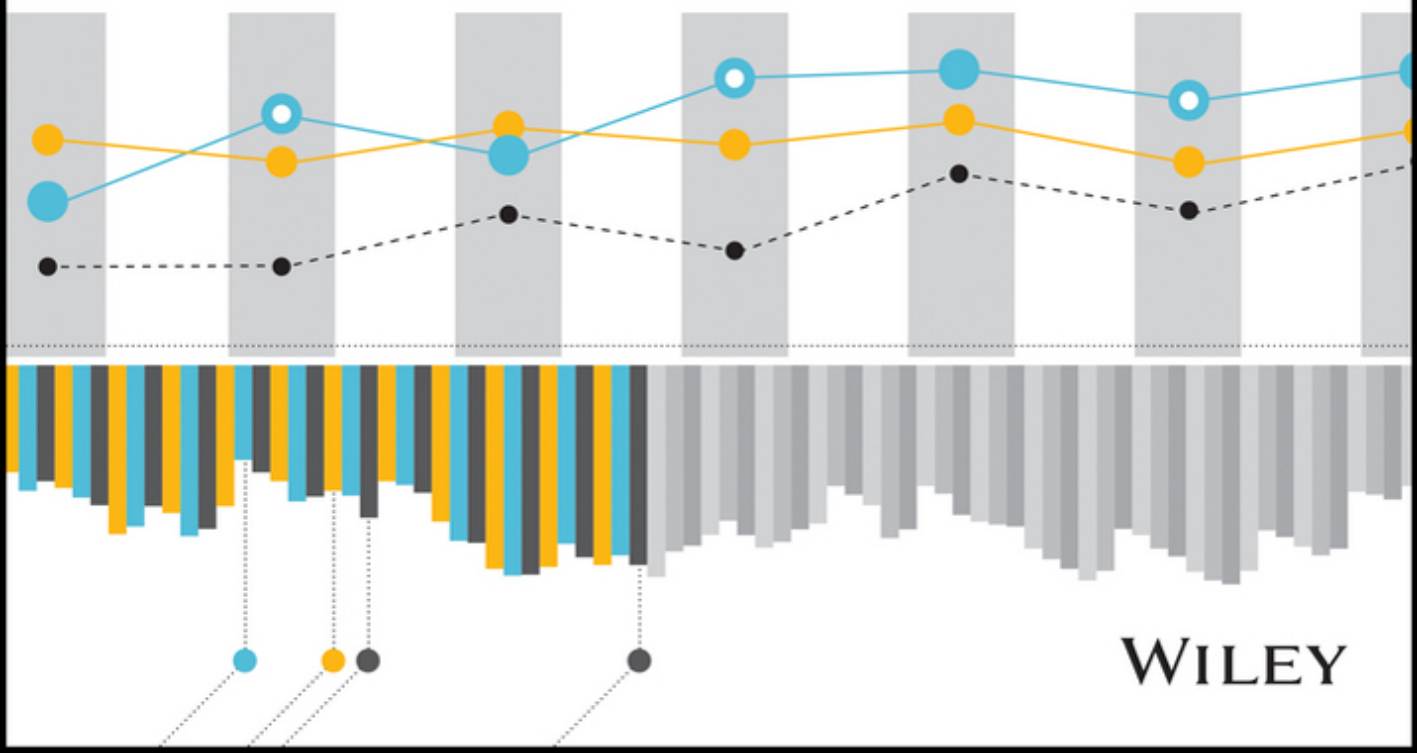


Christopher Price
Adam Jorgensen
Devin Knight

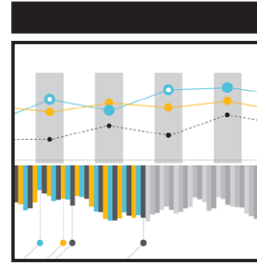
Building Performance Dashboards and Balanced Scorecards

with SQL Server® Reporting Services



WILEY

**Building Performance
Dashboards and Balanced
Scorecards with SQL Server®
Reporting Services**



Building Performance Dashboards and Balanced Scorecards with SQL Server® Reporting Services

