

LANGFIELD-SMITH ◆ THORNE ◆ SMITH ◆ HILTON

**MANAGEMENT
ACCOUNTING**

**Information
for Creating
and Managing
Value**

7e

MANAGEMENT ACCOUNTING 7E

Information for Creating and Managing Value

- **KIM LANGFIELD-SMITH**
- **HELEN THORNE**
- **DAVID SMITH**
- **RONALD HILTON**



Copyright © 2015 McGraw-Hill Education (Australia) Pty Ltd
Additional owners of copyright are acknowledged in on-page credits.

Every effort has been made to trace and acknowledge copyrighted material. The authors and publishers tender their apologies should any infringement have occurred.

Reproduction and communication for educational purposes

The Australian *Copyright Act 1968* (the Act) allows a maximum of one chapter or 10% of the pages of this work, whichever is the greater, to be reproduced and/or communicated by any educational institution for its educational purposes provided that the institution (or the body that administers it) has sent a Statutory Educational notice to Copyright Agency Limited (CAL) and been granted a licence. For details of statutory educational and other copyright licences contact: Copyright Agency Limited, Level 15, 233 Castlereagh Street, Sydney NSW 2000. Telephone: (02) 9394 7600. Website: www.copyright.com.au

Reproduction and communication for other purposes

Apart from any fair dealing for the purposes of study, research, criticism or review, as permitted under the Act, no part of this publication may be reproduced, distributed or transmitted in any form or by any means, or stored in a database or retrieval system, without the written permission of McGraw-Hill Education (Australia) Pty Ltd including, but not limited to, any network or other electronic storage.

Enquiries should be made to the publisher via www.mcgraw-hill.com.au or marked for the attention of the Permissions editor at the address below.

National Library of Australia Cataloguing-in-Publication entry

Author: Langfield-Smith, Kim, author.

Title: Management accounting : information for creating and managing value/Kim Langfield-Smith, Helen Thorne, David Smith, Ronald Hilton.

Edition: 7th edition.

ISBN: 9781743075906 (paperback)

Notes: Includes index.

Subjects: Managerial accounting—Australia.

Other Authors/Contributors: Thorne, Helen, 1951- author. Smith, David Alan, author. Hilton, Ronald W., author.

Dewey Number: 658.1511

Published in Australia by

McGraw-Hill Education (Australia) Pty Ltd

Level 2, 82 Waterloo Road, North Ryde NSW 2113

Publishers: Robert Ashworth, Rosemary Noble

Product developers: Cynthia Morali, Jane Roy

Editorial coordinators: Carolina Bodin, Samantha Allemann

Senior production editor: Claire Linsdell

Permissions editor: Haidi Bernhardt

Copy editor: Carol Natsis

Proofreader: Pauline O'Carolan

Indexer: Olive Grove Indexing

Cover design: Christabella Designs

Internal design: David Rosemeyer

Typeset in ChaparralPro-Regular 10/13 by SRNova Private Limited, India

Printed in China on 70 gsm matt art by 1010 Printing International Ltd

Contents in brief

Part 1	INTRODUCTION TO MANAGEMENT ACCOUNTING	2
Chapter 1	Management accounting: information for creating value and managing resources	4
Chapter 2	Management accounting: cost terms and concepts	36
Part 2	COSTS AND COSTING SYSTEMS	70
Chapter 3	Cost behaviour, cost drivers and cost estimation	72
Chapter 4	Product costing systems	122
Chapter 5	Process costing and operation costing	172
Chapter 6	Service costing	220
Chapter 7	A closer look at overhead costs	272
Chapter 8	Activity-based costing	324
Part 3	INFORMATION FOR MANAGING RESOURCES	384
Chapter 9	Budgeting systems	386
Chapter 10	Standard costs for control: direct material and direct labour	442
Chapter 11	Standard costs for control: flexible budgets and manufacturing overhead	486
Chapter 12	Managing and reporting performance	530
Chapter 13	Financial performance measures and incentive schemes	578
Chapter 14	Strategic performance measurement systems	614
Chapter 15	Managing suppliers and customers	652
Chapter 16	Managing costs and quality	704
Part 4	INFORMATION FOR CREATING VALUE	750
Chapter 17	Sustainability and management accounting	752
Chapter 18	Cost volume profit analysis	796
Chapter 19	Information for decisions: relevant costs and benefits	844
Chapter 20	Pricing and product mix decisions	896
Chapter 21	Information for capital expenditure decisions	942

