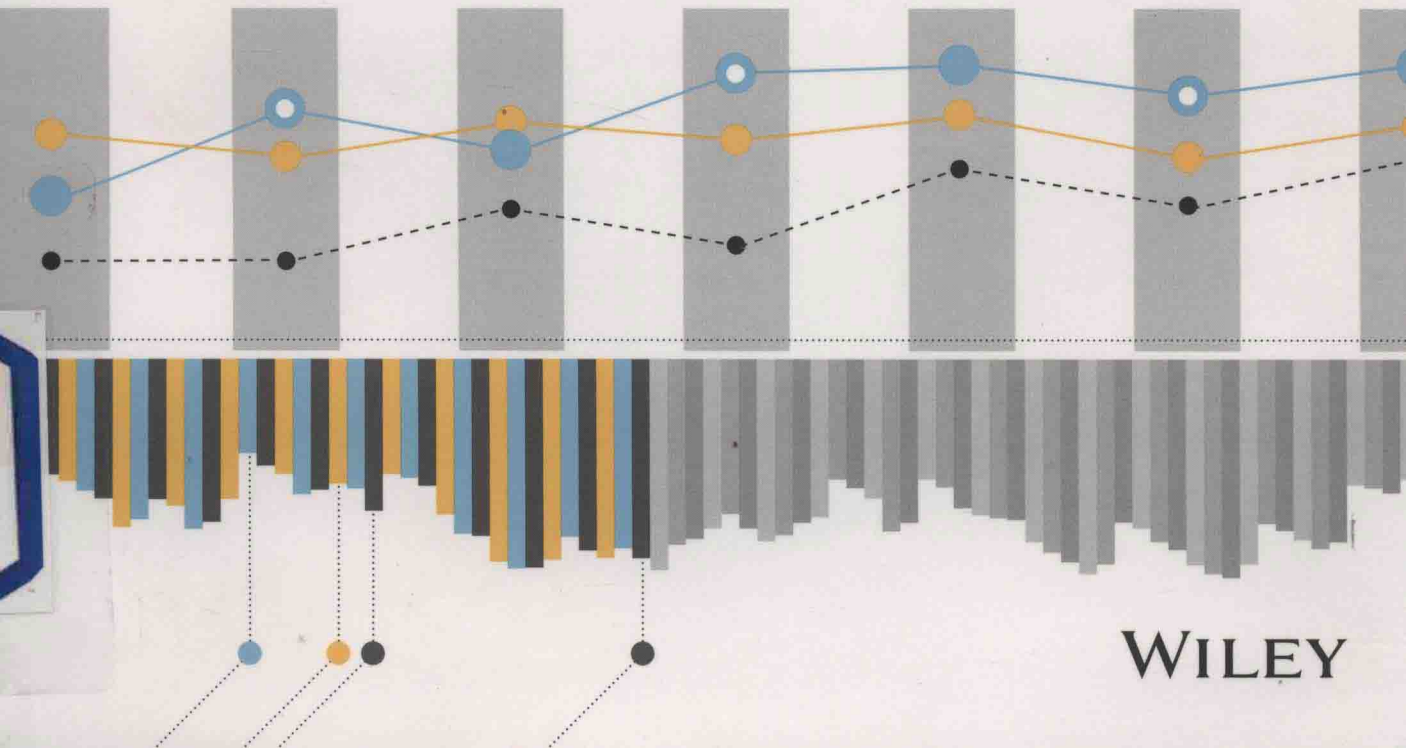


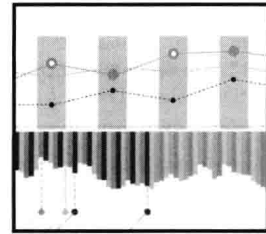
Christopher Price  
Adam Jorgensen  
Devin Knight

# Building Performance Dashboards and Balanced Scorecards

with SQL Server® Reporting Services



WILEY



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藏书章

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Adam Jorgensen

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

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



*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*



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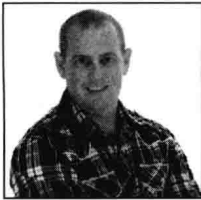
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**Chris Price** is a senior consultant with Microsoft and is based in Lakeland, Florida. He has a BS degree in Management Information Systems and a Master of Business Administration degree, both from the University of South Florida. He began his career 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.

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**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.



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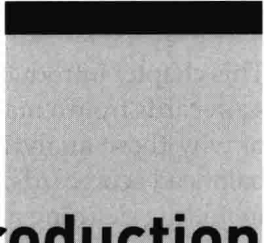
—Chris Price

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—Devin Knight

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—Adam Jorgenson



# 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

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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**

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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**

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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?**

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The companion website for this book can be found at [www.wiley.com/go/performance dashboards](http://www.wiley.com/go/performance dashboards) 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**

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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.



