services workbook, you have to name a range in Excel before you publish the workbook. Follow these steps:

1. Right-click the Data Sources element header.

The data source options menu opens, as shown in Figure 9-2.

2. Select New Data Source from this menu.

The Select a Data Source Template dialog box opens, as shown in Figure 9-3.

3. Select a data source template by choosing the following:

- Category: Tabular List
- Template: Excel Services

Figure 9-14 shows the selected Excel Services template.

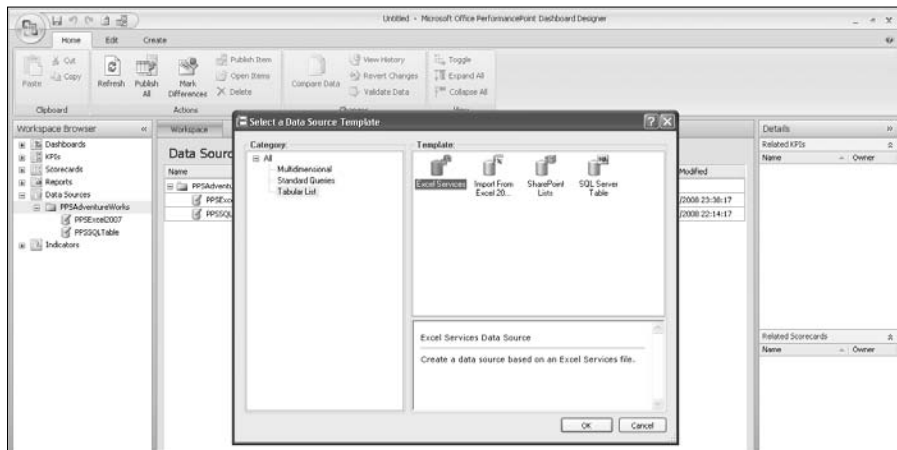


Figure 9-14:
Adding
an Excel
Services
data source.

4. Click the OK button.

The Create a Data Source dialog box opens, as shown in Figure 9-4, although the Name and Display Folder fields will be blank.

5. Enter a name for your data source.

If you want to store the data source in a folder, you can create a folder by typing the name in the Display Folder Location field (or click the Select Display Folder button to select an existing folder).

We enter **PPSExcelservices** as the name of the data source element and enter **PPSAdventureWorks** as the folder name.

6. Click the Finish button.

Your data source properties tab is now open in your workspace, and your data source element is added to your Workspace Browser.

Figure 9-15 shows our new data source, PPSExcelservices, in the workspace open to the Editor tab. Of course, when you first set up the data source, all the connection setting information will be blank.

7. Enter the SharePoint Site of your Excel Services workbook.

Figure 9-15 shows the SharePoint site of our Excel Services workbook: http://devapp4/projects/dashboardviewer_ppsfd/.

8. Click the Document Library drop-down arrow to select the document library where your Excel Services workbook is located.

Figure 9-15 shows our document library named Dashboards.

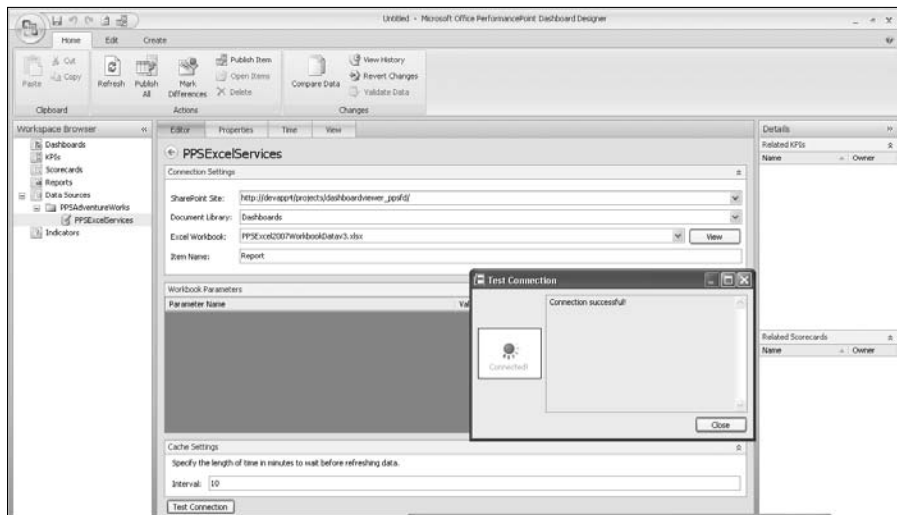


Figure 9-15:
Setting up
our Excel
Services
data source.

9. Click the Excel Workbook drop-down arrow to select the workbook from your chosen document library.

Figure 9-15 shows our Excel Workbook named `PPSExcel2007WorkbookDataV3.xlsx`.

10. In the Item Name box, enter the range name of the report in your Excel workbook.

Figure 9-15 shows the item name Report for our report. We realize that you are very impressed with the creativity of our naming conventions.



You can set up a range/item name in Excel 2007 before you publish to Excel Services by selecting the cells you want to include in your report, right-clicking and selecting Name a Range, and then naming your range. The range name is the item name you enter in the previous step.

11. Click the Test Connection button in the lower-left corner of the Editor tab.

Hopefully, your connection will succeed and a pop-up box that tells you so will appear, as shown in Figure 9-15. You can also click the View button and look at the Excel Services report.

12. Publish your new data source element.

See Chapter 8 for instructions on publishing.

Setting Up Required Data Properties

Now you have your data source set up. But before you move on to setting up some of your other elements, you may have to manage some of your properties. For example:

- ✓ If you want to use an Excel or SQL data source element as a data source for a KPI, make sure that you set up your data type properties (see the next section in this chapter).
- ✓ If you want to be able to combine multiple data sources into a KPI, report, or scorecard and map these sources against each other by time, you need to set up time properties (see the section “Defining the time dimension to combine data sources across time,” later in this chapter). This will come in handy if, for example, you have your actual data in Analysis Services and your budget data in an Excel spreadsheet.
- ✓ If you want to use your data source to create filters that use relative time (for example, rolling 3 months, month to date, or prior year), you need to set up your time properties (see the section “Defining the time dimension to combine data sources across time,” later in this chapter).

- ✓ If you want to enable other PerformancePoint Dashboard Designer developers to edit or even just use the data source you create, you may need to add them to set up the proper permissions. More importantly, if you want users to be able to view data in their dashboards based on one of your data source elements, you have to grant them permissions to do so (see the section “Setting your data source element permissions,” later in this chapter).

Setting your fact and dimension properties on SQL and Excel data sources

When you create an Analysis Services cube, you set fact (that is, measures) versus dimension (that is, attribute) properties in the cube itself so that PerformancePoint can recognize which fields are facts and which are dimensions. (*Go, Analysis Services!*)

But this information is not inherent in Excel or SQL. So you have explicitly assigned your data source fields as a measure or a dimension.

To set up your data type properties for an Excel or SQL data source element, follow these steps:

- 1. Select your data source element from your Workspace Browser, and then click the View tab header in your workspace.**

The View tab opens.

Figure 9-16 shows the View tab of our Excel Services data source element open in the workspace. You can only see field names, but the table is currently populated with the value “No Data.” That’s just because we haven’t tried to preview the data yet.

- 2. Click the Preview Data button in the upper-right corner of the View tab.**

Your data grid should populate with data from your data source.

Figure 9-17 shows our data source element grid populated with data from our Excel Services worksheet.

Because a live connection exists between PPS and Excel Services and between PPS and SQL tables, barring latency or network issues, if someone updates that Excel Services spreadsheet or SQL table and you click the Preview Data button again, the data values will change/update.



3. Click a column.

The column is highlighted in a darker blue. Figure 9-17 shows the Sales Amount column selected.

Figure 9-16:
Looking at the View tab.

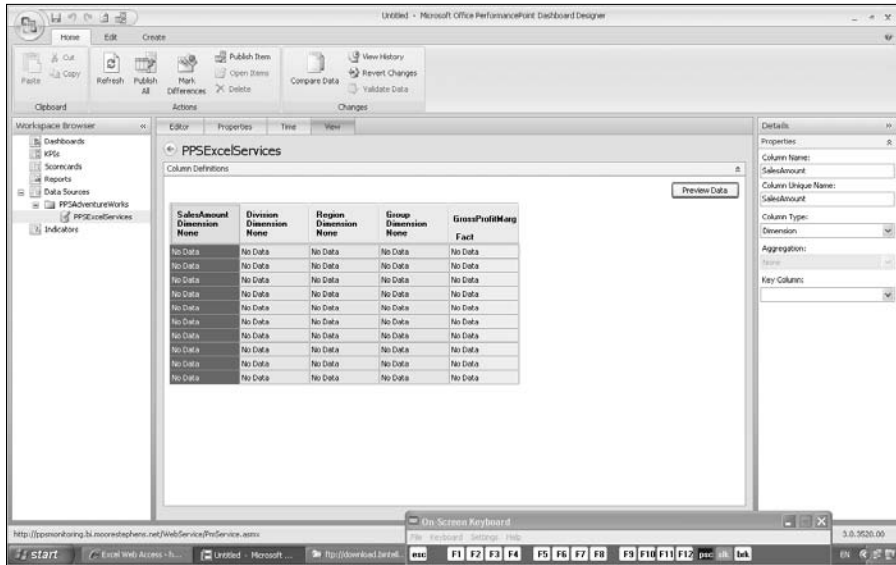
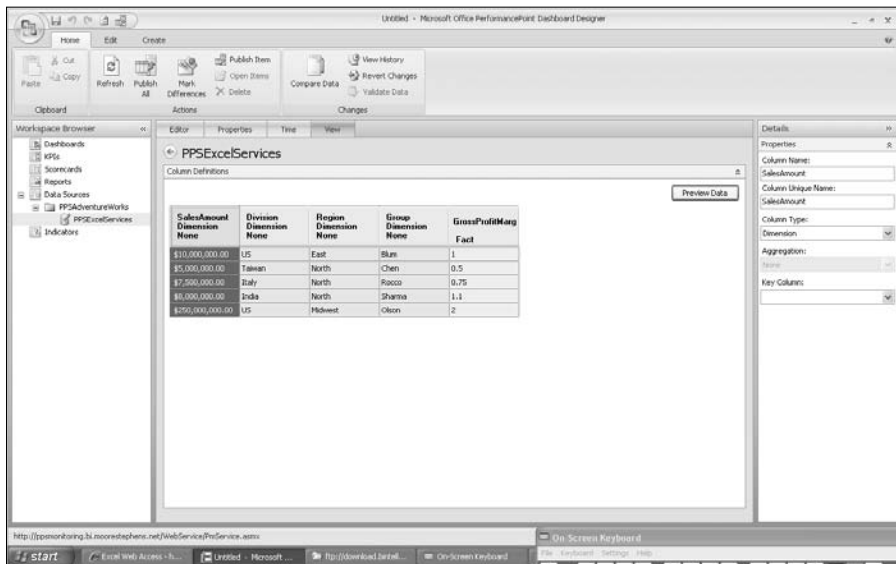


Figure 9-17:
Setting your data properties.



4. In the Details pane on the right side of the screen, check whether the type is correct for the selected column, as follows:

- A measure column has the value Fact
- A dimension column has the value Dimension
- A time dimension column has the value Time Dimension
- A table key (like an ID) has the value Key
- A field that you don't want to include has the value Ignore

Figure 9-17 shows that the Sales Amount column type is currently set as a dimension. This is not correct, because Sales Amount is actually a measure.

5. If the value is correct, click another column and repeat Step 4. If not, go to Step 6.

6. Click Column Type drop-down arrow and select the proper column type.

In this case, we choose Fact, as shown in Figure 9-18.

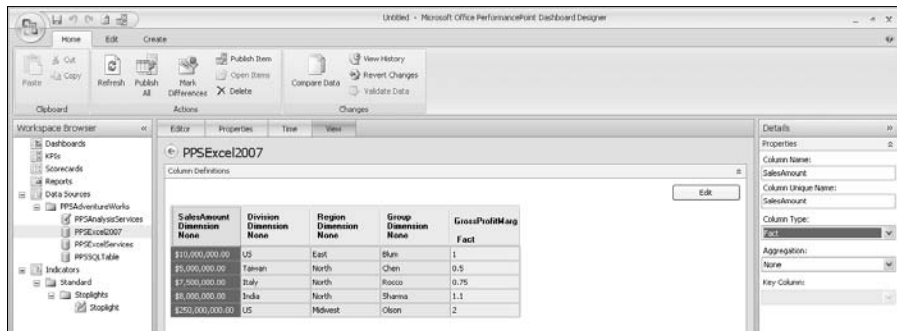


Figure 9-18:
Setting the
correct col-
umn type.

7. For fact column types, select the proper aggregation by clicking the Aggregation drop-down arrow.

You see the following list of aggregation types:

- Average
- Count
- Minimum
- Statistical Standard Deviation
- Sum
- Statistical Variance
- First Occurrence



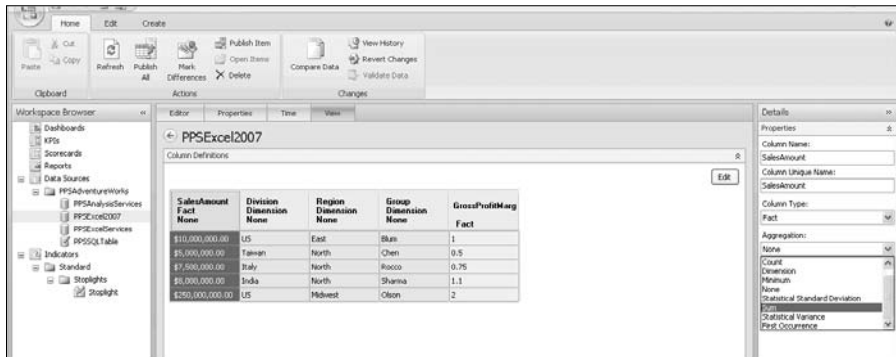
In this case, we want to be able to add the Sales Amounts together, so we choose Sum, as shown in Figure 9-19.

Sum and Count are common aggregation types.

8. Complete the column type changes for all columns and publish your item.

Now your Excel or SQL data source is ready to use to create KPIs.

Figure 9-19:
Choosing an aggregation type for facts.



Defining the time dimension to combine data sources across time

PerformancePoint has a feature called Time Intelligence that allows you to link any or all of your data sources to an internal calendar, a master calendar. As we mention earlier in this chapter, this is particularly useful to achieve two objectives:

- ✓ To combine multiple data sources into one KPI, scorecard, or report and map them together by time (for example, if you have actual data in Analysis Services and budget data in Excel)
- ✓ To create filters that use relative time periods

Defining time dimension properties for Excel and SQL data sources

To define time dimension properties in an Excel or SQL data source element, make sure that your Time field is defined as a time dimension on the View tab of your data source element (see the section “Setting your fact and dimension properties on SQL and Excel data sources,” earlier in this chapter). Then, follow these steps:

1. Select your data source element from your Workspace Browser and then click the Time tab header in your workspace to open the Time tab.

Your Time tab opens.

Figure 9-20 shows our Time tab. In the Time Dimensions section, we have one time dimension, called Period, in this data source.

If you do not have any time dimensions listed here, go back to your View tab and make sure that you have identified a time dimension.

2. Select the check box in the Master column for the time dimension that you want to use as the primary time dimension, that is, the one that will potentially map to another data source.

In this case, we only have one time dimension, although it is very common to have many dates associated with your data. We select Period as the master time dimension, as shown in Figure 9-21.



Figure 9-20:
Viewing the
Time tab in
your work-
space.

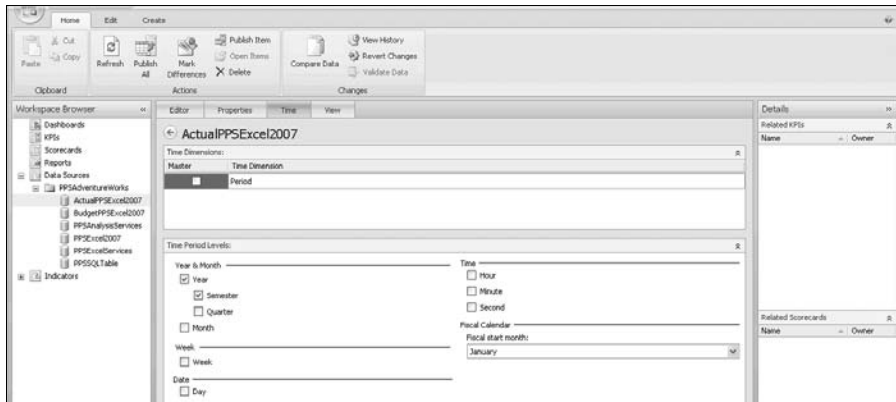
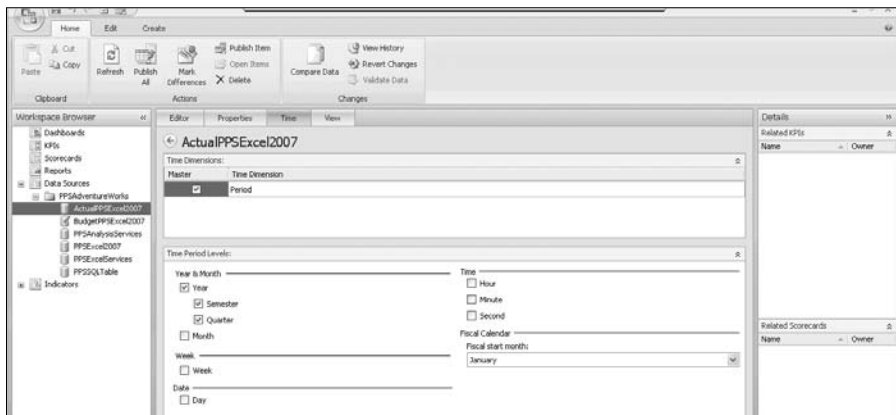


Figure 9-21:
Setting up
the time
properties.



3. Select the time period levels to which you want PPS to aggregate.

If your data is being stored at the month level and you want it to be summarized only at the quarter, semester, and year, select Quarter, Semester, and Year.

In this case, our data is stored at the quarterly level, and we want PPS to aggregate at the quarter, semester, and year, as shown in Figure 9-21.

4. Publish your item (see Chapter 8 for more information on publishing).

Defining time dimension properties for Analysis Services data sources

What's nice about setting up the time dimension properties for Analysis Services is that PPS already knows which dimensions are dates — that's all set up in Analysis Services itself. You just need to give PPS a couple of other pieces of information. To set the time properties for an Analysis Services data source, follow these steps:

1. Select your data source element from your Workspace Browser, and then click the Time tab header for your Analysis Services data source.

Your Time tab opens in your workspace. The Time tab for Analysis Services is shown in Figure 9-22.

2. Select the time dimension you want to use as your master time dimension by clicking the Time Dimension drop-down arrow in the Reference Data Mapping section of your workspace.

We select Date.Date.Calendar.

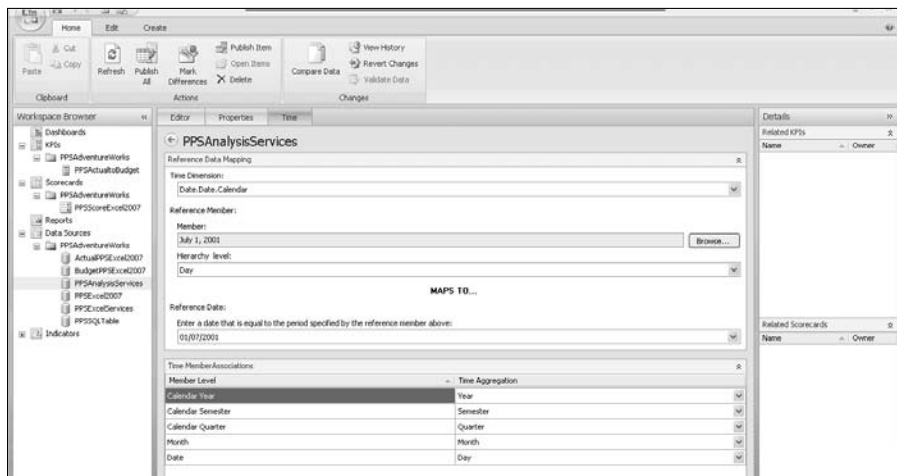


Figure 9-22:
Setting up
the time
properties.

3. Select a reference member (date value) by clicking the Browse button next to the Member box and choosing a dimension member value at the lowest level of granularity that you have.

Our lowest level of granularity for this time dimension is a day, so we choose a day: July 1, 2001. The actual date you choose is not relevant; what's important is the level at which you select it.

4. Select the appropriate hierarchy level or level of the date hierarchy that value represents (that is, Day, Month, Quarter, Semester, or Year).

In our example, we have daily data. You may have only monthly data, but the date is still stored as a day.

In this example, we select Day as the hierarchy level, but if your date represents a month or quarter (that is, it is the month end date or the quarter end date), choose Month or Quarter as the appropriate hierarchy level. In Figure 9-23, we select the member July 2001 with a hierarchy level of Month.

5. Enter a date in the Reference Date section that is equal to the period you specify in Step 4.

We enter July 1, 2001 (our server is UK based, so the date is in *dd/mm/yyyy* format; U.S.-based servers will follow standard U.S. date formatting, or *mm/dd/yyyy*). If you are specifying the reference member at a month or quarter, for month use the month end date and for quarter use the quarter end date.

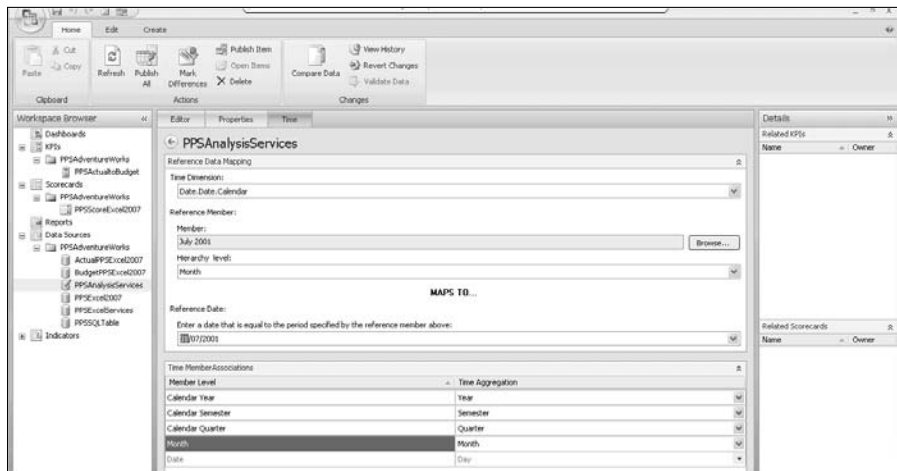


Figure 9-23:
Looking at
monthly
versus
daily time
settings.

6. Map the member level values to time aggregations in the Time Member Associations frame using the Time Aggregation drop-down arrows.

Map your year attribute name to Year, your semester attribute name to Semester, and so on.

In Figure 9-22, we map Calendar Year to Year, Calendar Semester to Semester, Calendar Quarter to Quarter, Month to Month, and Date to Day.

Figure 9-23 shows the same time dimension, mapped only to the month level. In the Time Member Associations section, Date and Day are grayed out and disabled. Because we selected a month hierarchy level, we cannot define associations at a lower level of granularity.

Setting your data source element permissions

Setting your data source element permissions allows different users to read and/or edit your data source element and have access to the data it connects to. Roles include the following:

- ✔ **Reader:** Has access to read or use data source elements. This should include report and dashboard users.
- ✔ **Editor:** Has access to edit or delete data source elements.

Editor or reader access to a data source (or any other element for that matter) works together with PerformancePoint Server roles. These PPS roles include the following:

- ✔ **Administrator:** Has access to create, read, edit, or delete everything, regardless of whether you add the user as an editor or reader, or even if you do not assign the user to a role.
- ✔ **Data source manager:** Has access to create, read, edit, or delete all data sources, regardless of whether you add the user as an editor or reader, or even if you do not assign the user to a role.
- ✔ **Creator:** Has access to create KPIs, indicators, scorecards, reports, and dashboards, but not data sources. A creator can edit a data source if he is named as an editor on the data source.
- ✔ **Power reader:** Has read-only access to all data elements, whether or not the reader is named as an editor on the data source.

There are two rules for ensuring proper access to users who are not administrators or data source managers:

- ✔ If you want users who are not administrators or data source managers to be able to edit your data source element, make sure that they have the creator PPS role and grant them editor access as described in the following steps.
- ✔ If you want users who are not administrators or data source managers to be able to read the data source element or access data that the data source element connects to, make sure that the user has the creator or power reader PPS role and grant the user reader access as described in the following steps.



PerformancePoint role access needs to be granted by your PPS server administrator (which might be you), whereas you (yes, you) can grant reader or editor access. To provide reader or editor access for your data source element, follow these steps:

- 1. Select your data source element from your Workspace Browser and then click the Properties tab header of your selected data source.**

Your Properties tab opens in your workspace. Figure 9-24 shows our Properties tab.

In the Permissions frame, the creator of the data source element, in this case BI\rbloom, is by default listed as the first user and given the editor role.

- 2. Click the New Permission button in the Permissions frame to add a new user.**

A blank line item appears under your first username.

- 3. Enter the name of the new user or group as it is named in your security directory.**

In Figure 9-24, we enter **BI/DashboardDevelopers** and **BI/DashboardAuthenticatedUsers**.



Unfortunately you can't browse or check names against your security directory (that is, Active Directory), but if you get the name wrong or it doesn't exist in the directory, PPS opens a dialog box that tells you so. You may have to go to your help desk or IT department to figure out exactly what users or groups to enter here.

4. Using the Role drop-down arrow, choose Reader or Editor for the selected user.

In Figure 9-24, we assign the dashboard developers an editor role and dashboard authenticated users a reader role.

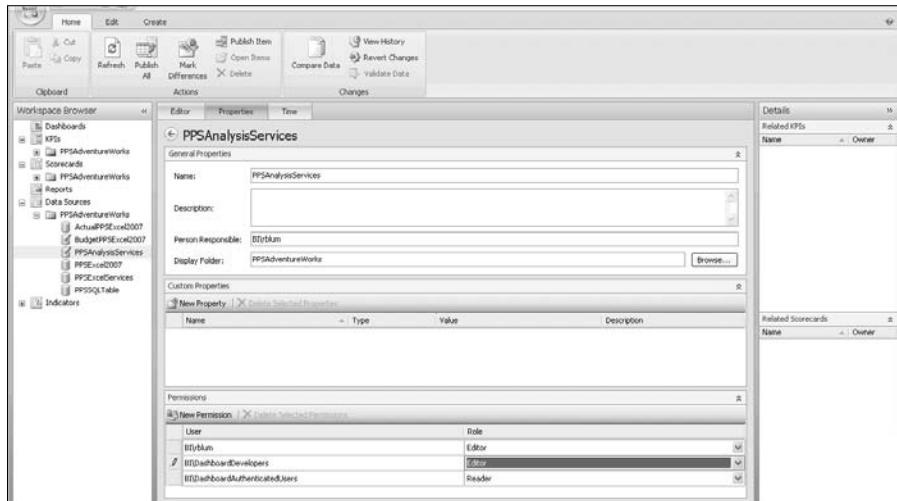


Figure 9-24:
Granting
permissions
to users.

Chapter 10

Picturing Your Business Performance with Indicators

In This Chapter

- ▶ Finding out how to set up the graphics that indicate your business performance
- ▶ Discovering how to create and use your own graphical indicators

Business users love graphic indicators. They are the bells and whistles of dashboards and scorecards. Indicators grab your attention and draw your focus to issues with your business performance, and they do so in a colorful and enticing way.

So when our boss tells us to enhance a sales presentation, to “make it sexier” (yes, he actually says that), he doesn’t mean that we should wear tighter pants (well, maybe he does). What he means is that he wants to see more graphics, more colors — he wants more indicators.

But indicators, while quite lovely, are not just glitz and glamour. They can tell you at a glance how your business is performing against goals and over time. You need an indicator to build a KPI, and you need a KPI to create a scorecard.

PerformancePoint has many fine indicator graphics to choose from, as you soon see. If you want to get creative, you can set up your own graphics. If you are vain, you can even set up a graphic with pictures of yourself.

A successful indicator represents the following items at a glance:

- ✔ **The nature of the variance between your actual and target measures and KPIs:** The graphic tells you whether it’s a good variance, a bad variance, or not quite good or bad (borderline). The built-in indicator graphics usually come in sets of two (good and bad), three (good, bad, and borderline), or more.
- ✔ **How close an actual measure is to its target:** The graphic shows the progress and completion level of a measure to its target, usually in four levels (0%, 25%, 50%, 75%, and 100%) or over a range of gradients.

- ✔ **Trends of your measures and KPIs between time periods:** The graphic tells you how a measure or KPI has changed from a prior period.

The thresholds that associate a graphic with a measure or KPI are set when you create a KPI element. For more information on how thresholds are set, see Chapter 11.

Viewing and Opening Your Existing Indicators

To be able to use an indicator element for a KPI element, the indicator element needs to be published on PerformancePoint Server. But you may already have a number of indicators published to your server, whether you or another developer set them up.

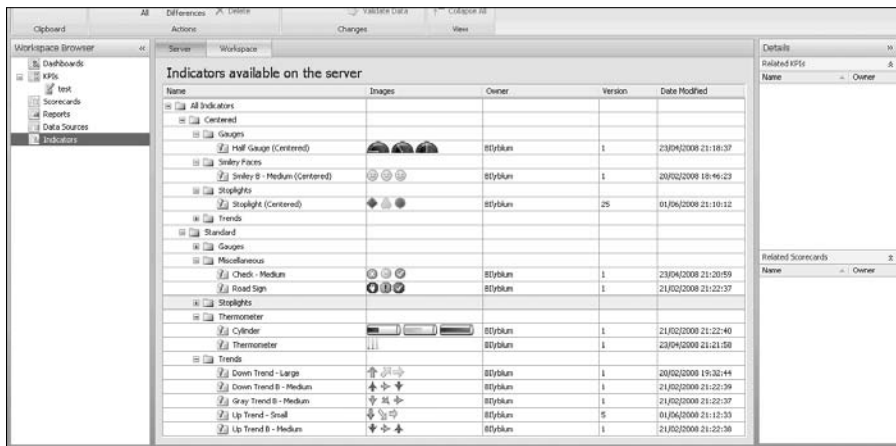
To view and open an existing indicator element from your server to your workspace, follow these steps:

1. Click the indicator element header in your Workspace Browser.

If you don't see any indicators in your workspace, make sure that you've refreshed from your server (see Chapter 8).

All the indicators on your PPS server appear in your workspace, as shown in Figure 10-1.

Figure 10-1:
Viewing the indicators published on your Performance Point server.



2. Double-click the indicator row in your workspace that you want to open in the workspace (or click the indicator row and click the Open Items icon on the Home toolbar).

Your indicator now opens in your workspace and is added to your Workspace Browser.

You can open multiple indicators or folders of indicators to your workspace at a time by holding down Ctrl as you click indicator rows in your workspace. Then click the Open Items icon on your Home toolbar.

Creating a New Indicator Element from Existing Indicator Graphics

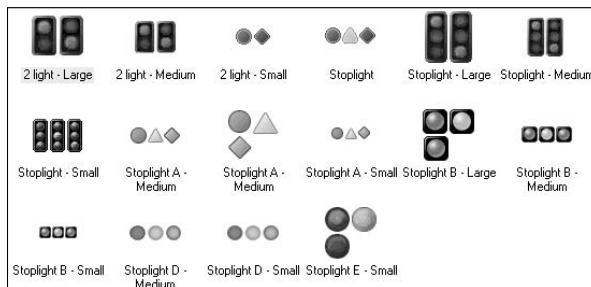
If you don't see the indicator type that you want on your PerformancePoint server, you have to create it. Now, this doesn't mean that you have to create the graphic itself, it just means that you need to set up the existing graphic as an indicator element.

Types of graphics you can choose include those that show the following:

➤ **Performance against a goal (that is, good, bad, or borderline):** These could (and typically would) be used for displaying the variance of actual to budget data, like the variance between a quarterly sales amount and the quarterly sales quota. Indicator styles that show performance against goal include the following (with category header in parentheses):

- Stoplights (Centered and Standard categories — see Figure 10-2)
- Thermometers (Centered and Standard categories — see Figure 10-3)
- Smiley faces (Centered and Standard categories — see Figure 10-4)

Figure 10-2:
Stoplights are a classic and clear way to communicate performance.



- Checks (Centered and Standard categories, Miscellaneous subcategory — see Figure 10-5)
- Flags (Centered and Standard categories, Miscellaneous subcategory — see Figure 10-6)

Figure 10-3:

With thermometers, the heat is on — your business performance.

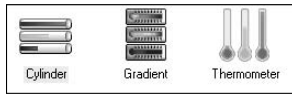


Figure 10-4:

Turn that frown upside down.

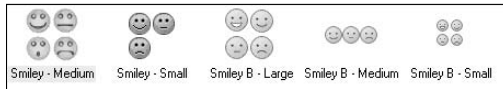


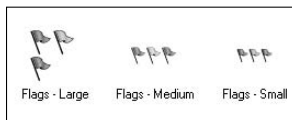
Figure 10-5:

Checks combine checks and x marks with color to communicate performance.



Figure 10-6:

Ready, set, go with flag indicators.



- Red to black (Centered and Standard categories, Miscellaneous subcategory — see Figure 10-7)
- Weather (Centered and Standard categories, Miscellaneous subcategory — see Figure 10-8)

✓ **Progress toward a goal (that is, 25% complete, 50% complete, and so on):**

These could be used to track a daily or monthly actual against a quarterly or project goal, such as if you wanted to track a quarterly sales amount against the annual sales quota, or if you wanted to track current project costs against the project budget. Indicator styles that show progress toward a goal include the following:

- Gauges (Centered and Standard categories — see Figure 10-9)
- Quarters (Centered and Standard categories — see Figure 10-10)
- Progress bars (Centered and Standard categories — see Figure 10-11)

✓ **Trending or direction to a target (that is, going up, going down, staying the same, and so on):** These could be used to display a change in a KPI value from a prior time period. The indicator style that shows direction to a target is trends (Centered and Standard categories — see Figure 10-12).

Figure 10-7:

I see an indicator and I want it painted black.

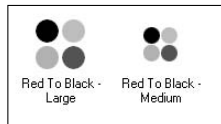


Figure 10-8:

Stormy to sunny graphics show business performance.



Figure 10-9:
Gauges look like a real dashboard and are great for showing progress along a continuum.



Figure 10-10:
These are good for showing quarter-based progress in your KPIs and also for teaching fractions to your children.

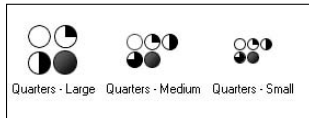


Figure 10-11:
Progress bars can be set at gradients from 2 to 10.

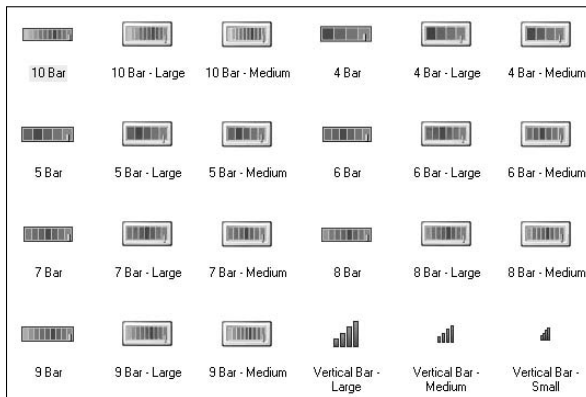
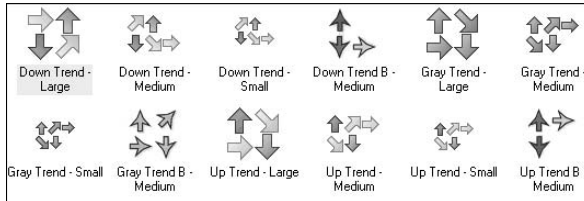


Figure 10-12:
Trend indicators can be used to show both performance and trends over time.



The other major distinction between graphics is that they fall under both a standard and centered categorization:

- ✓ **Standard categories:** Higher or extreme levels show better performance. This would be true of any indicator (and hence, KPI) where higher (or lower) is better. For example:
 - Sales amount (the higher the better)
 - Gross profit margin (the higher the better)
 - Losses (the lower the better)
- ✓ **Centered categories:** Centered levels show better performance. This would be true of any indicator (and hence, KPI) where you want the actual value to stay close to the target plus or minus a margin, but extremes are not good. For example:
 - Utilization rates (too low and you've overstaffed; too high and you've understaffed)
 - Hit ratios (too low and you're not finding enough business; too high and you may not be prepared for the workflow)

To create an indicator element, follow these steps:

- 1. Right-click the indicator element header in your Workspace Browser.**
An options menu opens.
The indicator options menu is shown in Figure 10-13.
- 2. Choose New Indicator.**
Your indicator dialog box opens, as shown in Figure 10-14.
- 3. In the Category section on the left side of the dialog box, click a category type.**

The templates that fall into that category will appear in the Template frame in the upper-right corner of the dialog box.

We select the Thermometer category under the Standard category header, and our selection of thermometers is shown in Figure 10-15. To view a description of the indicator template, we click the template in the Template frame and can see a description in the lower-right frame of the dialog box. In this case, we've chosen the Cylinder template from the Standard Thermometer section (which is highlighted).

Figure 10-13:
Viewing
your
indicator
options
menu.



Figure 10-14:
Selecting
your
indicator
category.

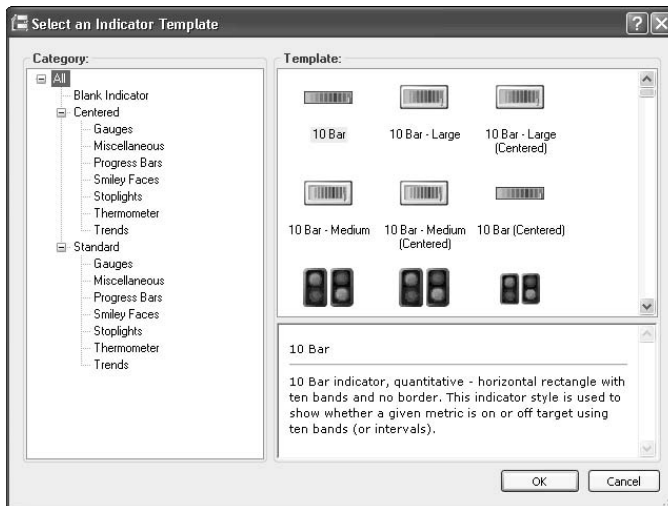
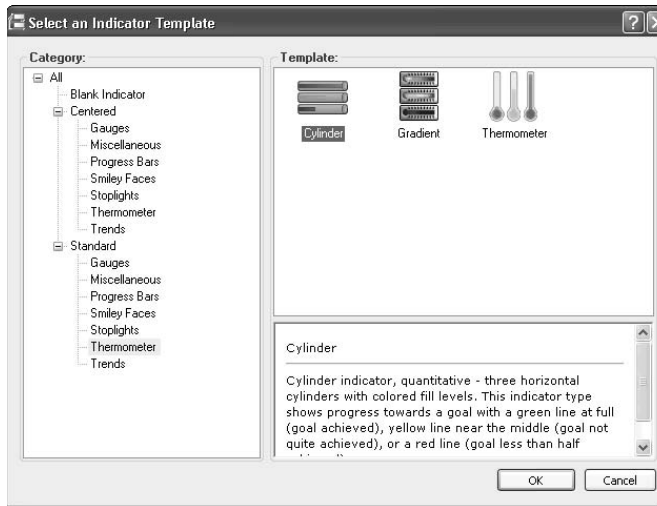


Figure 10-15:
Selecting
your
indicator
template.



4. Click the OK button.

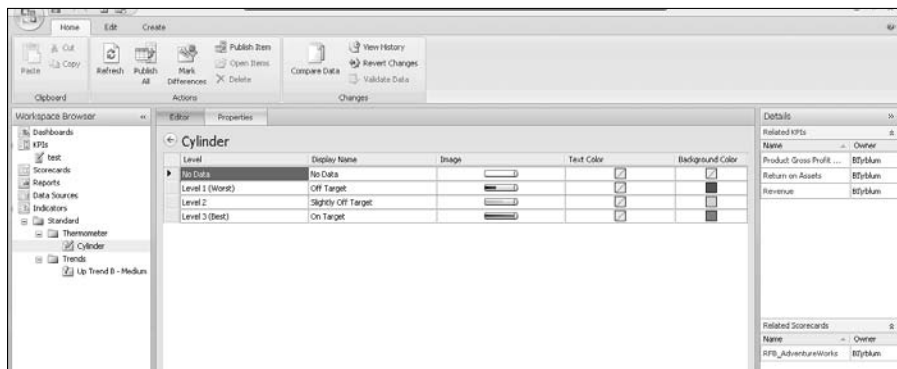
A new indicator element is added to the Indicators section in your Workspace Browser, and the indicator element opens in your workspace.

Figure 10-16 shows that a new cylinder indicator has been added to our workspace.

5. Publish your indicator (see Chapter 8).

At this point, you don't need to do anything else if you're happy with the properties (display names, images, and background colors) of the indicator.

Figure 10-16:
Viewing
your
indicator
in your
workspace.





Before you start changing properties of the KPIs, look at the Details frame on the right side of your Dashboard Designer window (as shown in Figure 10-16). Here you can see all the KPIs and scorecards that your indicator is currently associated with. Now, how can this happen because you just created it? Well, maybe you didn't just create it; someone else may have already set up this indicator and published it to the server. To create your own unique instance of the indicator, you have to copy and paste it.

To create your own instance of an indicator, follow these steps:

1. Right-click the indicator in your Workspace Browser.

An indicator options menu opens. We right-click Cylinder.

2. Choose Copy.

The menu closes.

3. Right-click the folder you want to put the indicator in.

An indicator options menu opens. We right-click the Thermometer header under Indicators→Standard.

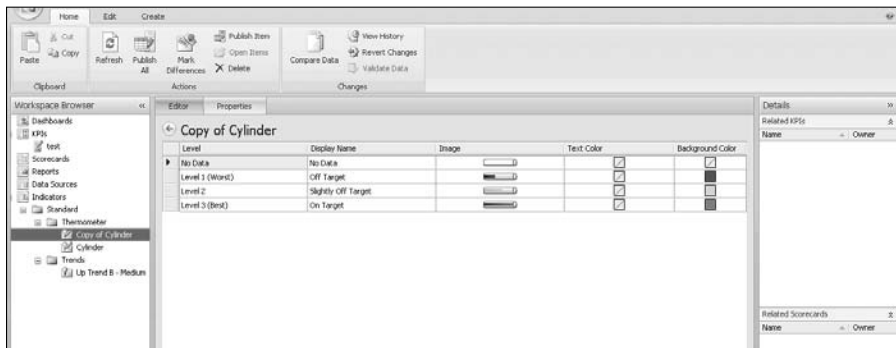
4. Choose Paste.

Your indicator is pasted as Copy of [IndicatorName].

Figure 10-17 shows our Copy of Cylinder indicator added to the Thermometer folder in our Workspace Browser. Looking at the Details frame, we can see that no KPIs or scorecard elements are currently associated with this indicator.

However, you have so many great indicator options to choose from, so there's probably not too much value in editing the graphics or properties of an existing indicator element. You can, however, create a new indicator if, for example, you have some graphics you want to use (see the section "Getting Creative with Your Own Indicator Graphics," later in this chapter).

Figure 10-17:
Looking at
your KPI
indicator
details.



Setting Security and Permissions on Your Indicator

Just like with every other element, you need to make sure that the right users can read and/or edit this indicator. Permissions work the same for an indicator as they do for a data source — and all the other elements for that matter. For more information on setting up permissions, see the section in Chapter 9 on permissions and security.

Getting Creative with Your Own Indicator Graphics

Even though you have so many great and communicative graphics to choose from in PerformancePoint, you may have graphics that are more meaningful to your organization or that you have already developed. Beyond just using the indicator graphics that are built into PPS, you can create your own custom indicators using graphics that you create or already have. For example, we think some pictures of our CEO with a thumbs up and thumbs down would make a superb indicator.

To create your own custom indicator, you need to have graphics available on a server connected to your Dashboard Designer. The graphics can be in the following file formats: `.bmp`, `.jpg`, `.gif`, and `.png`. They can be up to 250 pixels by 250 pixels, but the image will be very large on your screen. It would be better to shrink your image to about 50 by 50 pixels or less. To match the size of other indicator graphics, 25 by 25 pixels is optimal.

To create your custom indicator, follow these steps:

- 1. Right-click the indicator element header in your Workspace Browser.**

The indicator options menu opens, as shown previously in Figure 10-13.

- 2. Select New Indicator.**

The indicator dialog box opens, as shown in Figure 10-14.

- 3. Choose Blank Indicator in the Category frame of your dialog box.**

You see a blank indicator template, as shown in Figure 10-18.

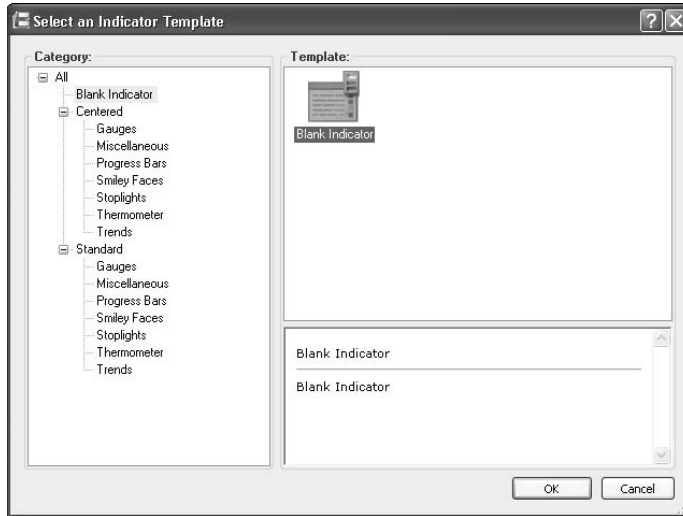


Figure 10-18:
Selecting
your blank
indicator
template.