Contents in full

<i>Preface</i>	xv	<i>Text at a glance</i>	xxii
<i>About the authors</i>	xvi	<i>Acknowledgments</i>	xxiv
<i>About this edition</i>	xvii	<i>Connect digital resources</i>	xxvi
<i>About the digital resources</i>	xxi		

Part 1 Introduction to management accounting 2

Chapter 1

Management accounting: information for creating value and managing resources 4

Australian organisations in the twenty-first century	5	Some important considerations in the design of management accounting systems	19
REAL LIFE The increasing competitive pressures in Australia's airline industry	6	Management accounting responses to the changing business environment	21
What is management accounting?	7	<i>Learning objectives</i>	4
REAL LIFE 'Big data' and the changing role of the accountant	9	<i>Summary</i>	22
Management accountants within organisations	10	<i>Key terms</i>	23
Management accounting processes and techniques	11	<i>References</i>	23
REAL LIFE The accountant in the modern business environment	13	<i>Appendix</i>	24
Management accounting and strategy	13	<i>Key terms (appendix)</i>	27
Planning and control	17	<i>Review questions</i>	27
Costing goods and services	19	<i>Exercises</i>	28
		<i>Problems</i>	31
		<i>Cases</i>	33

Chapter 2

Management accounting: cost terms and concepts 36

Management accounting information	37	REAL LIFE There's plenty of gold, but at what cost?	50
Cost classifications: different classifications for different purposes	40	Cost flows in a manufacturing business	50
REAL LIFE Insurance: the importance of monitoring and managing costs	41	<i>Learning objectives</i>	36
Costs across the value chain	44	<i>Summary</i>	53
REAL LIFE Classifying costs in Australia's hotel industry	45	<i>Key terms</i>	54
Manufacturing costs	46	<i>References</i>	54
Product costs	48	<i>Self-study</i>	55
REAL LIFE The cost of producing motor vehicles in Australia	48	<i>Review questions</i>	57
		<i>Exercises</i>	58
		<i>Problems</i>	61
		<i>Cases</i>	67

Chapter 3

Cost behaviour, cost drivers and cost estimation 72

What are cost behaviour, cost estimation and cost prediction?	73	Cost estimation	88
Cost drivers	74	Practical issues in cost estimation	94
REAL LIFE Cost drivers at Holden Engine Company	77	Effect of learning on cost behaviour	95
REAL LIFE Managing costs in challenging times	78	<i>Learning objectives</i>	72
REAL LIFE Cost behaviour and cost management at Qantas	79	<i>Summary</i>	97
Cost behaviour patterns	79	<i>Key terms</i>	98
REAL LIFE Cost behaviour in Australian companies	86	<i>References</i>	98
REAL LIFE The behaviour of labour costs in the current business environment	87	<i>Self-study</i>	99
Using cost behaviour patterns to predict costs	87	<i>Appendix</i>	101
		<i>Key terms (appendix)</i>	105
		<i>Review questions</i>	105
		<i>Exercises</i>	107
		<i>Problems</i>	110
		<i>Cases</i>	118

Chapter 4

Product costing systems 122

Product costing	124	<i>Learning objectives</i>	122
REAL LIFE The cost of Australian wine	125	<i>Summary</i>	151
REAL LIFE Costing defence contracts	126	<i>Key terms</i>	151
REAL LIFE Product costing in small business	128	<i>References</i>	152
Flow of costs in manufacturing businesses	128	<i>Self-study</i>	152
Allocating overhead costs to products	129	<i>Appendix</i>	155
REAL LIFE Product costs at Coopers Brewery	131	<i>Key term (appendix)</i>	156
Types of product costing systems	133	<i>Review questions</i>	156
Job costing: Williams Elevators	137	<i>Exercises</i>	157
Process costing: Spritz	148	<i>Problems</i>	161
		<i>Cases</i>	167