Christopher Price
Adam Jorgensen
Devin Knight

WILEY

Building Performance Dashboards and Balanced Scorecards with SQL Server® Reporting Services

Published by
John Wiley & Sons, Inc.
10475 Crosspoint Boulevard
Indianapolis, IN 46256
www.wiley.com

Copyright © 2014 by John Wiley & Sons, Inc., Indianapolis, Indiana
Published simultaneously in Canada

ISBN: 978-1-118-64719-6
ISBN: 978-1-118-64730-1 (ebk)
ISBN: 978-1-118-84909-5 (ebk)

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

Limit of Liability/Disclaimer of Warranty: The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Web site is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or website may provide or recommendations it may make. Further, readers should be aware that Internet websites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services please contact our Customer Care Department within the United States at (877) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit www.wiley.com.

Library of Congress Control Number: 2013948017

Trademarks: Wiley and the Wiley logo are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates, in the United States and other countries, and may not be used without written permission. SQL Server is a registered trademark of Microsoft Corporation. All other trademarks are the property of their respective owners. John Wiley & Sons, Inc. is not associated with any product or vendor mentioned in this book.

For my smart and beautiful children, Savannah and Keegan.

—Chris Price

Colossians 3:17

—Devin Knight

To Teresa Pugh—Grace, Strength and Love.

An example for all of us.

We miss you.

—Adam Jorgensen



Credits

Executive Editor

Robert Elliott

Project Editor

Victoria Swider

Technical Editor

Kathi Kellenberger

Production Editor

Daniel Scribner

Copy Editor

Katherine Burt

Editorial Manager

Mary Beth Wakefield

Freelancer Editorial Manager

Rosemarie Graham

Associate Director of Marketing

David Mayhew

Marketing Manager

Ashley Zurcher

Business Manager

Amy Knies

Vice President and**Executive Group Publisher**

Richard Swadley

Associate Publisher

Jim Minatel

Project Coordinator, Cover

Katie Crocker

Composer

Cody Gates,
Happenstance Type-O-Rama

Proofreader

Sarah Kaikini, Word One

Indexer

Ron Strauss

Cover Designer

Ryan Sneed

Cover Image

Ryan Sneed

About the Authors



Chris Price is a senior consultant with Microsoft and is based in Lakeland, Florida. He has a BS degree in Management Information Systems and a Master of Business Administration degree, both from the University of South Florida. He began his career over 10 years ago and has performed in a diverse range of roles from developer to software architect with extensive experience across a wide range of Microsoft technologies.

Chris has architected and successfully implemented multiple, large-scale, multi-tier applications and enterprise data warehouse projects. He specializes in data integration, ETL, BI/DW architecture and design, master data management, and BI development.

Chris teaches the Pragmatic Works SSIS training class, has spoken at 24 Hours of PASS, and regularly presents at SQL Saturdays, Code Camps, and other community events. He has served as a contributing author on *Professional Microsoft SQL Server 2012 Analysis Services with MDX and DAX* (Wiley, 2012), and was a technical reviewer for *Knight's Microsoft SQL Server 2012 Integration Services 24-Hour Trainer* (Wiley, 2012).

You can follow Chris on his blog at <http://bluewatersql.wordpress.com/> or on Twitter at @BluewaterSQL.



Devin Knight is a senior BI consultant at Pragmatic Works. He authored the books *Knight's Microsoft SQL Server 2008 Integration Services 24-Hour Trainer* (Wiley, 2012), *Knight's Microsoft SQL Server 2012 Integration Services 24-Hour Trainer* (Wiley, 2012), *Knight's Microsoft Business Intelligence 24-Hour Trainer* (Wiley, 2012), and *SharePoint 2010 Business Intelligence*

24-Hour Trainer (Wiley, 2012). Devin has spoken at numerous conferences, including 24 Hours of PASS, SQL Saturdays, and Code Camps, and is a contributing member to the PASS Business Intelligence Virtual Chapter. Making his home in Jacksonville, FL, Devin is the vice president of the local users' group (JSSUG).