4. Click the OK button.

The Create New Indicator dialog box opens, as shown in Figure 10-19.

5. Enter the name and folder of your new indicator.

We enter **AllThumbs** as the name of the indicator and **PPSAdventureWorks** in the folder name, as shown in Figure 10-19.

6. Click the Next button.

Your indicator type page opens in the dialog box, as shown in Figure 10-20.

7. Select Standard or Centered as your indicator type.

We select Standard because bigger is often better.

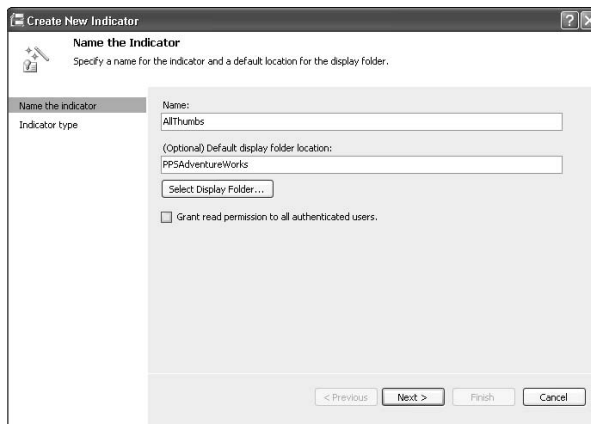


Figure 10-19:
Naming
your new
indicator
element.

Figure 10-20:
Picking a
Standard
or Centered
indicator
type.



8. Select the number of levels for your indicator.

This value should be equal to the number of graphics that you have.

We have two graphics, one thumbs up and one thumbs down. So we select 2, as shown in Figure 10-20.

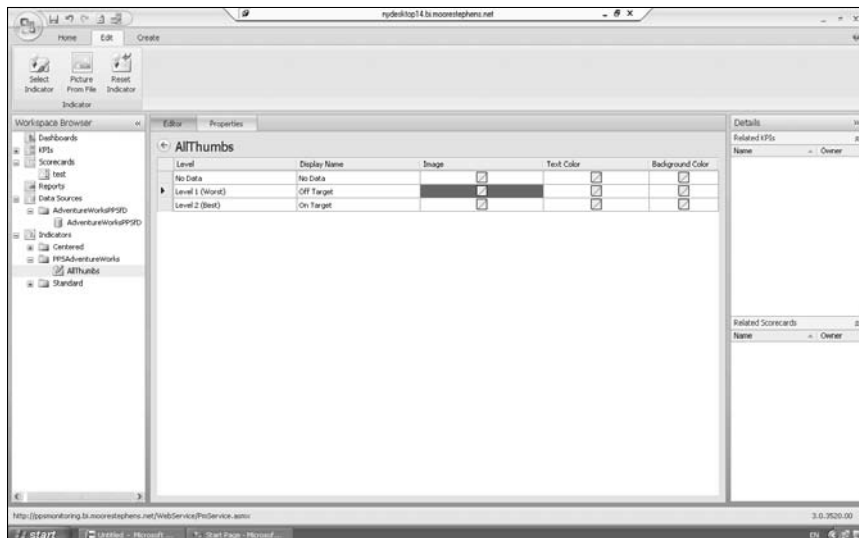
9. Click the Finish button.

The indicator is added to your Workspace Browser, and it opens in your workspace.

10. Click the Editor tab.

The Editor page opens in your Workspace Browser, as shown in Figure 10-21.

Figure 10-21:
Editing your
new
indicator.



11. Double-click the image cell of your first level.

A dialog box opens, allowing you to select a graphic from a local or network folder.

Figure 10-21 shows the image cell of our Level 1 (Worst) level highlighted. When we double-click the little box with the red line through it, the Open File dialog box opens, as shown in Figure 10-22.

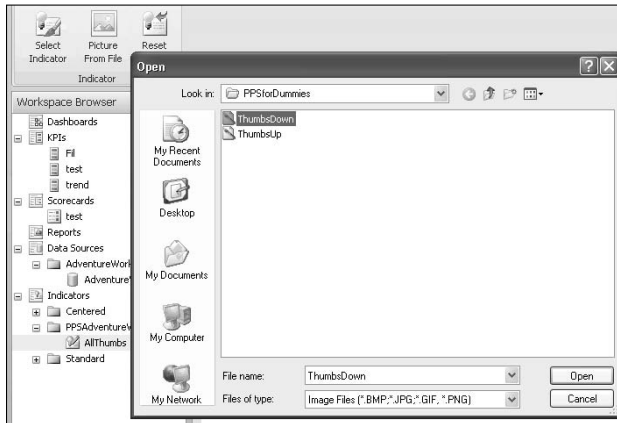


Figure 10-22:
Picking your
indicator
graphic.

Alternatively, we have some toolbar options on the Edit tab, also shown in Figure 10-21. We can choose one of the standard indicator graphics, select one from a picture file (which is the same as double-clicking), or default to the original graphic (which in this case would be no graphic).



This is the same method you would use to change the graphic on an existing indicator element, or to add a graphic for the No Data levels, which often have no default graphic.

12. Select your graphic and click the Open button.

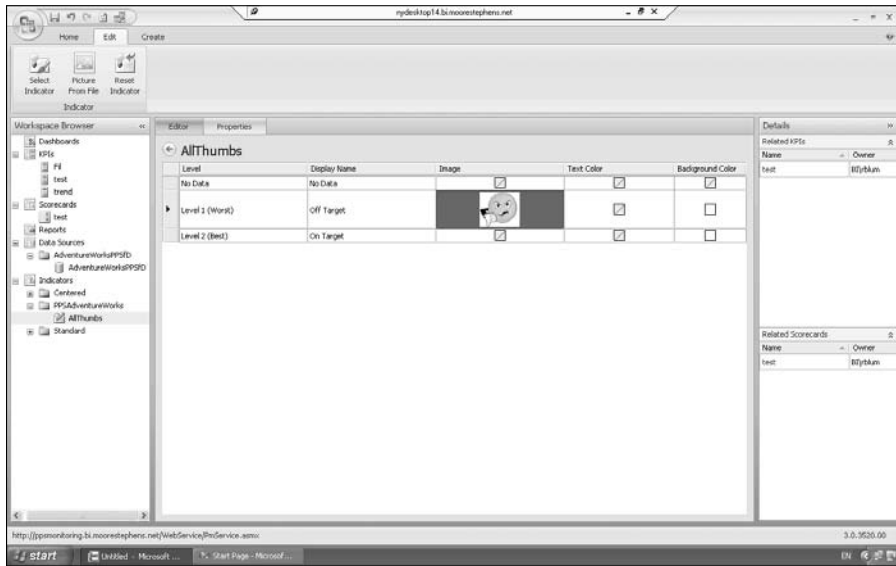
Your graphic is now added to your workspace in the selected cell.

We select ThumbsDown.bmp, because we are picking the graphic for the worst level. The thumbs-down graphic is now added to our indicator workspace, as shown in Figure 10-23.



The size of the graphic on your screen is the size of the graphic in your scorecard. This one is 50 by 50 pixels and is still larger than the standard graphics. If you want the sizes to match, shrink your image to about 25 by 25 pixels.

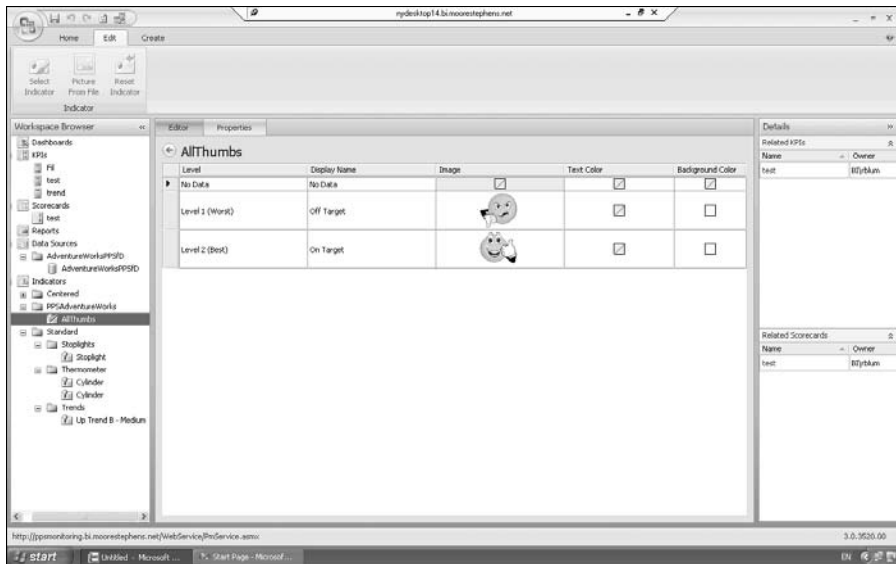
Figure 10-23:
Seeing your graphic in your workspace.



13. Finish adding your graphics using Steps 11 and 12.

We just need to add a thumbs-up graphic, and we're all set, as shown in Figure 10-24.

Figure 10-24:
Thumbs up on our new indicator element.



14. Publish your item (see Chapter 8).

Okay, you are now finished with indicators — halfway to a KPI and one-quarter of the way to a dashboard. Quiz: Which indicator should we use to measure our progress? Answer: Gauges, quarters, or progress bars would be fine, because they would show progress toward our goal of creating a PerformancePoint dashboard.

Chapter 11

Showing Your Company's Most Important Measures: Key Performance Indicators (KPIs)

In This Chapter

- ▶ Creating key performance indicators to put into your scorecards
 - ▶ Pointing to the actual and target measures that your KPI element will compare
 - ▶ Setting the targets and thresholds that generate the score of the KPI element
 - ▶ Rolling your KPIs into groups called objectives
-

A key performance indicator element, or KPI element, is not a key performance indicator as you know it. A key performance indicator from a business (that is, your) perspective is a measure that is at least partially representative of how well or poorly an aspect of your business is performing. However, a KPI element is a combination of the following items:

- ✓ An actual measure
- ✓ A target measure
- ✓ A method for comparing actual to target
- ✓ Thresholds for assigning values of good and bad and anything in between
- ✓ An indicator element that visualizes these thresholds

When you create a KPI element, you are creating a component with defined business rules that can be displayed along with other KPI elements on your dashboards through a scorecard.

Assembling the Items You Need for Your KPI Element

You already have the following items that you need to assemble the KPI element:

- ✓ An actual measure and a target measure from one or more defined data sources, such as the one you set up in Chapter 9. The actual and target measures can come from different data sources.
- ✓ A published indicator element (such as the one you set up in Chapter 10) that you want to use for this particular KPI element.

Next, you have to identify the correct method for comparing your actual to target measure. You need to set the scoring pattern, banding method, and thresholds.

When bigger isn't always better: Setting the scoring pattern

Scoring pattern is where you assign the direction you would optimally want your KPI to go. Consider the following directions:

- ✓ **Increasing is better:** You want the value to be high, and even higher than the target would be fine. You would use this for a measure like sales amount (the higher the better) with a Standard indicator.
Standard indicators value high or low extremes, whereas Centered indicators value low variance from the target. See Chapter 10 for information on Standard versus Centered indicators.
- ✓ **Decreasing is better:** You want the value to be low, and even lower than the target would be fine. You would use this for a measure like loss amount (the lower the better) with a Standard indicator.
- ✓ **Closer to the target is better:** You want the value to hover around the target. You would use this for a measure like utilization (not too high and not too low, but just right) with a Centered indicator.



Evening the score with a banding method

The banding method is where you assign the calculation you will use to compare your actual number to a target number. You have to choose the

right method so that you can appropriately set the good, bad, and borderline bands, or thresholds, around the calculation result. You have to know the range of values to set the right bands around them. Your options are as follows:

- ✓ **Band by normalized value of actual to target:** This is an appropriate method for comparing the actuals and targets of continuous measures like amounts or counts. This method creates a normalized range (0% to $n\%$) for the KPI using this calculation:

$$(\text{Actual value} - \text{Worst value}) / (\text{Target value} - \text{Worst value})$$

Consider a scenario where your KPI is sales amount, and your worst value is 0. A zero sales amount would be very bad.

Division A has an actual value of \$10,000 and a target value of \$20,000; the normalized value for Division A is

$$(10,000 - 0) / (20,000 - 0) = 50\%$$

If Division B has an actual value of \$2,000,000 and a target of \$8,000,000, even though its actual value is much higher than that of Division A, if you normalize Division B's value, you can see that Division A performed better because Division B has the following normalized value:

$$(2,000,000 - 0) / (8,000,000 - 0) = 25\%$$

In this example, 0 is the worst value, but the worst value is included in the algorithm, of course, in case 0 is not the worst value. For example, you used to get 400 points on your SAT test just for showing up.

This normalized method creates a normalized score — a ratio — so that you can compare scores across attributes.

- ✓ **Band by numeric value of actual:** You can use this method for ratios, which are by nature normalized with values like -1 to 1 or 0 to 1. This method would be great for something like a gross profit margin or loss ratio, any value that is essentially already normalized because it is a ratio.
- ✓ **Band by stated score:** You can use this method if you have already scored the variance between actual and target and that score is stored in a field in a data source. Because this is not nearly as likely a scenario as the other two options (but would be extremely impressive), we don't go into further explanation for this option.

We highly recommend using a normalized method, to be able to associate KPI scores correctly when you get to creating a scorecard and unless you have developed your own KPI scoring algorithms, methods, and rules.



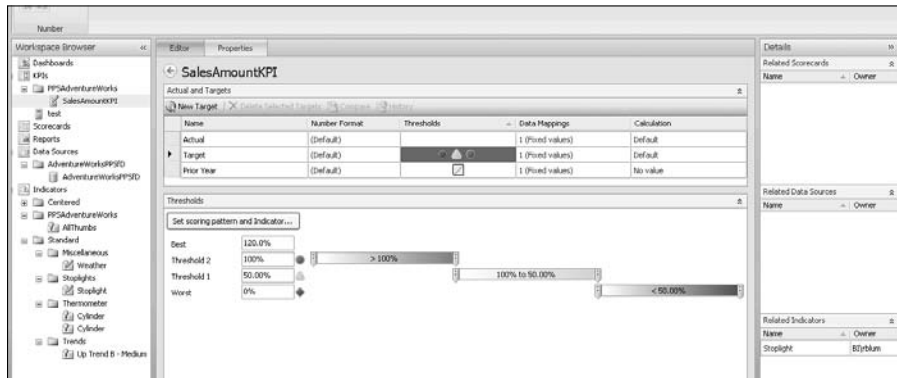
Setting the endpoints of your bands with thresholds

Finally, you have to determine what thresholds you will use to assign a value to the comparison you previously defined. *Thresholds* are the endpoints of your bands, where you determine which values to assign to which graphic indicator. In PerformancePoint, three-level, standard, normalized KPIs (like stoplights) default to a range of 0% to >120% with bands, as shown in Figure 11-1, as follows:

- ✓ 0% to <50%: Bad (red)
- ✓ 50% to <100%: Borderline (yellow)
- ✓ 100+%: Good (green)

This means that Division A at 50% would have a yellow stoplight, and Division B at 25% would have a red stoplight.

Figure 11-1:
Viewing
your default
thresholds
for a
common
KPI.



Visualizing Your Company's KPIs

Two common scenarios that you will encounter when assembling KPIs are those that deal in amounts (like sales amount) and those that deal in ratios (like gross profit margin). In our first example, we will create a KPI for sales amount using the concepts reviewed previously.

Steps will include the following:

1. Creating your KPI element
2. Adding additional targets to your KPI element
3. Pointing actuals and targets to their correct data source through data mappings

4. Formatting how the actual and target numbers appear
5. Setting a scoring pattern and choosing an indicator element for your KPI element

A lot of steps are involved because this is probably one of the more complex elements to assemble. You might want to get a cup of coffee before you start. Or a doughnut. At least a cookie.

Creating KPIs for amount measures

To create a KPI element for an amount measure, follow these steps:

1. **Right-click your KPI element header in your Workspace Browser.**

Your KPI element options menu opens, as shown in Figure 11-2.

2. **Choose New KPI.**

The Select a KPI Template dialog box opens, as shown in Figure 11-3.

Figure 11-2:
Viewing
your KPI
options
menu.

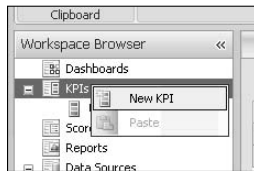
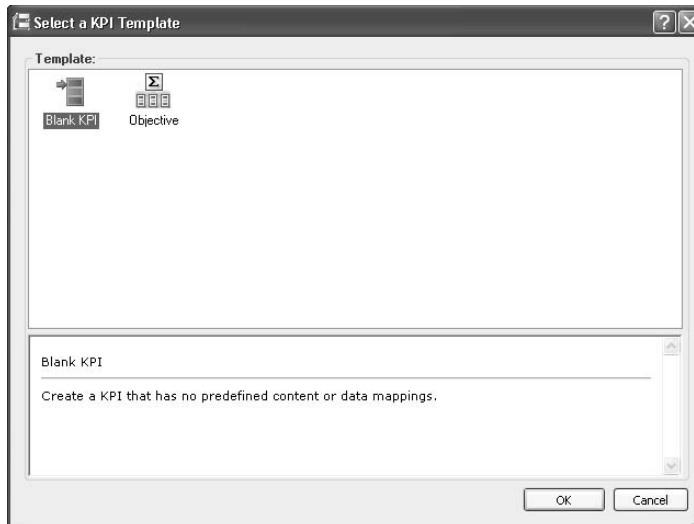


Figure 11-3:
Selecting
a KPI
template.



3. Select Blank KPI and click the OK button.

The Create a KPI dialog box opens, as shown in Figure 11-4.

4. Enter the name of your KPI in the name field and, optionally, enter a folder for the KPI.

We enter the name **SalesAmountKPI** and add it to folder PPSAdventureWorks.

5. Click the Finish button.

Your new KPI is created, added to your Workspace Browser, and opened in your workspace.

Figure 11-5 shows our new KPI, SalesAmountKPI, open to the Editor page in our workspace.

You can see two items under Actual and Targets, namely, an actual and a target measure. A number of properties need to be edited, including number format, thresholds, data mapping, and calculation, but first, we would like to add one additional target for a prior year.

6. Click the New Target button at the top of the Actual and Targets frame in your workspace to add a new target to your KPI element.

A new row is added in the Actual and Targets frame. You can keep the name or change it to something more applicable by clicking the name and typing the new one.

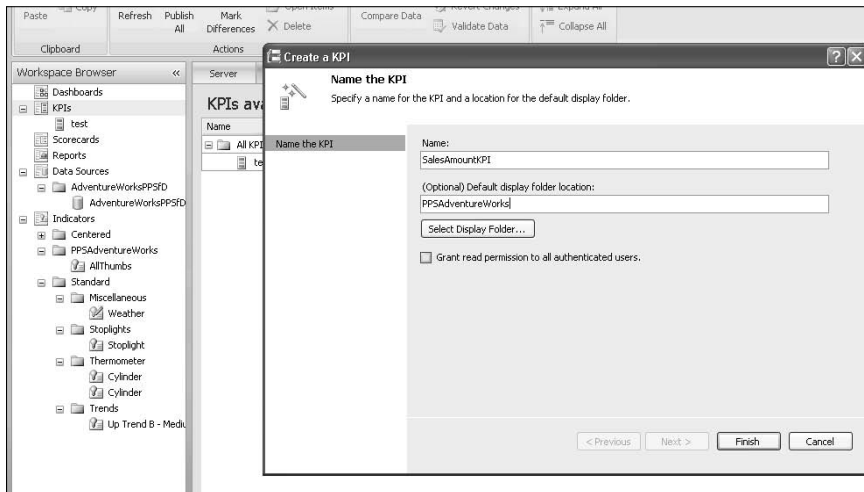


Figure 11-4:
Naming
your KPI.

Figure 11-5:
Editing your
new KPI.

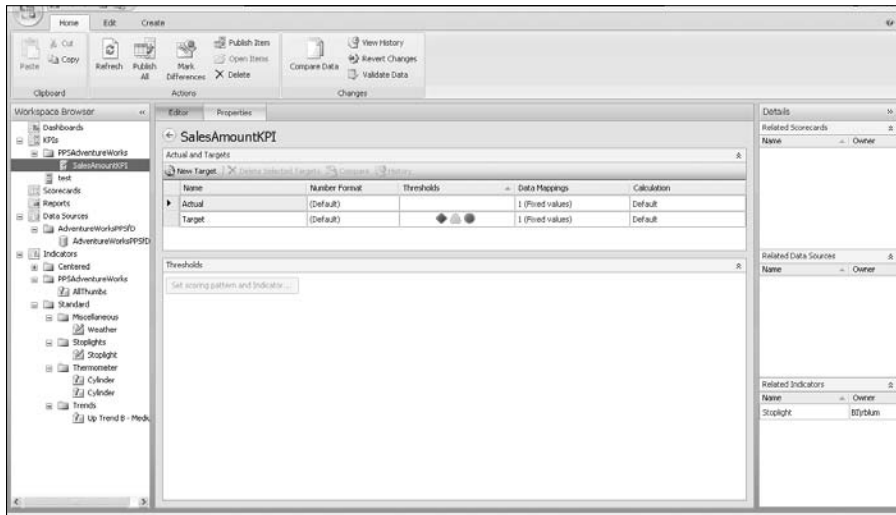
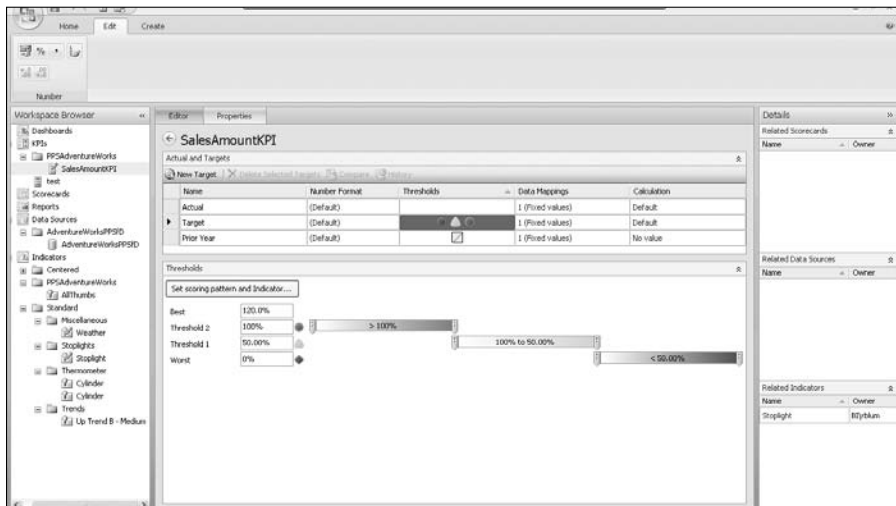


Figure 11-6 shows that a new row has been added to our target frame. By default, the new target was named Target(1). Because we plan to use prior year sales amount data as a comparative value to our actual, we rename the new target to **Prior Year**. For Target, we plan to use the sales amount quota established in our data source.

Figure 11-6:
Adding a
new target
measure.

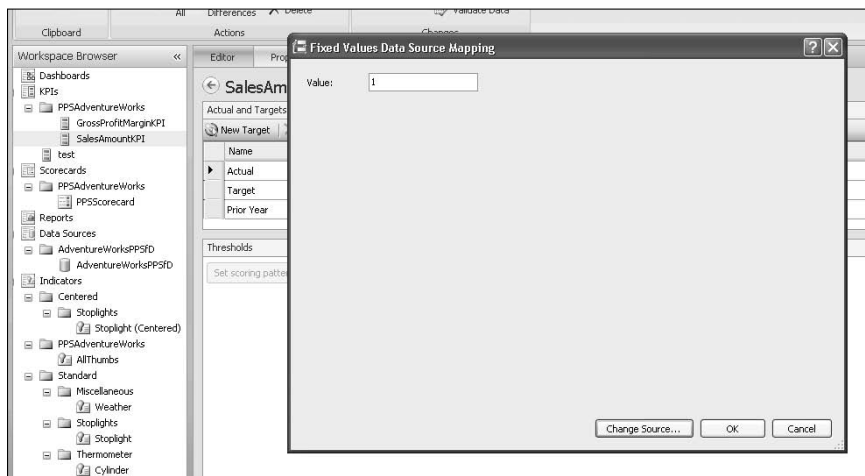


7. Click the Data Mappings cell for the Actual row.

The current value is 1 (Fixed values). The Fixed Values Data Source Mapping dialog box opens, as shown in Figure 11-7.

The data source for our sales amount is not a fixed value; it is located in our AdventureWorksPPS data source. So we must now change the source of the data.

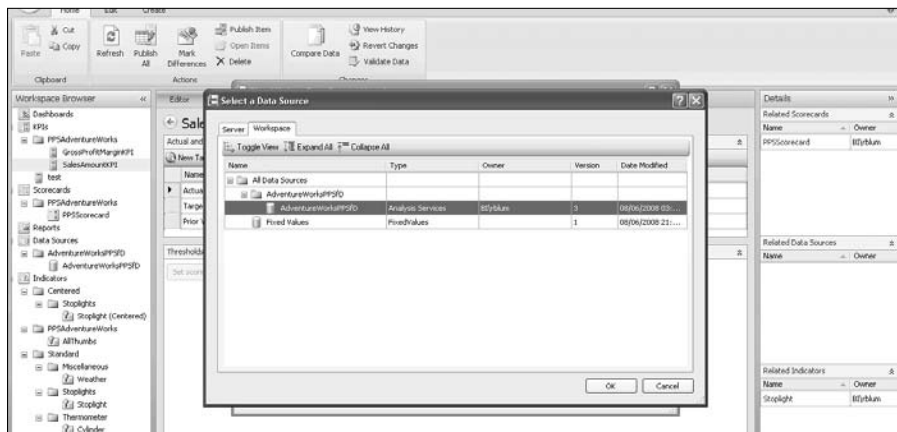
Figure 11-7:
The dialog
box opens.



8. Click Change Source button at the bottom of the dialog box.

The Select a Data Source dialog box opens, as shown in Figure 11-8. You can see two tabs in the dialog box that shows the data source elements: Workspace and Server.

Figure 11-8:
Setting
the data
mappings.



- Click the data source that you want from the Workspace or Server tab, and click the OK button.

We choose AdventureWorksPPSfD on the Workspace tab and click the OK button. The Dimensional Data Source Mapping dialog box opens, as shown in Figure 11-9.

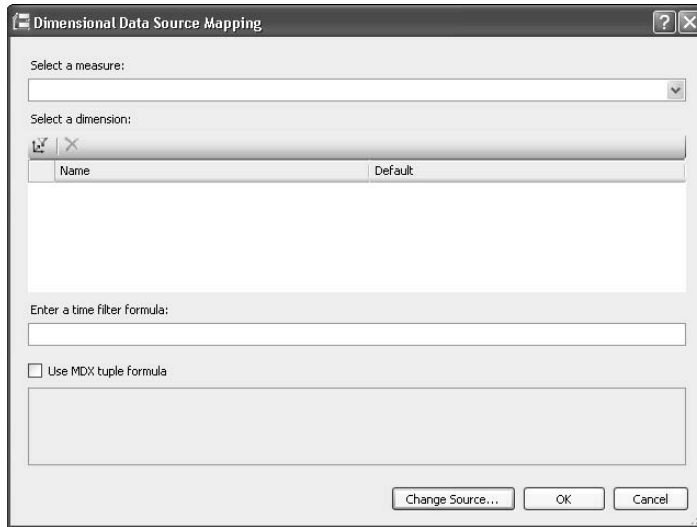


Figure 11-9:
Setting your
actual data.

- Click the down arrow in the Select A Measure drop-down box and select the measure you want to use for your actual; then click the OK button (see Figure 11-10).

We select Sales Amount from the drop-down list.



You can also filter your KPI by a cube dimension here, for example, if you wanted a territory- or department-specific KPI. To do so, click the Select Members icon directly under the Select A Dimension header. Select the dimension attribute you want and click the OK button. Click the cell under Default next to your new attribute and select the value(s) you want to filter by. But note that you can slice your KPIs by dimensions later as well.

- Repeat Steps 7 through 10 for all measures that are sourced from a data source element.

We repeat Steps 7 through 10 to add a data mapping for our target (Sales Amount Quota) and for the prior year (PriorYearSalesAmount). The result of our data mappings is shown in Figure 11-11.

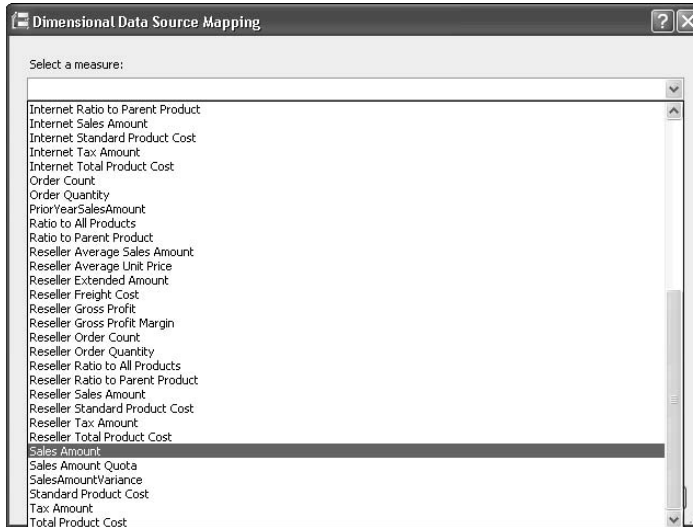


Figure 11-10:
Selecting
your actual
measure.

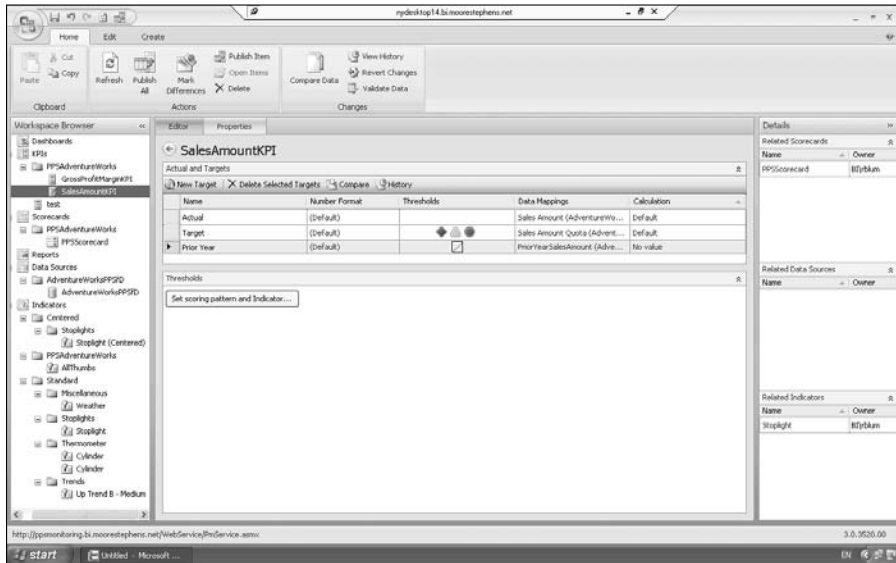


Figure 11-11:
Mapping
all our
measures.

12. To change the calculation type for any measures, click the cell in the Calculation column.

A Calculation dialog box opens, as shown in Figure 11-12.



Pay special attention to those that say “No Value.” When you create a KPI element, existing actual and target calculation fields default to Default (which is Source Data). But when you add a new target (like we added Prior Year), it defaults to No Value.

Figure 11-11 shows that our Prior Year target has a calculation of No Value. To change that, we click that cell in the Calculation column.

13. **Select the calculation type you want for that measure, usually Default, make sure that the Use Calculated Values Of Actual And Target To Compute Score check box is selected, and click the OK button.**

Figure 11-12 shows the Calculation dialog box.

We select Default as the calculation type.

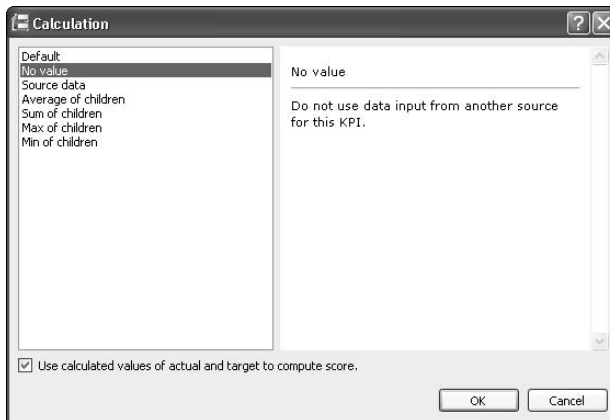


Figure 11-12:
Fixing the
No Value
calculation
type.



Default provides a normalized weighted scoring method for your KPIs. Other options (Source Data, Average of Children, Sum of Children, Max Of Children, or Min Of Children) allow you to specify a non-normalized calculation method for determining your KPI score. Because we recommend using normalization methods, use Default unless you have score-carding requirements that can't be met using normalization techniques.

14. **Click a Thresholds cell for a chosen measure and click the Set Scoring Pattern And Indicator button.**

The Thresholds cell for Target is highlighted in Figure 11-6. When we click the Set Scoring Pattern And Indicator button, we are presented with the Edit Banding Settings dialog box, shown in Figure 11-13, and we can now change or accept the scoring pattern shown.

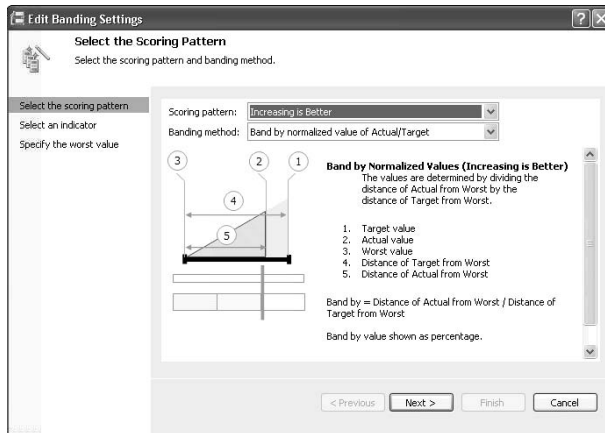


Figure 11-13:
Setting your
scoring
pattern
options.

15. Use the Scoring Pattern and Banding Method drop-down boxes to view or change your options.

Descriptions of your choices are presented within the dialog box, as shown in Figure 11-13.

For Sales Amount, the current scoring pattern — Increasing Is Better — is correct, and we want to band by the normalized value of actual/target. So we click the Next button. If our measure were something like Losses, we would want to change Increasing Is Better to Decreasing Is Better. You can see some examples of this earlier in this chapter.

16. Click the Next button.

17. Select an indicator element and click the Next button.

We retain the stoplight indicator, but as you can see in Figure 11-14, we can choose from any indicator element that is in our workspace.

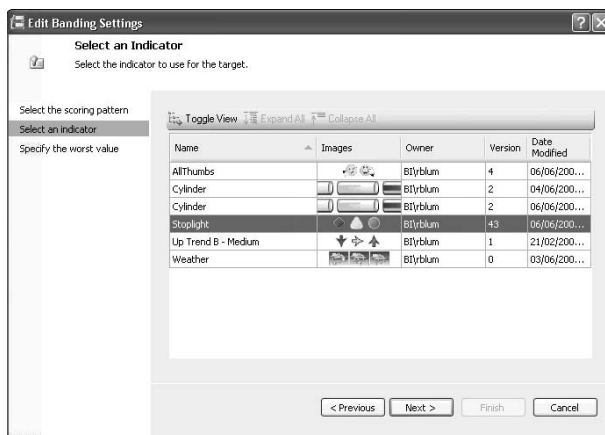


Figure 11-14:
Picking your
indicator
element.

- 18. In the Enter Worst Value box, enter the worst amount for this measure and click the Finish button.**

This worst value is usually 0.

The worst sales amount we can have is no sales, or 0, so we enter **0** in the Enter Worst Value box, as shown in Figure 11-15, and then click the Finish button.

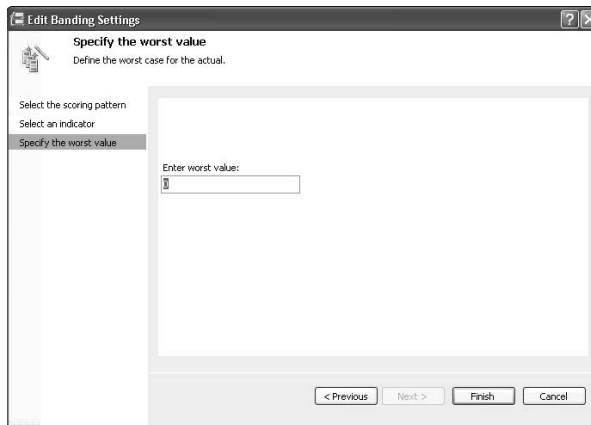


Figure 11-15:
Entering the
worst value.



TIP

If we were using a measure like gross margin (which we do in the next section), we could certainly have negative numbers — and having a negative gross margin is worse than earning no margin. So if this were Gross Margin, we would enter **-1** in the Enter Worst Value box. Entering the worst value helps PPS normalize the various KPI scores, aligning a KPI with a worst of 0 with a KPI with a worst of **-1**.

- 19. Set the Scoring Pattern and Indicator settings for all target measures by repeating Steps 14 through 18 until you are done.**

We have one additional target measure to set — Prior Year.

We use the same settings as we used for Target, but because we are trending, we want arrows, so we select the Up Trend B - Medium indicator, as shown in Figure 11-14.

- 20. Change the percentage values in the threshold boxes in the Thresholds pane to associate an indicator graphic/value (red/bad, green/good, yellow/borderline) with a range of KPI values.**



TIP

If you don't have any prior business rules on this, you can keep the default. The default ranges are shown in Figure 11-6:

- 0% to less than 50% is red, or bad.
- 50% to 100% is yellow, or borderline.
- >100% is green, or good.



For Sales Amount, though, 90% of goal would be considered good, so we enter **90%** into Threshold 2, as shown in Figure 11-16. Now, if the sales amount is within 90% of goal, the indicator will be green.

To show trending, use the following method for assigning thresholds.

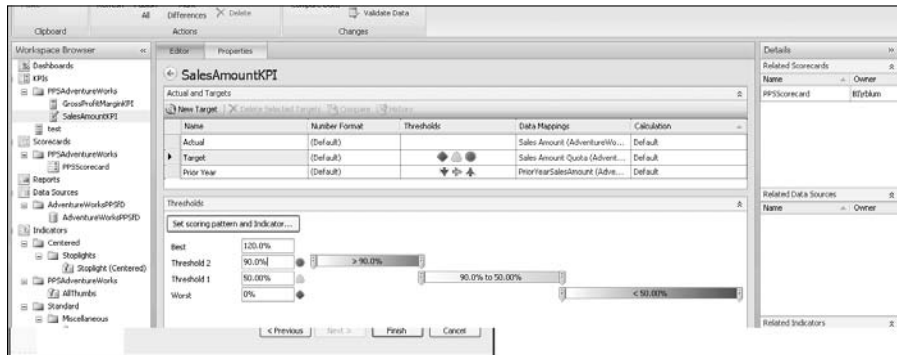
For the Prior Year target, we want to show the following:

- A green up arrow only when the Actual value is higher than the Prior Year value. This equals a threshold of greater than 100%.
- The yellow side arrow when Actual value equals Prior Year value. This equals a threshold of only 100%.
- A red down arrow whenever Actual value is lower than the Prior Year value. This equals a threshold of 0% to less than 100%.

We set the Prior Year thresholds as follows:

- Worst = 0%
- Threshold 1 = 100%
- Threshold 2 = 100%
- Best = 120%

Figure 11-16:
Changing
indicator
ranges with
thresholds.



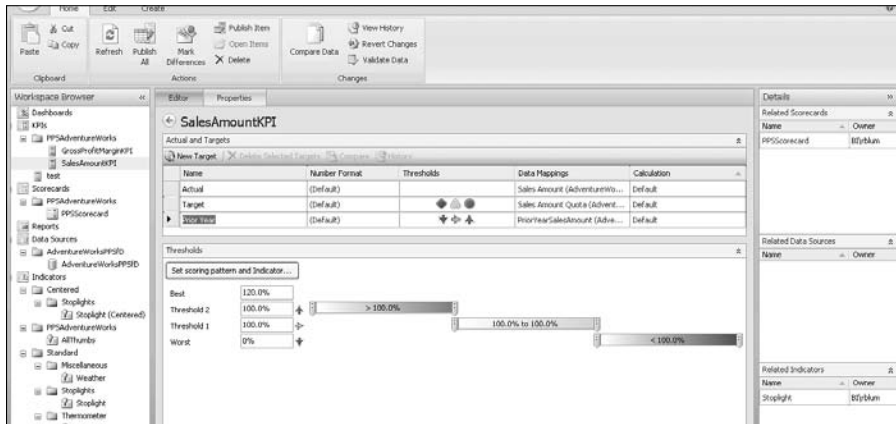
As shown in Figure 11-17, we will now have the following:

- A red down arrow when the Actual/Prior Year is less than 100%, that is, anytime Actual is less than Prior Year
- A yellow side arrow when the Actual/Prior Year equals 100%, that is, anytime Actual equals Prior Year
- A green up arrow when the Actual/Prior Year is greater than 100%, that is, whenever Actual is greater than Prior Year

21. Publish your KPI.

Congratulations, the hard part is over.

Figure 11-17:
Changing
thresholds
for a
trending
KPI.



Creating KPIs for ratio measures

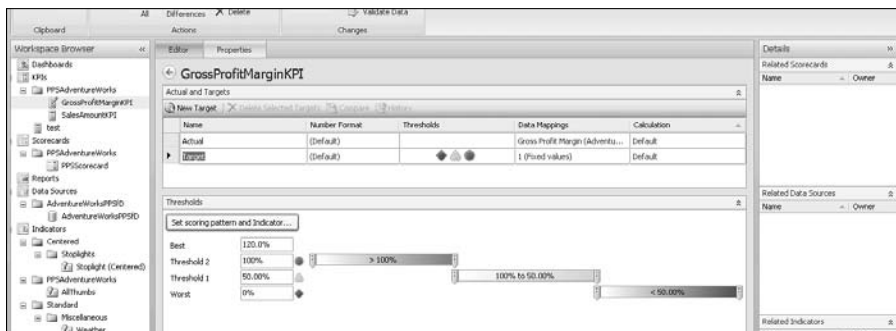
The method for creating a KPI for a ratio measure is similar to that for creating any other KPI. Start by following Steps 1 through 13 from the previous section. The difference comes with setting scoring and pattern indicators.

1. Follow Steps 1–13 from the previous section.

We begin this example from the point of having a KPI with an actual and a target set up, but not having set up the scoring pattern or thresholds, as shown in Figure 11-18.

Because gross profit margin is a ratio, we can use a fixed value (of 1, or 100%) as the target value, as shown in Figure 11-18. We are essentially providing a normalized target for a normalized KPI.

Figure 11-18:
Setting
scoring
patterns for
a ratio
measure.



2. Click the Set Scoring Pattern and Indicator button.

The Edit Banding Settings dialog box opens, as shown previously in Figure 11-13.

3. Change the banding method to Band by Numeric Value of Actual (see Figure 11-19).

Because a ratio is already normalized, you don't need to normalize it further like you do with counts and amounts.

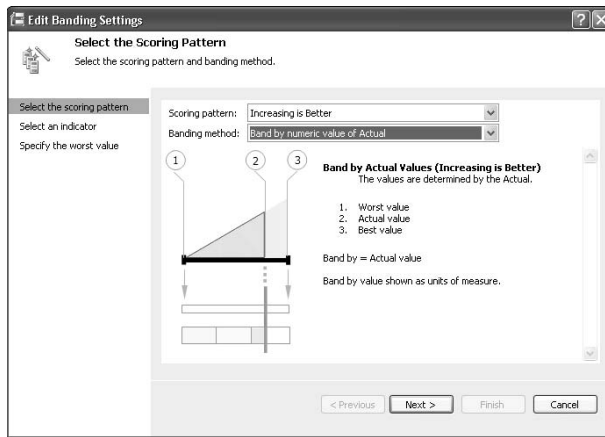


Figure 11-19:
Changing the banding method for a ratio KPI.

4. Click the Next button.

5. Select the indicator element you want or keep the one already assigned, and click the Next button.

We keep the stoplight indicator.

6. Click the Finish button.

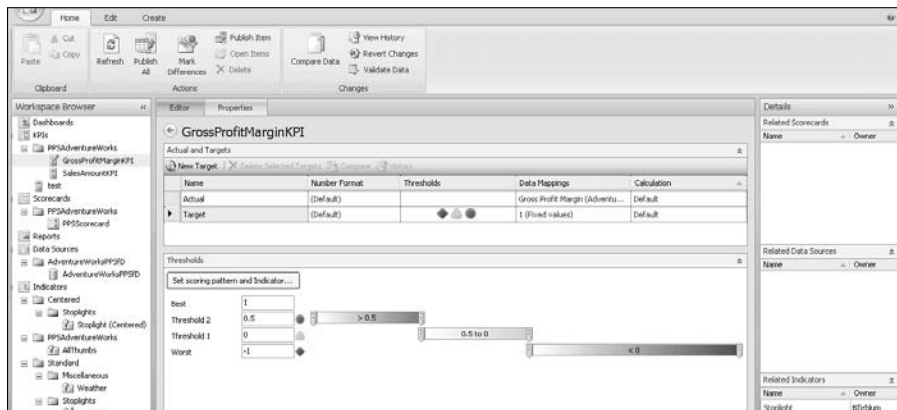
7. Adjust the scoring pattern to a range of -1 to 1 or 0 to 1.