Chapter 5

Process costing and operation costing 172

Process costing at Spritz	174	Process costing using the FIFO method	181
REAL LIFE From trees to timber	174	Process costing and spoilage	184
Process costing with work in process inventories	175	Hybrid costing systems	188
Process costing using the weighted average method	177	Operation costing for batch manufacturing processes	188

REAL LIFE Which costing system for Australian wine?	191	Self-study	197
		Appendix	200
Other issues in process costing	194	Key term (appendix)	204
<i>Learning objectives</i>	172	Review questions	204
<i>Summary</i>	195	Exercises	205
<i>Key terms</i>	196	Problems	210
<i>References</i>	196	Cases	217

Chapter 6

Service costing **220**

What are service organisations?	221	REAL LIFE The costs and benefits of service costs at Hyde and Partners	245
Cost classifications in service organisations	223	Flow of costs in service firms	246
REAL LIFE The costs of services provided by Australia's hospitals	226	Costing in retail and wholesale businesses	247
Estimating service costs	227	<i>Learning objectives</i>	220
REAL LIFE Service costing in the NSW public sector	230	<i>Summary</i>	249
Costing services at Adelaide Bank	232	<i>Key terms</i>	251
REAL LIFE The billing system at SimsPartners	238	<i>References</i>	251
REAL LIFE The downside of using billable hours to charge for legal services	240	<i>Self-study</i>	251
When should firms estimate their service costs?	243	<i>Review questions</i>	254
		<i>Exercises</i>	255
		<i>Problems</i>	259
		<i>Cases</i>	267

Chapter 7

A closer look at overhead costs **272**

What are overhead costs?	273	Allocating support department costs	290
Allocating indirect costs: some general principles	275	<i>Learning objectives</i>	272
REAL LIFE Measuring tsunami recovery costs: an overhead or not?	276	<i>Summary</i>	298
Allocating overhead costs to products	277	<i>Key terms</i>	299
Issues in estimating overhead rates	283	<i>References</i>	300
REAL LIFE How should FFA allocate its overheads?	285	<i>Self-study</i>	300
Allocating indirect costs to responsibility centres	288	<i>Appendix</i>	302
REAL LIFE Overhead costs and price setting at Dalrymple Bay Coal Terminal	289	<i>Key terms (appendix)</i>	308
		<i>Review questions</i>	308
		<i>Exercises</i>	309
		<i>Problems</i>	313
		<i>Cases</i>	320

Chapter 8

Activity-based costing

324

Problems with conventional product costing systems	326	REAL LIFE ABC in the New Zealand Blood Service	341
Product costing at Mason & Cox	328	REAL LIFE The adoption of ABC in Australia and New Zealand	341
Activity-based costing at Mason & Cox	330	Other activity-based costing issues	342
Initial decisions about ABC at Mason & Cox	331	Activity-based costing in service organisations	344
Step one: measuring the costs of the manufacturing overhead activities	332	REAL LIFE Counting the cost of childhood immunisation	345
Step two: assigning the costs of manufacturing overhead activities to products	334	<i>Learning objectives</i>	324
REAL LIFE Activity-based costing in the NSW public sector	337	<i>Summary</i>	345
Activity-based versus traditional product costs at Mason & Cox	338	<i>Key terms</i>	346
REAL LIFE Costing hospital care	339	<i>References</i>	346
Costs versus benefits of ABC at Mason & Cox	340	<i>Self-study</i>	347
When should ABC be used?	340	<i>Appendix</i>	350
		<i>Key terms (appendix)</i>	358
		<i>Review questions</i>	359
		<i>Exercises</i>	360
		<i>Problems</i>	365
		<i>Cases</i>	376