Adam Jorgenson is the President of Pragmatic Works and a PASS Board Director. He has gained extensive experience with SQL Server, SharePoint, and analytics over the past 13 years. His primary focus is helping organizations and executives drive value through new technology solutions, management techniques, and financial optimization. He specializes in the areas of OLAP, Cloud, and Big Data and works on solutions to make those technologies real for enterprises.

About the Technical Editor



Kathi Kellenberger is a senior consultant with Pragmatic Works. She has authored, coauthored, or technical-edited eight SQL Server books and counting. Her "claim to fame" is her contribution to *Professional SQL Server Integration Services 2005*, the first SSIS book to hit the shelves, as the lone woman on the cover. Kathi enjoys speaking about SQL Server and has presented at many events, such as SQL Saturdays, PASS Summit, Day of .NET, SQL Rally, and user group meetings. When Kathi is not working with SQL Server, she enjoys spending time with her grandchildren Thomas, Gwen, and Elliott.



Acknowledgments

What a journey this book has been! First, thank you to the acquisitions and editorial staff at Wiley for the opportunity and the patience you have given and shown. This book is truly the product of a great team of knowledgeable and professional people, and it would not have been possible without each and every one of you. Next, thank you to my mentor and friend Adam Jorgensen, who has walked, sometimes pushed, and other times pulled me through the process of writing this book. I am greatly indebted. Finally, thank you to all the people, including my family, who were there to answer my questions (typically in the middle of the night) and were supportive throughout the process.

—Chris Price

I must give thanks to God, without whom I would not have such blessings. Thanks to my wife Erin, who has had amazing patience during the late nights of writing and editing. To our three children Collin, Justin, and Lana, who have sacrificed time with Daddy. Thanks to the book's other authors, Chris and Adam, who worked very hard while missing time with their families, too. Finally, I would like to thank my E.I. mentor, Phil Shaw, for showing me the art of Extreme Ironing. The performance art of Extreme Ironing has always been a dream of mine, and I look forward to my ultimate goal of underwater ironing.

—Devin Knight

First I want to thank my Lord and Savior Jesus Christ. I can do all things through Him. I also want to thank the team at Pragmatic Works and Wiley for pulling together another amazing title. Special thanks to our Microsoft counterparts for their technical additions and help editing this effort! Thank you to our clients who drove the need for a book like this through their passion for better business practices and processes. Last but not least, thanks to Chris and Devin for their work in helping to make this book a reality.

—Adam Jorgenson



Contents at a Glance

Introduction		xix
Part I	Foundations of Dashboards and Balanced Scorecards	1
Chapter 1	Introduction to Balanced Scorecards	3
Chapter 2	Planning Your Dashboard and Scorecard Initiative	21
Part II	Building and Extending Dashboards and Balanced Scorecards	33
Chapter 3	Building Your First Dashboard and Balanced Scorecard	35
Chapter 4	Enhancing your Dashboard and Balanced Scorecard	51
Chapter 5	Interactive Dashboards and Balanced Scorecards	67
Chapter 6	Visual Dashboards and Balanced Scorecards	89
Chapter 7	Mobile Dashboards and Balanced Scorecards	125
Chapter 8	Extending Dashboards and Balanced Scorecards with Custom Code	139
Chapter 9	Publishing Dashboards and Balanced Scorecards	155
Part III	Dashboards and Balanced Scorecards in Action	173
Chapter 10	Dashboards	175
Chapter 11	Strategy and Process Maps	195
Chapter 12	Balanced Scorecards Case Study	219
Chapter 13	Decision-making Charts	233
Chapter 14	Forecasting Trends and Data Smoothing	253
Index		277