In this case, gross profit margin could certainly be negative, so we assign thresholds on a scale of -1 to 1, as shown in Figure 11-20:

- Worst = -1. Any gross profit margin that is less than 0 is considered bad and will get a red stoplight.
- Threshold 1 = 0. Any gross profit margin that is between 0 and 50% is considered borderline and will get a yellow stoplight.
- Threshold 2 = 0.5. Any gross profit margin that is greater than 50% will be considered good and will get a green stoplight.
- Best = 1. This value doesn't have any bearing on indicators but does help PPS normalize the KPI scores against other KPIs.

8. Publish your KPI.

Figure 11-20:
Setting
thresholds
for a ratio
measure.



Rolling your KPIs into groups with objectives

From a business perspective, objectives are the key strategic areas that you want to measure. Technically implemented in PPS, objectives are a rollup of a set of KPIs. You may have defined your own objectives or leveraged the Balanced Scorecard methodology to define these strategic groups.

The Balanced Scorecard methodology provides four objectives, called perspectives: the Financial, the Internal Business, the Customer, and the Learning and Growth perspectives. So, for example, all financial KPIs roll up to a Financial objective, which is scored based on the rollup of the individual KPI scores.

You don't need objectives to create a scorecard. KPIs are fine to stand alone, alongside each other, without any additional organization. But if you have objectives, here's how you use them:

- 1. Right-click the KPI element header in your Workspace Browser.**

The KPI options menu opens, as shown in Figure 11-2.

- 2. Select New KPI.**

The Select a KPI Template dialog box opens, as shown in Figure 11-3.

- 3. Choose Objective and click the OK button.**

The Create a KPI dialog box opens, as shown in Figure 11-4.

4. Name your KPI and enter a display folder if you want; then click the Finish button.

We name the KPI **Sales Objective**, add it to the PPSAdventureWorks folder, and click the Finish button.



You can set your thresholds as you would for a normalized band, assuming a range of 0 to over 100%, or you can keep the defaults. You can also change the target indicator graphics if you want and/or you can add a new target. See the section “Creating KPIs for amount measures,” earlier in this chapter, for information on how to perform these tasks.

PPS takes it from here, combining the subset of KPI scores into an overall objective score. You can see more about how this works when you build your first scorecard element in Chapter 12.



The same property setting methods that apply to the data source and indicator elements apply here as well. Refer to Chapter 9 for more information on setting security.

Chapter 12

Scoring Your Business Performance: Assembling Your KPIs with a Scorecard

In This Chapter

- ▶ Assembling your KPIs into a scorecard
 - ▶ Adding rows, columns, and dimensions
 - ▶ Organizing your KPIs and setting objectives
 - ▶ Formatting for the right look and feel
-

Are you tired of digging around that opus of a management report on your desk to find the measures that indicate how well your business is performing, only to find out too late that something is wrong? Too often companies don't know how their business is performing in a timely enough fashion to address issues and take corrective actions. Businesses need quantifiable data delivered quickly, efficiently, and in a highly communicative way, to alert decision makers and managers to issues when they happen so that they can address them when they need to.

Scorecards are the foundation of business performance monitoring. They provide an easy-to-read graphical and numeric representation of how key performance indicators (KPIs) are performing against budgeted goals. In doing so, issues become highly visible to business users on an as-needed basis.

Scorecards enable you to assemble the KPIs and objectives you built in Chapter 11 into a cohesive and holistic business performance report that you can publish to your dashboard and view anytime you want. It gets updated as often as your data source gets updated. So, you've already completed the hard part — building the KPI — now it's just assembly time.

Assembling a Scorecard from KPIs and Data Source Elements

Even though a scorecard is set of assembled KPI elements, and KPI elements already have data sources, you still have to choose a data source for your scorecard. This is because scorecards also provide the ability to slice and/or filter by associated dimensions.

For example, if you have a KPI element that's based on an Analysis Services data source, and you choose an Analysis Services–based scorecard element, you can slice or filter the KPI by any associated dimension or attribute in the cube.

If you created a KPI that uses different data source types, like an Analysis Services data source for Actual and Excel 2007 for Budget, as long as the Excel data has the same dimension attribute names as your cube, you can slice and dice from an Analysis Services–based scorecard.



If your disparate KPI element data sources don't share some of the same dimensional attribute names, you can still join them into a scorecard element, but you can't leverage the feature that allows you to add dimensions to the scorecard because the dimensions will not apply to all KPIs.

You can select from (but aren't limited to) the following scorecard templates:

- ✓ Analysis Services
- ✓ Excel 2007
- ✓ SQL Tabular
- ✓ Excel Services

Because you set up dimensionality in your tabular (Excel and SQL) data source elements (that is, you specified which fields are dimensions and which are measures), the setup of a multidimensional and tabular scorecard is the same and acts the same. This example uses Analysis Services.

Follow these steps to create a scorecard element:

1. Right-click the Scorecard element header in your Workspace Browser.

The Scorecard options menu opens, as shown in Figure 12-1.

2. Choose New Scorecard.

The Select A Scorecard Template dialog box opens, as shown in Figure 12-2.

Figure 12-1:
Creating
a new
scorecard
element.

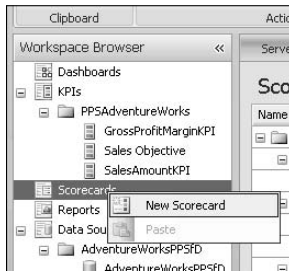
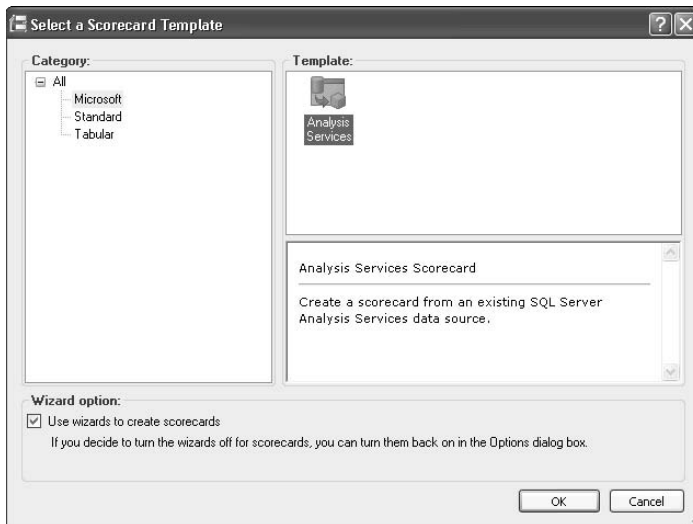


Figure 12-2:
Choosing a
scorecard
type.



- 3. Select a scorecard category in the left frame of the dialog box and then a template from the right frame of the dialog box.**

Make sure that the Wizard option at the bottom of the dialog box is selected and click the OK button. A Name The Scorecard dialog box opens.

We select the Microsoft category and Analysis Services template.

If we wanted Excel or SQL, we would have to go into the Tabular category.

- 4. Enter a name for your scorecard in the Name field and, optionally, a folder location for your new scorecard element, and click the Next button.**

The Select A Data Source dialog box opens.

We enter **AnalysisServicesScorecard** in the Name field and **PPSAdventureWorks** in the Folder field, as shown in Figure 12-3.



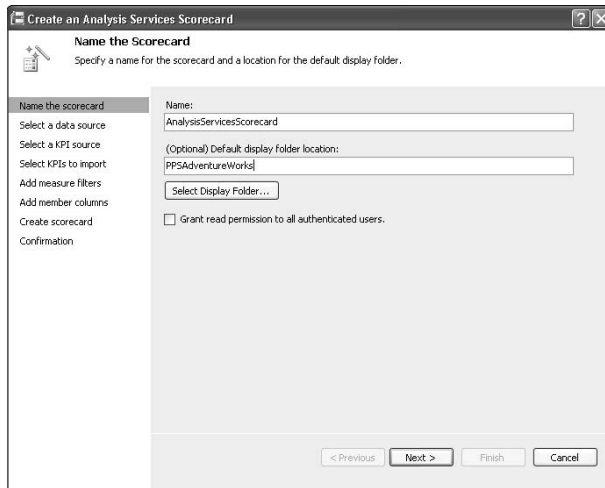


Figure 12-3:
Naming
your
scorecard
element.

5. Select your data source element from either the Server or Workspace tab, and click the Next button.

If you are using Analysis Services, the Select A KPI Source dialog box opens. Otherwise, you can skip to Step 7.

We select AdventureWorksPPSfD, which is an Analysis Services data source, as shown in Figure 12-4. Only data sources that are the same type we selected in Step 3 are visible in this step.

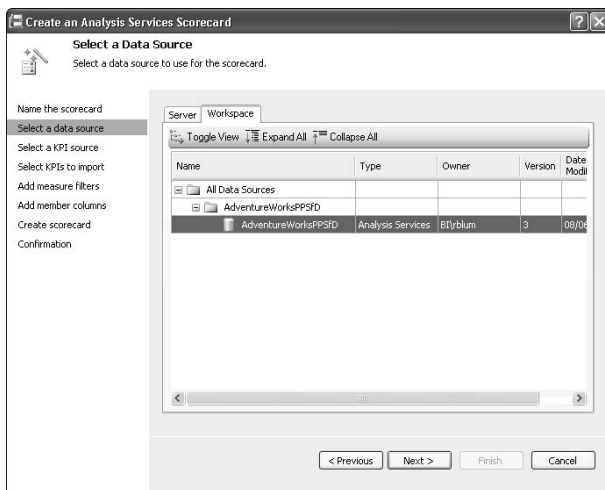


Figure 12-4:
Selecting
your data
source
element.

6. Select the **Create KPIs from SQL Server Analysis Services Measures** option, and click the **Next** button (see Figure 12-5).

The **Select KPIs To Import** view opens.

This step tells the Scorecard Wizard that you will use one of the KPIs you built in Dashboard Designer, and not use KPIs that were built in Analysis Services.

7. Click the **Select KPIs To Import** link to choose your existing KPI elements, as shown in Figure 12-6.

A **Select A KPI** dialog box opens.

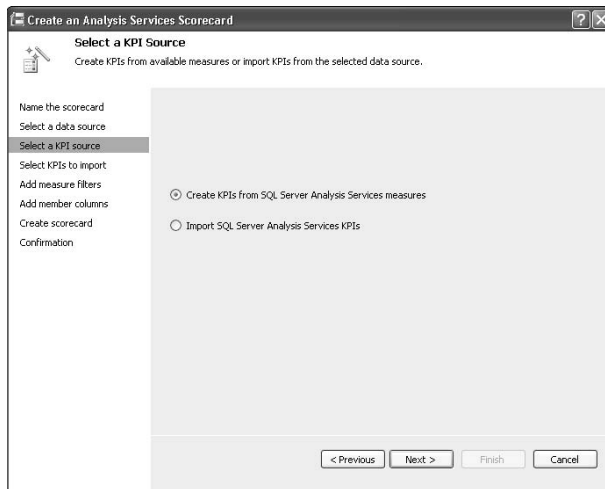


Figure 12-5:
Choosing
your KPI
source.

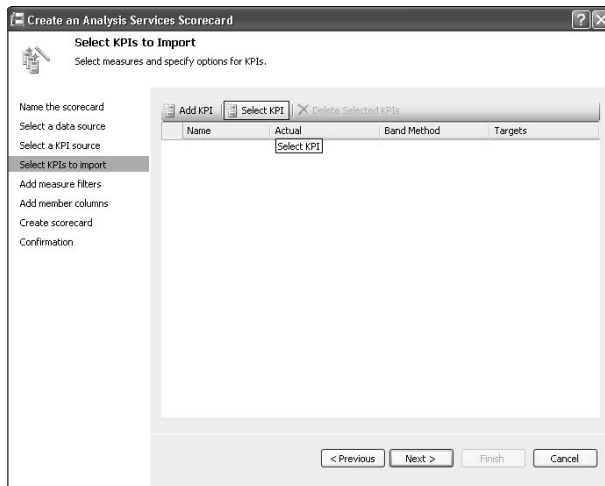


Figure 12-6:
Choosing
your KPIs.

8. Select the KPIs you want to add to your scorecard, and click the OK button.

Your selected KPIs now show in your KPI selection list.



You can select multiple KPIs by holding down Ctrl while you click your KPIs. You can select an entire folder of KPIs by selecting the folder instead of individual KPIs. Also, after you click the OK button, you can click the Select KPIs To Import link again to add additional KPIs to your selection list.

We select GrossProfitMarginKPI, Sales Objective, and SalesAmountKPI from the PPSAdventureWorks folder of the Workspace tab, as shown in Figure 12-7.

When we click the OK button, the KPIs appear in our KPI list (grayed out), as shown in Figure 12-8.

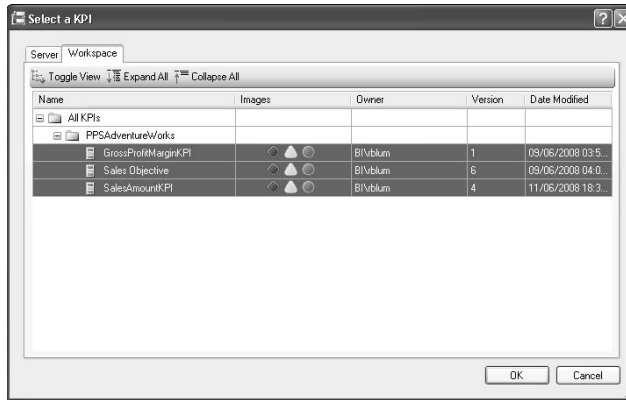


Figure 12-7:
Choosing
your KPIs.

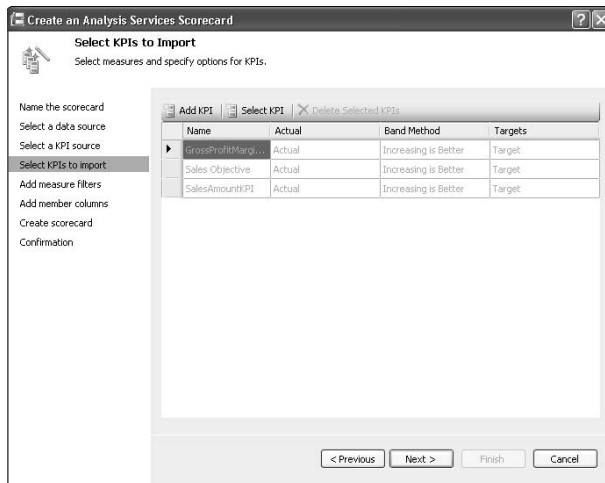


Figure 12-8:
Choosing
your KPIs.



9. Click the Next button.

The Add Measure Filters dialog box opens, as shown in Figure 12-9.

Measure filters allow you to filter measures (that is, actual versus target) based on a dimension member. Although you can perform a similar action for a specific KPI measure, this allows a filter to be applied to all measures. It's like adding a dimension member to your scorecard without seeing the dimension. You don't need to do this very often if at all, so we'll skip this step.

10. Click the Next button.

The Add Member Columns dialog box opens.

11. To add dimension values to your scorecard, select the Add Column Members check box, click the Select Dimension button, select the dimension you want, and click the OK button. See Figure 12-10.

We want to add a dimension to the scorecard, so we select the Add Column Members check box.

Then we click the Select Dimension button, choose Sales Territory.Sales Territory from the drop-down list, and click the OK button.

12. From the Select Members window, select the dimension member values you want to see in your scorecard and click the OK button (see Figure 12-11).

You see a confirmation of your selections.

We choose All Sales Territories, Europe, North America, and Pacific. If you pick All Sales Territories, you will see one column with the total All Sales Territories, not each sales territory, unless you choose them specifically as well.

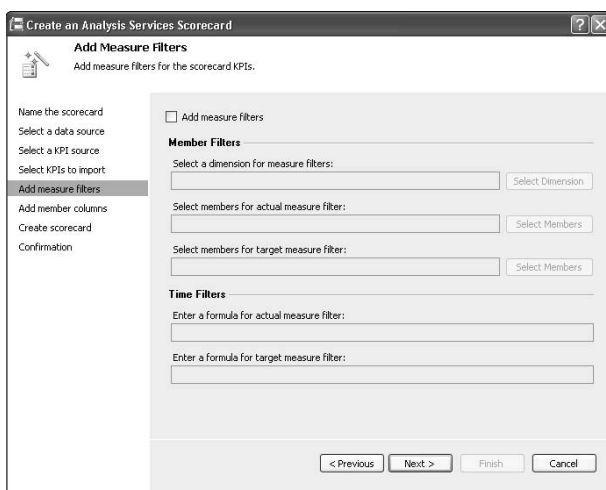


Figure 12-9:
The Adding
Measure
Filters
dialog box.

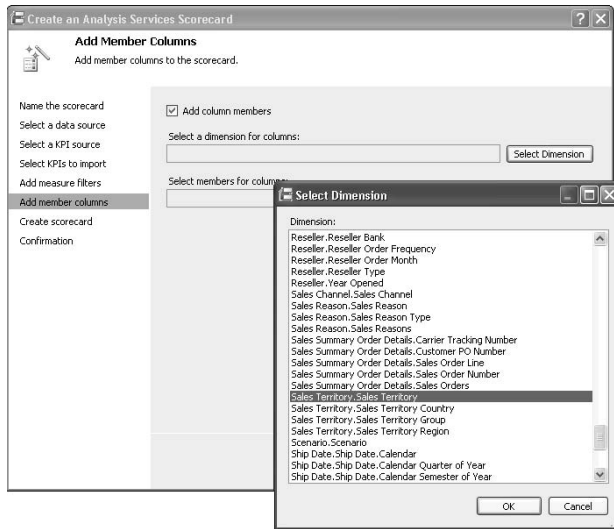


Figure 12-10:
Adding
dimension
members.

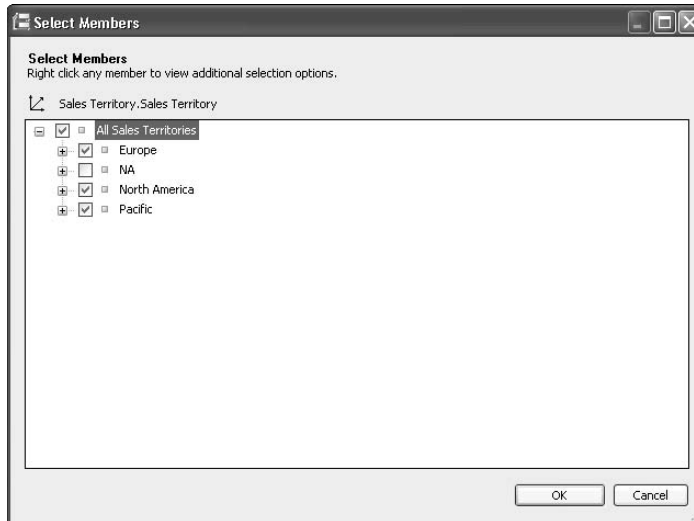
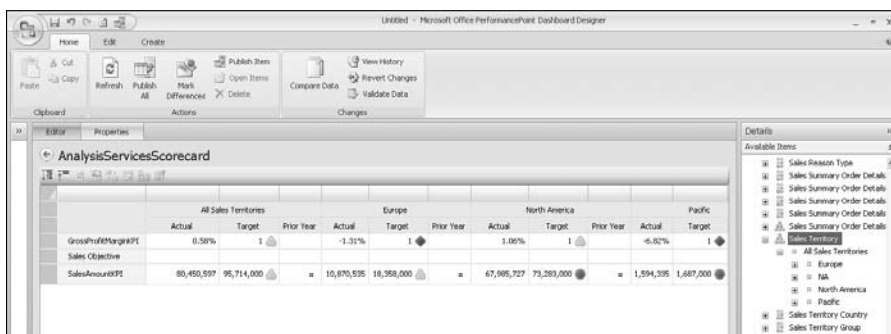


Figure 12-11:
Choosing
dimension
values.

13. Click the Finish button.

Congratulations! You have built a scorecard (see Figure 12-12).

Figure 12-12:
Viewing
your new
scorecard.



Making Changes to Your Existing Scorecard

While the Scorecard Wizard we just walked through is incredibly helpful in helping you set up a scorecard, you may of course look at the result of what you built and want to make some changes. No need to fear; you don't need to run the wizard again. You can make a number of changes right in the Workspace pane using editing tools and data from the Details pane (shown in Figure 12-12).



Dimensions in scorecards aren't dynamic. You can't add a hierarchy that drills up and down like you can in ProClarity, so it's worth your time to consider how dimension values may change over time and how this will impact your scorecard. In the following example, we add specified years to our scorecard, but this will become quickly outdated when a new year occurs.

Removing and adding dimensions to your scorecard

A common edit of a scorecard is to add or remove dimensions to provide more or less granularity or specificity to your KPIs.

Follow these steps to remove dimensions from your scorecard:

1. In your workspace, select the dimension headers and column values that you want to remove.

In Figure 12-13, we've selected all the dimension headers for deletion, but not yet the columns that we want to remove, because we want to show you what happens if you don't delete the KPI data cells as well.

2. Click the Delete icon on the Home toolbar and then click the Publish Item icon.

If you only removed the headers, you will still have all the data columns, as shown in Figure 12-14, no longer sliced by a dimension (note how the values repeat). When we delete the headers and extraneous columns, the scorecard looks like Figure 12-15.

Figure 12-13:
Selecting
your
dimension
headers.

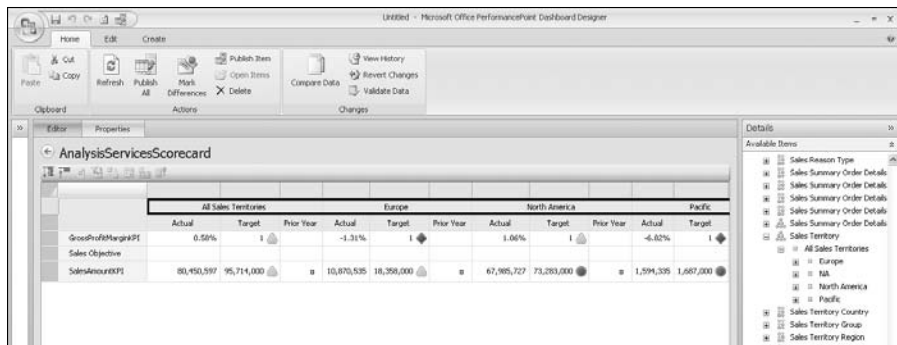


Figure 12-14:
All the
extraneous
columns
aren't
removed.

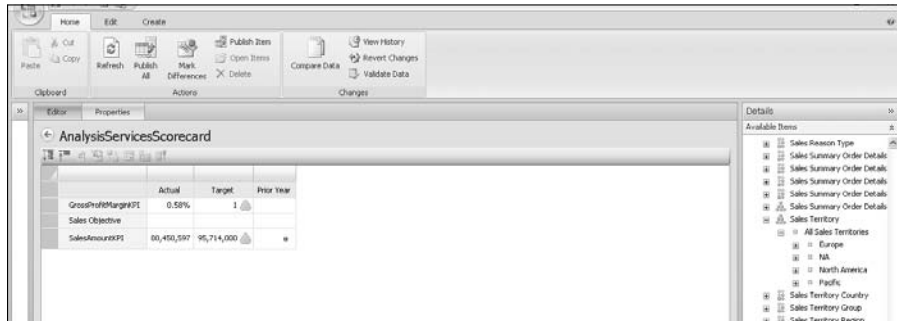
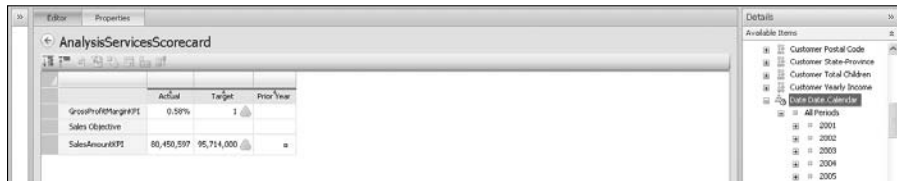


Figure 12-15:
All the
extraneous
columns
are now
removed.



To add dimensions to your scorecard, follow these steps:

1. **Expand the Dimensions folder in the Details⇨Available Items frame.**
2. **Drag and drop the attribute you want onto your scorecard in your workspace.**

When you drop the attribute, you can see a thin blue line with arrows pointing to where the attribute will be dropped (as shown in Figure 12-15). Where you drop the attribute depends on where you want to see it:

- If you drop the attribute on top of your KPI members (for example, Actual, Target, Prior Year), you can see each attribute value with its own set of KPI members.
- If you drop the attribute below your KPI members, you can see each KPI member with a set of attribute values.
- If you drop the attribute to the left of the KPI measure (for example, GrossProfitMarginKPI, SalesAmountKPI), you can see each attribute value with a set of KPI measures. If we add Sales Territory to the left of the children KPIs, as shown in Figure 12-16, the blue line covers just the children.

Figure 12-16:
Dropping
your dimen-
sion values.

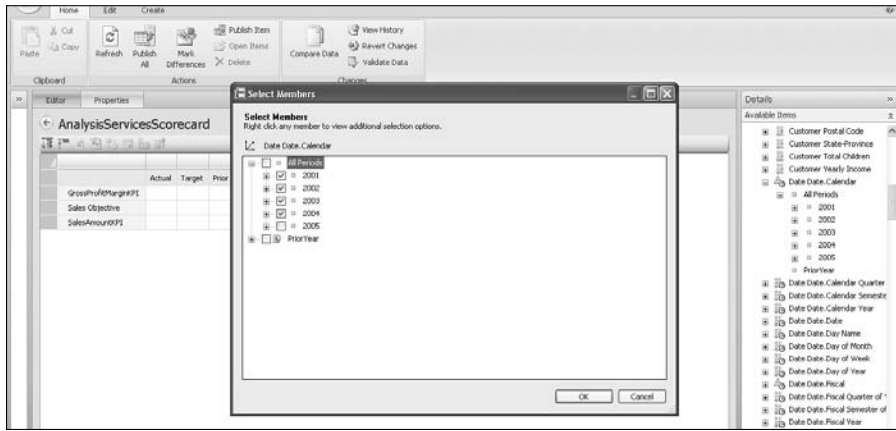


- If you drop the attribute to the right of the KPI measures, you can see each KPI measure with its own set of attributes.
- If you drop the attribute to the left of the objective KPI, you can see your attribute members with a set of objective and children KPIs.

A Select Members dialog box opens.

We dragged Date.Date.CalendarYear into our workspace, and when we drop that above the KPI members, the dialog box shown in Figure 12-17 opens.

Figure 12-17:
Choosing
attribute
members
for your
scorecard.



3. Select the values you want to be displayed in your scorecard, and click the OK button.

Your attributes are added to your scorecard.

In Figure 12-17, we choose 2001, 2002, 2003, and 2004, but not a top level (All Periods), and then click the OK button.

When we click the OK button, the selected attributes are added to our scorecard, as shown in Figure 12-18.

4. To see data in the scorecard, publish your item.

Figure 12-18:
The
new-and-
improved
(albeit
blank)
scorecard.

	2001			2002			2003			2004		
	Actual	Target	Prior Year	Actual	Target	Prior Year	Actual	Target	Prior Year	Actual	Target	Prior Year
GrossProfitMarginKPI												
Sales Objective												
SalesAmountKPI												

Setting objectives and reordering KPIs

Now that your KPIs are set up, you may still want to

- ✓ Specify the order of your KPIs
- ✓ Set your KPI objectives by assigning *children KPIs*, the KPIs that summarize to the objective KPI scores

A child KPI has to be physically underneath its objective. To reorder KPIs, see the section “Reordering KPIs,” later in this chapter.

Setting objectives by indenting KPIs

To make a KPI a child of its objective, follow these steps:

1. Click the child KPI in your workspace that you want to indent.

In Figure 12-19, we select SalesAmountKPI, which is directly underneath Sales Objective, the objective KPI.

2. Click the Decrease Level icon in the Format section of the Edit toolbar, as shown in Figure 12-19.

Your KPI becomes a child of the objective KPI.

Figure 12-20 shows SalesAmountKPI indented under Sales Objective, which now has a minus sign.

Figure 12-19:
Setting the KPI objective and child relationship.

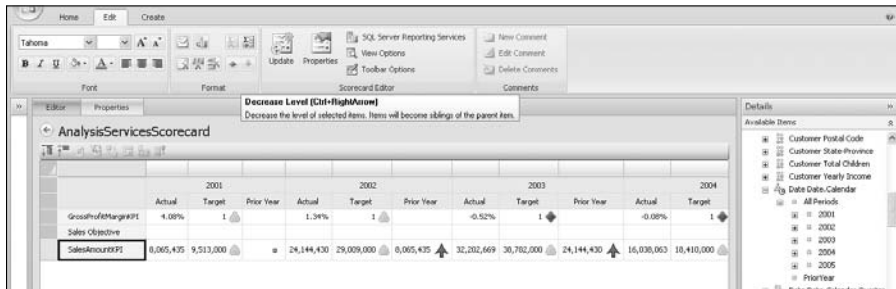
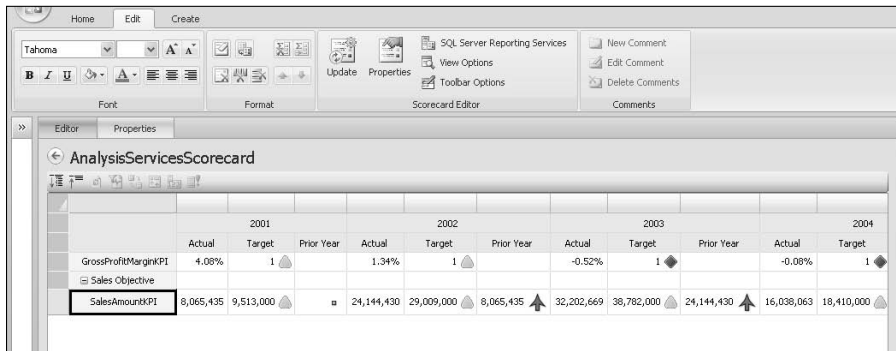


Figure 12-20:
Setting your KPI objective and child relationship.



Reordering KPIs

In this example, we want to add a KPI (GrossProfitMarginKPI) to add to the objective, but it is currently above the objective.

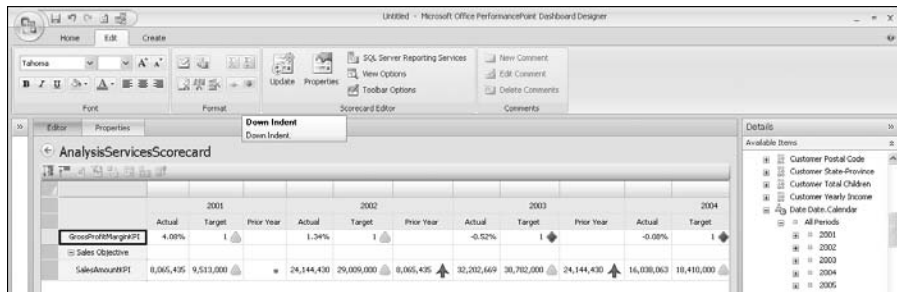
Follow these steps to reorder your KPI:

1. **Select the KPI that you want to move.**
2. **Click the Down Intent icon until your KPI is in the proper position.**

We select GrossProfitMarginKPI as shown in Figure 12-21, and then click the Down Intent icon until it is under SalesAmountKPI.

Now we have to indent the GrossProfitMarginKPI so that it becomes a child of Sales Objective, which we do by following the preceding steps for making the KPI a child of its objective (see the previous section). And then, of course, we publish.

Figure 12-21:
Selecting
your KPIs
so you can
move them
around.



Giving KPIs weight toward an objective

Next, you might want to weight the children KPIs so that they add more or less value to the objective KPI score. This can increase the score of a child KPI that you consider to be more important to the overall score.

Follow these steps to weight your children KPIs:

1. **Right-click the KPI that you want to weight.**

In Figure 12-22, we right-click GrossProfitMarginKPI. A KPI options menu opens.

2. **Select Properties from the options menu.**

The KPI View Settings dialog box opens, as shown in Figure 12-23.

Figure 12-22:
Viewing
your KPI
options
menu.

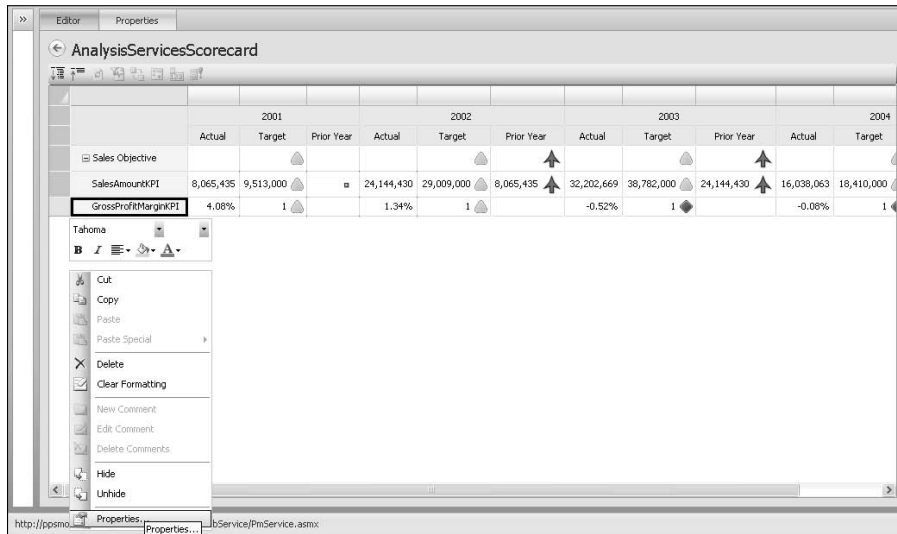
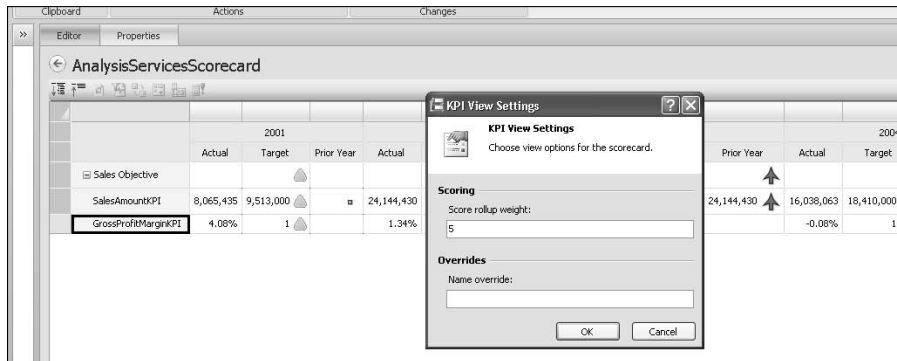


Figure 12-23:
Weighting
your KPIs.



3. Enter a weight value in the Score Rollup Weight box, and click the OK button (and publish).

In Figure 12-23, we enter a weighting value of 5 to GrossProfitMarginKPI. The 2003 Sales Objective KPI Target value changes from yellow to red, as shown in Figure 12-24 (compared to Figure 12-22). This is because the poor GrossProfitMarginKPI value, and hence the score, is being weighed more highly than the borderline SalesAmountKPI for that same period.

Figure 12-24:
Changing the objective KPI score with weighting.

	2001			2002			2003			Actual	Target
	Actual	Target	Prior Year	Actual	Target	Prior Year	Actual	Target	Prior Year		
Sales Objective	1	1	1	1	1	1	1	1	1	1	
SalesAmountKPI	8,065,435	9,513,000		24,144,430	29,009,000	8,065,435	32,202,669	38,782,000	24,144,430	16,038,063	18,410,000
GrossProfitMarginKPI	4.08%	1		1.34%	1		-0.52%	1		-0.08%	

Getting the right look with scorecard formatting

You can make many formatting changes to your scorecard to obtain the look and feel you desire or to draw attention to specific items. You can change the following items:

- ✓ Font size, color, and type
- ✓ Cell/row/column color
- ✓ Left/center/right alignment

To change formatting, follow these steps:

1. **Select the cell(s), row(s), or column(s) that you want to format.**

A solid black line is visible around what you select.

In Figure 12-25, we select the Sales Objective row.

Figure 12-25:
Selecting the cells that you want to format.

	2002			2003		
	Actual	Target	Prior Year	Actual	Target	Prior Year
Sales Objective						
Europe	1	1		1	1	1
SalesAmountKPI	1,698,881	4,162,000		5,632,817	9,376,000	1,698,881
GrossProfitMarginKPI	4.10%	1		-3.33%	1	
North America	1	1	1	1	1	
SalesAmountKPI	22,445,549	24,284,000	8,065,435	25,722,422	27,172,000	22,445,549
GrossProfitMarginKPI	1.13%	1		0.45%	1	
Pacific	1	1	1	1	1	
SalesAmountKPI				847,431	867,000	
GrossProfitMarginKPI		1		-11.53%	1	

- Click icons in the Font section of the Edit toolbar to change the formatting properties of your selection.

In Figure 12-26, we click the Bold icon and increase the font size to 10. You could also change the background cell or font color and alignment.

- Publish.

Your scorecard element is now published to your PerformancePoint Server environment.



The same property-setting methods that apply to the data source and indicator elements apply here as well. Refer to Chapter 9 for more information on setting security.

	2002			2003		
	Actual	Target	Prior Year	Actual	Target	Prior Y
Sales Objective						
Europe	1	1	1	1	1	1
SalesAmountKPI	1,698,881	4,162,000		5,632,817	9,376,000	1,698,881
GrossProfitMarginKPI	4.10%	1		-3.33%	1	1
North America	1	1	1	1	1	1
SalesAmountKPI	22,445,549	24,284,000	8,065,435	25,722,422	27,172,000	22,445,549
GrossProfitMarginKPI	1.13%	1		0.45%	1	1
Pacific	1	1	1	1	1	1
SalesAmountKPI				847,431	867,000	
GrossProfitMarginKPI		1		-11.53%	1	1

Figure 12-26:
Viewing your formatting changes.

Chapter 13

Unleashing Business Knowledge: Displaying and Charting Your Data with Reports

In This Chapter

- ▶ Integrating ProClarity, Reporting Services, Excel Services, and Web reports into PerformancePoint
 - ▶ Creating new PerformancePoint reports
-

Scorecards may be the glitz and glamour of business performance solutions, but reports are the bread and butter. Aside from using scorecards for actual-to-target monitoring, most business intelligence and performance management reporting is done via report elements in the form of grids (numbers) and charts (pictures).

If you are new to online analytical processing (OLAP) reporting (like Analysis Services), you may be more familiar with reports that have limited interactivity (a sort here, a filter there) or none at all (hence the doorstep that is your current business performance report). PerformancePoint leverages the capabilities of our good friend Analysis Services by providing a dynamic, interactive, and analytical environment to the get your users the data they need the way they want to see it.

But what if you already have a library of business performance reports that you've built in Reporting Services, ProClarity, or another Web-enabled application? No need to fear; importing is here. You can easily incorporate your existing report catalog into your PPS environment and dashboards. Thus you can eliminate a significant amount of migration and/or rework, allowing you to move forward with increasingly more effective business performance analytics. It's a win/win situation.

Using Reports You Have Already Created

If you have existing reporting environments (that is, Reporting Services, ProClarity, Excel Web Services), it's just a few simple steps to integrate your existing reports into PerformancePoint.



While the reports themselves can only provide functionality of the existing software, you can connect these reports to each other and new PPS reports with dashboard filters.

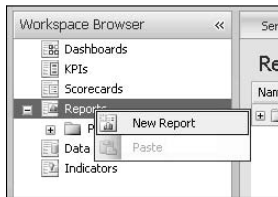
Creating a PPS report element from an existing report

Follow these steps to create a PPS report element:

1. **Right-click the Reports element header in your Workspace Browser.**

A Reports options menu opens, as shown in Figure 13-1.

Figure 13-1:
Creating a
new report
element.



2. **Choose New Report.**

The Select A Report Template dialog box opens.

3. **Select ProClarity Analytics Server Page, Excel Services, or SQL Server Report, and then click the OK button.**

A dialog box for naming your new report opens, similar to the one shown in Figure 12-3.

In Figure 13-2, we select ProClarity Analytics Server page and click the OK button.

4. **Enter the name of your report in the Name field and the optional folder name of your new report in the Default Display Folder field.**

We name the report **PPSProClarity** and the folder **PPSReports**.

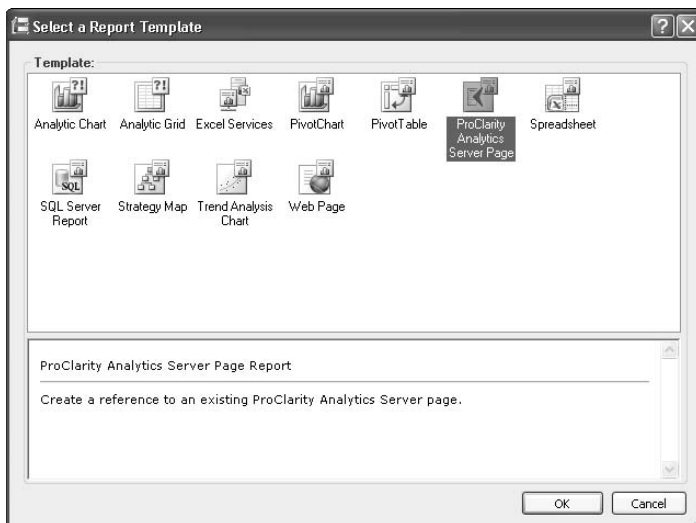


Figure 13-2:
Choosing
a report
template.

5. Click the Finish button and then the Close button.

Your report element is now open to the Editor page in your workspace. (The following section shows the Editor page of a ProClarity report.)

6. Set up the editor properties of your new report.

The following sections show how to set up reports for ProClarity, Reporting Services, and Excel Services.

Setting up a ProClarity report

Follow these steps to set up a ProClarity report:

1. In the Server URL field, enter the server address for your ProClarity Analysis Services (PAS) site.

This is the PAS address to which your existing briefing books are deployed.

In Figure 13-3, we enter **http://devapp1/pas** into the Server URL field.

2. Click the Browse button on the right side of the Workspace frame.

The PAS Browser dialog box opens in the lower-right corner of your Workspace frame, as shown in Figure 13-3.

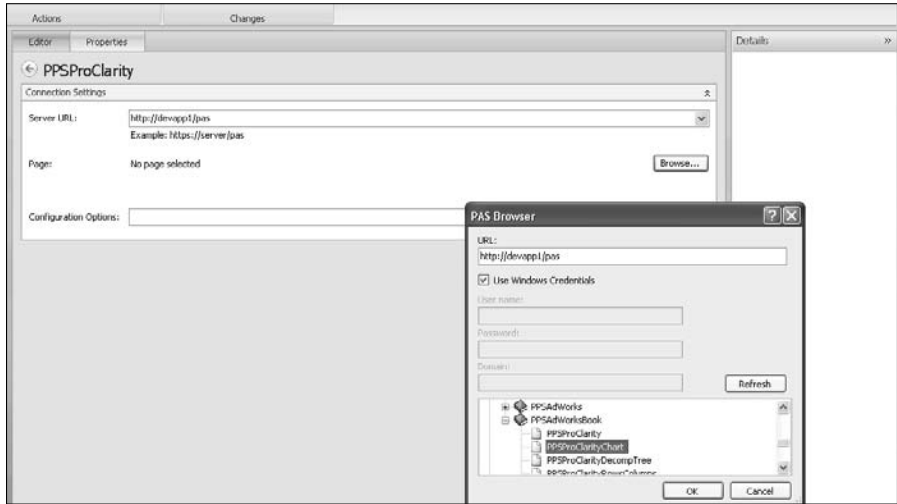


Figure 13-3:
Setting up
a ProClarity
report.

3. Select the Use Windows Credentials check box or type in a username, password, and domain.

The credentials provide your access to PAS, which would typically be your Windows logon.

You should see a list of PAS libraries in the lower frame of your dialog box, as shown in Figure 13-3.

4. Find the desired PAS library and expand it by clicking the plus sign to the left of the library name.

5. Select the PAS report you want to use and click the OK button.

Your Page URL now shows in your Connection Settings window, as shown in Figure 13-4.

6. Click the drop-down arrow in the Configuration Options box to view some configuration choices, and select one per your requirements.

Figure 13-4 shows some “out-of-the-box” options. Individual configuration values are separated by a semicolon.



Figure 13-4:
Choosing
your PAS
report.



However, you aren't limited to the configuration choices provided in this drop-down list, and options may exist that are much more relevant to your PAS via PPS delivery needs. See "ProClarity URL Tricks for M&A" in the "Top Ten Tips, Tricks and Potential Pitfalls" section for more options.

7. Publish.

Setting up a Reporting Services report

To set up a Reporting Services report in PPS, follow these steps:

1. Click the down arrow in the Server Mode box to select either Report Center or Integrated SharePoint, depending on where your Reporting Services reports (.rdx files) are deployed (probably Report Center).

Figure 13-5 shows the Reporting Services Report Editor tab.