Part 3 Information for managing resources

384

Chapter 9

Budgeting systems

386

Strategic planning and budgeting systems	387	Behavioural consequences of budgeting	405
Purposes of budgeting	388	REAL LIFE Budgeting practices in Australia	406
Responsibility accounting	388	Zero-base budgeting	408
REAL LIFE 'Beyond budgeting' and other budget adaptations	389	Program budgeting	409
The annual budget: a planning tool	390	<i>Learning objectives</i>	386
REAL LIFE Budgeting at the Australian Ballet School	394	<i>Summary</i>	410
Budgeting at AVJennings Ltd	395	<i>Key terms</i>	410
REAL LIFE Budgeting for major events: the Olympic Games	396	<i>References</i>	411
Budget administration	405	<i>Self-study</i>	411
		<i>Appendix</i>	414
		<i>Review questions</i>	418
		<i>Exercises</i>	419
		<i>Problems</i>	423
		<i>Cases</i>	437

Chapter 10

Standard costs for control: direct material and direct labour 442

Controlling costs	443	Standard costs for product costing	461
Setting standards	444	<i>Learning objectives</i>	442
Developing standards at R.M. Williams	447	<i>Summary</i>	464
Calculating standard cost variances	449	<i>Key terms</i>	464
REAL LIFE Cost pressures and variance analysis in hospitals	454	<i>References</i>	465
Investigating significant variances and taking corrective actions	454	<i>Self-study</i>	465
Cost control through assigning responsibility	459	<i>Appendix</i>	468
Standard costing and behaviour	461	<i>Key terms (appendix)</i>	469
		<i>Review questions</i>	470
		<i>Exercises</i>	471
		<i>Problems</i>	474
		<i>Cases</i>	482

Chapter 11

Standard costs for control: flexible budgets and manufacturing overhead 486

Flexible budgets	487	Activity-based budgeting	505
Flexible overhead budget: R.M. Williams	490	<i>Learning objectives</i>	486
Overhead application in a standard costing system	492	<i>Summary</i>	508
Calculating overhead cost variances	492	<i>Key terms</i>	509
Overhead cost performance report	498	<i>References</i>	509
Standard costs for product costing	499	<i>Self-study</i>	509
Flexible budgets in service organisations	501	<i>Appendix</i>	512
An appraisal of standard costing systems	501	<i>Key terms (appendix)</i>	513
REAL LIFE Adapting standard costing systems for modern times	504	<i>Review questions</i>	513
		<i>Exercises</i>	514
		<i>Problems</i>	518
		<i>Cases</i>	526

Chapter 12

Managing and reporting performance 530

Purposes of performance measurement	531	Responsibility centres	534
Characteristics of effective performance measurement systems	532	More complex structures	536
REAL LIFE Principles for reporting performance outcomes	533	REAL LIFE Shared services to enhance customer value and manage costs	538
Structuring for control: decentralisation	533	Financial performance reporting	539
		Transfer pricing	544

<i>Learning objectives</i>	530	<i>Review questions</i>	558
<i>Summary</i>	553	<i>Exercises</i>	559
<i>Key terms</i>	554	<i>Problems</i>	562
<i>References</i>	554	<i>Cases</i>	571
<i>Self-study</i>	555		

Chapter 13

Financial performance measures and incentive schemes 578

Financial measures in investment centres	579	<i>Learning objectives</i>	578
Return on investment	580	<i>Summary</i>	597
Residual income	583	<i>Key terms</i>	598
Measuring profit and invested capital	584	<i>References</i>	598
Measures of shareholder value	588	<i>Self-study</i>	598
Incentive schemes	591	<i>Review questions</i>	601
REAL LIFE Senior executive pay in Australia	594	<i>Exercises</i>	602
REAL LIFE Employee share ownership is more than an incentive compensation scheme	596	<i>Problems</i>	604
		<i>Cases</i>	610