Contents

Introduction	xix	
Part I	Foundations of Dashboards and Balanced Scorecards	1
Chapter 1	Introduction to Balanced Scorecards	3
	Origins of Strategic Management Systems	3
	Tools of Today's Management	4
	Balanced Scorecards	4
	Strategy Maps	5
	Dashboards	7
	Benefits of Today's Scorecards	7
	Team Strategy	8
	Information Technology Alignment	8
	Data Strategy	8
	Organizational Alignment	8
	Strategy to Action Conversion	9
	Choosing the Right Technology for the Task	9
	Designing for Audience Usability	10
	Executives	10
	Sales and Marketing	10
	Field and Global Workforce	11
	Operations and Production	11
	Organizing Your Balanced Scorecard	11
	Defining Your Strategic Function	12
	Why is the Strategy Map so Important?	17
	How Do You Know It's Working?	19
	Moving Forward with your Scorecard Initiative	19
	Summary	19

Chapter 2	Planning Your Dashboard and Scorecard Initiative	21
	Defining Scope and Gathering Requirements	22
	Executive Involvement	22
	Defining Measures	25
	Selecting the Right Performance Metrics	28
	Planning Development and Implementation	29
	Managing Expectations and Scope	30
	Summary	31
Part II	Building and Extending Dashboards and Balanced Scorecards	33
Chapter 3	Building Your First Dashboard and Balanced Scorecard	35
	Anatomy of a Reporting Services Project	36
	Introduction to Data Sources, Datasets, and Controls	37
	Design and Preview	41
	Building Your First Dashboard	46
	Scoping and Requirements for Your Dashboard	46
	Considerations Before You Get Started	47
	Identifying Metrics and Gathering Data	47
	Working with Metrics and KPIs	48
	Designing the Dashboard	49
	Summary	50
Chapter 4	Enhancing Your Dashboard and Balanced Scorecard	51
	Organizing and Achieving Visual Consistency	51
	Placement and Layouts	52
	Dashboard Headers and Footers	53
	Reports, Subreports, and Paging	54
	Formatting Dashboard Elements	55
	Fonts and Text Boxes	55
	Borders, Lines, Color, and Images	56
	Text, Numbers, and Dates	58
	Conditional Formatting	60
	Expressions	60
	Conditional Formatting Step-by-step	61
	Custom and Data-driven Labels and Titles	62
	Creating Custom Labels	63
	Working with Dates and Times	64
	Summary	66
Chapter 5	Interactive Dashboards and Balanced Scorecards	67
	Common Interactive Features	67
	Drillthrough	68
	Expand / Collapse Groups	69
	Interactive Sorting	71
	Bookmarks	72

	Parameterization	74
	Introduction to Reporting Services Parameters	75
	Data-driven Parameters	79
	Working with Cascading Parameters	82
	Step-by-step Drillthrough Report	83
	Summary	88
Chapter 6	Visual Dashboards and Balanced Scorecards	89
	General Guidelines for Data Visualizations	89
	Know your Audience	90
	Select the Right Medium	90
	Kill Cute	90
	Use Colors Carefully	91
	Working with Charts and Graphs	92
	Getting Started with Charts	93
	Extending the Reporting Services Chart	102
	Working with Sparklines and Data Bars	107
	Sparklines	107
	Data Bars	109
	Working with Gauges and Bullet Graphs	110
	Gauges	110
	Bullet Graphs	112
	Working with Indicators	115
	Working with Maps	118
	Summary	123
Chapter 7	Mobile Dashboards and Balanced Scorecards	125
	Planning for the Right Audience	125
	Browser or Native?	126
	Choosing a Mobile Platform	127
	The Pros and Cons of Reporting Services	127
	The Pros and Cons of PerformancePoint	128
	General Considerations for Mobile Dashboards	134
	Performance	135
	Security	136
	Design Considerations	137
	Summary	137
Chapter 8	Extending Dashboards and Balanced Scorecards with Custom Code	139
	Choosing to Embed Custom Code	140
	Direct Inputting Code	141
	Writing a Function	142
	Creating Assemblies for Reusability	146
	Building a .NET Assembly	147
	Deploying an Assembly	150
	Using an Assembly in a Report	151
	Summary	153