2. Type in the server name of your Reporting Services or SharePoint server, depending on your selection from Step 1.

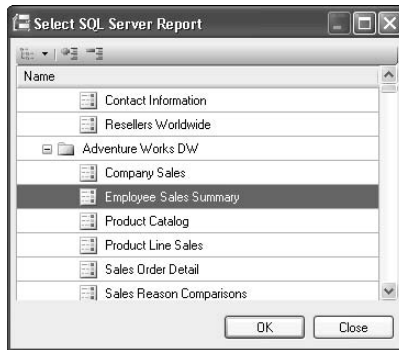
In Figure 13-5, we type in `http://devapp1/reportserver2005`.

3. Click the Browse button to the right of the Report field.

The Select SQL Server Report dialog box opens, as shown in Figure 13-6.

Figure 13-5:
Setting your
Reporting
Services
configura-
tions.

Figure 13-6:
Selecting
the report
from the
report
server.



4 Expand the appropriate folder to find your report, select it, and click the OK button.

In Figure 13-6, we select Employee Sales Summary.

5. Select or deselect the Show Toolbar, Show Parameters, and Show Docmap check boxes.

These check boxes are below the Report field, as shown in Figure 13-5.

- Select Show Toolbar if you want users to have the Reporting Services toolbar to enable zooming, exporting, and printing functionality.
- Select Show Parameters if you want users to be able to set Reporting Services parameters with the report. Because you can use dashboard filters across dashboard reports, or specifically for one report on a dashboard, you don't necessarily need to keep the native parameters in view.
- Select Show Docmap if you want your report to include a document map in a separate pane.

In Figure 13-5, we select the Show Toolbar check box.

6. Set your zoom level by clicking the down arrow to the right of the field and choosing the value you want.

The default is 100 percent.

7. To select or change the value of a report parameter, in the Report Parameters box, click the parameter row you want to edit and click the Edit button.

A drop-down box opens, as shown in Figure 13-7.

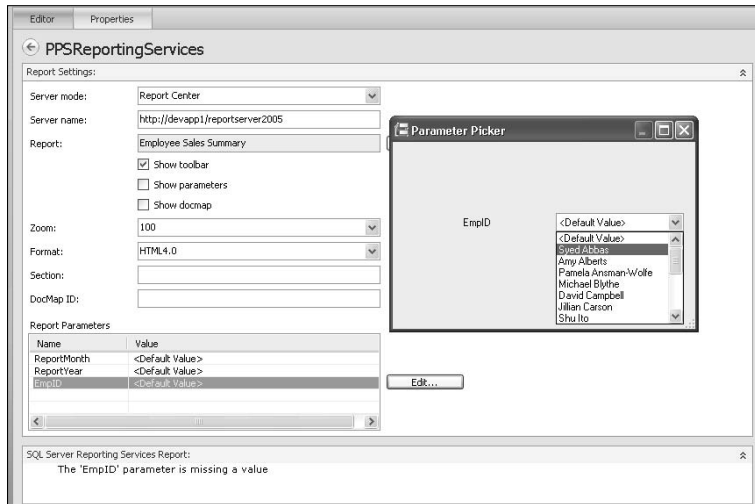


Figure 13-7:
Editing default values for parameters.

8. Select the desired value(s) and click the OK button.

The value of the edited parameter in the Report Parameters box should change, as shown in Figure 13-8.

We choose Syed Abbas as the default value and click the OK button.



You don't have to specify report parameters at this point. However, some parameters don't have set defaults. In this example, EmpID doesn't have a set default. This fact is shown in the SQL Server Reporting Services Report box of Figure 13-7. You can see the warning "The 'EmpID' parameter is missing a value." You can use a dashboard filter later (see Chapter 14) to enable users to populate that parameter value, but if you want to view the report now, you need to enter a value. When you resolve this error, you can see the top of the Reporting Services report in the Report frame (it's the toolbar, because we enabled the toolbar in Step 5).



To view the results of your configuration changes, click the double up arrow in the upper-right corner of the Report Settings frame. Then you can see a preview of your Reporting Services report as it will appear in your dashboard.

9. Publish.

Figure 13-8:
Viewing
the default
values for
parameters.



Setting up an Excel Services report

Follow these steps to set up an Excel Services report in PPS:

1. In the **SharePoint Site** field of the **Editor** tab, enter the **SharePoint site of your Excel Services workbook**.

The Editor page is shown in Figure 13-9.

In Figure 13-9, we enter **http://devapp4/projects/dashboardviewer_ppsfd/**.

2. Click the down arrow in the **Document Library** field and choose the **appropriate document library**.

We choose **Dashboards** from the document library drop-down list, as shown in Figure 13-9.

3. Click the down arrow in the **Excel Workbook** field and choose the **appropriate Excel workbook**.

We choose **ExcelServices/PPSExcel2007WorkbookDatav2.xlsx**, as shown in Figure 13-9.

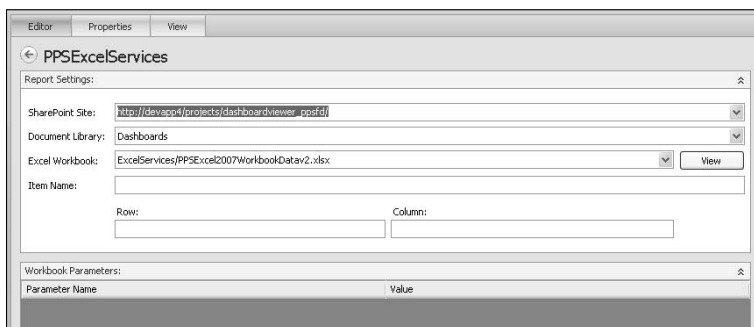
If your workbook has parameters, you can enter or select values in the **Workbook Parameters** frame.

To view your report, click the **View** tab.

4. **Publish.**



Figure 13-9:
Setting up
an Excel
Services
report.



Creating Your New PerformancePoint Report

Being able to use existing reports is a great way to get started in setting up elements for your dashboard. But PerformancePoint reports deliver functionality via a SharePoint environment that might be limited using other report types. Functions like filtering, sorting, top and bottom selections, pivoting, and changing report types enable users to get the information they need to make better business decisions.



For more information on the different report types and what they might be used for, see Chapter 15.

Some people like numbers: Creating your grid report

It's true: Some users prefer grids, and some users prefer charts. While a picture can paint a thousand words, a grid full of numbers can tell a heck of a story. But it doesn't matter, because you aren't limited to one or the other.

You can build grids that become charts and charts that become grids, or you can display both grids and charts connected to each other with filters on a dashboard page (and we're getting really excited about all the possibilities).

The two report types that provide great functionality include

- ✓ Analytic grids (recommended)
- ✓ Pivot tables

Providing powerful analysis with analytic grids

Analytics grids are the meat of a business performance solution. These grids will likely make up at least half of the reports you deploy into dashboards because they are informative, clear, and easy to use, and they have a lot of functional capability. To find out more about how analytics grids deliver great business performance information to users, see Chapters 15 through 17.

Follow these steps to create an analytics grid:

1. **Right-click the Reports element header and select New Report. See Figure 13-1.**

The Create A Report dialog box opens to the Name The Report page.

2. **Enter a name for your report in the Name field (and a folder name in the Folder Name field if you so choose), and click the Next button.**

We enter the name **PPSAnalyticsGrid** (really, our creativity overwhelms you, doesn't it) and the folder **PPSReports**.

The Select A Data Source page opens in the dialog box, as shown in Figure 13-10.

3. **Select the data source for your report, click the Finish button, and then click the Close button.**

We select AdventureWorksPPSfD in the AdventureWorksPPSfd folder.

Your report Design tab opens in your workspace, as shown in Figure 13-11.

4. **Drag and drop fields from your Measures, Dimensions, and Named Sets folders shown in your Details frame to your Rows, Columns, or Background frames at the bottom of the Design tab.**

You can see a blue line appear in the frame you are dropping into, as shown in the Columns frame of Figure 13-12.

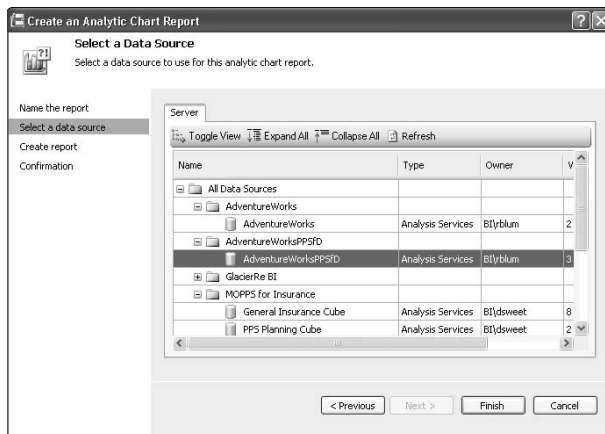


Figure 13-10:
Selecting a
data source
for your
report.

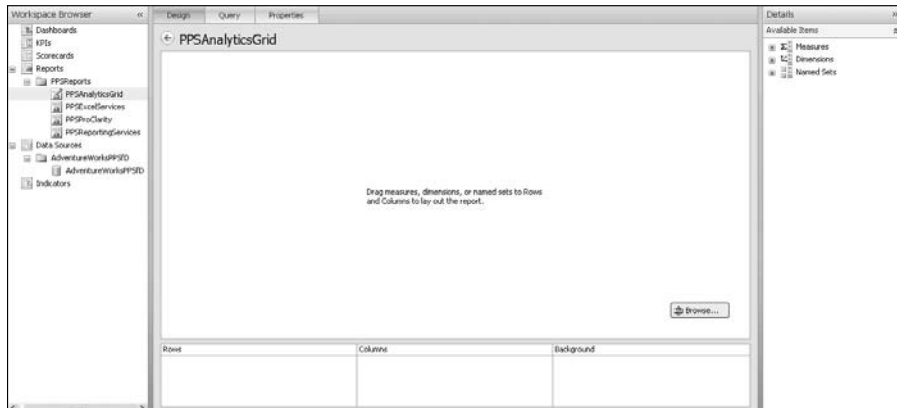


Figure 13-11:
Getting ready to design your analytics grid.



Figure 13-12:
Dragging a field into the Columns frame.

In Figure 13-13, we drag the Sales Amount, Sales Amount Quota, and SalesAmountVariance measures into Columns, and we drag the Sales Territory dimension into Rows:

- Columns show along the top of the grid, as the measure in Figure 13-13.
 - Rows show down the side of the grid. Figure 13-13 shows Sales Territory rolled up to the top level, All Sales Territories, as the current row member.
 - All measures go in the same place, either in Columns or Rows, but not both — you can't cross-tabulate measures.
 - Background fields are used for filtering the grid by dimension members without actually showing that dimension in the grid itself.
- 5. Click the down arrow next to any dimension in your Rows, Columns, or Background that you want to filter.**

The Select Members dialog box opens, as shown in Figure 13-14.

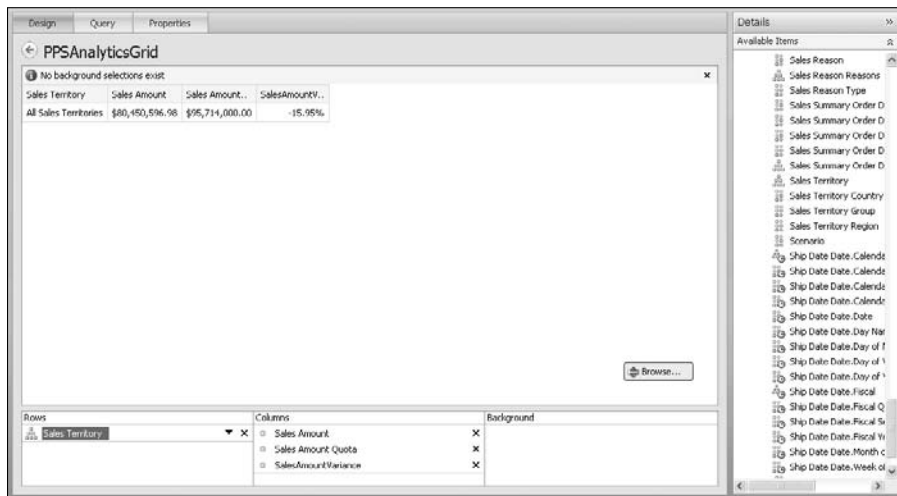


Figure 13-13:
Viewing the
grid in your
workspace.

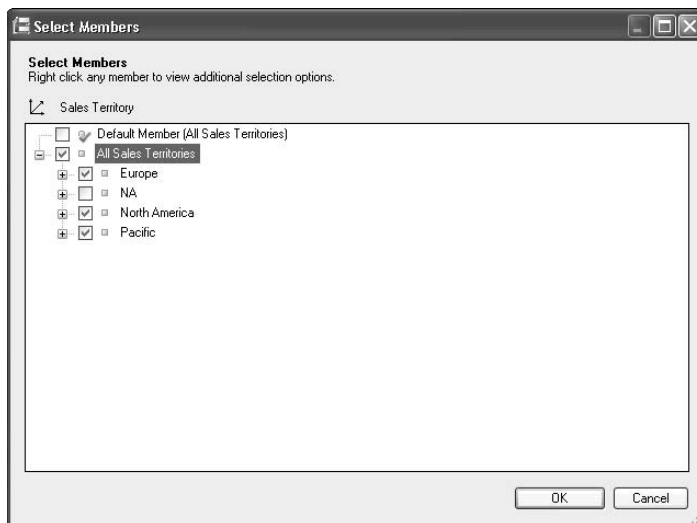


Figure 13-14:
Selecting
grid
members.

6. Select or deselect the dimension members you want to include or exclude in your report, and then click the OK button.

In this case, we

- Deselect Default Member
- Expand All Sales Territories
- Select Europe, North America, and Pacific, but not NA (although we can think of quite a few people we'd like to send there)



Member selection is a little strange. All category (like All Sales Territory shown in Figure 13-14) isn't just a subtotal; it is the total regardless of which descendants you pick for this view. This works a bit better for nonhierarchical data.

7. Click the Browse button below your grid to adjust the default view of your grid.

A view of what your report will look like when it's in your dashboard is shown in Figure 13-15.

Sales Territory	Sales Amount	Sales Amount...	SalesAmountY...
All Sales Territories	\$80,450,596.98	\$95,714,000.00	-15.95%
Europe	\$10,870,534.80	\$18,358,000.00	-40.79%
North America	\$67,985,726.81	\$73,283,000.00	-7.23%
Pacific	\$1,594,335.38	\$1,687,000.00	-5.49%

Figure 13-15:
Browsing
your grid.

8. Expand or collapse your hierarchy until it is showing the levels you want in your default (or beginning) view.

In Figure 13-15, we expand the top-level All Sales Territories to show Europe, North America, and Pacific in the default view.

9. Click the OK button. The report in your design workspace now shows your new default view, as shown in Figure 13-16.

Even when a hierarchy is present, the Design view doesn't show the plus or minus signs. You will see the plus and minus signs in the Browse view.

10. Publish your report.

You can view and even modify the underlying code (MDX) of your query in the Query tab.



The screenshot shows the PPSAnalyticsGrid interface. At the top, there are tabs for 'Design', 'Query', and 'Properties'. Below the tabs, the main area displays a table with the following data:

Sales Territory	Sales Amount	Sales Amount..	SalesAmountV..
All Sales Territories	\$80,450,596.98	\$95,714,000.00	-15.95%
Europe	\$10,870,534.80	\$18,358,000.00	-40.79%
North America	\$67,985,726.81	\$73,283,000.00	-7.23%
Pacific	\$1,594,335.38	\$1,687,000.00	-5.49%

Below the table, there is a 'Browse...' button. At the bottom of the window, there is a configuration panel with three sections: 'Rows', 'Columns', and 'Background'. The 'Rows' section contains 'Sales Territory'. The 'Columns' section contains 'Sales Amount', 'Sales Amount Quota', and 'SalesAmountVariance'. The 'Background' section is empty.

Figure 13-16:
Viewing
your default
view.

Enabling ad hoc analysis with pivot tables

Pivot tables are nothing new, but good things withstand the test of time. You find pros and cons to using a pivot table over an analytics grid. On the pro side:

- ✔ Users can drag and drop dimensions and measures from a field list into their grid, giving them complete control over the rows, columns, and grid filters.
- ✔ Users can export their pivot table to Excel from SharePoint, keeping the live connection to the cube (if security allows). This means that they can leverage the reporting power of Excel 2007 from a jumping-off pad of their dashboard.

But on the con side:

- ✔ They don't look as nice and polished as a ProClarity grid.
- ✔ Most business users don't need or even want unlimited querying flexibility, so forcing them to run ad hoc queries creates more work than is necessary.
- ✔ You don't have the same analytical tools as you have with analytics grids. For a comparison of reports and analytical capabilities, see Figure 16-1.



Microsoft Web Components must be installed to create a pivot table in PPS.

To create a pivot table report element, follow these steps:

1. Right-click the Reports element header in your Workspace Browser.

A Reports options menu opens, as shown in Figure 13-1.

2. Select New Report from the Reports options menu.

The Select A Report Template dialog box opens, as shown in Figure 13-2.

3. Select Pivot Table, and click the OK button.

4. Enter the name of your report in the Name field and the optional folder name of your new report in the Default Display Folder field.

We name the report **PPSPivotTable** and the folder **PPSReports**.

5. Click the Finish button and then the Close button.

Your report element is now open to the Editor page in your workspace.

Unlike with analytics grids, you need to set up a data source separately from your data source elements.

6. Click the Commands And Options icon on the Pivot Table toolbar.

The icon is shown in Figure 13-17, as is the Commands And Options dialog box that opens when you click it.

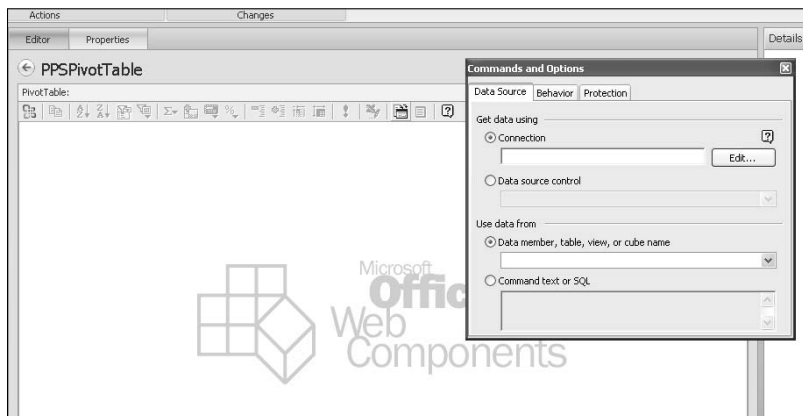
7. On the Data Source tab, choose the Connection option. Then click the Edit button, as shown in Figure 13-17.

The Data Link Properties dialog box opens, as shown in Figure 13-18.

8. Select Microsoft OLE DB Provider for Analysis Services 9.0 (or other data source type if necessary), and then click the Next button.

The Connection tab opens.

Figure 13-17:
Setting up
your pivot
table data
source.



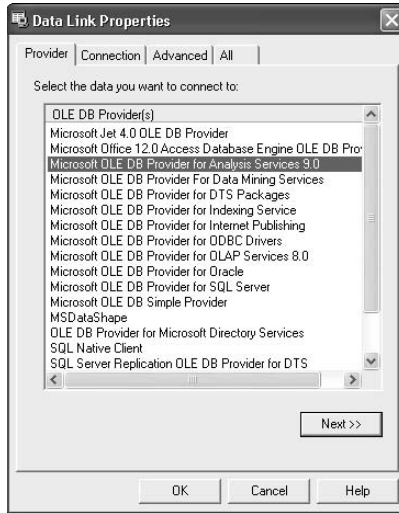


Figure 13-18:
Choosing
your data
source type.

9. In the Data Source field in section 1 of the Connection tab, type the name of your Analysis Services server.

In Figure 13-19, we enter `devsql6/as2005x64`.

10. Choose your security access in section 2 of the Connection tab.

In Figure 13-19, we choose Use Windows NT Integrated Security.

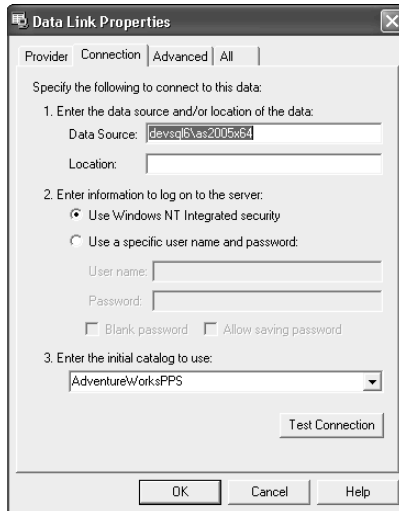


Figure 13-19:
Entering
your data
source
information.

- 11. In section 3, click the arrow to the right of the drop-down box to select the *catalog*, or Analysis Services database name, that you want to use.**

A catalog may contain several cubes.

We choose AdventureWorksPPS, as shown in Figure 13-19.

- 12. Click the OK button.**

The Commands And Options dialog box reopens, as shown in Figure 13-20.

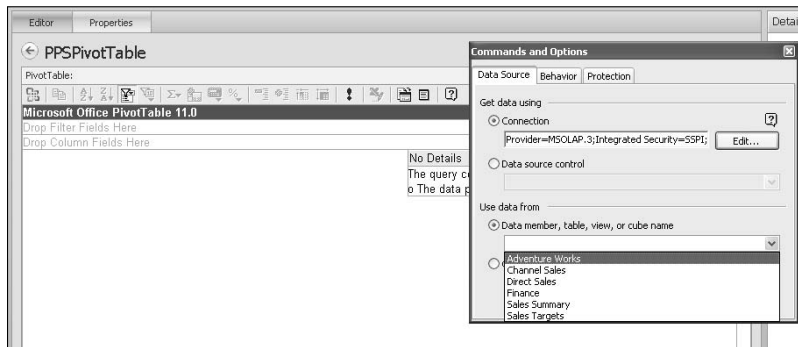


Figure 13-20:
Choosing
your cube.

- 13. Select the Data Member, Table, View, or Cube Name option.**
 - 14. Click the arrow to the right of the associated drop-down box and choose the cube that you want.**
- In Figure 13-20, we select AdventureWorks.
- 15. Click the X in the upper-right corner of the dialog box to close the dialog box and save your changes.**
 - 16. To open your field list, click the Field List icon, as shown in Figure 13-21.**

The field list opens.

Now you can begin to drag and drop your dimensions and measures into your pivot table. For more information on adding dimensions and measures to your pivot table, see Chapter 16.

- 17. Oh, did we say publish? Publish.**

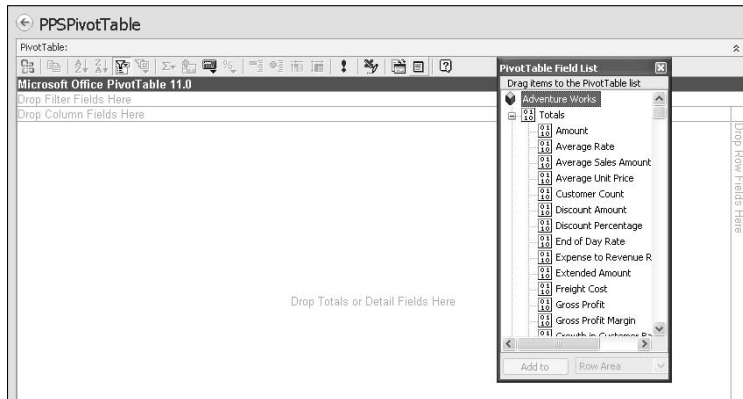


Figure 13-21:
Viewing
your
field list.

Some people like pictures: Creating your chart report

Charts are great for showing trends, change over time, comparisons, relative size, or volume of measures. Plus, they are pretty. Seriously, users respond to charts because they look cool *and* they quickly communicate business performance. You have several chart types to choose from:

- ✓ Analytics charts (recommended)
- ✓ Pivot charts
- ✓ Trend analysis charts

Providing visual insight with analytics charts

If analytics grids are the meat of a business performance solution, analytics charts are the potatoes (hungry yet?). Analytics charts provide an essential complement to analytics grid reporting, and they function very similarly. They are also built similarly. Follow these steps to create an analytics chart:

- 1. Follow the preceding Steps 1–3 for creating an analytics grid, except instead of choosing an analytics grid template, choose an analytics chart.**

See the section “Providing powerful analysis with analytic grids,” earlier in this chapter.

- 2. Drag and drop fields from your Measures, Dimensions, and Named Sets folders shown in your Details frame to your Series, Bottom Axis, or Background frames at the bottom of the Design tab.**

You can see a blue line appear in the frame you are dropping into, as shown in the Columns frame of Figure 13-12, and when you have dropped at least one series and one axis, you will see your chart in your workspace.

- The Series are the numeric values (that is, the measures) that your chart shows.
- Bottom Axis is the value along the bottom axis of your report.
- Background is where you put the attributes you want to filter your report by, but that you don't want to see on your series or axis.

In Figure 13-22, we drop the Sales Amount and Sales Amount Quota measures into the Series and the calendar date hierarchy (called Date Date.Calendar) into the Bottom Axis frames.

You can see both measures next to each other in a bar chart, the series key to the right of the bars, and the bottom axis of Calendar Date rolled up to the top-level All Periods.

3. Click the down arrow next to the dimensions in Bottom Axis to select members.

The Select Members dialog box opens, as shown in Figure 13-23.

4. Select the members you want to see along the bottom axis, and click the OK button.

In Figure 13-23, we select 2001, 2002, 2003, and 2004. Now the report no longer shows all periods summed together, but each year broken out.

Figure 13-22:
Dragging
and
dropping
measures
and
attributes
into your
analytics
chart.

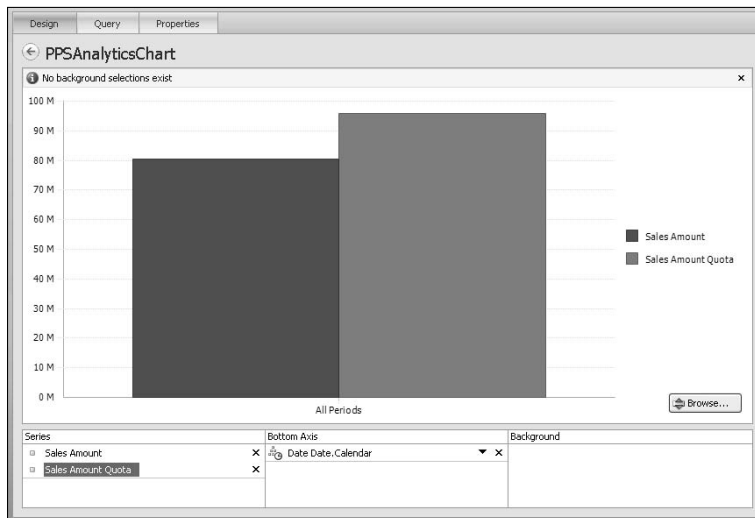
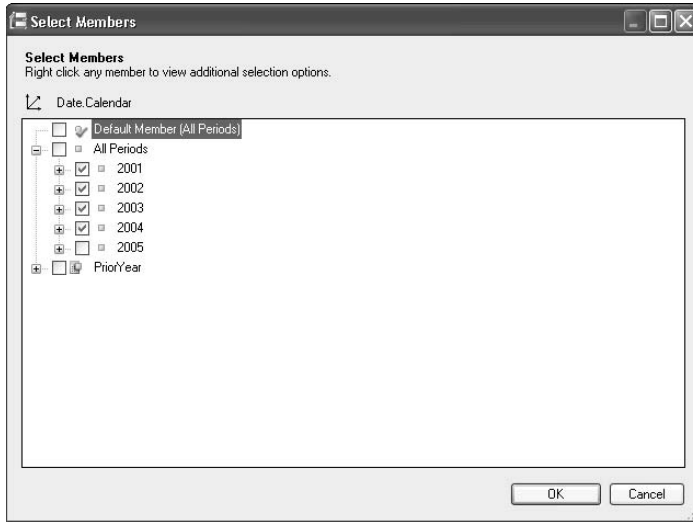


Figure 13-23:
Filtering
your
members
and setting
up your
bottom axis.

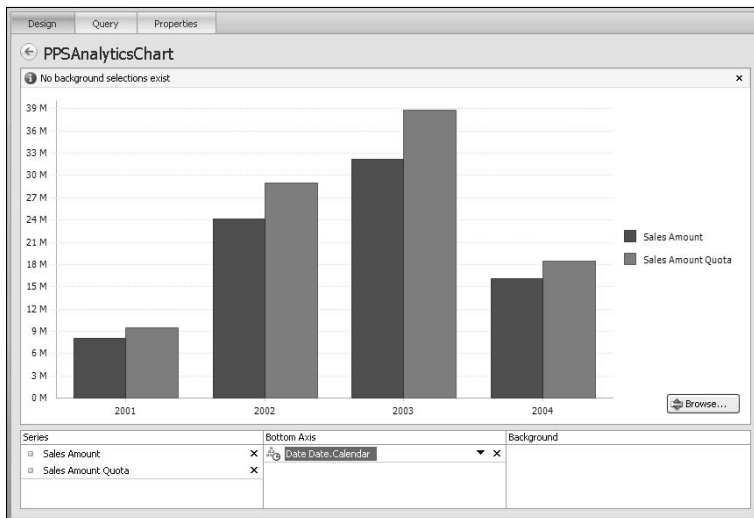


5. To change the report style, click the **Browse** button next to your chart, as shown in Figure 13-24.

The chart view opens in a browser.

In the browser, you can change the report type from bar to line, stacked bar, or grid.

Figure 13-24:
Browsing
your analyt-
ics chart.



6. Click a report style icon on your toolbar to change the report style.

Your chart reflects the style you have selected.

In Figure 13-25, we click the Line Chart icon on the browser toolbar and, poof, a line chart appears.



For some reason, a pie chart isn't one of your reporting choices. We like pie charts. If you do too (and really, who doesn't?), you'll have to build one in ProClarity and follow the preceding steps for creating a new PPS report from ProClarity.

7. Click the OK button to close the browser.

8. Publish your new analytics chart.

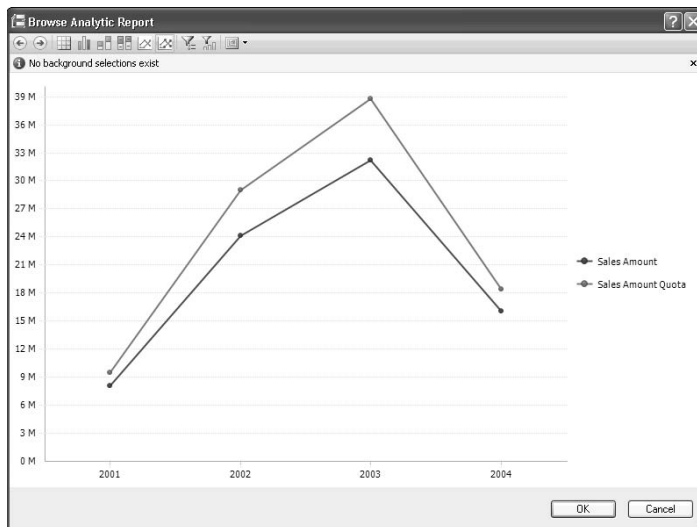


Figure 13-25:
Changing to
a line chart.

Enabling ad hoc visualizations with pivot charts

Pivot charts are built very similarly to pivot tables. Follow all the steps for setting up pivot table, except select Pivot Chart as the template.

For more information on adding dimensions and measures to your pivot table, see Chapter 16.

Predicting the future with trend analysis charts

We see a trend analysis chart in your future. A *trend analysis chart* takes data that you have in a scorecard element, applies a statistical algorithm to it to predict future trends on that data, and then displays the history and prediction in a line chart. (Try to use the term *statistical algorithm* as often as possible. It makes you sound smart.)



Here's the issue:

A trend analysis chart can only predict trends to the last date that you have in your cube. But the last date you have in your cube might be the last date you have data for.

Here's the solution:

Your Date dimension should be populated with future dates, for as far as you want to predict based on your historical data. So if you have historical data for 2001 to 2004, you may want to add 2005 dates into your Date dimension, or have your DBA do it for you.

Trend analysis charts are based on scorecards. You may want to build a scorecard that specifically feeds your trend analysis chart and make sure that

- ✓ A time dimension exists in the scorecard on the columns
- ✓ The time dimension is at the level (that is, year and month) that you want to trend to be on.
- ✓ If you don't want multiple lines in your trend analysis chart (that is, one for each actual, target, and prior year like those shown at the end of the following steps), delete the target and other KPI values from your scorecard, leaving only the actual value.

Follow these steps to create a trend analysis chart:

1. Right-click the Reports element header and select New Report. See Figure 13-1.

The Create A Report dialog box opens to the name the report page.

2. Enter a name for your report in the Name field (and a folder name in the Folder Name field if you so choose), and click the Next button.

The Select A Data Source (scorecard element) dialog box opens, as shown in Figure 13-10.

We enter the name **PPSTrendAnalysisChart** and the folder name **PPSReports**.

3. Select a scorecard from your server.

In Figure 13-26, we select AnalysisServicesScorecard in the PPSAdventureWorks folder.

4. Click the Next button.

The Select The KPIs dialog box opens, as shown in Figure 13-27.

5. Select the KPIs you want to trend.

Multiple KPIs will present as multiple trend charts.

In Figure 13-27, we select SalesAmountKPI.

Figure 13-26:
Choosing a
scorecard
for your
trend
analysis.

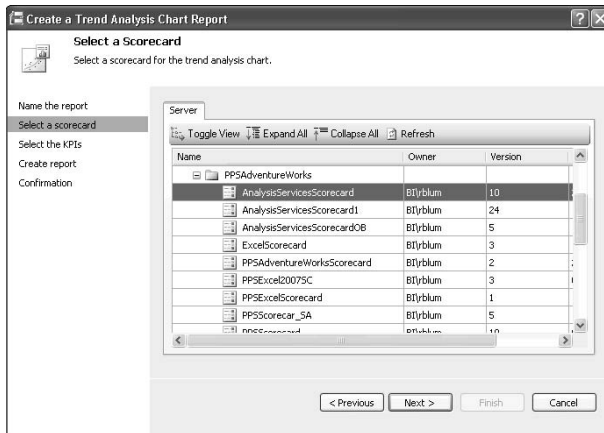
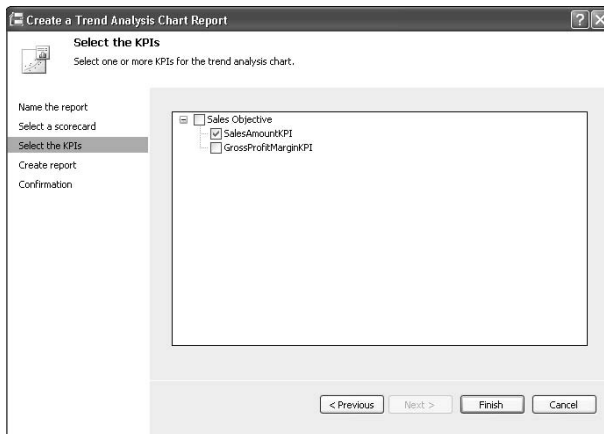


Figure 13-27:
Selecting
the KPIs for
your trend
analysis.



6. Click the Finish button and then the Close button.

Wow, a line chart appears in your workspace showing your KPI, as shown in Figure 13-28.

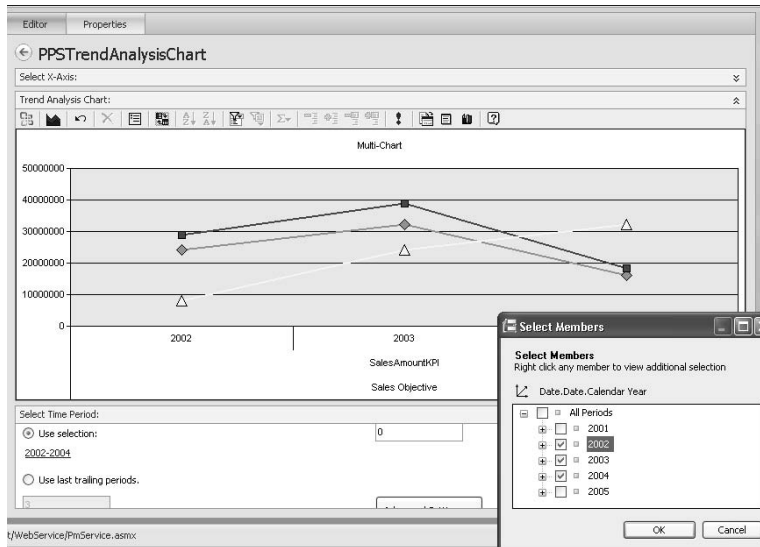
7. Select the Use Selection option and click the blue, underlined time range in the Select Time Period frame to manually select the time periods you want to use.

The Select Members dialog box opens, as shown in Figure 13-28.

8. Select the time periods you want to use for your history, and click the OK button.

In Figure 13-28, we select 2002–2004.

Figure 13-28:
Viewing
your trend
analysis
chart
without
the trend.

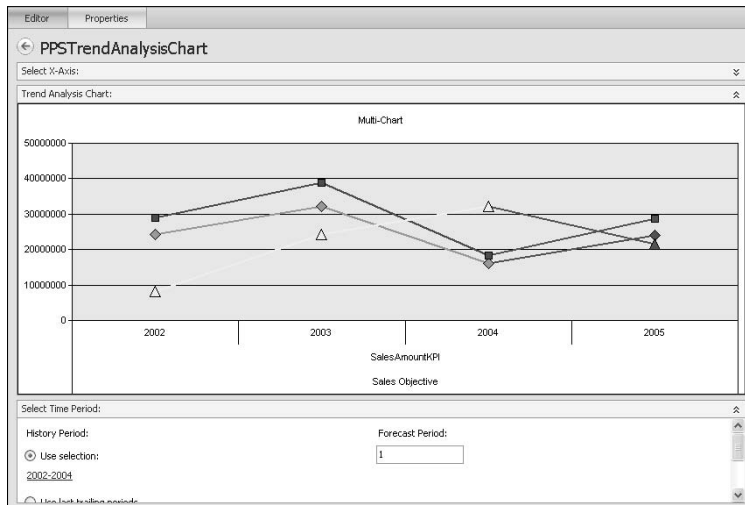


9. Change the number of forecast periods in the Select Time Period frame from 0 to the number of periods you want to forecast and press Tab.

Your trend analysis chart can now predict out your KPI to the selected periods by showing predictions in bright red.

In Figure 13-29, we enter **1** in the Forecast Period field and press Tab. It looks like our Sales Amount will go up in 2005. Yay!

Figure 13-29:
Predicting
an upward
trend
in sales.





A trend analysis chart is really a special pivot chart. In your workspace, you can right-click the chart and select the Pivot Chart toolbar. Then you can see and use your field list, change your chart type, show/hide the chart legend (handy when you have multiple lines), or use any of the pivot chart options. Chapters 15 through 17 have information on analyzing trend analysis charts and working with pivot charts.

Seeing the impact of indicators: Creating your strategy map report

Strategy maps provide an overall view of your organization's strategy quantified through KPIs and objectives, and presents the status of your KPIs and objectives graphically as your underlying data source is updated. If an objective goes red, you see it here.

To build a strategy map report, you should first identify or create the following:

- ✓ A scorecard that contains the KPIs you want to include in the strategy map. The scorecard we will use is shown in Figure 13-30.
- ✓ A Visio diagram of shapes connected to each other that will become the basis for your KPIs and objectives. The one we created is shown at the end of the following steps.

Figure 13-30:
A scorecard
for our
strategy
map.

	2003		
	Actual	Target	Prior Year
Sales Objective			
SalesAmountKPI	32,202,669	38,782,000	24,144,430
GrossProfitMarginKPI	-0.52%	1	

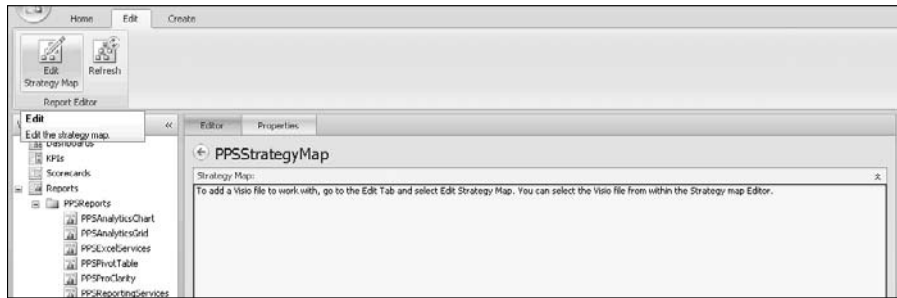
To build your strategy map, follow these steps:

- 1. Follow Steps 1–5 for creating a pivot table report, except choose a Strategy Map template instead.**

See the section “Enabling ad hoc analysis with pivot tables,” earlier in this chapter.

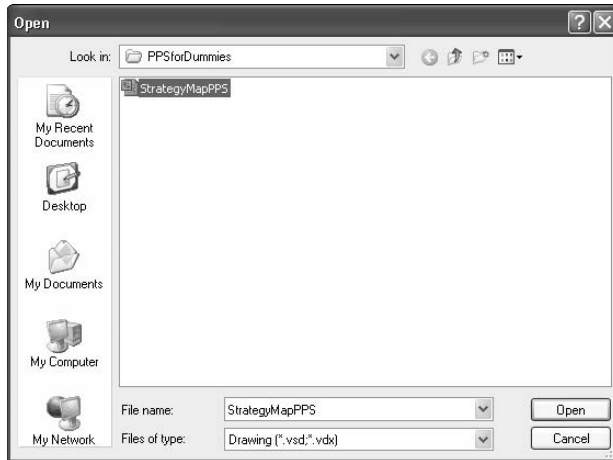
Your blank strategy map opens in your workspace, as shown in Figure 13-31.

Figure 13-31:
Editing your
strategy
map.



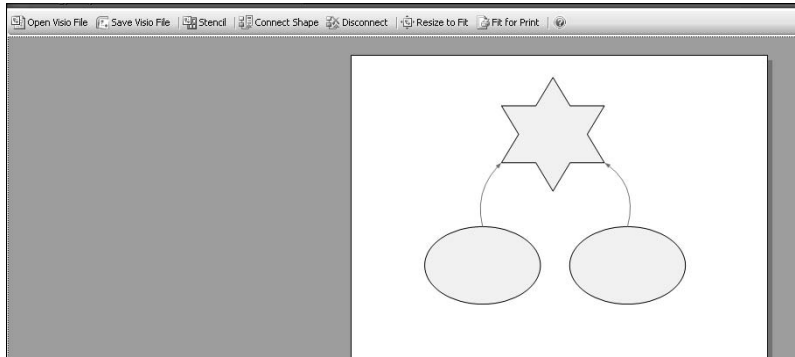
2. Click the **Edit Strategy Map** button on the **Edit** toolbar.
The Strategy Map Editor opens.
3. Click the **Open Visio Diagram** button on the toolbar.
An Open dialog box appears, as shown in Figure 13-32.

Figure 13-32:
Opening
a Visio
diagram
into your
Strategy
Map Editor.



4. Select the **Visio** diagram you want to open, and click the **Open** button.
Your Visio diagram opens into your strategy map.
We select StrategyMapPPS, which is a Visio diagram we previously created. Our Visio diagram is now open in the Strategy Map Editor, as shown in Figure 13-33.

Figure 13-33:
Viewing
your Visio
diagram in
the Strategy
Map Editor.



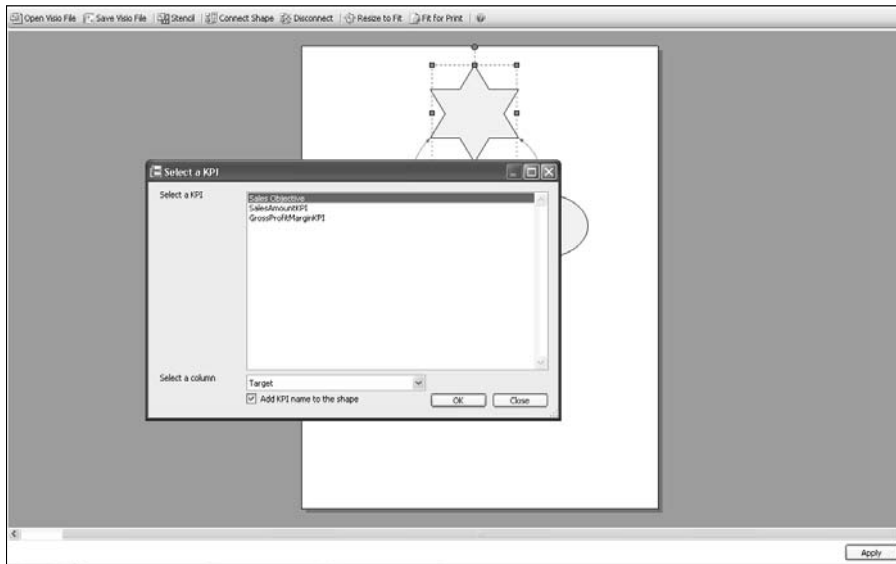
5. Click a shape in your diagram and click the **Connect** button in the **Strategy Map Editor**.

The **Select A KPI** dialog box opens.

6. Select the **KPI** you want to associate to that shape.

In Figure 13-34, we select **Sales Objective**.

Figure 13-34:
Connecting
KPIs to your
map shapes.



7. In the Select A Column drop-down list, select the column (Target or Actual) that you want to use, and click the OK button.

We select Target.

8. Repeat steps 5 through 7 for each of your shapes, and then click the Apply button at the bottom right of your frame.

Your strategy map generates per the KPI values, as shown in Figure 13-35.