Chapter 14

Strategic performance measurement systems 614

The problems with using traditional financial performance measures in isolation	615	How successful are balanced scorecards?	629
The advantages of non-financial measures	617	Does non-financial performance lead to financial performance?	630
Selecting operational measures	617	Benchmarking	632
The limitations of non-financial performance measures	620	<i>Learning objectives</i>	614
The balanced scorecard	621	<i>Summary</i>	635
REAL LIFE Managing performance at IAG	623	<i>Key terms</i>	636
REAL LIFE Measuring impact in charitable organisations	624	<i>References</i>	636
Strategy maps	624	<i>Self-study</i>	637
REAL LIFE Customising the balanced scorecard	626	<i>Review questions</i>	639
Developing a balanced scorecard for the Cooktown Bus Company	627	<i>Exercises</i>	640
		<i>Problems</i>	642
		<i>Cases</i>	648

Chapter 15

Managing suppliers and customers

652

Supply chain management	653
REAL LIFE A product not a commodity: a new supply chain for Tasmanian wool	655
REAL LIFE Driving supply chain improvements at Coles	656
Managing suppliers	656
Managing inventory	661
Managing customers	668
REAL LIFE Is JIT too risky?	669
REAL LIFE Managing customers with social media	671

Managing time	675
<i>Learning objectives</i>	652
<i>Summary</i>	680
<i>Key terms</i>	680
<i>References</i>	681
<i>Self-study</i>	682
<i>Appendix</i>	685
<i>Key terms (appendix)</i>	687
<i>Review questions</i>	688
<i>Exercises</i>	689
<i>Problems</i>	692
<i>Cases</i>	700

Chapter 16

Managing costs and quality

704

Cost management	705
Activity-based management	706
REAL LIFE Lean thinking at the city of Melbourne	710
Business process re-engineering	713
Life cycle costing	714
REAL LIFE Cost management in the Australian wine industry	715
Target costing	717
Managing throughput	720

Managing quality	722
REAL LIFE Managing costs, throughput and quality for customer value: Flinders Medical Centre	722
<i>Learning objectives</i>	704
<i>Summary</i>	728
<i>Key terms</i>	728
<i>References</i>	729
<i>Self-study</i>	730
<i>Review questions</i>	731
<i>Exercises</i>	732
<i>Problems</i>	736
<i>Cases</i>	746

Part 4 Information for creating value

750

Chapter 17

Sustainability and management accounting

752

Corporate sustainability	753
REAL LIFE Corporate responsibility reporting around the globe	755
Sustainability and stakeholders	759
REAL LIFE Measuring sustainability performance at Arrium	760

Sustainability and management accounting	761
Recognising and measuring economic, environmental and social impacts	761
REAL LIFE The valuation of environmental impact – PUMA and beyond	763
Environmental management accounting	763

Environmental costs	764	Sustainability and capital expenditure analysis	777
Sustainability and supply chain management	768	<i>Learning objectives</i>	752
REAL LIFE A life cycle analysis of carbon emissions	768	<i>Summary</i>	780
REAL LIFE Environmental costing at GH Michell & Sons	771	<i>Key terms</i>	781
REAL LIFE A sustainability scorecard at Westpac	772	<i>References</i>	781
Strategic performance measurement systems and sustainability	775	<i>Self-study</i>	782
		<i>Review questions</i>	785
		<i>Exercises</i>	786
		<i>Problems</i>	789
		<i>Cases</i>	792

Chapter 18

Cost volume profit analysis 796

CVP analysis at the Melbourne Theatre Company	797	Practical issues in CVP analysis	813
The break-even point	799	REAL LIFE Making the most of our coffee culture	815
The break-even formula	799	An activity-based approach to CVP analysis	815
REAL LIFE The importance of the break-even point at Linneys	800	Financial planning models	818
REAL LIFE A sundae too far away	802	<i>Learning objectives</i>	796
Graphing cost volume profit relationships	802	<i>Summary</i>	821
Target net profit	804	<i>Key terms</i>	822
Using CVP analysis for management decision making	806	<i>References</i>	822
CVP analysis with multiple products	810	<i>Self-study</i>	822
REAL LIFE Salmon—a fishy success story	812	<i>Appendix</i>	825
Including income taxes in CVP analysis	812	<i>Key terms (appendix)</i>	828
		<i>Review questions</i>	828
		<i>Exercises</i>	829
		<i>Problems</i>	832
		<i>Cases</i>	838