Chapter 9	Publishing Dashboards and Balanced Scorecards	155
	Choosing a Deployment Location	155
	Configuring and Publishing to a Native Report Server	156
	Setting Up and Configuring Reporting Services	156
	Planning for Growth and Scalability	158
	Deploying to SQL Server Reporting Services	161
	Managing Security	162
	Configuring and Publishing to SharePoint	165
	Configuring Reporting Services for SharePoint	166
	Deploying to SharePoint	170
	Data Alerts	170
	Summary	172
Part III	Dashboards and Balanced Scorecards in Action	173
Chapter 10	Dashboards	175
	Case Study: Adventure Works	175
	What to Measure and When	176
	Developing the Dashboard	176
	Summary	194
Chapter 11	Strategy and Process Maps	195
	Strategy Maps	195
	Perspectives	197
	Strategic Themes	198
	Objectives and Casual Links	200
	Designing a Strategy Map	201
	Process Maps	202
	Process Flow Map	202
	SIPOC Map	206
	Value Stream Map	207
	Case Study: Contoso Plastics	210
	Background	211
	The Situation	211
	Process Improvement	212
	Design Sessions	212
	Anecdotal Results	213
	Implementing Strategy and Process Maps	214
	Working in Microsoft Visio	214
	Alternative Implementation Options	217
	Summary	218
Chapter 12	Balanced Scorecards Case Study	219
	Designing a Balanced Scorecard for a Marketing Firm	220
	Defining Objectives	220
	Selecting Metrics	222
	Choosing Appropriate Targets	223

	Bringing the Balanced Scorecard Together	225
	Wrangling the Data	226
	Building the Balanced Scorecard	226
	Summary	231
Chapter 13	Decision-making Charts	233
	Box-and-whisker Charts	233
	Box-and-whisker by Example	234
	Building a Box-and-whisker Chart	235
	Pareto Charts	240
	80-20 Rule	240
	Pareto Chart	240
	Building a Pareto Chart	241
	Variance Charts	244
	Gantt Charts	248
	Summary	251
Chapter 14	Forecasting Trends and Data Smoothing	253
	Smoothing Data	253
	Simple Moving Average	254
	Weighted Moving Average	256
	Exponential Weighted Moving Average	257
	Forecasting with Moving Averages	259
	Forecasting	259
	Forecasting with Microsoft Excel	259
	Forecasting with SQL Server Analysis Services	262
	Case Study: Health Care Forecasting	273
	Gathering and Preparing the Data	273
	Building the Time Series Model	274
	Making the Forecast	276
	Summary	276
Index		277



Introduction

Balanced scorecards and performance dashboards are high value, high visibility tools for driving and monitoring organizational performance in today's hypercompetitive business environment. These business critical reports can be reliably delivered using Reporting Services on Microsoft's SQL Server platform.

This book focuses on understanding and successfully delivering performance management reports using SQL Server Reporting Services by introducing the benefits, concepts, and techniques behind designing, building, and delivering dashboards, balanced scorecards, and other performance management reports.

How This Book Is Organized

This book is organized into three distinct sections:

Part I: Foundations of Dashboards and Balanced Scorecards

The first section of the book takes a holistic look at performance management, common metrics, and the steps necessary to successfully implement balanced scorecards, dashboards, and other similar reports. Chapter 1 is foundational in covering the business drivers and metrics involved, while Chapter 2 discusses gathering business requirements, scope, project management, and implementation.

Chapter 1: Introduction to Balanced Scorecards

This chapter introduces the basic premise behind both dashboards and balanced scorecards from a manager's or executive's perspective and answers the question of why these analytical tools are important, diving into the fundamentals of balanced scorecards, explaining the scorecard in the business process context, including defining a strategic foundation while developing an overall vision.