You can select the Render As Image check box at the bottom of the page. This gives a more finished look to the strategy map when it's added to a dashboard.

9. Publish.



The same property-setting methods that apply to the data source and indicator elements apply here as well. Refer to Chapter 9 for more information on setting security.

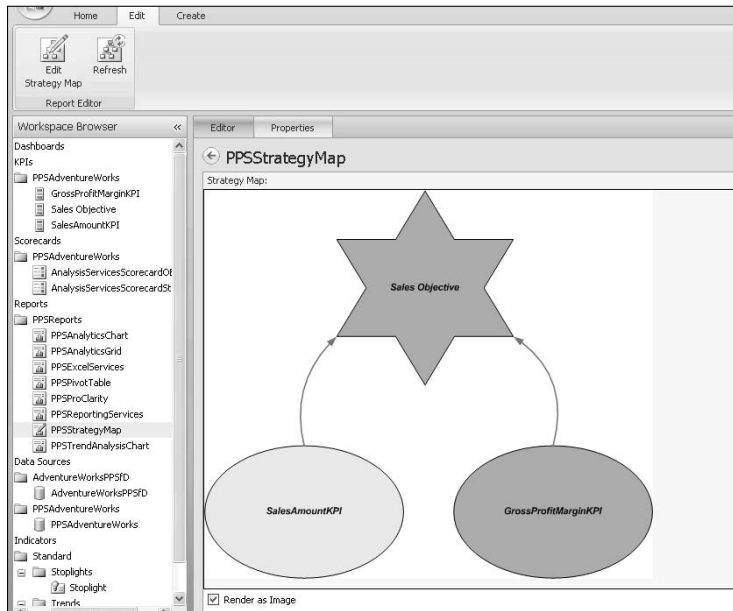


Figure 13-35:
Your
strategy
map comes
to life.

Part IV

Viewing and Analyzing Your Business Reports

The 5th Wave

By Rich Tennant



"At my last place of employment we used something called PerformancePoint to predict trends and forecast budgets."

In this part . . .

In Part IV, end-users (managers, analysts, and decision makers) find how to use a PPS dashboard to get the information they need. You discover the basics of navigating a PerformancePoint dashboard, find out how to use analytical functions to unleash your business information, and determine how to export your reports for powerful business presentations.

Chapter 14

Monitoring Your Business at a Glance with Dashboards

In This Chapter

- ▶ Bringing your elements together in a dashboard
- ▶ Connecting your reports and scorecards with dashboard filters
- ▶ Delivering your business performance dashboards online to your business users

You made it to the home stretch. The culmination of your efforts, your hard work, your diligence. The dashboard element is where you

- ✓ Assemble your scorecards and reports into a consolidated interface
- ✓ Create and add dashboard filters to tie your scorecards and reports together
- ✓ Deploy your new business performance solution to your business users

Assembling a Dashboard

A dashboard element is made up of four primary components, as shown in Figure 14-1:

- ✓ **Dashboard page:** A dashboard page is a Web page that contains any number of *zones* with *content* and *filters*. Dashboard pages have names.
- ✓ **Zone:** A zone is a section of a dashboard page in which you can place *content* or *filters*.
- ✓ **Reports:** Dashboard reports include report and scorecard elements that you place into your zones to flesh out the dashboard page.
- ✓ **Filters:** Dashboard filters are drop-down lists of attribute members that are linked to any and all reports in the zones on your dashboard page. These also get dropped into a zone.



Figure 14-1:
Viewing the
layout of
your dash-
board page.

Zoning In: Creating and designing your dashboard layout with zones

Dashboards contain one to many zones, so the first step when setting up a dashboard is to choose how many zones you want. To set up a new dashboard, follow these steps:

1. Right-click the Dashboard element header in your Workspace Browser.

A dashboard options menu opens.

2. Choose New Dashboard.

The Select a Dashboard Page Template dialog box opens, as shown in Figure 14-2.

We select the Header, 2 Columns dashboard layout and click the OK button.

3. Select the template you want to start with, and click the OK button.

The naming dialog box opens.

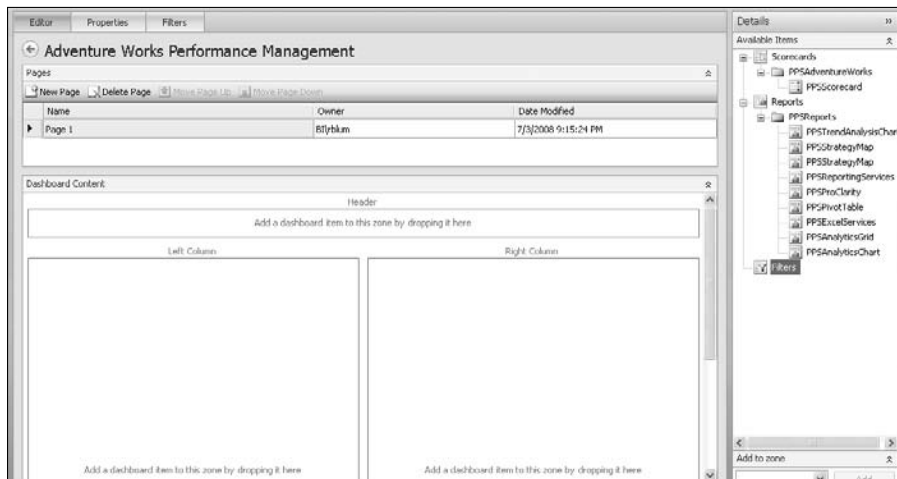
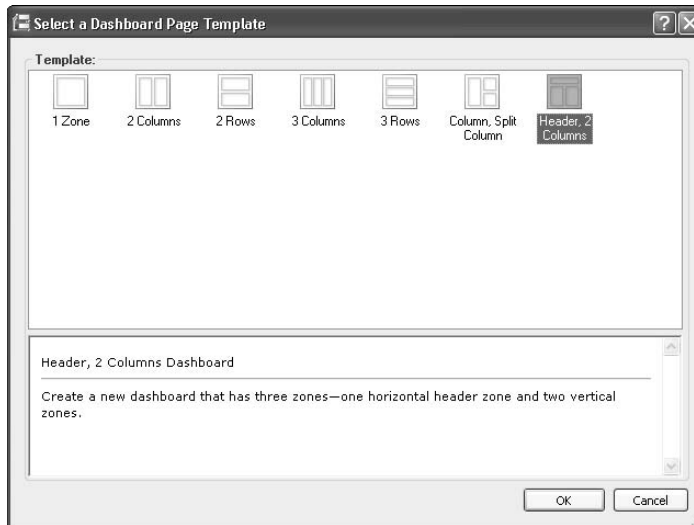


You have the option of adding, removing, and reorganizing your dashboard template at any time in the Dashboard Editor; this is just to get you started. To edit your zone layout, see the section “Zoning out: Reorganizing and sizing your zones,” later in this chapter.

4. Enter the name of your new dashboard and a folder name if you so choose, and then click the Finish button.

Your new dashboard opens in your workspace, as shown in Figure 14-3.

We named the dashboard Adventure Works Performance Management.



Adding the building blocks to your dashboard

After your new dashboard has been created, you want to start adding some content — reports and scorecards — to your dashboard page. To add content, follow these steps:

1. **Expand your Reports or Scorecards folders in your Details frame to see what scorecards and reports are available in your workspace.**



The reports and scorecards that are on our workspace are shown in the Details frame of Figure 14-3.

Reports have to be in your workspace to add them to your dashboard.

2. **Drag and drop your report or scorecard elements into each of your zones.**

In Figure 14-4, we drag PPSAnalyticsChart from the Reports folder into the Left Column. A blue line appears where your element will drop.

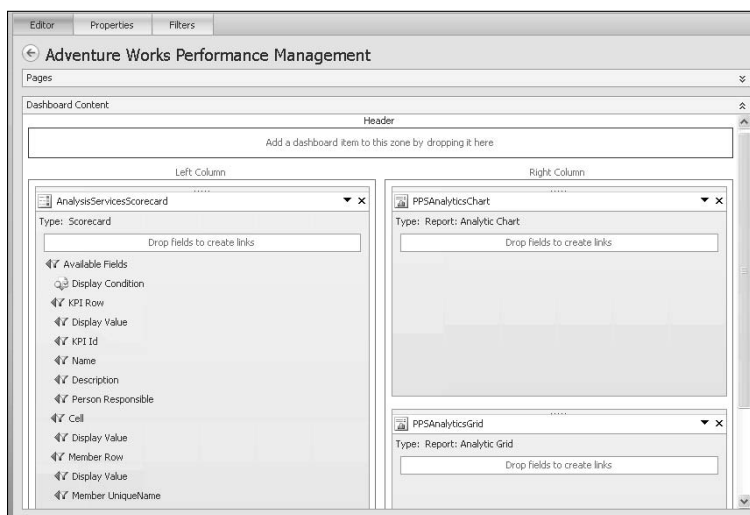
Figure 14-5 shows the PPSAnalyticsChart in the right frame and the AnalysisServicesScorecard in the left frame. We also dropped a PPSAnalyticsGrid underneath the PPSAnalyticsChart. No zone was set up, but we can drop there anyway.

We haven't added anything to the top header because we will use that area of the page for a dashboard filter (see the next section).

Figure 14-4:
Dragging
and
dropping a
report.



Figure 14-5:
Our
dashboard
is ready
to go —
maybe.



3. Publish your dashboard.

At this point, you could be ready to review your dashboard in Preview mode or even deploy to SharePoint in Deploy mode; if so, skip ahead. If you want to add filters or pages, or reorganize your zones, carry on.



To see how your dashboard will look to users, you can use Preview mode. See the section “Previewing your dashboard,” later in this chapter.

Powering your dashboard page with filters

Two types of filters exist, in addition to any filters that you created within your reports or scorecards, including the following:

- ✓ Drop-down lists or expandable trees from which users make selections to filter and link any or all reports or scorecards on your dashboard. This is likely the one you would use the most.
- ✓ KPIs from scorecards that users can select to filter other reports in the dashboard to show data for that KPI. To implement this, you need a scorecard and a report to show details about measures contained in the KPI. This is a good way to allow users to drill down to more detail on a “bad” KPI.

This chapter focuses on drop-down lists, but you can find more information on this method on the Microsoft PerformancePoint blog:

```
http://blogs.msdn.com/performancepoint/archive/2007/12/21/passing-context-from-scorecards-to-other-report-views.aspx.
```

You can do the following with PPS dashboard filters:

- ✓ Create tree-style (hierarchical) drop-down lists in addition to simple lists
- ✓ Enable multiple versus single selection of members
- ✓ Set defaults right in PPS

The easiest way to create an expandable filter list is to use Member Selection, choosing an existing dimension hierarchy or attribute from your Analysis Services cube. This works especially well if you are using Analysis Services–based reports and scorecards.

Follow these steps to create a dashboard filter:

- 1. Click the Filters tab in your dashboard workspace to open the Filters Workspace page.**

The Filters page is shown in the background of Figure 14-6.

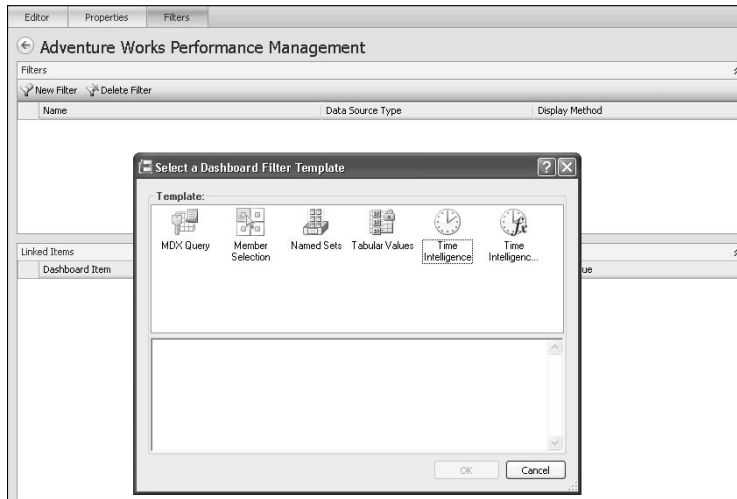


Figure 14-6:
Viewing
the Filters
workspace
and choos-
ing a filter
template.

2. Click the New Filter icon in the Filters frame of the Filters workspace.

The Select A Dashboard Filter Template dialog box opens, as shown in Figure 14-6.

3. Select the filter template you want to use, and click the OK button.

The Create A Filter dialog box opens.

Filter templates include the following:

- **Member Selection** allows you to choose dimension members from any of your data sources. This works especially well if you use the same data source as you did for your reports and scorecards — even better if you are using Analysis Services.

New members aren't automatically added to your drop-down list. If you use Member Selection to create a list of dates, new dates that you haven't manually selected here because they don't exist will not appear as part of your list. In this case, you should use MDX Query.

- **MDX Query** allows you to use the power of MDX to create your own filter list from an Analysis Services data source. While Member Selection is a bit easier, you will need to use MDX Query to create dynamic sets (like dates) that may change over time. It is also great for creating a drop-down list of items that aren't attributes, like a list of measures.

Chapter 18 lists several great resources for using MDX.





- **Named Sets** allows you to use a named set already created in Analysis Services as your drop-down list. This is good for using static-set lists (like states within a user-defined region) or dynamic-set lists (like Top 10 Salespeople).
- **Tabular Values** allows you to use a variety of data sources to select values for your drop-down list, along with a default. This is similar to Member Selection except that the list can only come from an Excel or SQL data source. This is good if you want to manually create a selection list.

If you are using a tabular value list or any list for which the data source is different than the report data source, make sure that the filter values will map correctly to the reports and scorecards.

- **Time Intelligence** allows you to create time calculations (for example, Prior Year = Year - 1, Prior Month = Month - 1) within the filter definition itself. We try to program all time intelligence into Analysis Services itself, but this is a nice alternative if you haven't done so.

We select Member Selection and click the OK button.

4. **Enter the name of your new filter and a description if you choose, and click the Next button.**

The Select A Data Source dialog box opens.

We name our filter **PPSMemberSelectionFilter**.



The name you give your filter is what shows up on the dashboard as the filter label, so choose a name appropriately. For example, because we will use this filter for member selection on Sales Territory, we could call it, oh, Sales Territory.

5. **Select your data source, and click the Next button.**

The Select Members dialog box opens.

We choose the PPSAdventureWorks Analysis Services data source and click the Next button. This is the same data source that we used for the reports that will be in our dashboard.

6. **Click the Select Dimension button, select the attribute or hierarchy where you want to select your members, and click the OK button.**

You are brought back to your Select Members page.

We click the Select Dimension button, choose Sales Territory.Sales Territory as shown in Figure 14-7, and click the OK button.

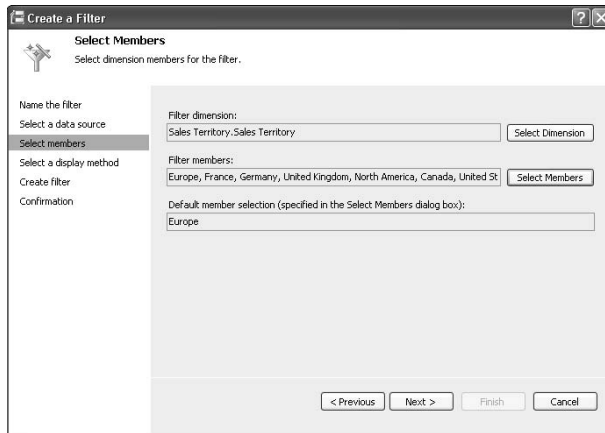


Figure 14-7:
Your Select
Members
page.

7. Click the **Select Members** button, select the members you want to select for your list or deselect the members you don't want on your list, and click the **OK** button.

You are brought back to your Select Members page.

We select Europe, North America, and Pacific; and deselect All Sales Territories and NA from the member selection list. See Figure 14-8.

8. Set a default member by right-clicking the member and choosing **Set As Default Selection** from the member options menu. Then click the **OK** button to close the Select Members dialog box.

You are brought back to your Select Members page.

We right-click Europe and choose Set As Default Selection. The default member selection is now shown as (Default Selected) next to Europe, as shown in Figure 14-9. Also, your default member appears on your Select Members page under Default Member Selection.

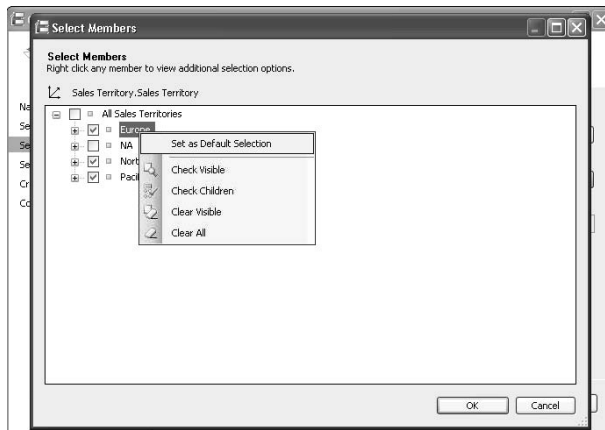
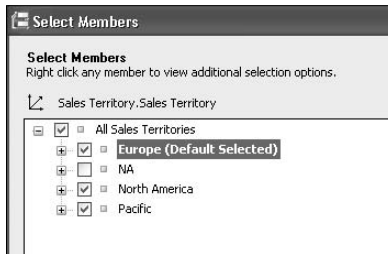


Figure 14-8:
Selecting your mem-
bers in
your Select
Members
dialog box.

Figure 14-9:
Setting
your default
member.



9. Click the Next button.

The Choose Display Method dialog box opens.

10. Choose your display option from List (a single selection list of items), Tree (a tree from which a single item can be selected), or Multi-Select Tree (a tree from which multiple items can be selected).

The trees are great for hierarchies.

We select Multi-Select Tree, as shown in Figure 14-10, so that users can select more than one sales territory at a time.

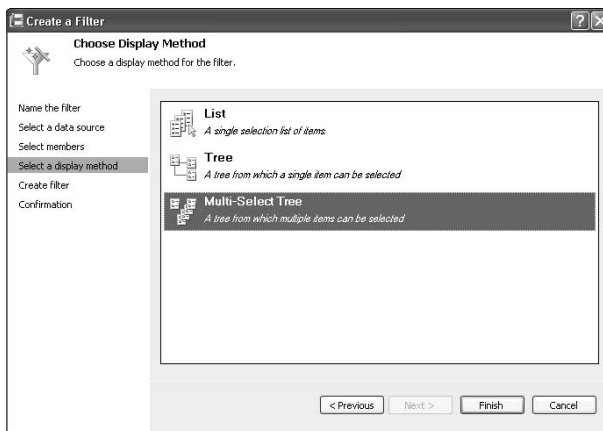
11. Click the Finish button and then the Close button.

You are brought back to your Dashboard Workspace Filter page, where your new filter is listed in the Filters section.



To edit your filter (that is, go back through the Filter Wizard), click the value in the Data Source Type field. In Figure 14-11, we would click Member Selection.

Figure 14-10:
Choosing
a selection
list.



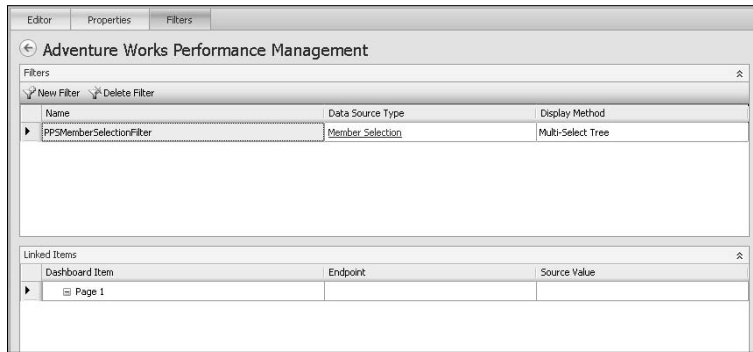


Figure 14-11:
Viewing our
dashboard
filters.

12. Click the Editor tab to open it in your workspace.
13. Drag and drop your new filter from the Filters list in the Details frame into your dashboard.

We drop PPSMemberSelection Filter into the top of the dashboard, as shown in Figure 14-12.

14. Click the down arrow at the header of the dashboard zone you want to join to the filter.

We click the down arrow next to PPSAnalyticsChart.

A zone options menu opens, as shown in Figure 14-13.

15. Select Create Link.

The Edit Filter Link dialog box opens, as shown in Figure 14-14.

16. On the Link Items tab, select the filter zone from the Filter drop down menu.

In Figure 14-14, we select Header - (1)PPSMemberSelectionFilter, which provides the zone number (1) and zone name (PPSMember SelectionFilter).

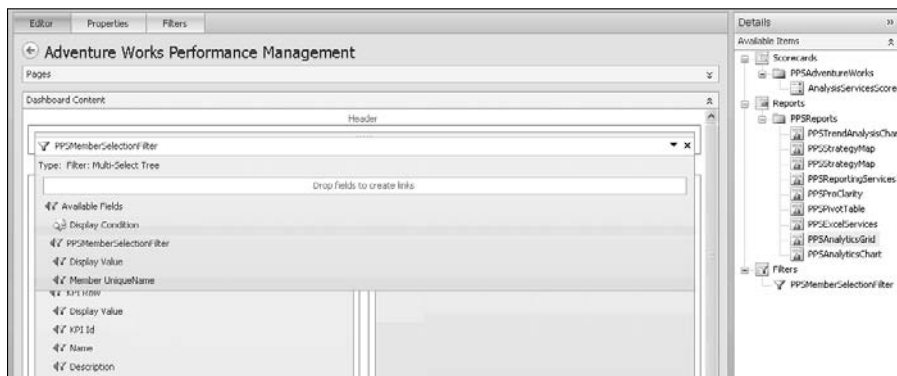


Figure 14-12:
Adding your
filter to your
dashboard.

Figure 14-13:
Creating
a link to
your filter.

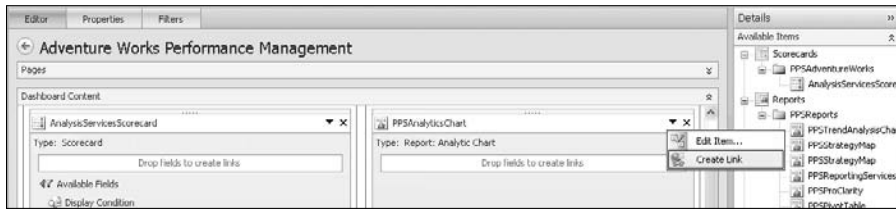


Figure 14-14:
Editing your
filter link.



17. Click the Link Options tab, as shown in Figure 14-15.

Figure 14-15:
Setting the
link options.



18. Choose a dashboard item endpoint from the options in the drop-down list.

A *dashboard item endpoint* is the row, column, measure, or dimension to which you want to connect your filter value. Your options may vary based on your report type and/or contents.

Analytics charts and grids show measures and report dimension options:

- If you choose a report dimension that is the same as the filter dimension, the report dimension will be filtered by the values in the filter. This is good to use if the dimension you want to filter is in the row, column, or background of the chart or grid. If the dimension doesn't show up as an option in your endpoint list, consider adding it to the background of your grid or chart.
- If you choose measures or a dimension that isn't the same as the filter, your measures or dimensions will be replaced by the values in the filter. When users select a filter, they usually expect not that dimensions will change, but that the underlying data will be filtered, so take care when using this option.



This is a good option if you want to provide a drop-down list of measures that users can select from, thus enabling them to choose which measures to display in their chart or grid.

Scorecards show filters, rows, and columns options:

- If you choose Filters, your scorecard will be filtered by the filter. This is good to use if you want to filter the overall scorecard.
- If you choose Rows or Columns, your rows or columns will be replaced by the values in the filter.



You can also filter strategy maps, trend analysis charts, PAS reports, Reporting Services reports, Excel Services reports, pivot tables, and pivot charts.

When we add a filter link to the analytics chart, we don't see a Sales Territory dimension in that report (so we don't have Sales Territory as a drop-down dashboard endpoint option). We go back to the PPSAnalyticsChart report, add Sales Territory to the background, and publish. Now, when we create the filter for the analytics chart, we have the Sales Territory option. Sales Territory is already an option in the analytics grid report, so we create a link to that as well.

19. Choose a source value (Member Unique Name or Display Value) from the options in the Source Value drop-down list.



Using Member Unique Name, especially when using Analysis Services, is a safer bet because Display Value may give you issues with members that have spaces (for example, North America). Display Value is better utilized when you are using a filter list that you created or one that isn't sourced from Analysis Services.

20. Click the OK button to close the Edit Filter Link dialog box and then publish your dashboard.

Zoning out: Reorganizing and sizing your zones

Zones can be moved, and you can drag and drop them where you want them.

To add a new zone, you can either drag and drop a report or scorecard onto your dashboard in between, above, or below existing zones. Or, you can follow these steps:

1. **Right-click on the dashboard page where you want to place a new zone.**

A zone options menu opens, as shown in Figure 14-16.

In Figure 14-16, we right-click the AnalysisServicesScorecard Report zone and are given the option to

- Add a zone to the left, right, above, or below that zone
- Split the existing zone into two (thereby adding another zone to the right)
- Delete the existing zone
- Edit the zone settings

2. **Select Add Right to add a new zone to the right of your existing zone.**

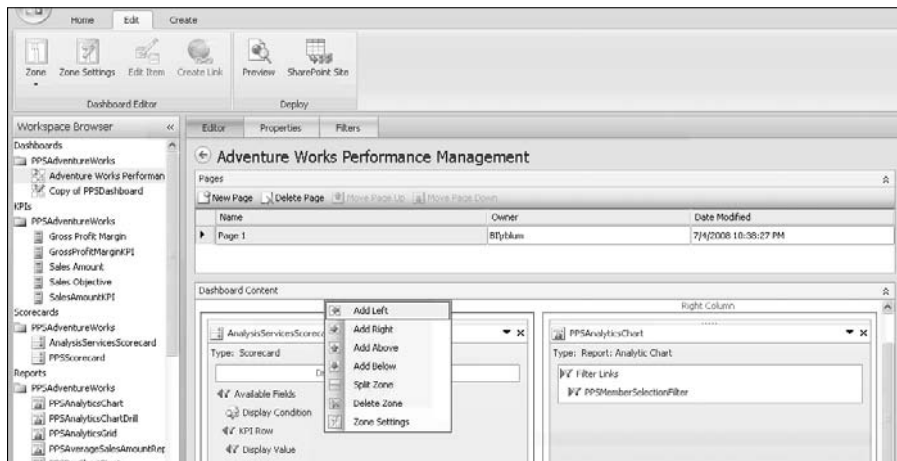


Figure 14-16:
Adding,
removing,
and splitting
a zone.

You can also resize an existing zone. Often one of your side-by-side reports requires a bit more room than the other. By default, zones split a Web page evenly; hence zones 2 across or 2 down default to a 50-50 split of the Web page. But you can adjust this to suit your reporting needs by following these steps:

1. **Click the down arrow in the header of the zone that you want to decrease.**

A zone options menu opens.

If you will resize using the following Specify Percentage Of Dashboard method, you have to decrease one zone first so that you can increase another, because your total percentage can't be greater than 100 percent, and each zone will default to half, or 50 percent.



2. **Select Edit Item.**

The Edit Item dialog box opens, as shown in Figure 14-17.

3. **Click the Size tab.**

4. **Choose the Specify Width option, and then choose either Specify Percentage Of Dashboard Page or Specify Pixels.**

We select Specify Percentage Of Dashboard Page, and then change the analytic chart zone width to 40 percent.

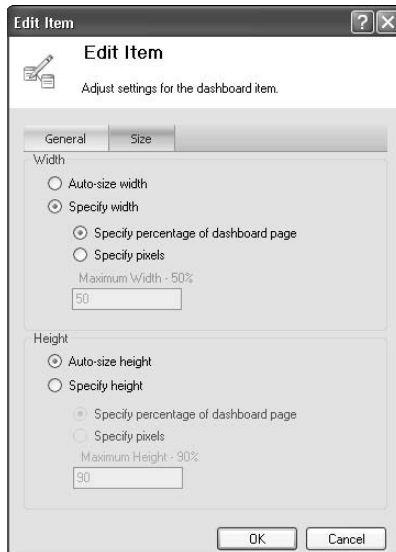


Figure 14-17:
Resizing
your
dashboard
zones.

5. Repeat with other zones as necessary.

We change the size of the scorecard zone to 60 percent, thus giving the scorecard more room on our dashboard page.

Finally, you can rename your dashboard by following these steps:

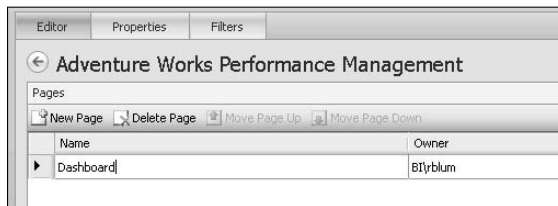
1. Click the page name in the Pages section of the Editor frame.

You should now be able to edit the page name.

2. Type in your new name.

In Figure 14-18, we change the page name to **Dashboard**.

Figure 14-18:
Renaming
your
dashboard
page.



Adding pages to your dashboard

A dashboard can contain many pages. To a user, it may look like many dashboards exist, but technically, it's one dashboard with many pages. You can think of a Dashboard (with a capital D) as a set of many dashboards (with a lowercase d) that you deploy to a customer group. You might have an Executive Dashboard that has many pages of reports and dashboards for your executives, a Sales Dashboard that has many pages of reports and dashboards for your sales team, and so on.

Follow these steps to add a new page your existing dashboard:

1. Click the New Page icon on the toolbar of the Pages frame of the Editor tab.

The Select A Dashboard Page Template dialog box opens, as shown in Figure 14-2.

2. Select the template you want to start with, and click the OK button.

Your new page will be created and is ready to be filled with reports, scorecards, and filters.

3. Publish your dashboard.



The same property-setting methods that apply to the data source and indicator elements apply here as well. Refer to Chapter 9 for more information on setting security.

Delivering Your Dashboards to Users

Now that you've completed and published your dashboard, you have two options for the next steps:

- ✓ You can preview your dashboard to the preview site to review and unit test before you deploy to your SharePoint users.
- ✓ You can deploy your dashboard to SharePoint, thus creating a business performance management solution for your organization.

Previewing your dashboard

Previewing your dashboard as you build it is a good idea, if only to make sure that you are getting the results that you want from your filters and that the zone sizes are good for the reports in your dashboard.



The preview site is also a good place to share the dashboard with your QA team prior to deploying to SharePoint.

To preview your new (or any published) dashboard, follow these steps:

- 1. Click the Dashboard element header in your Workspace Browser.**
- 2. Click the Preview button on the Edit toolbar.**

The Deploy Dashboard To Preview Site dialog box opens to the Select A Dashboard Page, as shown in Figure 14-19.

- 3. Select the dashboard you want to preview, and click the Next button.**

The Specify A Location page opens in your dialog box.

We select Adventure Works Performance Management.

- 4. Enter your preview site location, which will look something like `http://ppsmonitoring.companyname.net/Preview`, and click the Finish button.**

Your preview site opens to the first page of your dashboard.

We enter the preview site URL and click the Finish button. Figure 14-20 shows the Adventure Works Performance Management dashboard on the preview site.

Figure 14-19:
Deploying
your
dashboard
in Preview
mode.

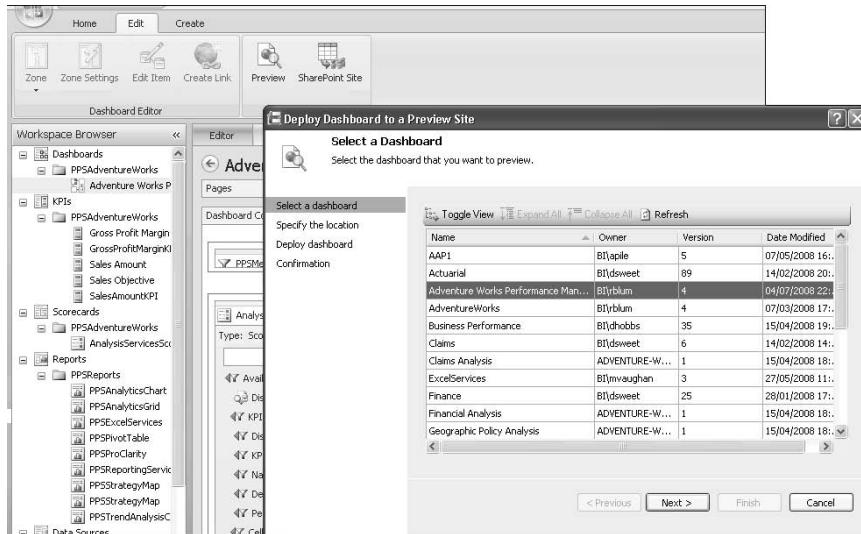
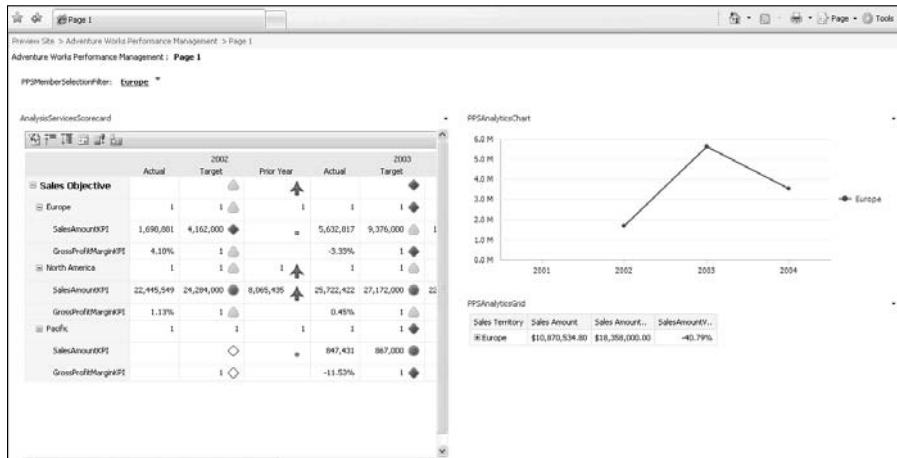


Figure 14-20:
Previewing
your
dashboard.



- The Sales Territory filter in the upper-left zone of the dashboard is set to its default value of Europe.
- The scorecard is below that but not linked to it.
- The analytics line chart and grid are on the right side of the dashboard, and both shown data for only Europe.

Looking good, ready to deploy.

Deploying to your SharePoint site

Here is the moment where all your hard work is about to pay off. You are about to revolutionize the way your company manages business performance by providing it with the information it needs to know.

To deploy your dashboard to SharePoint, follow these steps:

1. Click the Dashboard element header in your Workspace Browser.

2. Click the SharePoint button on the Edit toolbar.

The Deploy Dashboard dialog box opens.

3. Select the dashboard you want to deploy, and click the Next button.

The Specify A Location page opens in your dialog box.

We select Adventure Works Performance Management.

4. Enter your SharePoint site location, which will look something like `http://server/site`, and click the Next button.

The Select A Layout page opens in your dialog box.

We enter our SharePoint site name.

5. Select Default from the Master Page drop-down menu or choose another SharePoint template if you have one.

We select Default.

6. Click the Finish button.

Your new PerformancePoint dashboard opens in SharePoint.

That's it, you're done. Now do the following:

- ✔ Send your business users a link to their new PerformancePoint dashboard site, and let them know about all the great management reporting they now have access to.
- ✔ Tell your users to buy this book because Chapters 15–17 contain great user-guide material for analysts and managers that are new to both business performance management reporting as well as PerformancePoint monitoring and analytics.
 - Wait for the requests to start coming. When users see what PerformancePoint and you can do for them, they will want to revolutionize every aspect of their reporting process.

Chapter 15

Discovering Your Business Performance with Dashboards

In This Chapter

- ▶ Getting to and around your dashboard
- ▶ Making business decisions from your PerformancePoint reports
- ▶ Focusing in on the KPIs that indicate performance sooner, not later
- ▶ Figuring out which reports you have so that you know how to analyze them and so that you know which types to ask for

Unless you love spending the entire last week (at least) of every month and quarter assembling management reports (sifting through data, copying, pasting, entering data, formatting charts in spreadsheets, validating, printing, and so on), you can probably think of many other more constructive tasks you could be addressing. If you are the recipient of these reports, you have an idea of how your company, maybe even how your division, is doing — but you just don't necessarily know why. And a couple of other problems exist with this scenario:

- ✔ You shouldn't have to wait until quarter end to manage your business; you should have access to management information how and when you need to see it.
- ✔ The time spent manually assembling reports is time that could be spent analyzing reports to the level you need and making informed business decisions.
- ✔ Because of the time it takes to create the same reports every month, quarter, and so on, you are probably not getting a very holistic, or balanced, view of your business performance.

This is an area where business intelligence with PerformancePoint Server really shines:

- ✔ PerformancePoint provides you with current feedback on how you're doing with all the metrics and goals that are most important to you, rather than having to wait to the end of the quarter or year, when it may be too late to get back on track.
- ✔ PerformancePoint gives you the power to get to the level of information you need or to view the specific attributes or dimensions that give meaning to your business metrics.
- ✔ PerformancePoint makes it easy to communicate that information across your enterprise.

Getting to Your Dashboard

The first step to analyzing your business performance data is opening your dashboard. This is pretty straightforward. To access your dashboard, follow these steps:

- 1. Open your Web browser and enter your dashboard portal link in the address bar.**

You must have an active intranet or Internet connection to connect to your dashboard site.

This link may have been provided to you already and may look something like this: `http://servername/dashboardname.aspx`.

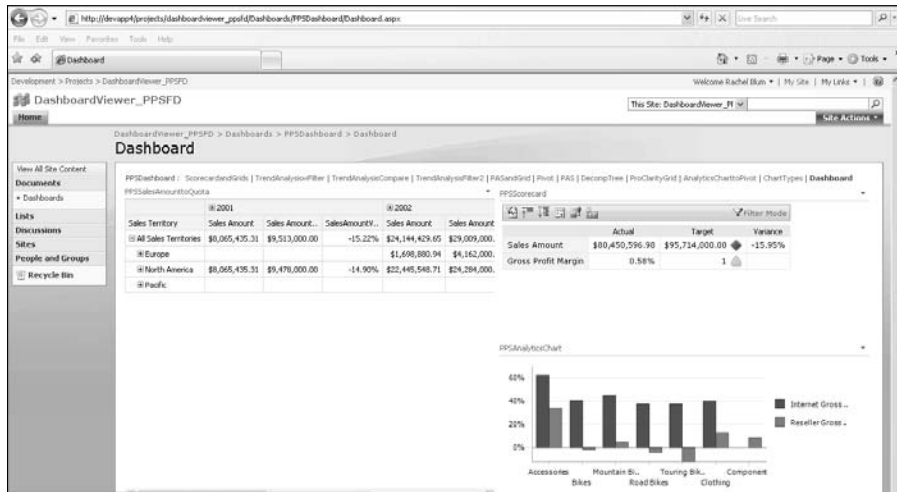
- 2. Click the Go button.**
- 3. If you are prompted with a security dialog box, enter your user ID and password.**
- 4. Click the OK button.**

Your dashboard page opens. An example of a dashboard page that is based on the AdventureWorks sample database is shown in Figure 15-1.



If you don't have a link or icon to access your dashboard, or if your link doesn't work or gives you an error, call the IT department, help desk, or person who set up your dashboard. You may also need permissions to access the site or underlying data sources, so mention that while you're on the phone.

Figure 15-1:
An example
of a PerformancePoint
dashboard.
Your
mileage
may vary.



Introducing the Dashboard Interface

PerformancePoint dashboards are endlessly configurable, so your dashboard is likely to be different from the sample shown in Figure 15-1.

But in general, dashboards are composed of the following:

- ✔ **Tabs:** Tabs organize the dashboards in some way and usually show up on the top of the dashboard page. If your interface contains multiple tabs, click the tab to display that category of information. Tabs may contain menus of reports, or they might bring you to another dashboard.
- ✔ **Menus:** Menus provide lists of actions you can take; they may appear on the dashboard page itself or on Internet Explorer's toolbar. Report-specific menus may also appear with the report zones (see Reports and Zones, later in this list).
- ✔ **Reports:** Reports are the individual displays that contain your KPI and dimension data in a variety of reporting formats (charts, grids, and scorecards). Each report allows you to view specified KPIs by specified business attributes (dimensions) at varying levels (hierarchies). For more information on reports, see Chapter 17.
- ✔ **Zones:** The space on the page that contains each report is called a zone. Will you ever need to know that? Probably not. . . .

- ✓ **Dashboard filters:** Dashboard filters are drop-down boxes of specific dimension values that, when selected, are applied to all the reports on the dashboard page. As opposed to a report filter, a dashboard filter changes the values of all the reports on the dashboard page, not just the individual report. For information on dashboard filters, see Chapter 17.

Determining What Kind of Reports You Have

A PerformancePoint dashboard is simply a Web page upon which is assembled several different reports. PerformancePoint allows the person who built the dashboard to choose from a variety of report templates. This is great for two primary reasons: Different types of reports are better for communicating different types of information, and some report types offer more flexibility or interactivity than others. For example, line charts are great for showing trends over time, but scorecards are great for comparing your company's actuals to its targets or budgets, so it's good to know which one you are working with.



Because you have so many report choices, PerformancePoint can widely address the reporting needs of your organization. But that also means that some differing techniques exist for analyzing data with different report types.

The types of reports you might be analyzing include the following:

- ✓ Analytics chart and grid
- ✓ Scorecard
- ✓ Strategy map
- ✓ Trend analysis chart
- ✓ Pivot table and chart
- ✓ ProClarity chart and grid
- ✓ ProClarity decomposition tree

Recognizing analytics grids and charts

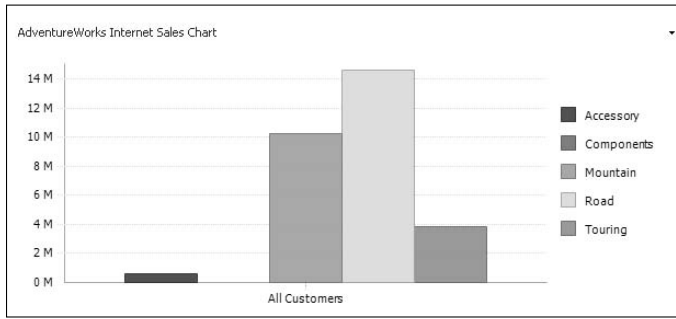
Analytics grids and charts show you your business performance information with numbers and graphs. See Figures 15-2 and 15-3.

The charts default to a particular color scheme, including blue, maroon, green and a taupe-ish gray. Nice.

Figure 15-2: An analytics grid communicates performance with numbers.

AdventureSales						
All Periods						
			CY 2001		CY 2002	
Product Model Catego...	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Prc
All Products	\$109,809,274.20	11.43%	\$11,171,022.63	14.11%	\$30,721,408.64	9.7
Accessories	\$1,272,057.89	49.88%	\$20,235.36	40.38%	\$92,735.35	30.6
Bikes	\$94,620,526.21	11.11%	\$10,500,935.96	14.43%	\$26,532,993.66	9.1
Clothing	\$2,117,613.45	17.42%	\$34,376.34	-5.56%	\$485,587.15	21.0
Components	\$11,799,076.66	8.75%	\$615,474.98	8.78%	\$3,610,092.47	11.6

Figure 15-3: An analytics chart communicates performance with graphs.



Recognizing scorecards

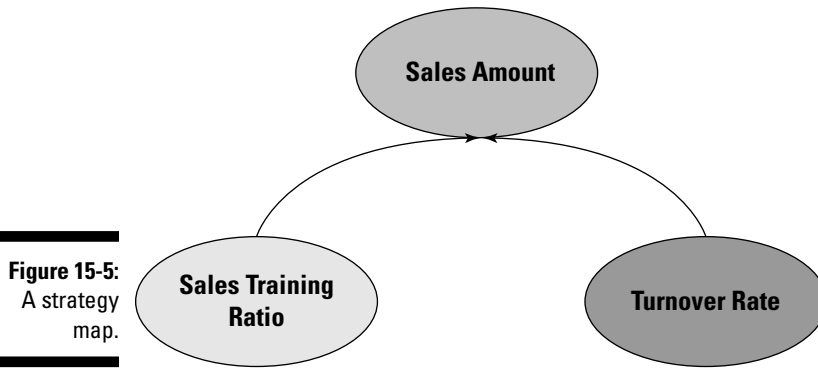
Scorecards show you how your business is performing against goals. They show KPI values of actuals and goals with graphic indicators. See Figure 15-4.

Figure 15-4: A scorecard shows you how your business is performing against its goals.

PPSScorecard			
	Actual	Target	Variance
Sales Amount	\$80,450,596.98	\$95,714,000.00	-15.95%
Gross Profit Margin	0.58%	1	

Recognizing strategy maps

Strategy maps show you your overall business performance strategy and indicate how your KPIs are connected to each other. A strategy map looks like a Visio diagram (because it is), where each shape represents a KPI. See Figure 15-5.



Recognizing trend analysis charts

Trend analysis charts show historical trends over time and predict future trends based on historical data. A trend analysis chart looks like a line chart, where part of the line is blue (actual data) and part of the line is red (predicted data). See Figure 15-6.