Chapter 19

Information for decisions: relevant costs and benefits 844

The management accountant's role in decision making	845	REAL LIFE Outsourcing, you can bank on it	861
REAL LIFE What role do accountants play in decision making?	847	REAL LIFE Sustainable solutions for by-products	867
Relevant information	849	Implications of activity-based cost analysis for decisions	868
Identifying relevant costs and benefits	850	Incentives for decision makers	869
Relevant information for some common decisions	854	Pitfalls to avoid when using accounting data for decisions	870

<i>Learning objectives</i>	844	<i>Key terms (appendix)</i>	879
<i>Summary</i>	871	<i>Review questions</i>	879
<i>Key terms</i>	872	<i>Exercises</i>	880
<i>References</i>	872	<i>Problems</i>	882
<i>Self-study</i>	873	<i>Cases</i>	891
<i>Appendix</i>	875		

Chapter 20

Pricing and product mix decisions

896

Major influences on pricing decisions	897	Product mix decisions	914
REAL LIFE Battling for Australia's skies	900	<i>Learning objectives</i>	896
Economic profit-maximising models	900	<i>Summary</i>	917
Pricing strategies	903	<i>Key terms</i>	918
Strategic pricing of new products	910	<i>References</i>	918
Competitive bidding	911	<i>Self-study</i>	919
Legal restrictions on setting prices	912	<i>Appendix</i>	922
REAL LIFE Proving predatory pricing: a challenge for the ACCC	913	<i>Key terms (appendix)</i>	925
REAL LIFE The penalties of price fixing	914	<i>Review questions</i>	925
		<i>Exercises</i>	926
		<i>Problems</i>	929
		<i>Cases</i>	937

Chapter 21

Information for capital expenditure decisions

942

Capital expenditure decisions	943	Post-completion audits of capital expenditure decisions	971
Cash flows	943	Justification of investments in advanced technologies	971
The capital expenditure approval process	944	REAL LIFE What drives investments in technology?	972
Capital expenditure decisions at the Meadowleigh Medical Centre	945	The limitations of traditional capital expenditure analysis	974
Discounted cash flow analysis	947	<i>Learning objectives</i>	942
Comparing two alternative investment projects	952	<i>Summary</i>	975
REAL LIFE Fleet renewal decisions at Qantas: the A380 and B787	955	<i>Key terms</i>	976
Accounting for uncertainty using real-options analysis	956	<i>References</i>	977
Other techniques for analysing capital expenditure proposals	957	<i>Self-study</i>	977
Performance evaluation: a behavioural issue	961	<i>Appendix</i>	980
Income taxes and capital expenditure analysis	962	<i>Review questions</i>	984
		<i>Exercises</i>	985
		<i>Problems</i>	988
		<i>Cases</i>	993

<i>Glossary</i>	996	<i>Index</i>	1011
-----------------	-----	--------------	------

Preface

One of the challenges we always face in writing new editions of this book is to capture current thinking and practice in management accounting, which are in a continual state of change. Unlike the financial accounting area, there are no accounting standards or legally enforceable practices in management accounting. Management accounting takes place within organisations and can be quite specific to each business. Also, to understand the nature of management accounting practice we need to understand the broader aspects of business practice across a range of areas including strategy, marketing, human resource management, operations management and organisational behaviour. Management accounting both draws on and contributes to these areas.

Our approach in presenting this subject to students and managers is to focus on cutting-edge management accounting as practised by leading organisations in Australia and overseas, while at the same time acknowledging that some firms are satisfied with more traditional approaches.