Chapter 2: Planning Your Scorecard Initiative

This chapter outlines a proven project approach to implementing dashboards and balanced scorecards in the enterprise, including getting executive buy-ins and defining managing scope, requirements, and expectations.

Part II: Building and Extending Dashboards and Balanced Scorecards

The second section of the book targets report designers and developers, as you are introduced to the skills and techniques needed to design, develop, and deliver both a dashboard and balanced scorecard using Reporting Services. This section assumes only limited Reporting Services knowledge, walking you through building a progressively more advanced solution.

Chapter 3: Building Your First Dashboard and Balanced Scorecard

This chapter guides you through the building of both a simple dashboard and a balanced scorecard. The examples presented introduce important Reporting Services features and objects including: reports, data sources, datasets, tables, and matrices.

Chapter 4: Enhancing Your Dashboard and Balanced Scorecard

This chapter introduces you to techniques for enhancing the dashboard and scorecard. Topics include advanced formatting controls and labels, paging, and conditional formatting.

Chapter 5: Interactive Dashboards and Balanced Scorecards

Chapter 5 introduces the skills necessary to make Reporting Services dashboards and scorecards interactive, including sorting, filtering, parameterization, and report drillthrough.

Chapter 6: Visual Dashboards and Balanced Scorecards

The focus of Chapter 6 is on the visual aspect of dashboards and scorecards in Reporting Services. Topics include charts, gauges, sparklines, graphs, and map integration. You are also introduced to more advanced topics, such as customizing visual elements, setting thresholds, and alerting.

Chapter 7: Mobile Dashboards and Balanced Scorecards

Chapter 7 discusses topics and considerations that are important when designing and implementing dashboards for mobile devices.

Chapter 8: Extending Dashboards and Balanced Scorecards with Custom Code

Custom code within Reporting Services is introduced as a special topic in Chapter 8. You will walk through the implementation of a few examples, such as alternating row color and advanced formatting in both embedded code and in external assemblies.

Chapter 9: Publishing Dashboards and Balanced Scorecards

Chapter 9 closes the loop and discusses publishing and deploying your dashboard and/or scorecard including administration, security, scheduling, and report subscriptions.

Part III: Dashboards and Balanced Scorecards in Action

The third section of the book consists of case studies to highlight common performance management report implementations across different industry segments. This section targets executives, managers, and developers, as each chapter discusses the rationale, techniques, and implementation of each performance management report.

Chapter 10: Dashboards

This chapter uses a fictional retail sales company to illustrate the techniques and skills learned up to this point to design and implement a typical dashboard in Reporting Services.

Chapter 11: Process and Strategy Maps

Chapter 11 introduces the techniques and fundamentals behind process and strategy maps. A manufacturing case study is presented to walk you through the design and implementation process for both.

Chapter 12: Balanced Scorecards

This chapter uses a retail and marketing scenario as a functional example for designing and developing a balance scorecard using Reporting Services.

Chapter 13: Decision-making Charts

Chapter 13 introduces decision-making tools, including box-and-whisker, Pareto, and Gantt charts.

Chapter 14: Forecasting Trends and Data Smoothing

The final chapter discusses forecasting and data smoothing techniques to highlight trends. A financial services case study is used to demonstrate a common implementation of the techniques discussed.

Who Should Read This Book

This book was written for a very diverse audience and as such it is possible to skip around and get the information you need or want.

Managers, decision makers, and executives who are trying to get up to speed or are ready to take on a dashboard project should start with Part I. They will also find Part III useful in bridging theory with practice.

Developers and practitioners who are already familiar with analytical report fundamentals can start with Part II and dive directly into the skills needed to design, build, and implement dashboards and balanced scorecards.

Tools You Will Need

The primary focus of this book is Microsoft SQL Server Reporting Services. To follow along and apply the skills and techniques demonstrated, you will need to have either Microsoft SQL Server 2008 R2 or Microsoft SQL Server 2012 Database Engine and Reporting Services installed.