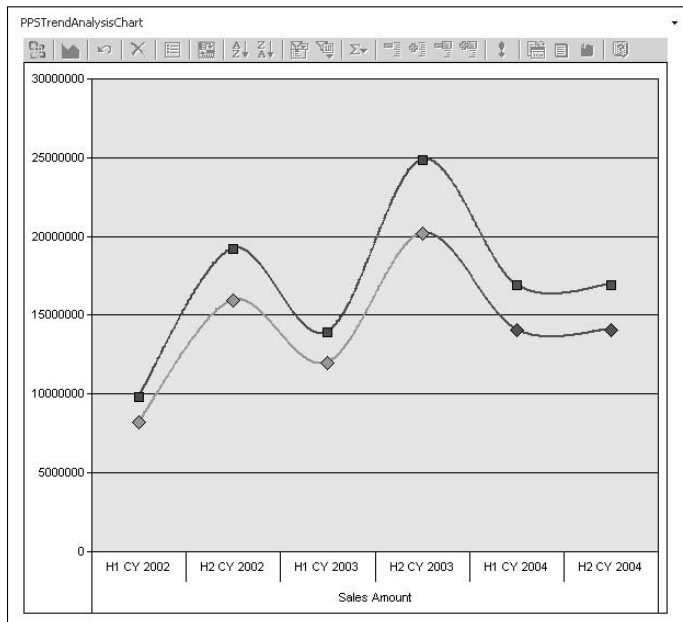


Figure 15-6:
A trend analysis chart shows historical data and predicts new trends.

Recognizing pivot tables and charts

Pivot tables and charts look like Excel pivot tables and charts and have a toolbar, as shown in Figures 15-7 and 15-8.

Figure 15-7:
A pivot table.

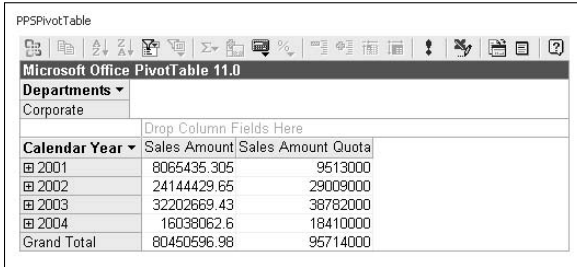
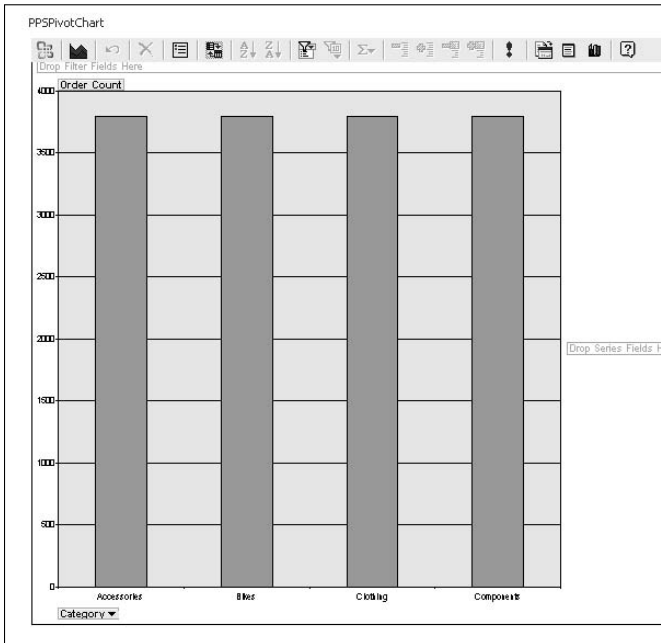


Figure 15-8:
A pivot chart.



Recognizing ProClarity charts and grids

ProClarity grids and charts have a slightly different look (by default) than analytics charts and grids. The dimension names are usually shaded in gray instead of blue, and the background of the report zone is grayish instead of

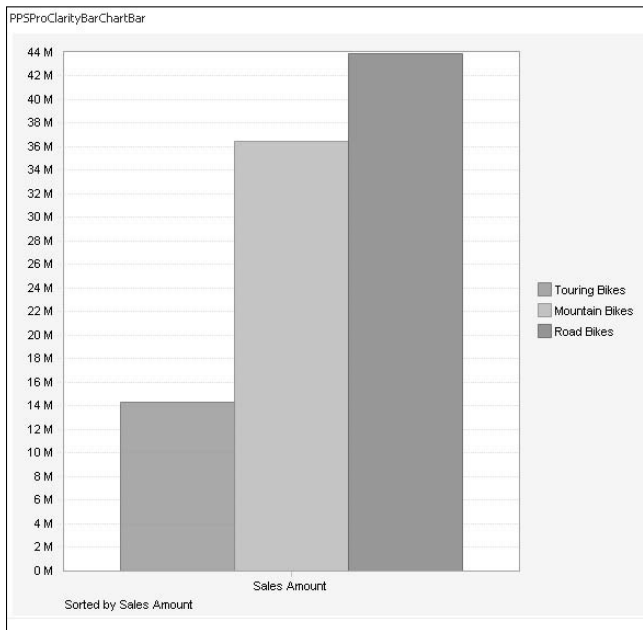
white. The big giveaway is that if you right-click a cell in a ProClarity grid, you don't get a report options menu. You have to click a cell to get the options menu to open.

Also, the charts default to a particular color scheme including blue, orange, and yellow. Figure 15-9 shows a ProClarity grid, while Figure 15-10 displays a ProClarity chart.

Figure 15-9:
A ProClarity
grid.

PPSProClarityGrid	
	Sales Amount
↓ Accessories	\$1,272,057.89
↓ Bikes	\$94,620,526.21
↓ Clothing	\$2,117,613.45
↓ Components	\$11,799,076.66

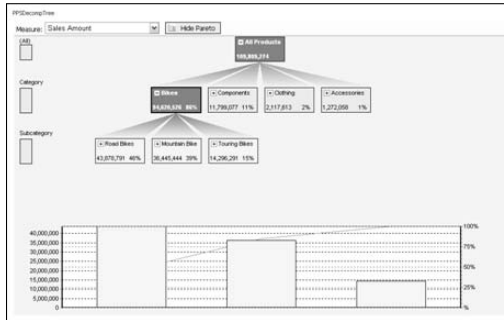
Figure 15-10:
A ProClarity
chart.



Recognizing ProClarity decomposition trees

Decomposition trees look a bit like organization charts, as shown in Figure 15-11.

Figure 15-11:
A ProClarity
decomposition
tree.



Other report types, which are not built into PerformancePoint or ProClarity, can be deployed to the same PerformancePoint dashboards. These report types may include the following:

- ✓ Reporting services
- ✓ Excel Web services
- ✓ Proprietary Web applications or reports built by someone in your organization

Chapter 17 shows you how to get the most out of your business information and how you can slice it, dice it, dig into the details, drill up, drill down, export, and print it. But next, we show you how PerformancePoint can help you make better business decisions.

Using Dashboard Reports to Make Decisions

Just as the dashboard in your car provides feedback about how things are going *now* (how fast you're going, how much gas you have left, how hot your engine is, and so on), PerformancePoint dashboards let you know how your business is performing right now. Dashboards provide an at-a-glance, consolidated view of your most important business information. Like a car dashboard, PerformancePoint dashboards let you know when everything's fine, when things are going exceptionally well, or when it may be time to pull over and take corrective action.

A dashboard quickly and clearly tells you how things are going for your organization as a whole and for the areas you manage. Dashboards accomplish this feat by displaying multiple reports or charts with metrics that best measure your company's performance on a single page, as shown in Figure 15-1.

So, if it's so easy, why are two chapters devoted to showing you how to analyze your dashboards and reports? Well, just in case it's not that easy. If you are experienced with business intelligence analytical tools and your understanding of business metrics is high, just dive in to the reports. Follow these steps:

1. **Right-click any cell.**
2. **Select a menu item.**
3. **See what you get.**

But, if you need a little more guidance than that, read on.

Understanding the metrics in your reports

Metrics are the numbers that measure how well or poorly your company is performing. The metrics that PerformancePoint displays in scorecards are called *key performance indicators*, or KPIs. A metric is a KPI if

- ✓ It is *measurable*.
- ✓ It is representative of a company *objective*.
- ✓ You can at least theoretically affect the metric through a *change* in business practice, process, planning, or strategy.

The concept of business performance management is, of course, that you can *manage* you business's *performance*, that is, identify issues and act on them. You may get enough information from one report on your dashboard to see where your business has problems, or you may find that the combination of information across the dashboard gives you a better understanding of what is wrong.

Identifying business performance issues in your dashboards

PerformancePoint offers a number of different report designs and enables your report developer to choose a style that best communicates to you how your business is performing. Your ability to make business decisions depends on your ability to read and understand the report you are given and to get to the source of the issues you identify. PerformancePoint dashboards provide you with meaningful combinations of reports that, at a glance, provide you with significant information but that also provide you with direction for further analysis.

Identifying issues in a scorecard

Scorecards are superior for comparing actual to budget data. As shown in Figure 15-4, a scorecard is a visual grouping of KPIs with graphics that indicate how the KPI is measuring up against a goal or budget.

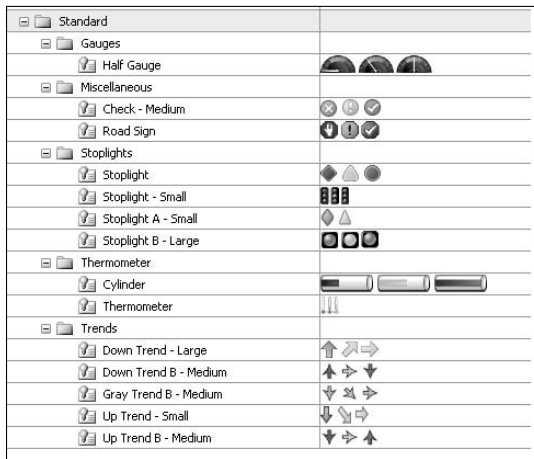
Although your scorecard might look a little different than Figure 15-4, in general, you will see a set of KPI measures as your rows, a column for actual data, and a column for budget data. In addition, you will see graphics that show the status of those KPIs.

You usually have three levels of an indicator that reflect the value of the comparison of an actual to a goal (for more information on how goals and indicators are set, see Chapter 11):

- ✔ **Good:** Your actual meets or exceeds your goal — good job.
- ✔ **Borderline:** Your actual just misses your goal — keep an eye on it.
- ✔ **Bad:** Your actual fails to meet your goal — take action.

But the scorecard doesn't always show you the numeric difference or variance between target and goal. Instead, it uses indicators (pictures that represent good, borderline, and bad), as shown in Figure 15-12.

Figure 15-12:
Indicating
the good,
the bad,
and the
borderline.



To view how your KPIs measure up against your goals, follow these steps:

1. Find the scorecard report on your dashboard.

It looks like Figure 15-4.

2. Identify KPIs with bad and borderline indicators. See Figure 15-12.

In Figure 15-4, we are looking at our actual sales amount KPI versus the value that has been budgeted for that KPI — sales amount quota. The goal indicator is yellow, representing borderline. As the regional sales director, you want to dig a bit deeper to see whether you can pinpoint where your sales aren't meeting quota.

Here is where a PerformancePoint scorecard has a weakness: You can't drill up, drill down, drill down to, or drill down through in a scorecard. You might be able to expand and collapse a specified dimension, but flexibility is limited; you can't really analyze your data to get to the source of the issue. But here's also where the PerformancePoint dashboard has a strength. You can use the information you have ascertained from the scorecard and analyze that information within one of the more interactive reports, such as the following:

- ✓ Grids and charts
- ✓ Decomposition trees



It is also possible for your report developer to connect scorecards to grids and charts so when you click a KPI value in your scorecard, all of the grids and charts in your dashboard change to represent that KPI value.

Digging deeper for the source of the issue

Are you the person who always takes data from your reports and exports it to Excel so that you can analyze it? You know you are. But with analytical reports like grids, charts, and decomposition trees, you really don't have to: These reports are great for allowing you to take your business knowledge and apply that to your analysis of the data. After you identify an issue with your scorecard (see the previous section of this chapter), dig deeper to the source of the issue right on your dashboard.

You have already identified the poorly performing KPIs. To find the cause, you can use an analytics grid report to dig into the details. An analytics grid is shown in Figure 15-13.

Figure 15-13:
Showing you what's wrong and giving you the power to dig deeper.

PPSSalesAmounttoQuota			
All Periods			
Employee Department	Sales Amount	Sales Amount..	SalesAmountV..
Sales	\$80,450,596.98	\$95,714,000.00	-15.95%

The following steps show how to take use what you’ve learned about your business performance from a scorecard, and apply that knowledge to report analysis:

1. Select one indicator for further analysis, and consider the dimensions that might impact that indicator.

This is where your business acumen comes in. While you can explore your KPI by any dimension in your cube, it helps to target those you think may have some impact.



Dimensions that are fairly common across industries (aside from some semantics) and also highly useful for analysis include the following:

- Geography: Country, region, state, city, zip code
- Business organization: Division, business unit, line of business, manager, employee
- Time: Sales date; accounting date by year, quarter, month, and day

Because we are looking at sales amount, we are interested in seeing how performance is spread across sales territories. This tells us whether we have to resolve sales issues across the whole enterprise, or whether we can focus on a few or only one territory.

2. If the dimension you want to analyze is already in your grid, drill down for a more detailed look. If not, drill down to the dimension you identified in Step 1.



For instructions on how to drill down or drill down to, see Chapter 16.

Our grid is showing sales amount, sales amount quota, and the variance of these measures by the dimension Employee Department. That might be interesting to explore. But our objective is not to necessarily address issues at the individual employee level (we’ll leave that to the regional sales managers), but rather to monitor performance at a regional or territory level. So if we drill down to Sales Territory, our grid now looks like Figure 15-14.

Figure 15-14:
Looking at the KPI (Sales Amount) by the chosen dimension (Sales Territory).

PP5SalesAmounttoQuota			
☑ All Periods			
Sales Territory	Sales Amount	Sales Amount..	SalesAmountV..
☑ All Sales Territories	\$80,450,596.98	\$95,714,000.00	-15.95%

3. Identify the rows of your grid that show the worst performance.

Our grid is at the top level of Sales Territory. To get some more detailed information, we expand the top level to see the country dimension members, as shown in Figure 15-15 (for more information on expanding, see Chapter 16).

Figure 15-15:
Drilling down on Sales Territory to get to countries.

PPSSalesAmounttoQuota			
	All Periods		
Sales Territory	Sales Amount	Sales Amount..	SalesAmountV..
All Sales Territories	\$80,450,596.98	\$95,714,000.00	-15.95%
Europe	\$10,870,534.80	\$18,358,000.00	-40.79%
France	\$4,607,537.94	\$5,557,000.00	-17.09%
Germany	\$1,983,988.04	\$2,287,000.00	-13.25%
United Kingdom	\$4,279,008.83	\$10,514,000.00	-59.30%
North America	\$67,985,726.81	\$73,283,000.00	-7.23%
Pacific	\$1,594,335.38	\$1,687,000.00	-5.49%

Expanding Sales Territory, we can see that the sales amount variance for Europe, at 40.79% below budget, and then the United Kingdom, at 59.30% below budget, looks extremely low. Even though our overall variance from budget was -15.95%, as we drill down and stratify the data, we can see areas that are contributing more to poor performance than others. So, should we close the UK sales region? Not so quickly.

We know that this report is showing sales data for a certain amount of time, but we aren't exactly sure what time frame we are viewing. By drilling down to calendar year, as shown in Figure 15-16, we can see that the data represents four years, 2001-2004, and more importantly, we can see that the UK's variance from budget is improving over the course of those years. Given that for the current year, the variance from budget is much lower than we thought (-42.3%) and that trends are getting better, we will not close the UK sales region and we will not yell at the UK sales manager for doing a lousy job (yet).

Figure 15-16:
Expanding years to look at trends.

PPSSalesAmounttoQuota												
	2001			2002			2003			2004		
Sales Territory	Sales Amount	Sales Amount..	SalesAmountV..	Sales Amount	Sales Amount..	SalesAmountV..	Sales Amount	Sales Amount..	SalesAmountV..	Sales Amount	Sales Amount..	SalesAmountV..
All Sales Territories	\$8,065,435.31	\$9,513,000.00	-15.22%	\$24,144,429.65	\$29,009,000.00	-16.77%	\$32,202,669.43	\$38,782,000.00	-16.96%	\$16,038,042.60	\$18,410,000.00	-12.88%
Europe				\$1,498,880.94	\$4,162,000.00	-69.18%	\$5,832,816.58	\$9,376,000.00	-39.92%	\$3,538,837.31	\$4,820,000.00	-26.56%
France				\$657,123.18	\$1,002,000.00	-14.46%	\$2,373,804.04	\$2,940,000.00	-19.26%	\$1,376,610.72	\$1,615,000.00	-14.76%
Germany							\$1,098,866.68	\$1,294,000.00	-15.08%	\$985,121.35	\$993,000.00	-10.86%
United Kingdom				\$841,757.76	\$3,160,000.00	-73.36%	\$2,160,145.83	\$5,142,000.00	-57.99%	\$1,277,105.23	\$2,212,000.00	-42.51%
North America	\$8,065,435.31	\$9,478,000.00	-14.90%	\$22,445,948.71	\$24,204,000.00	-7.57%	\$25,722,421.91	\$27,172,000.00	-6.20%	\$11,752,320.00	\$12,349,000.00	-4.85%
Pacific							\$847,430.96	\$867,000.00	-2.26%	\$746,904.41	\$820,000.00	-8.91%

4. Make decisions, take action, and reassess your plan.

We will work with the UK office to explore what its staff has been doing to meet its goals and reassess whether the business process is working. We might also consider that in the next planning cycle, we should

include a KPI that represents the decrease in sales amount variance from prior year, because we find that just looking at variance of actual to budget doesn't necessarily give us the full picture we need to make business decisions. Thus, we would be moving on to the next phases of the business performance management cycle — taking action and reassessing the plan.

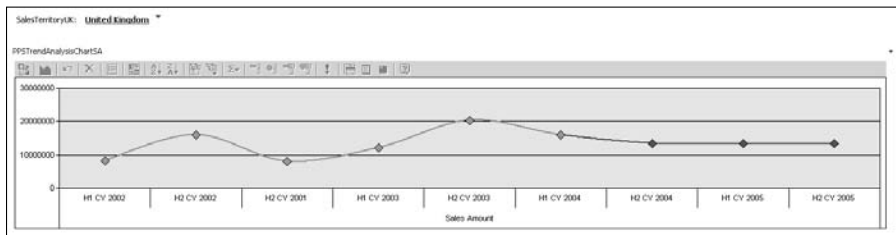
Predicting future trends with trend analysis charts

If hindsight is 20/20, foresight must be, what, at least 30/30? Analyzing historic data to monitor performance is extremely powerful, and the majority of business performance reports focus on this method of analysis. But only having historical data to look at leaves you having to guess or infer what might happen in the future if you don't change course. Now if your data is very *linear*, that is, the points of the data follow a straight line, it is easy to imagine what the future trend might look like — just follow the line.

But you know that data is not often as simple or linear as that. Most businesses have at least some sort of seasonal *variation*, or peaks and valleys, in their business performance data.

Predictive analytics, or statistical analysis of data to predict future trends, is not new. Many industries regularly incorporate highly complex statistical analyses into their business analyses (risk management, underwriting, pricing, and so on). But what is new is that PerformancePoint now extends the benefits of predictive analytics to a whole new audience — you. And it does so in a very simple and straightforward way: through trend analysis charts, as shown in Figure 15-17.

Figure 15-17:
Predicting future trends with a trend analysis chart.



These graphs show you how your KPIs will continue to perform over specified time periods, given how your KPIs have performed in the past. To analyze your trend analysis chart, follow these steps:

1. Identify the historical versus the future chart points.

The historical points are blue, and the predicted points are red.

In Figure 15-17, we are looking at a trend of sales amount over calendar semesters (half-years) for all our sales territories. The first six points (in blue on an actual trend analysis chart) represent the historical data of six half-years from 2002 to 2004, and the report is forecasting three half-years going forward. This information was set by our report developer.

2. Use the dashboard filter to select a specific dimension member.

For more information on using dashboard filters, see Chapter 17.

The dashboard filter at the top of our chart allows us to view the trend analysis by all our sales territories, any combination, or just one at a time. If we filter on just UK, we can view the predicted future trends for the next three periods, based on how the UK has been performing for the last six periods.

3. Follow your future trend points, and see how they match your expected goals.

You can see on this chart that our UK sales may have some seasonal fluctuations. Looking forward, UK sales seem to be at least holding steady, but not significantly rising.

So, if we take this analysis in conjunction with some other information we have discovered with other reports on the dashboard (see the sections “Identifying issues in a scorecard” and “Digging deeper for the source of the issue,” earlier in this chapter), we can see the following:

- The UK is not meeting its budgetary sales goal.
but . . .
- Sales have been increasing over the past couple of years.
and . . .
- Sales could continue to increase over the next couple of periods, or at least they should hold steady.
However . . .
- Sales will still not meet their goal for our predicted semesters, although the numbers are getting closer.

4. Make decisions, take action, and reassess your plan.

So, even if sales increase, they will not likely increase quickly enough to meet goals for the next three periods. So, we won't give the UK the Region of the Year Award, but neither will we shut them down. Instead, we will work with the regional sales manager to focus on the processes that are improving the region's sales and perhaps build upon them. In terms of planning, we might also consider changing our sales goals over the next couple of periods in line with what is a more likely annual increase in sales, rather than setting the budgetary expectation that improvements will happen immediately.



While it is important to set goals high, it is also important that the scorecard that monitors business performance be a trustworthy and realistic source of successes and failures: Your scorecard must set the proper expectations.

Understanding how KPIs impact each other with strategy maps

KPIs aren't necessarily mutually exclusive; they can impact each other in a cause-and-effect or *lagging-versus-leading* sort of way. This means that you will see a change in a *leading* (or causal) KPI before you see that same change in a *lagging* (or affected) KPI.

Business users are often looking at lagging KPIs as the primary metrics of their business performance management process for two primary reasons:

- ✓ They are typically the metrics that most directly impact the company's bottom line.
- ✓ They are the metrics that are easiest to capture.

For example, sales amount would likely be considered a lagging indicator, because a future change in sales amount could be predicted by these other KPIs:

- ✓ High turnover in your sales force might cause sales amount to go down during a future time period.
- ✓ Increase in sales training might cause sales amount to go up in a future time period.

While monitoring sales amount is useful — it directly impacts your company's bottom line — if you can identify the KPIs that impact sales amount, or any other important KPI, and monitor the performance of those leading indicators, you can make business decisions sooner that can change a negative course.

And this is where PerformancePoint comes in handy yet again. The primary objective of a strategy map is to show you at a glance your company's overall strategy. That's useful but not particularly actionable. However, a very actionable by-product is that a strategy map shows you at a glance how your KPIs are related to each other. Hence, if one of your leading indicators starts to show a performance issue, you'll get a good idea of how that impact will flow to your other more-lagging KPIs.

A strategy map, like the one shown in Figure 15-5, provides a picture of the following:

- ✓ The status of all your KPIs using color coding for each KPI shape: Red is bad, yellow is borderline, and green is good.
- ✓ How KPIs are associated to each other: Arrows point from leading KPIs to lagging KPIs.

To analyze a strategy map, follow these steps:

1. Identify the yellow or red KPI shapes.

The KPI shapes in Figure 15-5 show the following for a given time period:

- Turnover rate KPI (bottom left) is red — bad.
- Sales training ratio KPI (bottom right) is yellow — borderline.
- Sales amount KPI (top) is green — good.

2. Follow the arrows from your red or yellow shapes to see which KPIs they impact.

This example shows that because both employee turnover rate and sales training ratio are not meeting performance goals, we can expect that at some point, this will affect how the sales amount measures up against its goal.

3. Make decisions, take action, and reassess the plan.

Using the knowledge we've just gained, we know that we shouldn't just depend on the status of sales amount, the lagging indicator. Even though this metric most directly impacts the bottom line, we can see that if we don't change course for the leading indicators, our sales amount could be in trouble. In this case, we will work with both Human Resources and Training to address the staff turnover and training issues, particularly in reference to the plan.



The point of the preceding examples is not that making business decisions and enforcing changes within an organization are easy. The point is that if you even want to get to the point where you can make decisions, you need the proper information when and in the manner you need to get it. And that is what PerformancePoint provides.

Chapter 16

Analyzing Your Business Reports

In This Chapter

- ▶ Reporting what you need
 - ▶ Drilling, expanding, and showing detail to get to the most meaningful data
-

If you love getting and sorting through stacks of paper reports or spreadsheets long after you could have really used them, if you love calling your IT department every time you need a report and waiting days for turnaround, and if you love scrambling at the last minute to get your management reports ready for presentation, you are going to hate PerformancePoint. If not, you are in luck. PerformancePoint is going to give you not only all the management information you need but also the ability to analyze, export, print, and present that information, easily and when you need to.

One of the reasons you've been getting those stacks of paper is that so many ways exist to look at the same numbers, that is, there are so many dimensions by which you want to see the KPIs or metrics that impact your business. Dimensions are attributes that define your business structure (like geography, line of business, or sales organization) or time (like sales, accounting, or reporting date). And even within each of these dimensions, you find levels or hierarchies of information (like country/state/city or reporting year/month/day). Wouldn't it be nice if you could view your data by the dimensions and levels that you want without having to sift through everyone else's stuff? Of course it would. And yes, now you can.

In this chapter, you review how you get to your dashboard, what you see when you are there, and how to get what you need from your reports.

Understanding Analytical Methods

Your supervisor just walked into your office. Sales in the Northeast are down and he wants to know why, and he has to make a presentation on the topic in just a couple of hours — so the scramble begins. The month-end financial statements need to be assembled, and no one goes home until they are ready for tomorrow’s presentation to the CEO — so the scramble continues. All this time spent putting together reports, and you missed the fact that 25 percent of your customers closed their accounts in the last month in one of your regions and you have no idea why; in fact, you didn’t even realize that a problem existed. Not having the right information where and when you need it puts your company, and possibly your job, at risk.

But now with PerformancePoint, you have a real business intelligence and performance management system right in front of you. No more scrambling for information, no more not knowing why something is happening, and no more not knowing that it happened. PerformancePoint empowers you by presenting current business information and gives you the tools to analyze these metrics, identifying trends, anomalies, and issues in time to take corrective action. In fact, Microsoft should have named the tool *EmPowerPoint*.

PerformancePoint analytics empower you to find the “what” and answer the “why.” It helps you do the following things:

✔ **View your data at higher and lower levels of a business hierarchy:**

This is called *drilling up* and *collapsing* (higher) and *drilling down* and *expanding* (lower). You may be looking at a KPI by reporting year, but you want to see it by reporting month, so drill down or expand. You may be looking at a KPI by salesperson, but you want to see it for that whole sales division, so drill up or collapse. For more details, see the sections “Viewing lower levels by expanding and collapsing your data” and “Honing in on lower levels of data by drilling up and down,” later in this chapter.

✔ **View your report by any number of dimensions in columns or rows, or x and y chart axes:** This is called slicing or drilling down to. *Slicing* your data allows you to view your KPIs by any combination of business dimensions by adding or removing dimensions from your view.

Drilling down to differs from regular drilling down in that with this method, you can go from your current view at any level of a business hierarchy to an entirely different hierarchy, but maintain the filter of where you were.

Perhaps you have drilled down on your geography hierarchy from U.S. to New Jersey (go Jersey!), and you are interested in looking at the detail of New Jersey by line of business. You can now either add line of business as an extra dimension (slicing, keeping state and line of business in your view) *or* you can drill from New Jersey *to* line of business (drill down to, maintaining state as a filter but replacing it in your view by line of business). Either way, you arrive at the same result but with a different view — it just depends on what you want to see. Also, you can *pivot* your report by moving your row data into your columns and your column data into your rows (or flipping your *x* and *y* axes). See the sections “Changing your report dimensions with slicing and dicing” later in this chapter and in Chapter 17.

- ✔ **View the transaction details that are feeding your KPIs:** This is *drilling to detail*, and it allows you to see the detail of what is happening beneath the surface of your dashboard or report, to see the transactional records that are feeding your metrics. This allows you to see where issues may be in your organization but also the specific details of what might be contributing to those issues. See the section “Drilling through your summary report to get to the detail records” later in this chapter.

Learning What Your Reports Can Do

PerformancePoint offers so many different kinds of reports, and they don't all have the same analytical capabilities. That is, not all of them allow you to drill up, drill down, slice, dice, filter, sort, and so on. So instead of having you sit in front of a report wondering why you can't get it to do what you want, we've already done that for you. Take a look at Table 16-1 to make sure that your report type can actually do what you want (Y means yes and S means sometimes, to be explained in subsequent sections).

Table 16-1 Analytical Functionality by Report Type

<i>Report Type</i>	<i>Expand & Collapse</i>	<i>Drill Up & Down</i>	<i>Drill Down To</i>	<i>Change Dims</i>	<i>Change Measures</i>	<i>Sort</i>	<i>Filter</i>	<i>Pivot</i>	<i>Change Report Type</i>
Analytics Grid	Y	Y	Y	S	S	Y	Y	Y	Y
Analytics Chart		Y	Y	S	S	Y	Y	Y	Y
Pivot Table	Y	Y		Y	Y	Y	Y	Y	
Pivot Chart		Y		Y	Y	Y	Y	Y	Y
Scorecard	Y						Y		
Trend Analysis Chart							Y		
Strategy Map									
ProClarity Grid (in PPS)	Y	Y					Y		
ProClarity Chart (in PPS)	Y	Y					Y		
ProClarity Decomp Tree (In PPS)	Y				Y		Y		

Viewing lower levels by expanding and collapsing your data

Expanding and collapsing allow you to look at a row or column member at a lower level of detail, but keep the rest of the report that you are viewing as is. But you cannot expand or collapse on just any row of data; you can only expand and collapse on what is called a *hierarchy*.

Hierarchies are prebuilt into your data cube by your IT developer. They are sets of related attributes that can show different levels of a business dimension. For example:

- ✓ Organization hierarchy might contain Division↔Business Unit↔Line of Business
- ✓ Staff hierarchy might contain Corporate↔Managers↔Employees
- ✓ Geography hierarchy might contain State↔County↔City
- ✓ Date hierarchy might contain Year↔Quarter↔Month

Expanding and collapsing with analytics grids, pivot tables, and charts (and scorecards)

The following example shows you how to expand and collapse on an analytics grid, but the technique is the same on pivot tables and charts as well. Expanding in a scorecard is discussed later in this section. To expand/collapse a dimension value for lower-level detail, follow these steps:

1. Right-click the dimension member cell you want to expand.

Your reporting options menu opens, as shown in Figure 16-1.

All Periods		2001		2002		2003		2004		
Product Model Catego..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..
All Products	\$80,450,596.98	0.58%	\$8,065,435.31	4.08%	\$24,144,429.65	1.34%	\$32,202,669.43	-0.52%	\$16,038,062.60	-0.08%

<ul style="list-style-type: none"> Drill Down Drill Down To ▶ Drill Up Expand Show Only Remove Show Properties... Filter ▶ Pivot Report Type ▶ Format Report ▶ Show Information

Figure 16-1:
Your cell's
reporting
options
menu.

In the Figure 16-1, we have a report of sales amount and gross profit margin (our KPIs or measures) with All Products in the rows and Calendar Years in the columns (the dimensions, or attributes by which we want to view the KPIs or measures).

From this view, you can see that in 2001, we had a sales amount of \$8,065,435 and a gross profit margin of 4.08%, and although the sales amount almost tripled in 2002, the gross profit margin dipped to 1.34%. Sales are up — good. Margins are down — not as good.

If we could look at this information by product lines, we might get a clearer picture of where these changes are happening, thus directing us to potential business decisions or actions for affected product lines, or to further analysis by product line.

So in this case, we right-click the All Products cell.

2. Select Expand from the options menu.

If this is a pivot table, select Expand Items.

Figure 16-2 shows the report expanded from All Products. Now you can see the detail records below All Products along with the top level to include the following:

- Accessories
- Bikes
- Clothing
- Components

Now we can look at the changes in the gross profit margin by product line and find the specific product categories or subcategories where the margin is dropping.

Figure 16-2:
The analytic grid showing sales amount and gross profit margins by products and years.

Figure17-2

Product Model Catego..	All Periods		2001		2002		2003		2004	
	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..	Sales Amount	Gross Profit..
All Products	\$80,450,596.98	0.58%	\$8,065,435.31	4.08%	\$24,144,429.65	1.34%	\$32,202,669.43	-0.52%	\$16,036,062.60	-0.08%
Accessories	\$571,297.93	34.27%	\$20,235.36	40.38%	\$92,735.35	30.57%	\$296,532.88	33.66%	\$161,794.33	36.75%
Bikes	\$66,302,381.56	-1.49%	\$7,395,348.63	3.63%	\$19,956,014.67	-1.17%	\$25,551,775.07	-3.06%	\$13,399,243.18	-1.82%
Clothing	\$1,777,840.84	13.07%	\$34,376.34	-5.56%	\$485,587.15	21.03%	\$871,864.19	11.36%	\$386,013.16	8.59%
Components	\$11,799,076.66	8.75%	\$615,474.98	8.78%	\$3,610,092.47	11.80%	\$5,492,497.29	7.57%	\$2,091,011.92	6.60%

And, we can continue to expand until we come to the end of the hierarchy.

To collapse your report back to All Products follow these steps:

1. **Right-click a top line/summary cell.**

In Figure 16-3, we right-click All Products. The reporting options menu opens.

Figure 16-3:
The All
Products
reporting
options
menu.

		All Periods		2001		2002		2003		2004	
Product Model Catego...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	
All Products	\$20,450,096.98	0.58%	\$8,065,435.31	4.08%	\$24,144,429.65	1.34%	\$32,202,669.43	-0.52%	\$16,038,062.60	-0.08%	
Ac	37.93	34.27%	\$20,235.36	40.38%	\$92,735.35	30.57%	\$296,532.88	33.66%	\$161,794.33	36.75%	
Bk	31.56	-1.49%	\$7,396,348.63	3.63%	\$19,956,014.67	-1.17%	\$25,551,775.07	-3.06%	\$13,399,243.18	-1.82%	
Cl	10.84	13.07%	\$34,376.34	-5.56%	\$485,587.15	21.03%	\$871,864.19	11.36%	\$386,013.16	8.59%	
Cc	76.66	8.75%	\$615,474.98	8.78%	\$3,610,092.47	11.80%	\$5,482,497.29	7.57%	\$2,091,011.92	6.60%	

2. **Select Collapse from the reporting options menu.**

If this is a pivot table, select Collapse Items.

Now the report is rolled back up to the All Products level, as shown in Figure 16-1.



In addition to the expand/collapse method described here, analytics grids, pivot tables, and scorecards also allow you to expand and collapse by clicking the plus and minus signs next to the row or column values that can be expanded or collapsed, as follows:

1. **To expand the data, click the plus sign to the left of the level you want to expand.**

You can see the plus sign to the left of All Products in Figure 16-1.

2. **To collapse the data, click the minus sign next to the level you want to collapse.**

You can see the minus sign to the left of All Products in Figure 16-2.

Expanding and collapsing with ProClarity grids

ProClarity grids work a little differently than the PerformancePoint reports. They typically default to drill down, not to expand. If you see a little arrow to the left of a value and you click it, you will drill down, not expand. To expand or collapse in a ProClarity grid, follow these steps:

1. To expand, click the dimension member cell you want to expand.

You can expand if your value is part of a prebuilt hierarchy signified by a down arrow to the left of the value.

A reporting menu pops up. Figure 16-4 represents a ProClarity grid with a menu of cell options shown through a PerformancePoint dashboard.

Figure 16-4:
Expanding
a ProClarity
grid in a
PerformancePoint
dashboard.

	Sales Amount
[-] All Products	\$109,809,274.20
All Products <ul style="list-style-type: none"> [-] Drill Down [+] Drill Up [+] Expand [x] Show Only [x] Hide 	

2. Select Expand from the menu.

You can now see your data at the top level from which you expanded, as well as the lower-level members.

In Figure 16-5, we have selected Expand on the All Products category. Now we can see the detail records below All Products along with the top level to include the following:

- Accessories
- Bikes
- Clothing
- Components

Figure 16-5:
Expanding
a ProClarity
grid in a
PerformancePoint
dashboard.

	Sales Amount
[-] All Products	\$109,809,274.20
[-] Accessories	\$1,272,057.89
[-] Bikes	\$94,620,526.21
[-] Clothing	\$2,117,613.45
[-] Components	\$11,799,076.66

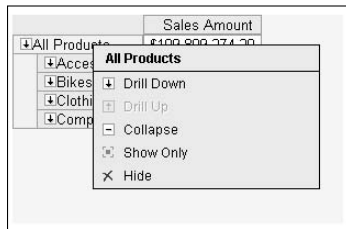


3. To collapse to the higher level, click the cell that you want to collapse back to.

You can only collapse on a cell that's been expanded.

A menu opens. Figure 16-6 shows the reporting options menu with the Collapse option.

Figure 16-6:
Collapsing
a ProClarity
grid in a
PerformancePoint
dashboard.



4. Select Collapse from the reporting options menu.

You can now see your data back at the collapsed level, as shown in Figure 16-4.



If your ProClarity report has been set to default to expand/collapse, you will see a plus sign to the left of the value you want to expand (or a minus sign to the left of the value you want to collapse). If this is the case, click the plus or minus sign to expand or collapse, as described in the previous section.

Honing in on lower levels of data by drilling up and down

Do you know why monthly and quarterly reports are so voluminous? People aren't looking at that many metrics. Rather, it is because different people in your organization need to see those metrics by a large number of dimensions, and at varying levels of detail for those dimensions.

PerformancePoint consolidates all this information into a much smaller number of reports that you can manipulate to get specifically at the information you need. And this is where drilling down and up comes in handy.

Drilling down is the best invention since sliced bread. (Actually, sliced bread doesn't thrill us — but drilling down does.) This method allows you to look at the lower levels of detail that you are interested in using

prebuilt hierarchies. (See some examples of hierarchies in the section “Viewing lower levels by expanding and collapsing your data,” earlier in this chapter.)

Drilling up and down with analytics grids and charts and pivot charts

The following method for drilling up and down works with analytics grids, charts, and pivot charts.

To drill up and down, follow these steps:

- 1. Right-click the dimension member cell, bar, line, or pie-chart slice you want to drill down on.**

The reporting options menu for an analytics grid or chart is shown in Figure 16-3.

In the example shown in Figure 16-7, we have an analytics bar chart that represents sales amount by product line.

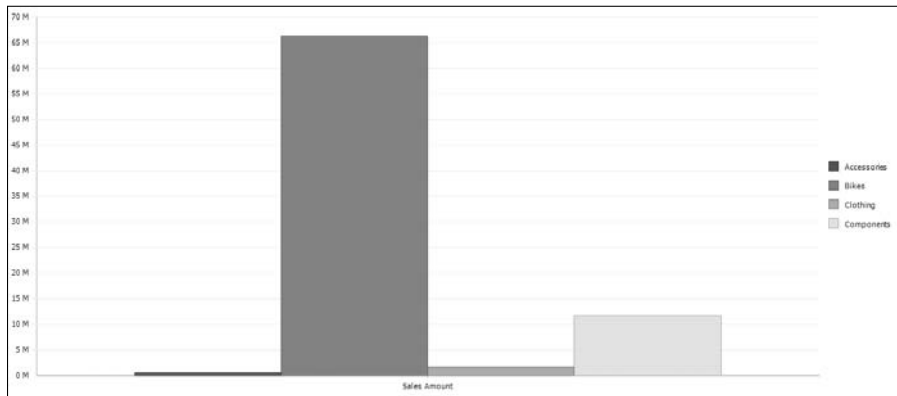
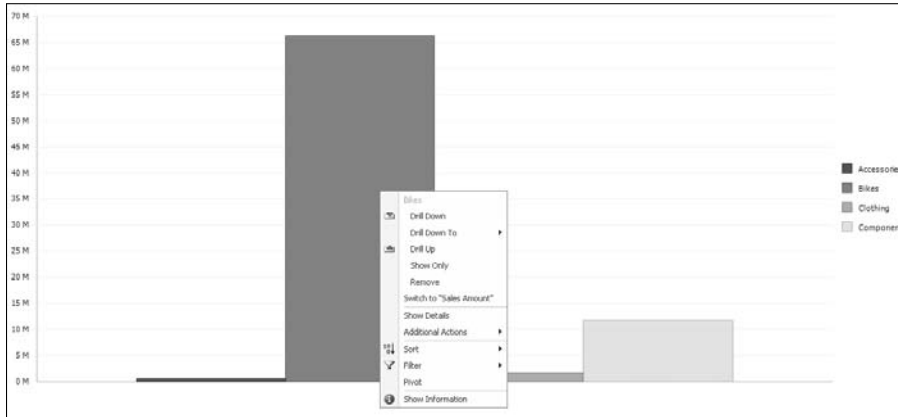


Figure 16-7:
Drilling
down on an
analytics
bar chart.

The Bikes category had sales of more than \$65 million — the product line with the highest sales amount. If we want to see more information on sales within the Bikes product line, we can drill down to the next level of detail.

- 2. Right-click the Bikes bar to reveal the reporting options menu shown in Figure 16-8.**

Figure 16-8:
A reporting
options
menu on an
analytics
bar chart.



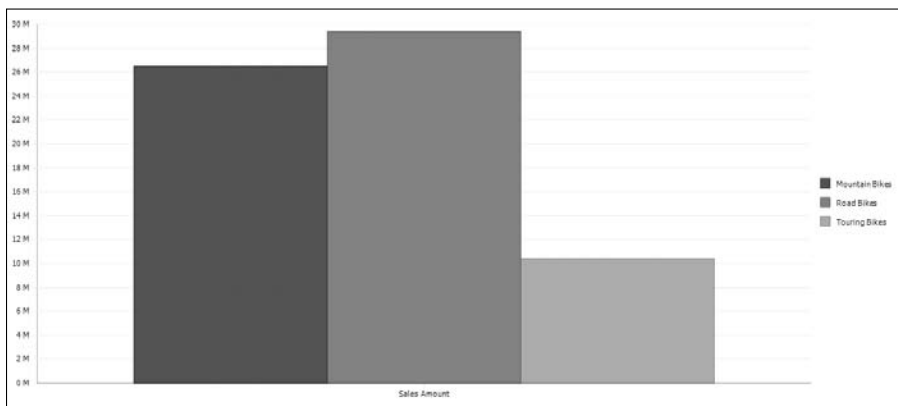
3. Select Drill Down from this menu.

If this is a pivot chart, select Drill Into. Now you can see your bar chart at the next-lowest level of detail in the hierarchy.

When we drill down on Bikes, we are presented with a bar for every item within Bikes, as shown in Figure 16-9:

- Mountain Bikes
- Road Bikes
- Touring Bikes

Figure 16-9:
Drilling
down on an
analytics
bar chart.

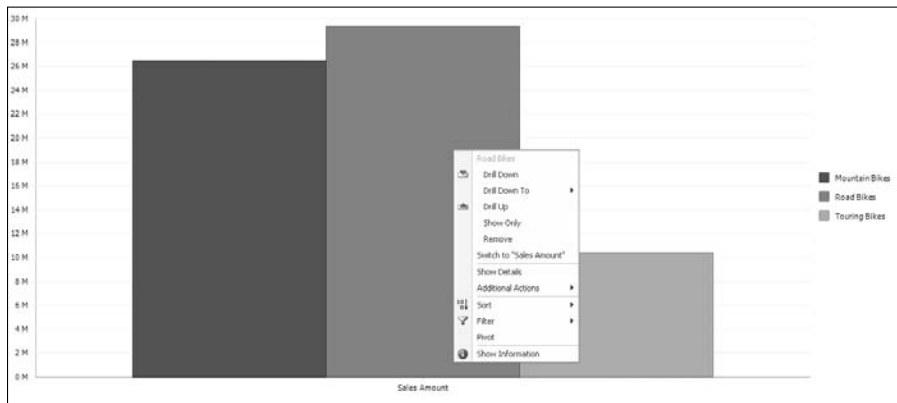


4. Repeat Steps 1 and 2 if necessary to get to the hierarchy level you want.
5. To drill back up, right-click any bar in your report and select **Drill Up** from the reporting options menu.

If this is a pivot chart, select **Drill Out**.

You should see your report as it looked right before you drilled down. In this case, if we drill up from the Road Bikes bar, as shown in Figure 16-10, we are taken back to the Bikes bar chart shown in Figure 16-7.

Figure 16-10:
Selecting
any bar
for drilling
back up.



In addition to the Drill Down method described here, you can also drill down on analytics grids with a double-click method and charts with a single click, as follows:

1. **Select the item:**

- For grids, double-click the dimension member cell that you want to drill down on.
- For charts, click the bar, line, or pie slice you want to drill down on.

When we click the Bikes bar in Figure 16-7, we get the same results as shown in Figure 16-9.

2. **To drill back up, right-click any bar in your report and select Drill Up from the reporting options menu.**

You should see your report as it looked right before you drilled down.

Drilling up and down with ProClarity grids and charts

ProClarity reports surfaced through PerformancePoint work a little differently than the analytics grids and charts. Instead of right-clicking a dimension member cell, bar, line, or pie slice to access a reporting options menu, just click the dimension member cell, bar, line, or pie slice, as follows:

- 1. Click the cell, bar, line, or pie slice you want to drill down on.**

Figure 16-11 shows the same report shown in Figure 16-7 but created in ProClarity instead of in an analytics chart, and it's a pie chart instead of a bar chart.