Additionally, you will need to download and install the Adventure Works sample databases from: <http://msftdbprodsamples.codeplex.com/>.

Periodically, other tools such as Microsoft SQL Server Analysis Services, SharePoint, PerformancePoint, and PowerView are mentioned or discussed. Having this software available is useful but not required.

What's on the Website?

The companion website for this book can be found at www.wiley.com/go/performancedashboards and it contains all completed sample code and Visual Studio projects demonstrated for this book. To use the samples provided, open each solution and then update the data source for your local machine instance.

Summary

This book will help you build a solid foundation on which you will be able to deliver meaningful and powerful analytical reports. The skillsets and techniques are intended to help make your dashboards and performance scorecards not only actionable and easy to use but also easier to build and manage.

Foundations of Dashboards and Balanced Scorecards

In This Part

This section of the book introduces the components and best practices for getting your scorecard and dashboard initiatives underway. Chapter 1 discusses the concepts behind the scorecard and how to get started planning the development of your first one. Chapter 2 helps you understand all the required steps for planning and executing your balanced scorecard initiative within your organization.

Chapter 1: Introduction to Balanced Scorecards

Chapter 2: Planning Your Dashboard and Scorecard Initiative

Introduction to Balanced Scorecards

In today's economy and business climate, tools are needed that enable management teams and executives to adapt to the demands of changing markets and rapidly moving conditions while working across the organization to drive success through strategic alignment. Balanced scorecards and dashboards, along with strategy maps, are organizational tools that help ensure this cross-business alignment and strategy implementation. This chapter covers where these tools originated, how management teams first began leveraging them, and how firms are using them today to be successful in their implementations of strategy.

Origins of Strategic Management Systems

A challenge for many growing firms in the 80s and 90s was turning deep strategic goals into actionable behavior across an organization. To fill this need, two experts from Harvard, Kaplan and Norton, put forth the concepts and practices behind the balanced scorecard in an article in *Harvard Business Journal* in 1992. Their new system of managing priorities and aligning responsibilities with profitability focused on converting strategy into action. A careful balance was needed with these proposed scorecard systems because some firms were succeeding with them and others viewed them as administrative overhead and

were getting bogged down in their implementation. To help streamline this overhead and get all the stakeholders on the same page, Kaplan and Norton developed a template driven system called a strategy map that sums up the critical measurements an organization needs to execute on its strategic goals.

Tools of Today's Management

The organizational model has grown and matured since the 90s, and the balanced scorecard is now in its third generation. Since its original development, its components have undergone some changes to produce more actionable deliverables. For instance, strategy maps have been improved by adding categories and areas for business types, such as online-only businesses. These improvements help the management team to more effectively communicate strategy to organizations. These improvements have built on the already significant adoption and success of this scorecard framework by many firms. Because it focuses on a problem that is consistent across industries, namely turning strategy into actions and measuring the success of those actions, the benefits are numerous for every participant. Today's model comes in three basic parts and is used by organizations whose industry did not even exist when the original technique was established.

Balanced Scorecards

A balanced scorecard is a tried and true method for turning organizational strategy into action. It is a specific format and organizational technique used to align goals to owners and strategy. Organizations use balanced scorecards to add clarity to their goals. The timetable and execution may vary between organizations, but the scorecard is flexible to accept these new criteria and requirements.

The balanced scorecard has a couple components. The first is a *destination statement*. The destination statement is a one- to two-page description of your organization at a point in the future, typically three to five years out, describing a desired end state.

The second component is the perspective map that shows how those goals align with different perspectives of the organization. This is the thing most people think of as the "balanced scorecard" since it is the most viewed artifact of the process. Traditionally, it's separated into perspectives for each consumer group: financial stakeholders, employees, customers, partners, and suppliers. It includes any strategic view that you think is important as you look at your organization on a three- to five-year landscape.

See an example of a high level scorecard in Figure 1-1.