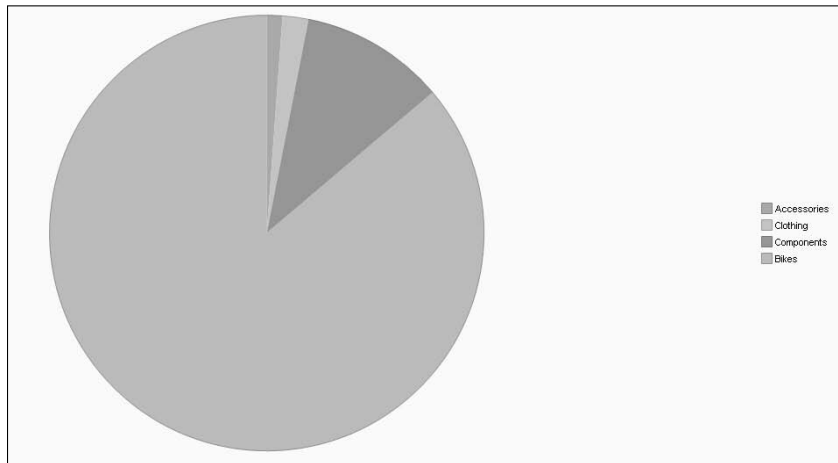


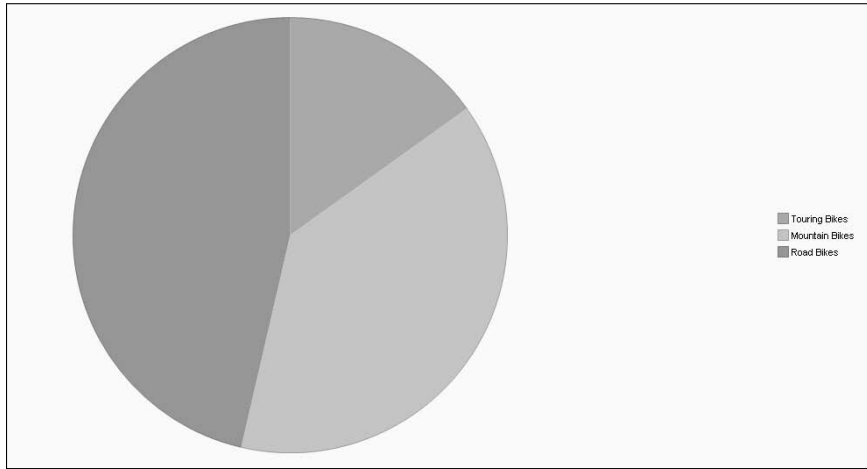
Figure 16-11:
Drilling
down on a
ProClarity
pie chart.

- 2. Select Drill Down from the reporting options menu.**

When we click the Bikes slice, we are presented with a reporting options menu (like the one shown in Figure 16-6), and we select Drill Down. Now we can see the pie chart divided into three slices, as shown in Figure 16-12:

- Mountain Bikes
- Road Bikes
- Touring Bikes

Figure 16-12:
A ProClarity
pie chart
that's been
drilled
down.



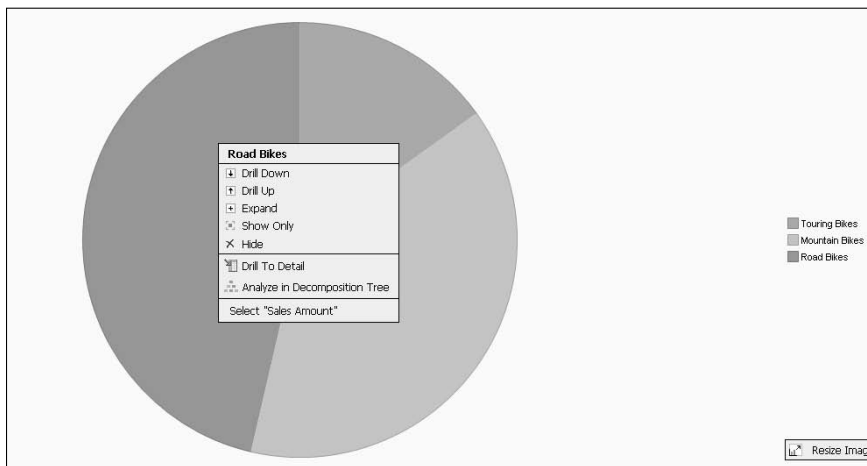
Because Road Bikes is the biggest slice, you may want to look at that in a lower level of detail.

3. Repeat Steps 1 and 2 as needed.

4. To drill back up, click any pie slice and select Drill Up from the report options menu.

When we click the largest slice, Road Bikes, and select Drill Up, as shown in Figure 16-13, we can see the pie in slices by product, as shown in Figure 16-11.

Figure 16-13:
Clicking a
pie slice to
open the
reporting
options
menu.





In addition to the Drill Down method for ProClarity, you can also drill down and up on ProClarity grids using the down and up arrows to the left of dimension values, as follows:

1. Click the arrow to the left of the dimension member to drill down.

You now no longer see the dimension member you drilled down from, but rather all the dimension members that are one level below that on the dimension hierarchy.

When we click the down arrow to the left of All Products, as shown in Figure 16-14, we no longer see All Products.

You can also click the down arrow to the left of the column header All Periods to drill down on the time hierarchy.

Figure 16-14:
Using the up
and down
arrows in a
ProClarity
grid.

	↓ All Periods
↓ All Products	\$109,809,274.20

Now we can see sales amount by accessories, bikes, clothing, and components, as shown in Figure 16-15.

Figure 16-15:
Drilling
down
in your
ProClarity
grid.

	↑ ↓ CY 2001	↑ ↓ CY 2002	↑ ↓ CY 2003	↑ ↓ CY 2004
↑ ↓ Accessories	\$20,235.36	\$92,735.35	\$590,242.59	\$568,844.58
↑ ↓ Bikes	\$10,661,722.28	\$26,486,358.20	\$34,910,877.69	\$22,561,568.03
↑ ↓ Clothing	\$34,376.34	\$485,587.15	\$1,010,112.16	\$587,537.80
↑ ↓ Components	\$615,474.98	\$3,610,092.47	\$5,482,497.29	\$2,091,011.92

2. To drill back up, click the up arrow on your grid.

If you are drilling up on rows, the up arrow will be at the upper left of the first column, right above the first dimension member, as shown in Figure 16-15. If you are drilling up from columns, the up arrow will be at the upper right of the first column, just to the left of your first column dimension member.

Determining your own path by drilling down to new dimensions

Certainly a limitation of drilling up and down is that someone else has decided what you can drill up and down on by setting up hierarchies in your Analysis Services cube (see Chapter 9). Often these hierarchies are very useful. For example, the ability to drill up and down on a time dimension (year to quarter to month) or organizational dimension (division, business unit, or line of business) is ubiquitously informative. But sometimes you as the analyst are drawn down a differing path, either based on something you see in the data or something you know.

For example, we might be drilling down on the organizational hierarchy (Business Unit↔Line of Business) and see that our sales are very low within a particular line of business. But we need to know more about the line of business: Do the sales results vary (some good, some low) depending on another attribute within this line of business? That is, did something happen in a particular dimension (for example, geography or sales team) to cause sales to drop within this line of business? Now, do we have to open a whole new report to investigate? No, we don't. We can drill down to geography from the troublesome line of business that we are viewing. In doing so, we are using our business knowledge to drive the analysis.

This is yet another place where PerformancePoint gives you an analytical edge, by giving you the power to direct your analysis where you want to go.

To drill from one dimension to another in an analytical grid or chart, follow these steps:

- 1. Right-click a dimension member cell, bar, line, or pie slice from which you want to drill to another dimension.**

In Figure 16-16, an analytical grid shows sales amount by product line. When we right-click the Bikes dimension member cell, the reporting options menu opens.

- 2. Select Drill Down To from the reporting options menu.**

You can now see a list of all the dimensions in your cube.

When we select Drill Down To, we are shown another menu of all the dimensions in the Adventure Works cube, as shown in Figure 16-16.

- 3. Select the dimension you want to drill down to.**

Another menu of the dimension attributes appears.

We want to select the Date dimension so that we can see bike sales by calendar year hierarchy. In Figure 16-17, we are presented with another menu of the attributes within the Date dimension.

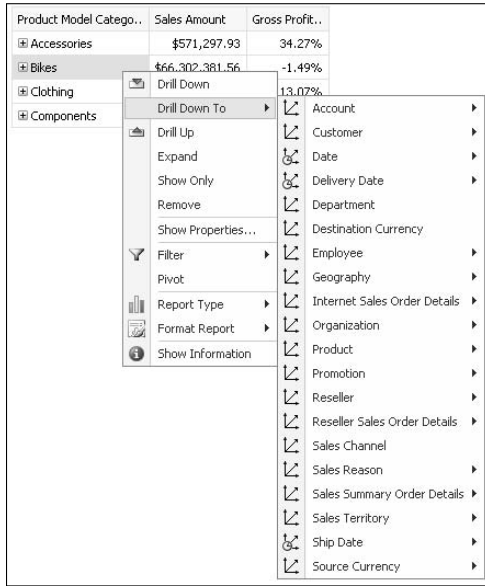


Figure 16-16:
The reporting options menu.

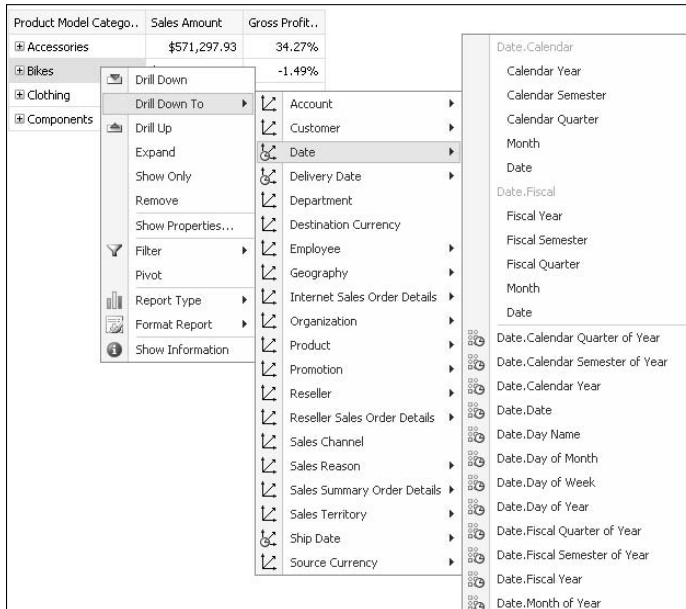


Figure 16-17:
Viewing your Drill Down to dimension attribute choices.

4. Select the dimension attribute you want to drill down to.

The dimension that you started from in your row or column is replaced in your report view with the dimension attribute you have drilled down to. However, the report maintains your original dimension member as a report filter.

We select Calendar Year from the list of Date attributes. The product line members that were in our rows are no longer visible. They have been replaced by calendar years, as shown in Figure 16-18. Yet if we add up the total sales amount for the report, it is \$66,302,381. If we look back at Figure 16-2, the report prior to the Drill Down To action, we can see that this amount is equal to the sales amount for Bikes. This is because now we are looking at a report of sales amount by calendar year for Bikes only.

Figure 16-18:
Viewing
your Drilled
Down To
report.

Date	Sales Amount	Gross Profit..
2001	\$7,395,348.63	3.63%
2002	\$19,956,014.67	-1.17%
2003	\$25,551,775.07	-3.06%
2004	\$13,399,243.18	-1.82%



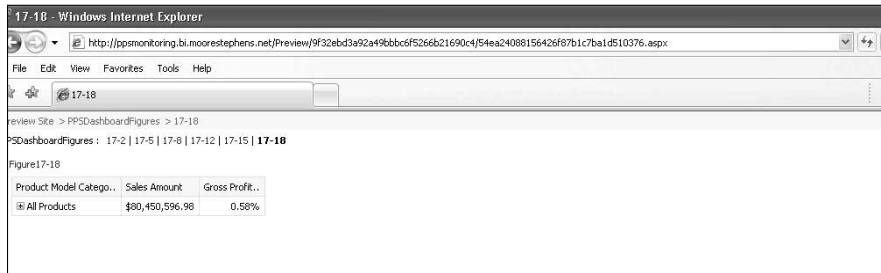
Drill Down To in an analytics grid can also be used to slice and dice, or to change the dimensions at the top level of analysis. For more on this, see the next section.

Be careful:

- After you use Drill Down To in a report, no reporting option exists within PerformancePoint for backing up to prior views. That is, no Drill Back Up To or Drill Up From reporting menu choice exists.
- You can't just refresh one report zone at a time. If you want to refresh one report, you are going to refresh them all.

To refresh your report to its original view, click the Refresh button on Internet Explorer's toolbar or press F5 on your keyboard. (The Refresh button is shown in Figure 16-19.) Your entire dashboard, not just one zone, will be refreshed to the original view.

Figure 16-19:
I've drilled
down and
I can't get
up! Using
the Refresh
button to
get back to
your original
report.



Changing your report dimensions with slicing and dicing

The goal of a PerformancePoint dashboard is to give you most of the information you need at a glance, and then to allow you some interactivity to get to the specific pieces of data that you need to do your job and manage your business performance. But sometimes what you see in your dashboard reports is just not the right information you need — you need to see different dimensions and measures than you have been given. Changing the dimensions and attributes in a report is called *slicing and dicing*.

If you need to perform a significant amount of slicing and dicing, or changing the dimensions and measures in your report, you have three options ranging in analytical prowess:

- ✓ **Most powerful:** Use ProClarity Web or Desktop Professional to perform your analysis.
- ✓ **Powerful:** Use a pivot table or chart report for your analysis.
- ✓ **Less powerful but still good:** Use an analytic grid or chart for your report.

Currently, ProClarity Web, Desktop Professional, or even the ProClarity Analytics Server is a better bet for true slicing and dicing than anything available in PerformancePoint (see Chapter 1 for more information on this topic). That said, PerformancePoint provides some slicing and dicing functionality through its analytics grid and charts and more so through its pivot table and chart types.

Changing dimensions and measures with analytics charts and grids

To change your report dimensions within an analytics chart or grid, you need to leverage the Drill Down To reporting option. As you may have read in the section “Determining your own path by drilling down to new dimensions,” earlier in this chapter, you know that you can drill down to another dimension attribute or hierarchy from any dimension member in your current report. But if you just want to switch out the dimension you are looking at without any report filters, just use the Drill Down To function from the report total or All dimension member.

To change your analytic report dimensions, follow these steps:

- 1. Right-click the All dimension member (cell, bar, line, pie slice) in your report.**

Figure 16-20 shows a grid report of sales amount by all products also expanded to include the next level of the product hierarchy. When we right-click the All Products member cell, the reporting options menu opens.

- 2. Select Drill Down To from the reporting options menu.**

A list of cube dimensions displays, as shown in Figure 16-20. We select Date.

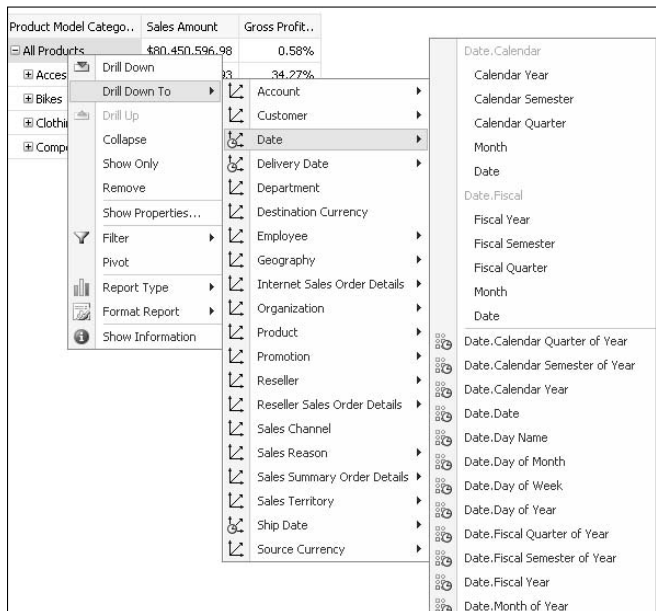


Figure 16-20:
Slicing and
dicing in an
analytics
grid.

3. Click the dimension that you want to change.

We want to slice the sales amount by calendar year, not by product line. So we select Calendar Year from the reporting options menu, as shown in Figure 16-20.

4. Click the attribute or hierarchy that you want to change.

Your original report dimension is now replaced with the new dimension you have chosen.

In this case, we select the Calendar Year attribute. Now, our report shows sales amount by calendar year. See Figure 16-21.

Figure 16-21:
Seeing the
report by
calendar
year.

Date	Sales Amount	Gross Profit..
☒ 2001	\$8,065,435.31	4.08%
☒ 2002	\$24,144,429.65	1.34%
☒ 2003	\$32,202,669.43	-0.52%
☒ 2004	\$16,038,062.60	-0.08%

Certainly a limitation of this report type for slicing and dicing is that you can only switch or slice and dice by the number of dimensions that your report has. If you only have one dimension, you can only change to one other dimension. If you have two, you can only switch to two, and so on.

Changing or selecting different measures for your report is very simple if you have been given a drop-down filter menu with a list of your measures (for more information, see Chapter 3). This might look like the drop-down menu shown in Figure 16-22, or the drop-down menu might allow you to select more than one value at a time.

In this example, we want to change the measures in the grid shown in Figure 16-22 with Order Quantity.

To change the measures in the report, follow these steps:

1. Click the arrow to the right of the Measures drop-down menu.

All your measures are displayed.

2. Select the measure you want to display in your report.

In this case, we select Order Quantity. Now the report shows All Products with Order Quantity as the measure, as shown in Figure 16-23.

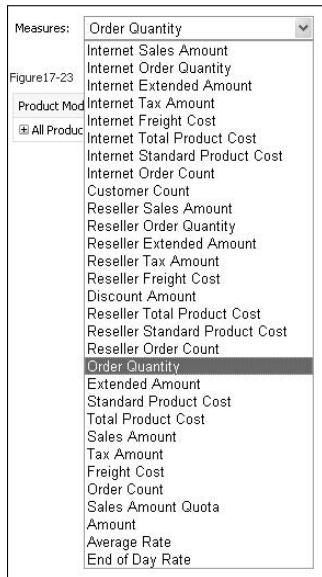


Figure 16-22:
Changing
measures in
an analytics
grid.

Measures: Order Quantity

Figure17-23

Product Model Category	Order Quantity
<input checked="" type="checkbox"/> All Products	214,378

Figure 16-23:
A grid with
the newly
selected
measure.

Changing dimensions and measures in pivot tables and charts

One of the best things about pivot tables and charts is that they allow you to change any measure or dimension at will, regardless of how your report developer set it up. They are very flexible, so if you are a power user, this is a great report type for you to be working with.

Because pivot tables and charts slice and dice a little differently, we give you an example of each.

To slice and dice your pivot table, follow these steps:

- 1. Access your pivot table field list by clicking its icon on the Pivot Table or Pivot Chart toolbar, as shown in Figure 16-24.**

Figure 16-24:
Accessing
your
dimension
and
measure
choices
from the
pivot report
field list.



Your pivot report field list opens in another window and shows you all your dimensions and measures.

If you first want to remove an existing dimension or measure from your pivot report field list, follow these steps:

- a. Right-click the field name within the pivot report.

In Figure 16-25, we want to remove Calendar Year as the row dimension from the pivot table before we replace it with another dimension from the field list. A reporting options menu opens.

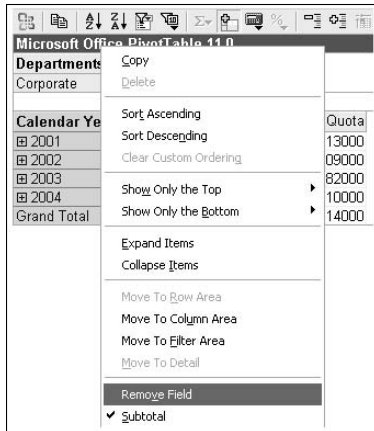
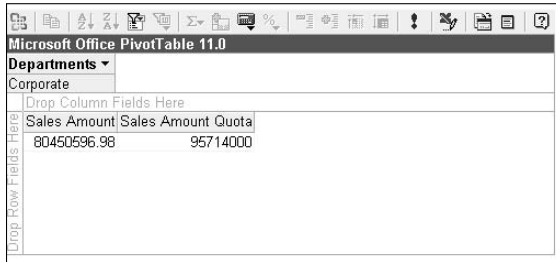


Figure 16-25:
Removing
an existing
dimension
from the
pivot table.

- b. From the reporting options menu, select Remove Field.

The item that you selected is no longer visible on your report, as shown in Figure 16-26.

Figure 16-26:
Seeing the
new pivot
table.



Microsoft Office PivotTable 11.0

Departments

Corporate

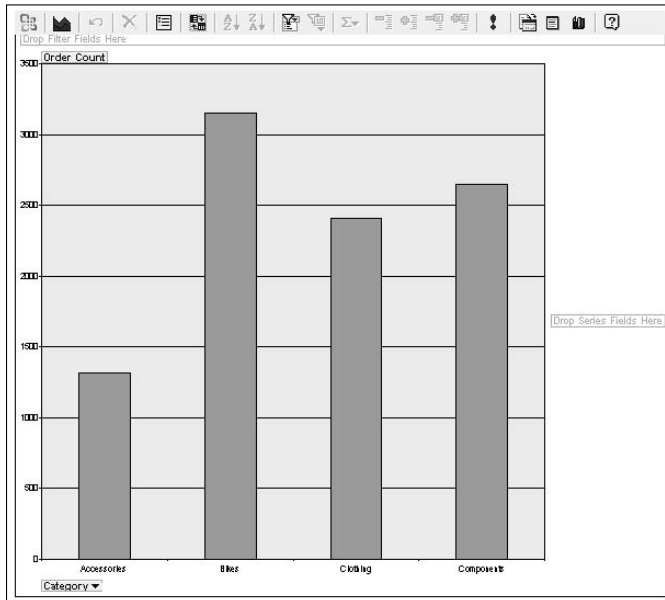
Drop Column Fields Here		
Sales Amount	Sales Amount	Quota
80450596.98		95714000

Drop Row Fields Here



To remove an item from a pivot chart, you can follow the previous steps, but the field items for dimensions are in a different location on the chart, and measures are along the top, as shown in Figure 16-27.

Figure 16-27:
Finding
dimension
and
measure
field items
in a pivot
chart.



2. To add a new dimension to the report, click the dimension you want to be on the field list.

In Figure 16-28, we select Product Model Category.

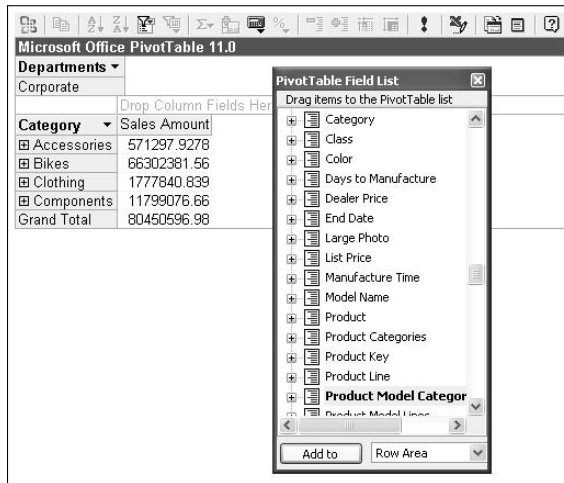


Figure 16-28:
Selecting
and
viewing the
new pivot
table
dimension.

3. At the bottom of the field list, choose Row Area from the pivot table drop-down menu and click the Add To button.

We choose Row Area from our Add To menu selection, as shown in Figure 16-28.



The drop-down menu on the pivot table field list contains a list of places to which we can send our dimension or measure:

- ✓ **Row:** Add this field to your grid rows.
- ✓ **Column:** Add this field to your grid columns.
- ✓ **Filter:** Add this field to your filter area for drop-down selection.
- ✓ **Data:** Add this field to your grid measures.

The drop-down menu on our pivot chart field list contains a slightly different list of places to which we can send our dimension or measure:

- ✓ **Series:** Use this field as your chart series.
- ✓ **Category:** Use this field as your x-axis categorization.
- ✓ **Filter:** Add this field to your chart filter area for drop-down selection.
- ✓ **Data:** Use this field as your chart measure(s).

Drilling through your summary report to get to the detail records

So, you've sliced and diced and drilled down as low as you can go, but you just don't have the smoking gun, the record that tells you where your business performance is suffering.

Multidimensional cube analysis is great for looking at summary data, for slicing and dicing at a summary level, and for looking at trends of summary data over time. But you may reach a point in your analysis when you just need to see the detail records behind the summary data. And this is where drilling through or showing your detail records comes in handy.

Show Details is a report option that you can execute from any noncalculated measure cell, which allows you to see the detail records that make up the totals of that measure cell.

Showing your detail with analytics grids, charts, and scorecards

To show detail records with analytics grids, charts, or scorecards, follow these steps:

1. Right-click any measure cell, bar, line, or pie slice to open the reporting options menu.
2. Select Show Details from this menu.

In Figure 16-29, we right-click the sales amount for the Road-150 road bike. We select Show Details, and the detail report opens in a new window.

Figure 17-2

Product Model Catego...	Sales Amount
Road-150	\$2,363,806.16
Road-250	\$9,377,457.68
Road-350-W	\$3,665,932.31
Road-450	\$1,874,406.52
Road-550-W	\$3,668,383.88
Road-650	\$7,442,141.81
Road-750	\$966,079.59

Sales Order	Sales Territory Region	Sales Channel	Source Currency Code	Employee	Date	Ship Date.Date	De
SO43662 Line 9	Canada	Reseller	CAD	José Edvaldo, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43662 Line 16	Canada	Reseller	CAD	José Edvaldo, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43666 Line 2	Southwest	Reseller	USD	Linda C. Mitchell	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43668 Line 2	Canada	Reseller	CAD	José Edvaldo, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43671 Line 1	Northwest	Reseller	USD	David R. Campbell	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43677 Line 2	Canada	Reseller	CAD	Garrett R. Vargas	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43680 Line 11	Southwest	Reseller	USD	Shu K. Ito	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43681 Line 13	Southeast	Reseller	USD	Tsvi Michael, Reiter	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43688 Line 11	Northeast	Reseller	USD	Michael G. Blythe	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43689 Line 4	Southwest	Reseller	USD	Jillian Carson	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43689 Line 19	Southwest	Reseller	USD	Jillian Carson	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43692 Line 20	Southwest	Reseller	USD	Shu K. Ito	2001-07-01 00:00:00	2001-07-08 00:00:00	2C
SO43845 Line 8	Southeast	Reseller	USD	Tsvi Michael, Reiter	2001-08-01 00:00:00	2001-08-08 00:00:00	2C
SO43850 Line 5	Canada	Reseller	CAD	José Edvaldo, Sarava	2001-08-01 00:00:00	2001-08-08 00:00:00	2C
SO43851 Line 9	Northeast	Reseller	USD	Michael G. Blythe	2001-08-01 00:00:00	2001-08-08 00:00:00	2C

Figure 16-29:
Showing your detail records in analytics grids and charts.

You can export the detail records to Excel by clicking the Export To Excel icon in the upper-left corner of your window. You are prompted to open or save the detail records as an Excel workbook.

You can see the Export To Excel icon in Figure 16-29. Your report is exported to Excel, as shown in Figure 16-30.

Figure 16-30:
Your detail records exported to Excel.

Sales Order	Sales Territory	Region	Sales Channel	Source	Currency Code	Employee	Date	Ship Date	Delivery Date	Product	Order Quantity	Unit #
5043662	Line 9	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043662	Line 16	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043666	Line 2	Southwest	Reseller	USD	Linda C. Michal	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043669	Line 2	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043671	Line 1	Northwest	Reseller	USD	Daniel R. Campbell	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043677	Line 2	Canada	Reseller	CAD	Carrett R. Vargas	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043680	Line 11	Southwest	Reseller	USD	Shuk, Ito	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043691	Line 13	Southwest	Reseller	USD	Toni Michael, Reber	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043690	Line 11	Northwest	Reseller	USD	Michael G. Blythe	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043699	Line 1	Southwest	Reseller	USD	Jillan Carson	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043699	Line 19	Southwest	Reseller	USD	Jillan Carson	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043892	Line 20	Southwest	Reseller	USD	Shuk, Ito	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043895	Line 8	Southwest	Reseller	USD	Toni Michael, Reber	2001-08-01 00:00:00	2001-08-08 00:00:00	2001-08-13 00:00:00	Road-150 Red, 62	1	2,14	
5043895	Line 5	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-08-01 00:00:00	2001-08-08 00:00:00	2001-08-13 00:00:00	Road-150 Red, 62	1	2,14	
5043895	Line 9	Northwest	Reseller	USD	Michael G. Blythe	2001-08-01 00:00:00	2001-08-08 00:00:00	2001-08-13 00:00:00	Road-150 Red, 62	1	2,14	

Drilling to detail with ProClarity grids and charts

Again, ProClarity reports work a little differently. To show detail records with ProClarity grids and charts, follow these steps:

1. Click any measure cell, bar, line, or pie slice to open the reporting options menu.
2. Select Drill to Detail from this menu.

In Figure 16-31, we click the sales amount for the Road-150 Red, 62 road bike. When the reporting options menu opens, we select Drill To Detail and can then see the details in the new Drill To Detail window.

Figure 16-31:
Showing detail records in ProClarity grids and charts.

Sales Order	Sales Territory	Region	Sales Channel	Source	Currency Code	Employee	Date	Ship Date	Delivery Date	Product	Order Quantity	Unit #
5043662	Line 9	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043662	Line 16	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043666	Line 2	Southwest	Reseller	USD	Linda C. Michal	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043669	Line 2	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043671	Line 1	Northwest	Reseller	USD	Daniel R. Campbell	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043677	Line 2	Canada	Reseller	CAD	Carrett R. Vargas	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043680	Line 11	Southwest	Reseller	USD	Shuk, Ito	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043691	Line 13	Southwest	Reseller	USD	Toni Michael, Reber	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043690	Line 11	Northwest	Reseller	USD	Michael G. Blythe	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043699	Line 1	Southwest	Reseller	USD	Jillan Carson	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	1	2,14	
5043699	Line 19	Southwest	Reseller	USD	Jillan Carson	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043892	Line 20	Southwest	Reseller	USD	Shuk, Ito	2001-07-01 00:00:00	2001-07-08 00:00:00	2001-07-13 00:00:00	Road-150 Red, 62	2	2,14	
5043895	Line 8	Southwest	Reseller	USD	Toni Michael, Reber	2001-08-01 00:00:00	2001-08-08 00:00:00	2001-08-13 00:00:00	Road-150 Red, 62	1	2,14	
5043895	Line 5	Canada	Reseller	CAD	Joel Edraskó, Sarava	2001-08-01 00:00:00	2001-08-08 00:00:00	2001-08-13 00:00:00	Road-150 Red, 62	1	2,14	
5043895	Line 9	Northwest	Reseller	USD	Michael G. Blythe	2001-08-01 00:00:00	2001-08-08 00:00:00	2001-08-13 00:00:00	Road-150 Red, 62	1	2,14	



If you have a large volume (that is, more than a couple thousand) of detail records, it could take a bit of time to see all those records in a detail window. But more to the point, why would you want to? Drilling to detail should be reserved as the path of last resort, that is, you have drilled down as far as you can go and now need a small (fewer than 100) list of the detail records. If you need access to larger numbers of detail data, you have better ways to get it. But think about what your needs really are. For example, if you want detail records so that you can do your own pivot table analysis in Excel, connect to the cube directly from Excel.



Business users deeply dislike the way the Drill To Detail window looks in ProClarity. It is probably the users' biggest complaint about the software. The titles look very messy — they are just the names of the columns as stored in the cube. But you don't care about that; it's hard to read and it doesn't look nice. This is where a reporting action report can be very useful. If you want a more highly formatted drill-through report, ask your report developer to build you a nice Reporting Services report to drill to. Better yet, the Show Details window from analytics reports looks much nicer too, so consider asking your PPS developer to use these options instead.

If your highlighted cell contains a *calculated field* — a field that is created as a calculation within Analysis Services — you cannot use Show Details from that cell. Your options here are as follows:

- ✓ See whether you have another measure in your report that is not a calculated field and try to drill to the details from there.
- ✓ If you are in an analytics or ProClarity report, see whether you have an action that allows you to drill to the details (see the next section).

Drilling through PerformancePoint for details with reporting actions

Actions typically refer to the launching of non-PerformancePoint reports or applications from your PerformancePoint reports. Actions can give you access to information that can't be presented in your PerformancePoint report for a number of reasons:

- ✓ The action report data may not be multidimensional.
- ✓ The required format of the action report couldn't be assembled using PerformancePoint options.

Reporting actions give you access to an even greater array of information and/or formatting styles, but from the *perspective* of the cell (dimension member or measure cell) from which you are launching the action. The perspective is the intersection of the cell plus all the report filters already applied to your PerformancePoint report.

To access your report actions, follow these steps:

1. **To see a list of your report actions, right-click a measure cell, bar, line, or pie slice in an analytics report. Or, click the dimension member cell, measure cell, bar line, or pie slice in a ProClarity report.**



The reporting options menu opens.

You may have different actions assigned to measure cells than to dimension member cells.

2. **Select Actions.**

You see a list of the actions that you can execute from that particular cell.

In Figure 16-32, we right-click the Sales Amount cell and select Additional Actions.

In this case, we have an action entitled Drillthrough.

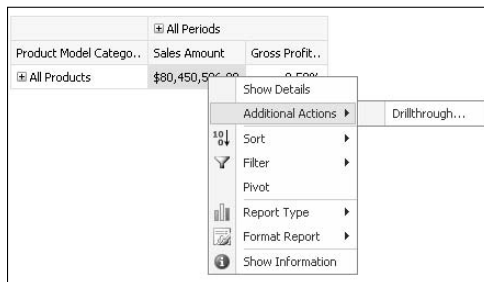


Figure 16-32:
Executing
reporting
actions.

3. **Select your action from the Actions menu.**

Your action executes.

In this case, the Drillthrough action opens a list of detail records in a new window, as shown in Figure 16-29. These detail records aggregate to the cell from which we executed the action.

Chapter 17

Organizing, Formatting, and Presenting Your Business Reports

In This Chapter

- ▶ Filtering, sorting, pivoting, and changing your report type to get the most meaningful view
- ▶ Presenting your results in PowerPoint and Excel
- ▶ Printing your reports and dashboards

Okay, admit it. You copy data from your company's reporting system into Excel so that you can create your own reports and charts. Do you know how we know this? Because most business users of reporting systems do this. And do you know why we care? Because you don't have to. Because we want you to spend your time analyzing data, not formatting it.

PerformancePoint allows you to organize and format your reports right in the SharePoint environment and to export that perfect report or chart to PowerPoint and Excel for presentation. Formatting capabilities include the following:

- ✔ **Pivoting your report or chart:** Pivoting allows you to exchange report rows with columns, or chart axes with series.
- ✔ **Sorting your data:** Sorting allows you to order your data numerically by the values of your KPIs (for example, high to low or low to high).
- ✔ **Filtering your data:** Filtering allows you to limit your view to specified dimension or KPI values or ranges within your report (for example, Top 10 states by sales amount, or All products with profit margins less than 10%).
- ✔ **Changing your report type:** PerformancePoint allows you to easily switch from a grid report to a pie chart to a line chart and back again.

The combination of these formatting techniques provide you with pretty much all you'll need to create the report that you want. And then, you can export the finished product to Excel or PowerPoint to add to a presentation or for printing.

Creating the Report You Want with Formatting and Organizing

Leveraging the power of PerformancePoint, you can quickly create the report or chart that is most meaningful to you or your other business users. You don't have to call your IT department to create a new report for you. You can take what you have and from that, create what you want.

Pivoting your report

Have you ever been looking at a chart and thought *This would make a lot more sense if it were just switched around a bit*, like your measures and dimensions are in the wrong place? This often happens when you change an analytics grid to a chart — sometimes the measures and dimension end up in the wrong place.

Pivoting your report is a nice quick way to do the following:

- ✓ Get your columns in your rows or your rows in your columns
- ✓ Get your series in your *x* axis and your *x* axis in your series

Analytics grids and charts and pivot tables and charts allow you to pivot.

Figure 17-1 shows what is supposed to be a line chart that has sales amount on the *x* axis and *y* axis, and years as the series. Because the *x* and *y* axis are the same variable, the line chart displays as a number of single points. If you are looking at a line chart, it makes more sense to have years as an *x*-axis attribute so that you can see a series (sales amount) over time.

To pivot your chart, follow these steps:

- 1. Right-click any line in your report.**

The reporting options menu opens.

- 2. Select Pivot from the reporting options menu.**

Your *x* axis now becomes your series, and your series becomes your *x* axis.

As you can see from Figure 17-2, years are now on the *x* axis and sales amount is the series. This line chart makes a lot more sense.

Figure 17-1:
Pivoting a
strange line
chart.

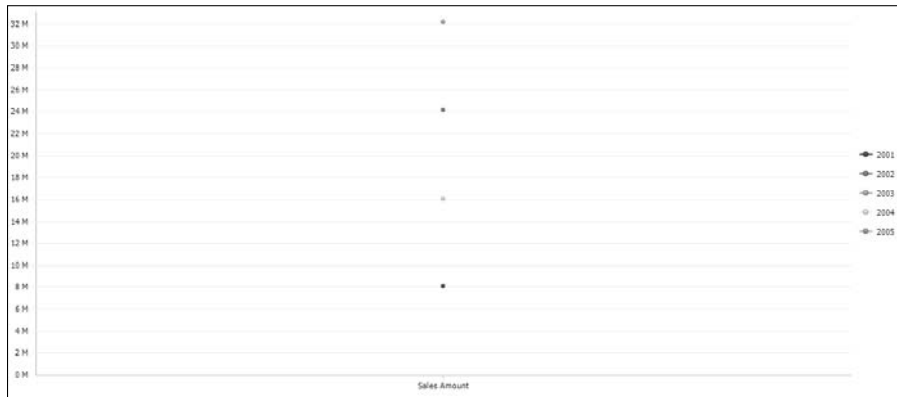
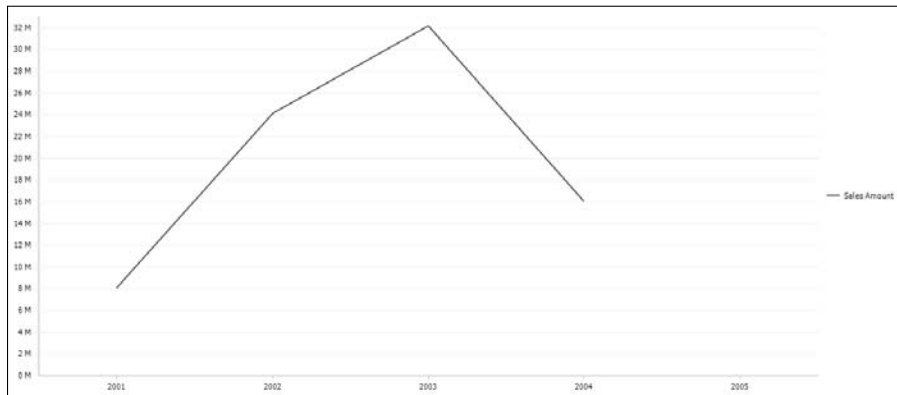


Figure 17-2:
Your pivoted
line chart
makes a lot
more sense.



Pivoting a grid works similarly. Follow these steps:

- 1. Right-click any cell to open the reporting options menu.**
- 2. Select Pivot from the reporting options menu.**

In Figure 17-3, we have a grid that shows calendar years and measures in rows and product lines in our columns.

If we want to flip that around to see calendar years and measures (sales amount and gross profit margin) in our columns and product lines in rows, we right-click any cell and select Pivot from the reporting options menu. When we expand the products and calendar year dimensions, the grid looks like Figure 17-4.

	All Products				
Date, Measures		Accessories	Bikes	Clothing	Components
All Periods					
Sales Amount	\$80,450,596.98	\$571,297.93	\$66,302,381.56	\$1,777,840.84	\$11,799,076.66
Gross Profit Margin	0.58%	34.27%	-1.49%	13.07%	8.75%
2001					
Sales Amount	\$8,065,435.31	\$20,235.36	\$7,395,348.63	\$34,376.34	\$615,474.98
Gross Profit Margin	4.08%	40.38%	3.63%	-5.56%	8.78%
2002					
Sales Amount	\$24,144,429.65	\$92,735.35	\$19,956,014.67	\$485,587.15	\$3,610,092.47
Gross Profit Margin	1.34%	30.57%	-1.17%	21.03%	11.80%
2003					
Sales Amount	\$32,202,669.43	\$296,532.88	\$25,551,775.07	\$871,864.19	\$5,482,497.29
Gross Profit Margin	-0.52%	33.66%	-3.06%	11.36%	7.57%
2004					
Sales Amount	\$16,038,062.60	\$161,794.33	\$13,399,243.18	\$386,013.16	\$2,091,011.92
Gross Profit Margin	-0.08%	36.75%	-1.82%	8.59%	6.60%

Figure 17-3:
Pivoting
your rows
to columns
and your
columns to
rows.

	All Periods		2001		2002		2003		2004	
Product Model Catego...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...	Sales Amount	Gross Profit...
All Products	\$80,450,596.98	0.58%	\$8,065,435.31	4.08%	\$24,144,429.65	1.34%	\$32,202,669.43	-0.52%	\$16,038,062.60	-0.08%
Accessories	\$571,297.93	34.27%	\$20,235.36	40.38%	\$92,735.35	30.57%	\$296,532.88	33.66%	\$161,794.33	36.75%
Bikes	\$66,302,381.56	-1.49%	\$7,395,348.63	3.63%	\$19,956,014.67	-1.17%	\$25,551,775.07	-3.06%	\$13,399,243.18	-1.82%
Clothing	\$1,777,840.84	13.07%	\$34,376.34	-5.56%	\$485,587.15	21.03%	\$871,864.19	11.36%	\$386,013.16	8.59%
Components	\$11,799,076.66	8.75%	\$615,474.98	8.78%	\$3,610,092.47	11.80%	\$5,482,497.29	7.57%	\$2,091,011.92	6.60%

Figure 17-4:
Your pivoted
grid.

Putting your data in order with sorting

Did you ever drill down on a report and find hundreds of rows of data in front of you? Yikes. It's very difficult to visually analyze a large number of records or bars or lines on a chart. Sorting and filtering are great analytical tools for directing your analysis or narrowing what you are looking at to the most important or significant pieces of data. Sorting allows you to put your data in order, from ascending to descending or vice versa.

Analytics grids, analytics charts, pivot tables, and pivot charts all have sorting capabilities. These PerformancePoint reports allow you to sort your measure data in ascending or descending order by a selected measure in a selected column. Follow these steps:

- 1. Right-click the measure cell for the measure on which you want to base your sorting, and then select Sort from the reporting options menu.**

You are presented with another menu that gives you the choice to

- Sort from largest to smallest

- Sort from smallest to largest
- Don't sort (this undoes any existing sorting you have for that measure)

In Figure 17-5, we right-click Sales Amount and select Sort from the reporting options menu.

Figure 17-5: Sorting your grid by sales amount.

Product Model Catego..	Sales Amount
Road-150	\$2,363,805
Road-250	\$9,377,457
Road-350-W	\$3,665,932
Road-450	\$1,874,406
Road-550-W	\$3,668,383
Road-650	\$7,442,141
Road-750	\$966,079

2. Select your desired sort order.

Your report is now sorted according to your specification.

In this case, we select Largest To Smallest, and the report is sorted with the highest sales amount at the top, as shown in Figure 17-6.

Figure 17-6: Viewing the sorted report.

Product Model Catego..	Sales Amount ↓
Road-250	\$9,377,457.68
Road-650	\$7,442,141.81
Road-550-W	\$3,668,383.88
Road-350-W	\$3,665,932.31
Road-150	\$2,363,805.16
Road-450	\$1,874,406.52
Road-750	\$966,079.59



When you sort your report, a little up or down arrow appears in the row or column you have sorted, as shown in Figure 17-5.

Also, if you drill up or down on report dimensions, the sort continues to apply to the report, and the data is continually re-sorted as you drill up or down.

You cannot sort on dimension members.

Limiting your report or dashboard data with filtering

Filtering is another great analytical tool for limiting your view to only the most important or significant pieces of data. PerformancePoint gives you the following ways to use filtering to get at the results you need:

- ✓ You can filter one, some, or all the reports on your dashboard with a dashboard filter.
- ✓ You can filter out all empty columns and rows in your reports.
- ✓ You can filter your report by a top or bottom set of values with a report filter (limited to pivot tables and pivot charts).

Filtering your dashboard with dashboard filters

Dashboard filters are drop-down selection menus that can be applied by the dashboard developer to one or many reports on a dashboard page. They can be set up to allow you to do the following:

- ✓ Select only one value
- ✓ Select many values at a time

To select values from your dashboard filter, follow these steps:

1. Click the value next to the filter name or the small triangle next to that.

In Figure 17-7, we click the All Products link next to Products in the upper-left corner of the dashboard page.

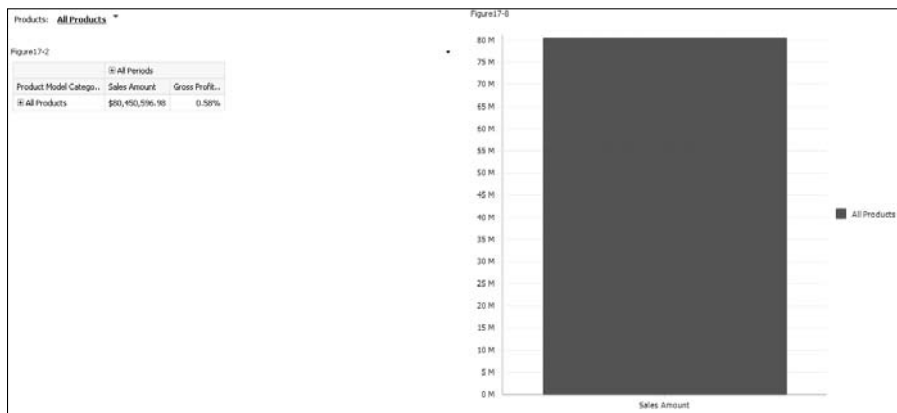


Figure 17-7:
Viewing our
dashboard
at the All
Products
level.

A drop-down filter menu opens as shown in Figure 17-8. Right now, the reports on our dashboards are showing All Products, so All Products is the only dimension member selected.

In Figure 17-8, we change the selection by deselecting All Products and selecting Accessories and Bikes.

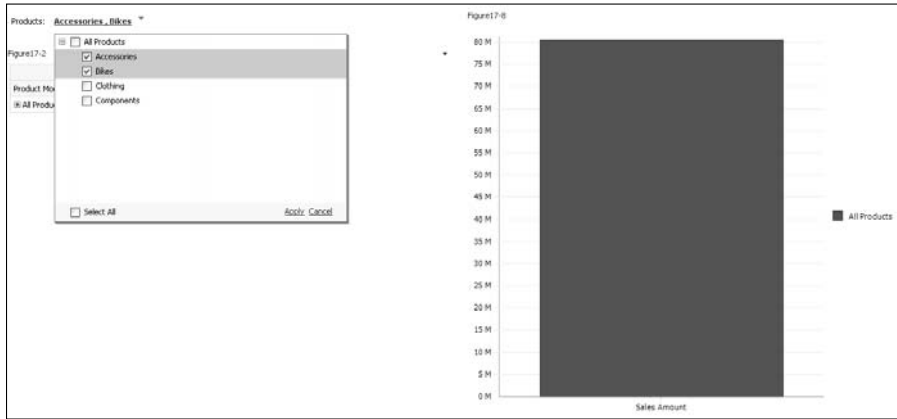


Figure 17-8:
Changing your dashboard filter.

2. Select Apply from the lower-right corner of the filter menu.

Your dashboard reflects your filter changes.

Figure 17-9 shows the same dashboard, now filtered just for Accessories and Bikes. The grid now has a row for both Accessories and Bikes, and the bar chart shows a bar for each as well.

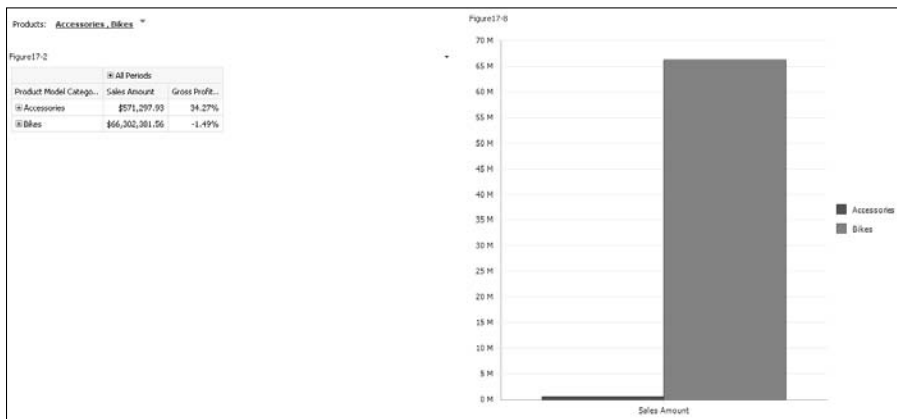


Figure 17-9:
Your dashboard filters change your report content. Cool.

Filtering your pivot tables and pivot charts

Pivot tables and pivot charts give you the most flexibility in terms of native sorting functionality. The reporting options provide many filtering selections. You can choose a filter for the following:

- ✓ The top x percent — for example, the top 5 percent of employees by sales amount
- ✓ The bottom x percent — for example, the bottom 12 percent of products by gross profit margin
- ✓ The top x — for example, the top 25 employees by order quantity
- ✓ The bottom x — for example, the bottom three sales territories by variance in actual to budget sales

To filter your pivot table or pivot chart, follow these steps:

1. Right-click a measure cell, bar, line, or pie slice.

A reporting options menu opens.

2. Select either of the following:

- Show only the top
- Show only the bottom

Here you see a list of numbers and percentages, as shown in Figure 17-10.

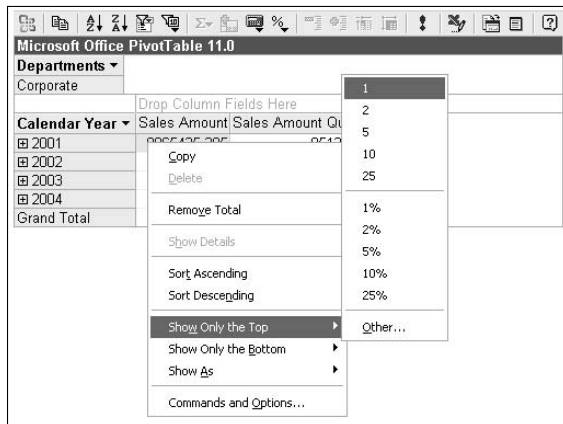


Figure 17-10:
The top and bottom filter menu.

3. Select the number or percentage you want to filter by, or select Other to customize the filter to your own specifications.

In this case, we want to filter our report for the top 1 calendar year by sales amount. We right-click any sales amount measure cell, select Show

Only the Top, and then choose 1. The report now shows only calendar year 2003, as shown in Figure 17-11.

Figure 17-11:
Our top 1 calendar year by sales amount.

Microsoft Office PivotTable 11.0			
Departments			
Corporate	Drop Column Fields Here		
Calendar Year	Sales Amount	Sales Amount	Quota
2003	32202669.43		38782000
Grand Total	32202669.43		38782000

Hiding empty rows and columns in an analytics grid and chart

Empty rows and columns can take up a lot of space on a report, without delivering valuable information. Often a report developer will hide empty rows and columns for you, but you can do it too.

To hide your empty rows and columns, follow these steps:

- 1. Right-click any cell, bar, line, pie slice, or series value to open the reporting options menu.**

Figure 17-12 shows an analytics grid with an empty row of data.

Figure 17-12:
An analytics grid with an empty row.

Date	Measures	Accessories	Bikes	Clothing	Components
2001	Sales Amount	\$20,235.36	\$7,395,348.63	\$34,376.34	\$615,474.98
2002	Sales Amount	\$92,735.35	\$19,956,014.67	\$485,587.15	\$3,610,092.47
2003	Sales Amount	\$296,532.88	\$25,551,775.07	\$871,864.19	\$5,482,497.29
2004	Sales Amount	\$161,794.33	\$13,399,243.18	\$386,013.16	\$2,091,011.92
2005	Sales Amount				

- 2. Select Filter.**

Another reporting options menu opens.

- 3. Select Empty Rows and/or Empty Columns.**

In this case, we select Empty Rows. Now, the empty row of data is removed from the report, as shown in Figure 17-13.

Figure 17-13:
An analytics grid filtered for empty rows.

Date	Measures	Accessories	Bikes	Clothing	Components
2001	Sales Amount	\$20,235.36	\$7,395,348.63	\$34,376.34	\$615,474.98
2002	Sales Amount	\$92,735.35	\$19,956,014.67	\$485,587.15	\$3,610,092.47
2003	Sales Amount	\$296,532.88	\$25,551,775.07	\$871,864.19	\$5,482,497.29
2004	Sales Amount	\$161,794.33	\$13,399,243.18	\$386,013.16	\$2,091,011.92

Getting the visual you need by changing the report style

Some people like numbers, some people like pictures, and sometimes it depends on what data you are looking at. Wouldn't it be nice if you could see your report as either a grid or chart, depending on what you want to see? Of course it would. And yes, you can. PerformancePoint gives you the flexibility to transform your grids to charts and vice versa within your dashboard. Not only that, but you can also choose from a nice variety of chart types.

Changing the report style in analytics grids and charts

One of the coolest things about analytic grids and charts is that they are interchangeable: If you see your data in a grid but want to change it to a chart (and vice versa), you are just a few clicks away. You also have a choice of chart types, including the following:

- ✓ Bar chart
- ✓ Stacked bar chart
- ✓ 100% stacked bar chart
- ✓ Pie chart
- ✓ Line chart
- ✓ Line chart with markers

Take a look at the grid shown in Figure 17-14.

Figure 17-14:
This grid may look better as a bar chart.

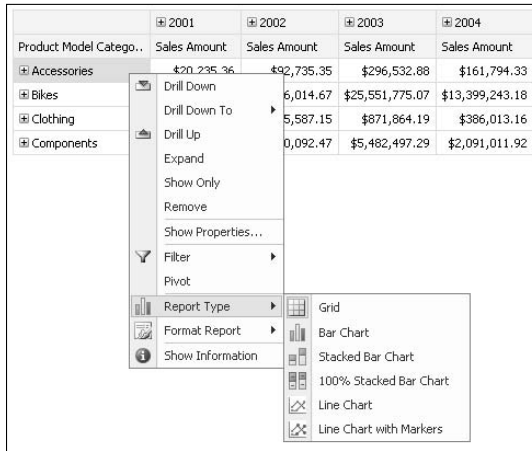
	2001	2002	2003	2004
Product Model Catego...	Sales Amount	Sales Amount	Sales Amount	Sales Amount
Accessories	\$20,235.36	\$92,735.35	\$296,532.88	\$161,794.33
Bikes	\$7,395,348.63	\$19,956,014.67	\$25,551,775.07	\$13,399,243.18
Clothing	\$34,376.34	\$485,587.15	\$871,864.19	\$386,013.16
Components	\$615,474.98	\$3,610,092.47	\$5,482,497.29	\$2,091,011.92

It looks fine as a grid, but we think this particular report would be more telling at a glance if it were a bar chart. We want to be able to see more at a glance, and if we have a chart with many columns and rows, charts are often a better way to achieve that. To make this change, follow these steps:

1. Right-click anywhere on the report to access the reporting options menu.

This menu is shown in Figure 17-15.

Figure 17-15:
Accessing your reporting options menu.

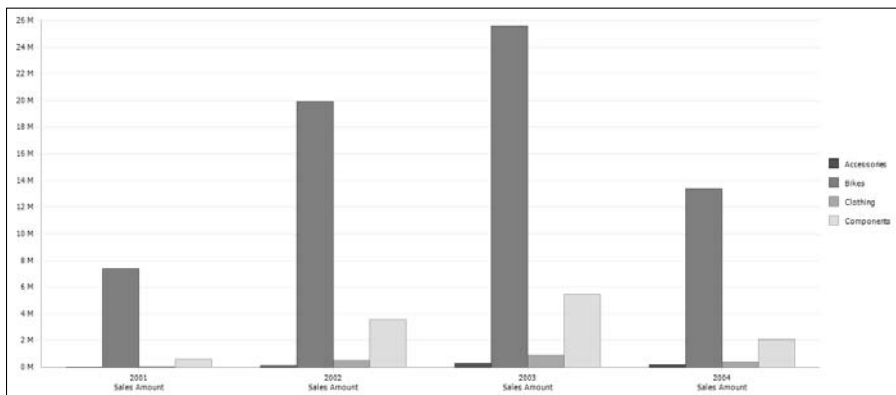


2. Select Report Type → Bar Chart (or any other report type you want) from the submenu that appears.



This is also where you can change from a chart to a grid. Now your report will look like Figure 17-16.

Figure 17-16:
Abracadabra! Our grid is now a bar chart.



Changing the report style in pivot charts

You can't change a pivot table to a pivot chart in your dashboard, but you can change the chart type on a pivot chart — with many great two- and three-dimensional options:

- ✓ Columns (vertical bars)
- ✓ Bars (horizontal bars)
- ✓ Lines
- ✓ Smooth lines
- ✓ Pie charts
- ✓ Scatter plots
- ✓ Bubble
- ✓ Area
- ✓ Donut
- ✓ Radar
- ✓ Stock
- ✓ Polar

We must admit, we don't often veer from the more traditional bars, lines, and pies. Once in a while, we go crazy and use smooth lines, like in our trend charts. But what is particularly nice (and fun) about changing the chart type in a pivot chart is that you can see how your change will affect your chart as you browse through your options — it's like trying on a chart before you buy it.

To change a pivot chart type, follow these steps:

1. Click the Chart Type icon on the Pivot Chart toolbar.

This icon is shown in Figure 17-17. The Commands And Options menu pops up, opening to the Type tab.

2. Click the chart type you want to change to.

In the right side of the window, you can see all the chart selections for the particular type you have chosen.

In this case, we change the column chart to a line chart. So we select Line and are then presented with several line options, also as shown in Figure 17-16.

3. Click a different chart subtype to get the look you want.

Your chart in the background changes per the new subtype.

In this case, we select a line chart with markers, as shown in Figure 17-16 and highlighted with a border. As we select the chart subtype, we can see the pivot chart behind the menu change. When we decide which chart type and subtype we want, we close the menu.

4. Click the red X in the upper-right corner of the Commands and Options menu to close it and complete your chart type change.

You can now view and analyze your report with the new chart.

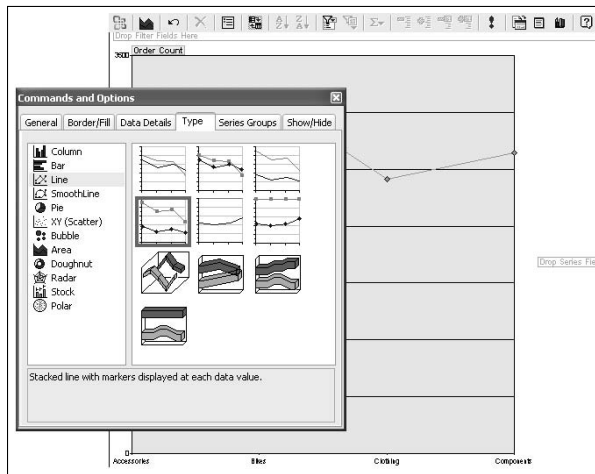


Figure 17-17:
Changing
your pivot
chart type.

Creating Presentations with Printing and Export

Analyzing business performance is an essential part of your job, but so is the presentation of the results of your analysis. Not only do you have to know how your business is performing, but you also often need to communicate that information to your managers and/or your team.

Back in the old days, we spent many a late night assembling presentations: analyzing data, ascertaining results, typing data into spreadsheets, creating charts and grids, copying, pasting, cropping, inserting, printing, and binding. Aarrghh! But those days are over, friend. Ah, the wonders of technology.

Now, with a tool like PerformancePoint, we have no more late nights. You can easily go from analysis to results to presentation to distribution. You may have to do some copying and pasting to consolidate, but it's a lot easier than it used to be.

Exporting your reports

You have the following ways to export your reports and/or assemble a presentation:

- ✓ You can export a picture of your report to Excel or PowerPoint.
- ✓ You can export your connection to the cube for further pivot table analysis in Excel.

Exporting PerformancePoint reports to Excel or PowerPoint

The following types of reports can be exported to Excel or PowerPoint:

- ✓ Analytics grids and charts
- ✓ Pivot charts
- ✓ Trend analysis charts
- ✓ Scorecards

To export your report to Excel or PowerPoint, follow these steps:

1. Click the small triangle in the upper-right corner of your report zone.

A report zone options menu opens. For more information about report zones, see Chapter 15.

Figure 17-18 shows a bar chart report named 'Figure 17-8'. We have clicked the small triangle in the upper-right corner of the report zone, and the report zone options menu is open. We can choose either of the following:

- Export To PowerPoint
- Export To Excel

2. Select Export To PowerPoint or Export To Excel.

A File Download dialog box opens, as shown in Figure 17-19, and gives you the following options:

- Open your PowerPoint or Excel presentation
- Save your PowerPoint or Excel presentation
- Cancel your action

Figure 17-18:
Exporting
our report
to Excel or
PowerPoint.

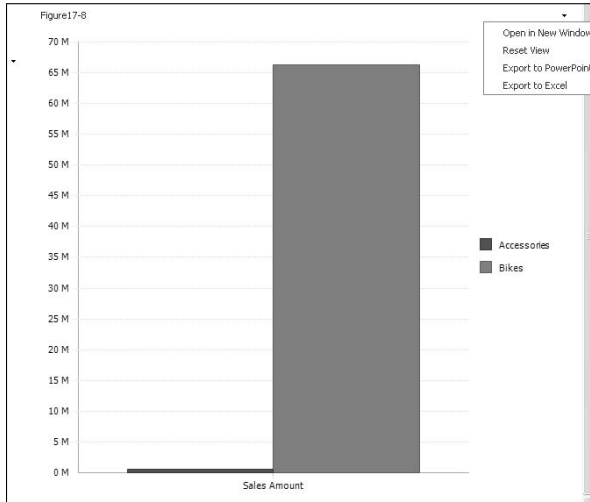
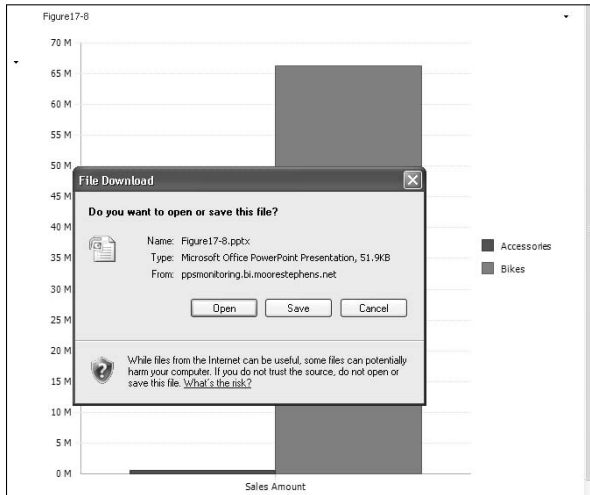


Figure 17-19:
Saving our
PowerPoint
or Excel
presenta-
tion.



3. Click the Save button to save your report.

A File Download dialog box opens as shown in Figure 17-20, and you are prompted to save your file. The default name of the file will be the name of the report as it appears in your dashboard, but you can change that in the File Name field.

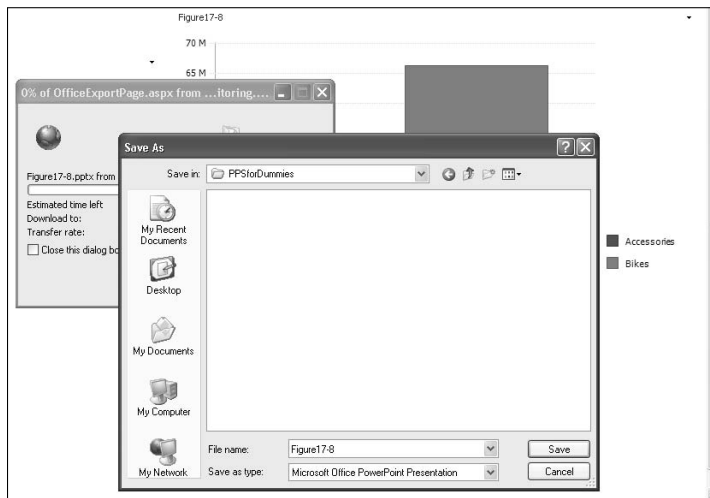


Figure 17-20:
Saving our
PowerPoint
presenta-
tion.

4. Name your file and click the Save button in the Save As dialog box to save your report.

I keep the default name of 'Figure 17-8' and click Save. A Download Complete dialog box opens.

5. Select Open, Open Folder, or Close from the Download Complete dialog box.

In this case, we want to see our presentation, so we click the Open button, as shown in Figure 17-21. (Alternatively, we could open the containing folder in Windows Explorer, or just close this dialog box, having already saved the presentation.)

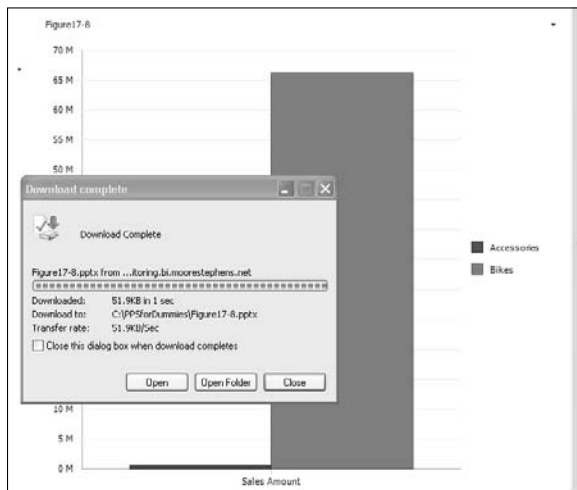


Figure 17-21:
Opening our
PowerPoint
presenta-
tion.

Viewing the PowerPoint report

When we click the Open button, our presentation opens in PowerPoint and looks like Figure 17-22.

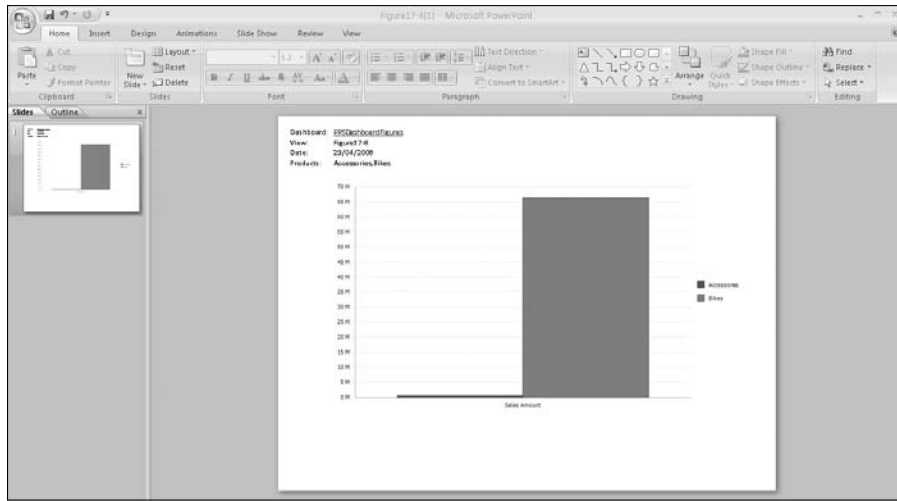


Figure 17-22:
Viewing our
PowerPoint
report.

As you can see in Figure 17-22, the bar chart is now a slide in a new PowerPoint presentation with the following features:

- ✔ In the header, a live link to the dashboard exists: PPSDashboard Figures. If you want to get back to the dashboard page, you have an appropriate Internet/intranet connection, and you are in Slide Show mode, clicking this link brings you to the dashboard page from which you exported this report.
- ✔ Under that is the title or view of the report: Figure 17-8 (you might want to come up with a better report name than that).
- ✔ Under that is the date the report was generated: 29/04/2008 (either we are working on our London server or we are very sophisticated).
- ✔ Under that are any dashboard filters that have been selected (for more information on dashboard filters, see Chapter 17). In this case, we have filtered on Accessories and Bikes.
- ✔ And of course, underneath that is the chart itself. Pretty nifty.

Viewing the Excel report

The same report exported to Excel is shown in Figure 17-23.

The same formatting applies in terms of the header — in fact it looks and is pretty much the same.

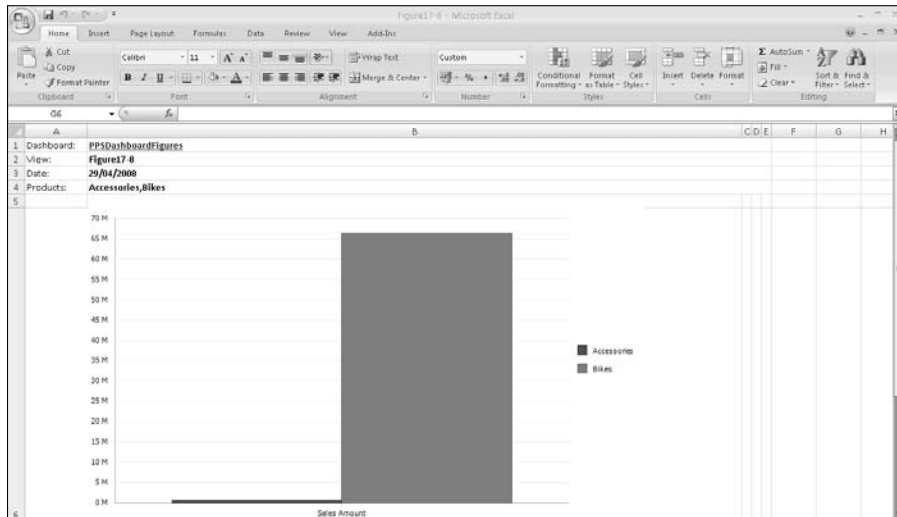


Figure 17-23:
Viewing our
Excel report.



Unfortunately you can only export one report at a time, as opposed to the whole dashboard. But you have these options:

- ✓ You can export the reports one at a time and then copy and paste them into the same presentation.
- ✓ You can save the dashboard page as an HTML (Web page) or MHT (single-file Web page) file using the File→Save As command in Internet Explorer.
- ✓ You can always press Print Screen and paste the results into Paint or a similar program.

Exporting pivot tables to Excel for further analysis

Pivot tables give you the added functionality of being able to export the actual connection to your data source, allowing you to continue your analysis and formatting in an Excel environment.

To export a pivot table from your dashboard, follow these steps:

1. Click the Export To Excel icon on the Pivot Table toolbar.

The icon is shown in Figure 17-24.

Excel launches, as shown in Figure 17-25.

2. Enable the data connection by clicking the Options button, which is next to the security warning below the toolbar, as shown in Figure 17-25.

If you don't see a security warning, skip to Step 4.

A Microsoft Office Security Options dialog box opens, as shown in Figure 17-26.



Figure 17-24:
Exporting
our pivot
table to
Excel.



Figure 17-25:
Launching
Excel.

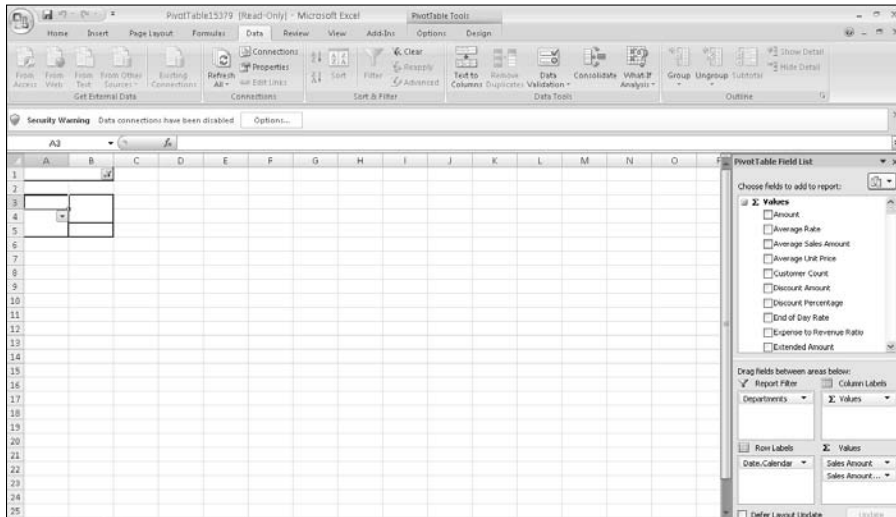


Figure 17-26:
Enabling
data
connectivity.



3. Select **Enable This Content** and click the **OK** button.

You are now connected to your data source.

4. **View your pivot report in Excel.**

Your exported report will appear in the left of your frame, as shown in Figure 17-27. Your field menu will appear on the right.

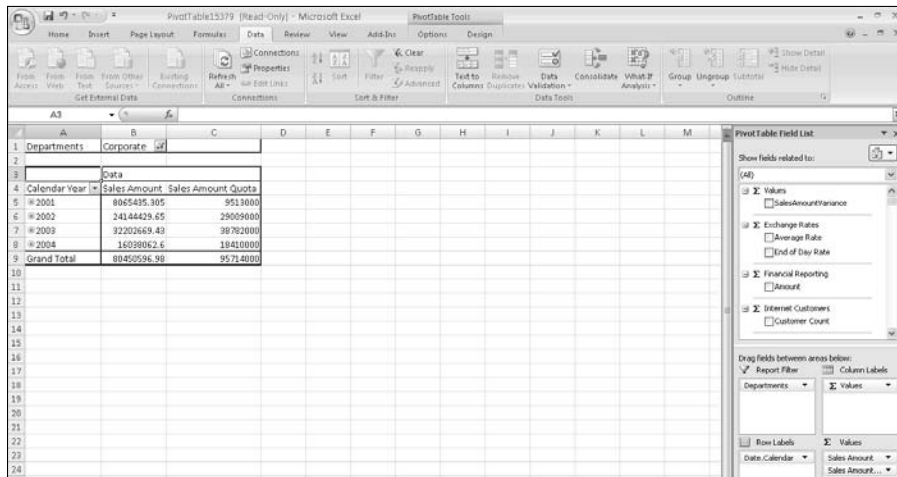


Figure 17-27:
Pivot away.

Printing your reports

Even with all the soft-copy distribution options available to you (for example, analysis, exporting, and e-mail), you may still need to print some reports, for yourself or for others in your organization. You have the following options:

- ✓ Print directly from your dashboard site (that is, through Internet Explorer)
- ✓ Print from your exported Excel or PowerPoint presentation

You probably already know how to print in Excel and PowerPoint, but if you've had issues printing from the Web, follow these steps:

1. In Internet Explorer, choose **File** ⇨ **Print Preview**.

A Print Preview window, like the one shown in Figure 17-28, opens.

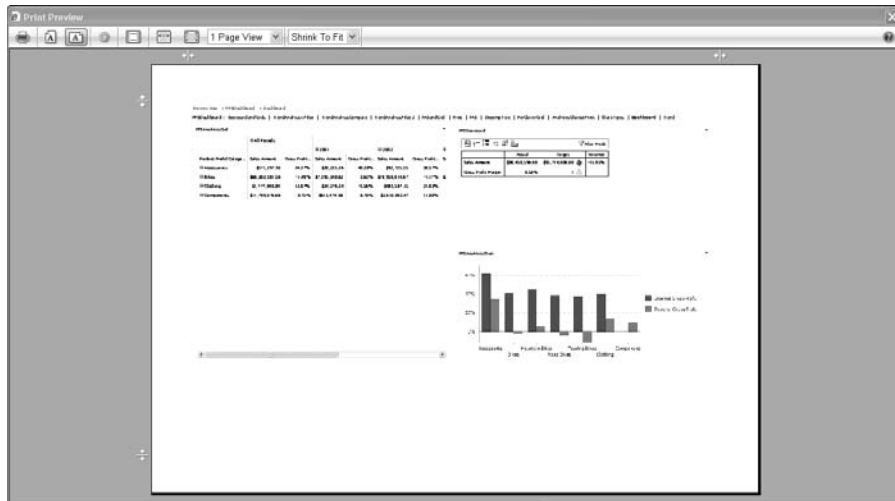


Figure 17-28:
Printing in
Internet
Explorer.

2. Use the icons on the toolbar to format your report for printing.

Here you can use the icons on the toolbar to

- Set the page layout to portrait or landscape
- Hide or show report headers and footers
- Shrink the image to the printing page or use another custom sizing
- Adjust the margins

3. Print your document by clicking the Print icon on the toolbar.

Now you have a nicely formatted dashboard printout.

Part V

The Part of Tens

The 5th Wave

By Rich Tennant



In this part . . .

In Part V, we share our top-ten recommendations for PerformancePoint and show related references. We also give you our top-ten tips, tricks, and potential pitfalls to watch out for.

Chapter 18

Ten Great References

In This Chapter

- ▶ Finding cool places to learn more about PPS
 - ▶ Connecting to the PPS community
-

Finding information about PerformancePoint can get you over obstacles and enhance your understanding about how to get the most out of your PPS solution. Some of these references are Planning specific, and some are M&A specific. Some address related technologies, like Analysis Services, that so significantly impact how PPS might be applied. The following sections describe our top-ten list.

Blogging PerformancePoint

We rely on a number of valuable PerformancePoint Monitoring & Analytics blogs to work our way through some of the complicated features of PerformancePoint. Here are a few of the best:

- ✓ Microsoft PerformancePoint blog: <http://blogs.msdn.com/performancepoint/default.aspx>
- ✓ Kevin White's PerformancePoint blog: <http://blogs.msdn.com/kevinwhite/default.aspx>
- ✓ Chris Webb's BI blog: <http://cwebbbi.spaces.live.com/blog>

Maximizing Your Analysis Services Data Source

Analysis Services provides a superior mechanism for communicating business performance data to analysts and decision makers because logic, speed, and data quality are built in. Throw in a viewing and analytical solution like PerformancePoint 2007, and you add clarity, visual communication, and ease

of use. If you don't already have an Analysis Services cube for your business performance data, it is something we highly recommend that you get. To that end, we recommend *Applied Microsoft Analysis Services 2005 and Microsoft Business Intelligence Platform*, by Teo Lachev (www.prologika.com), to get you started or to advance your skills.

Along the lines of Analysis Services, PerformancePoint allows you to manipulate MDX statements and create your own for dashboard filters. MDX can be difficult to understand, and the following resources are excellent:

- ✓ William Pearson has an excellent online MDX tutorial at www.databasejournal.com/article.php/1459531. It's good for beginners.
- ✓ Andy, our MDX guru recommends the following:
 - www.databasejournal.com/features/mssql
 - www.mosha.com/msolap

Using PerformancePoint Expression Language (PEL)

Advanced users of the Planning component who want to work with the configuration of business rules and processes may find this book lacking. We've intentionally tried to keep this book as "code-free" as possible. For those of you who can't wait to step into the rich world of PEL, we suggest starting with *The Rational Guide to Planning with Microsoft Office PerformancePoint Server 2007*, by Adrian Downes and Nick Barclay.

Downes and Barclay provide an excellent account of the basic structure and composition of PEL. And, their application of PEL to various functions is well conceived and useful.

For an even more complete guide to PEL, check out this link provided by Microsoft:

<http://msdn.microsoft.com/en-us/library/bb839123.aspx>

Working with Advanced Topics

This book is largely intended for users who are new to PPS technology or its precursors. As you advance your PPS capabilities, you may want to leverage

a bit more functionality that the software has to offer. For more advanced PerformancePoint developers and administrators on the Monitoring and Analytics side, check out *Business Intelligence with Microsoft Office PerformancePoint Server 2007*, by Craig Utley.

Also, if you are interested in extending PPS functionality through the PPS SDK (Software Development Kit), check out this link:

<http://msdn.microsoft.com/en-us/library/bb187388.aspx>

Joining the Microsoft Community

As a developer or user of PerformancePoint, you may come across issues or problems with the software. Beyond the typical MSDN resources, Microsoft has also created a community-based service to allow you to post questions and issues. Microsoft will follow up with bug-tracking status and future release dates. The forums also provide links to new downloads, such as add-on tools, Community Technology Previews (CTPs), and software that can fix your problems or allow you to try out new features before they are officially released.

While membership in the service requires you to fill out some surveys, the wealth of knowledge is well worth it. Check out this link:

<http://connect.microsoft.com>

Joining a PPS User Group

We found a couple of PPS user groups on LinkedIn and joined the PerformancePoint Server Professionals group (<http://radekle.spaces.live.com>). It is essentially a blog with a ton of great information and links like the preceding ones plus many more. To view the list of PPS user groups through LinkedIn, do one of the following:

- ✓ Visit www.linkedin.com/groupsDirectory?results=&sik=1217189367206.
- ✓ Visit www.linkedin.com, access the Groups Directory, and run a search on “PerformancePoint.”

Using Help Files

Of course, don't forget that every Microsoft product ships with a significant amount of documentation embedded right in the application. Just click the Help icon at the top of the menu bars. With a couple of keywords, an entire encyclopedia of PerformancePoint information is at your fingertips.

Sometimes the information may seem a bit too technical or overwhelming. But keep in mind that for PerformancePoint, Microsoft has done a great job of including examples with the help files. So, not only can you get the syntax structure, but you can also get to see how an example is addressed using that code.

When in Doubt, Google

What did we do before Google? Well, we would call our colleagues and ask them questions. And while we still do that, we Google questions about PerformancePoint quite a bit. Inevitably, Googling will bring you to the blogs previously listed.

Understanding Your Place in the IT World

While not a forum relating specifically to PerformancePoint, the IT Toolbox community provides a tremendous resource for all things business intelligence. Yes, we know that the IT Toolbox is not just for business intelligence. It holds a ton of information about *everything* relating to information technology. However, the business intelligence contents are especially good. You can use the links, white papers, articles, and forums to gain a better sense of the entire business intelligence industry today. You'll see where it's moving in the future, compare different products, discuss commonly experienced issues, and find a host of other useful topics.



If you get really proficient at PerformancePoint, a section even exists for finding jobs within the IT space.

So when it comes to determining whether PerformancePoint is the right solution for your company, go to the IT Toolbox to see how PerformancePoint compares to the other major players in the space. You may find that PerformancePoint is the perfect solution for you, or you may find alternative products that suit your needs better.

You can find the IT Toolbox at the following link:

<http://businessintelligence.ittoolbox.com>

Calling Moore Stephens Business Solutions

We often rely on the knowledge and experience of our colleagues when we get stuck. We are fortunate to have an incredibly talented and experienced team of business intelligence developers and architects at MSBS (www.msbs-llc.com). Team members have significant experience with Microsoft's Business Intelligence Stack, including SQL Server, Analysis Services (and MDX), Reporting Services, PerformancePoint Server, ProClarity, and SharePoint. While we specialize in creating performance management solutions for the insurance industry, our technical knowledge is ubiquitous.

Also, we have opened a blog to respond to any questions our readers might have about their PerformancePoint Server 2007 deployments. You can find the blog at this link:

<http://rachelandmarkbiblog.blogspot.com>

Chapter 19

Ten Tips, Tricks, and Pitfalls

In This Chapter

- ▶ Watching out for PPS pitfalls
 - ▶ Saving yourself some time with a couple of tips and tricks specific to Planning or Monitoring and Analytics (M&A)
-

This chapter is small but mighty. Following these recommendations can save you enormous amounts of time and pain. Why reinvent the wheel?

Using Analysis Services as Your Primary M&A Data Source

While PPS M&A is reasonably adept at leveraging data that is not multidimensional (for example, an SQL table or Excel Workbook), it is much more adept when it is. Instead of trying to make PPS fit your relational or flat data environment, take your relational and flat data environment and transform that into an Analysis Services cube whenever possible. And benefits to implementing Analysis Services extend far beyond its integration with PPS. See the sidebar “Analysis Services rocks” in Chapter 9 for more benefits.

Setting Up Element Security in M&A

In PPS M&A, when you create a new element, one of the first steps is naming that element. In the naming dialog box for each new element, you find a check box that allows access to that element for all authenticated users. Selecting this check box can save you the time of having to set up this authentication manually. The authentication does not manage or override data (that is, database or Analysis Services) security; it just allows the user access to the PPS dashboard page, scorecard, report, and data source elements. If users don't have access to certain data per their roles, allowing these element permissions does not change that.

Using Default Calculations for M&A KPIs

Unless you have very specific business rules regarding how KPIs should be calculated and rolled up, leave the default calculation setting for your KPIs and set No Value as the calculation for objectives. Default accurately normalizes your KPIs so that they can be compared correctly. Showing a fixed or data source value in the objectives can be misleading, because the objective itself will be calculated from the normalized values of its children. Therefore, setting the calculation to No Value makes more sense from a user perspective.

Trending with M&A Trend Charts

If you want to create trend charts, make sure that your date dimension has future dates. A Trend Analysis Chart can only predict trends to the last date that you have in your cube. But the last date you have in your cube might be the last date you have actual data for. Your Date dimension should be populated with future dates, for as far as you would like to predict based on your historical data.

ProClarity URL Tricks for M&A

In addition to the configuration options on the Editor tab of your PAS (ProClarity Analytics Server) report workspace, you can use a number of other configurations to show more or less of the PAS interface in your dashboard.

The great benefit to this is that by default, you have limited functionality on a PAS report when published with PerformancePoint. For example:

- ✓ You can't drill down to other dimensions in a decomposition tree.
- ✓ You can't change measures and dimensions in your report.
- ✓ You don't have a toolbar to launch ProClarity Web Professional or export your PAS report to Excel.

But, courtesy of the Microsoft PerformancePoint blog, you can use the following configuration settings to change the functions an end user has access to when viewing a PAS report deployed in PPS:

- ✓ Add `tabsVisible=false`; to your PAS configuration list to hide the ProClarity logo, the ProClarity tabs, and the left pane. Add `tabsVisible=true`; to show these items.
- ✓ Add `dimToolvisible=false`; to your PAS configuration list to hide your data layout tab to disable slicing, dicing, and filtering (that is, changing rows, dimensions, and background items). Add `dimToolvisible=true`; to show this tab.
- ✓ Add `contentNavigation=false`; to your PAS configuration list to remove the PAS library breadcrumb. Add `contentNavigation=true`; to show it.
- ✓ Add `fullscreen=true`; to your PAS configuration list to show the PAS toolbar, which includes PAS exporting and printing functions and Web Professional access. Add `fullscreen=false`; to hide the toolbar.

See this link for more information:

<http://blogs.msdn.com/performancepoint/archive/2008/03/27/using-customized-proclarity-views-in-a-pps-dashboard.aspx>

Connections for Planning

Depending on the installation and configuration of your Planning components, the methods of connecting to Planning Administration Console may be different compared to Planning Business Modeler and Excel. In most corporate settings, the Planning Administration Console connection requires connecting through `http://<servername>:46878`. However, connections to the planning server through Planning Business Modeler and Excel may not accept the same address, because the administrator may have set up a different domain and address for other connections.

If you need access to the planning server through all the Planning components, check with your administrator to obtain both connection methodologies before starting. Knowing the proper addresses for the components can greatly smooth your experience. After you have the addresses, make sure to keep them stored where you can access them at any time.

Planning Data Sources and Default Schemas

When creating a data source connection in Planning Administration Console, you may notice that some tables or views are missing. It turns out that the data connection module of Planning cannot navigate tables and views that do not belong to the default schema (usually dbo). Thus, if you have a data source that includes multiple schemas, only the tables and views belonging to the default schema will appear for inclusion in your data source panel.

Currently, no workaround exists for this issue. Just make sure that any of the tables and views that you want to use for dimensions in your model are present within the default schema of your database.

Formatting Your Planning Form Templates

As you build form templates for your Planning users, remember that usability is a tremendous boon to adoption. The more user-friendly and appealing you make the templates, the more your users will want to use your proud work. We recommend adding a couple of touches:

- ✓ Format the form templates to include company logos, proper columns and row headings, and row banding to make the look and feel of the template easier on the eyes and as familiar as possible.
- ✓ Add filters so that users aren't overwhelmed by the amount of data that needs to be entered. The Filter function allows your users to concentrate on a segment or slice of data at a time.

If you build your form templates with your end users in mind, both you and they will be happier in the end.

Ensuring the Proper Structure of Data Source Files for Planning Member Set Creation

For the Planning components, the creation of member sets plays a critical and essential role in the functionality of your application. However, the

means to create member sets through the Properties method require your dimension data source to be properly structured. This applies to any data source you import, whether you are using the CSV, a data source, or a custom data method.

Because the information resides in a flat file-like structure, you must ensure that the relationship between the grouping columns and the rest of the data is unique and exactly hierarchical without repetition. For example, if you are trying to build a member set containing country, state, county, and zip code, with zip code as the leaf-level member, you need to ensure that every zip code belongs to one and only one county. Then, each county only belongs to one state, and each state only belongs to one country. (If you try this example, using data from the United States, you'd soon realize that zip codes actually cross county and state lines!)

Trying to build a member set with data that is nonunique within the file results in an empty member set. You need to ensure that this doesn't happen to you (it's extremely annoying). If you are not familiar with writing SQL code, you should ask your resident DBA expert to check that the data source you are using is unique down to the level of your hierarchy.

If you have multiple rows for what you think should be leaf-level data, you'll need to do some cleanup of the data. In that situation, we suggest creating a database view of the data that conforms to the proper structure. In this way, you don't need to disturb the underlying data in case you need it for something else.

Most often, this problem arises when some history is contained within the base data. For example, an employee may have changed departments and the old department assignment is still in the data file. You may need to only bring currently active data into a view to suppress extraneous data.

Leveraging Current Period Configurations within Planning Form Templates

Within your Planning components, you can schedule current period updates (see Chapter 6). If you have done so, you can make your form templates automatically update to accommodate the shift in current period. Thus, if your current periods are scheduled for every 6 months, your form templates can automatically shift the dates within the time dimension to match.

When designing your matrix, simply edit the Time dimension in the Define Member Intersections for Columns section. Add dynamic ranges to configure how far into the future your scenario variable should apply for the given cycle. Thus, with the onset of a cycle, your actual scenario will apply to the current 6 months, while your forecast can be aligned with the next 6 months.

Appendix

Installing a Sample Data Source

To download the Adventure Works DW sample cube, follow these steps:

- 1. Go to <http://codeplex.com/SqlServerSamples#ssas>.**
- 2. Click Download next to “Microsoft Samples (OLAP, Data Mining, Administration).”**
A new Web page opens.
- 3. On the right side of the page in the box entitled “Releases” choose the appropriate version.**
I use Analysis Services 2005 SP2.
- 4. Click the appropriate download for your Analysis Services Server.**
This will usually be the first one, “SqlServerSamplesAS.msi,” unless you are on a 64-bit server. If you are not sure, ask your database server administrator which one to download (or ask them to do it for you).
An agreement dialog box will open.
- 5. Accept the license agreement by clicking Agree.**
- 6. Click Run when prompted and follow the install wizard to install the AdventureWorks Analysis Services Database.**

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