Since the first edition of this book appeared in the early 1990s, there have been dramatic changes in thinking about the role of management accounting in organisations. Once it was sufficient to describe management accounting as being concerned with providing information for planning and control, and for decision making. However, the role of management accounting is now more complex. It is now concerned with the processes and technologies that enable the effective use of organisational resources to support managers in enhancing customer and shareholder value. Supply chain management approaches provide a framework for integrating contemporary cost management and performance measurement. The issue of sustainability is now increasingly important as businesses seek to understand and manage any adverse impact they have on the environment and society.

The processes and technologies of management accounting that enhance shareholder and customer value are evolving over time and require an intimate knowledge of the nature of the business, its markets, its strategy and its people. Over the decades the practice of management accounting has developed to become more integrated with the process of management, and less a part of the practice of accounting, with management accountants playing a significant role as part of the management team.

The book has been written primarily as a text for one- or two-semester undergraduate management accounting courses. The references at the end of each chapter provide guidance on additional readings. With its description of current practice and strong emphasis on the new developments in management and management accounting, this book also provides a sound foundation for a management accounting unit within an MBA course.

While the origins of the text can be traced to the US text, *Managerial Accounting*, by Ronald Hilton, it has always differed from its US counterpart. It has been developed using major cases based on real Australian businesses, and it includes numerous illustrations—‘Real lives’—of current management accounting practices of organisations in Australia, New Zealand and the wider Asia-Pacific region. The Australian book takes a broad perspective in viewing management accounting as the efficient and effective use of resources, supporting managers in the improvement of customer and shareholder value. The rapidly changing business environment is seen as having implications for the development of new approaches to management accounting. We sincerely welcome any comments or suggestions from the lecturers and students who use this text.

Kim Langfield-Smith Helen Thorne David Smith

About the authors

Kim Langfield-Smith



Kim has a BEc from the University of Sydney, a MEc from Macquarie University and a PhD from Monash University. She is a fellow of CPA Australia and the Institute of Chartered Accountants in Australia (ICAA), and a graduate of the Australian Institute of Company Directors. She is a Vice-provost at Monash University as well as Professor of Management Accounting. Her prior appointments were at La Trobe University, the Universities of Melbourne and Tasmania, and the University of Technology, Sydney. Before entering academic life Kim worked as an accountant in several commercial organisations.

Her research interests are in the area of management control systems, and her research has been published in many journals, including *Accounting, Organizations and Society*; *Journal of Management Accounting Research*; *Management Accounting Research*; *Behavioral Research in Accounting*; *Journal of Accounting Literature*; and *Journal of Management Studies*.

Kim continues to play an active role in the accounting profession. She is chair of the Professional Qualifications Advisory Committee of CPA Australia, and a former member of the International Accounting Education Standards Board (IAESB), representing the ICAA and CPA Australia.

Helen Thorne



Helen has a BEc and DipAcc from Flinders University, and a PhD from the University of Adelaide. She is an adjunct professor in the International Graduate School of Business at the University of South Australia. Helen has also held appointments in the Graduate School of Management and the Commerce Department at the University of Adelaide.

Her research focuses on contemporary approaches to management accounting, including activity-based costing and strategic performance measurement systems, and she has published in journals, including *Journal of Accounting Literature*; *Journal of Cost Management*; *Advances in Management Accounting*; and *Australian Accounting Review*.

Before commencing her academic career, Helen worked as a management accountant with a major international company. Since then she has maintained her interests in the 'real world'. She is a member of CPA Australia and has undertaken consulting work in management accounting for a number of organisations in the manufacturing and service industries.

David Smith



David has a BCom (Honours) from La Trobe University and a PhD from Monash University. He is a professor of management accounting in the Department of Accounting at Monash University and has previously held appointments at the University of Melbourne and La Trobe University.

David's research is in the area of management control systems, with a particular focus on performance measurement, and his research has been published in journals including *Accounting, Organizations and Society*; *Management Accounting Research*; *Behavioral Research in Accounting*; *Journal of Accounting Literature*; and *Accounting, Auditing and Accountability Journal*.

David is actively involved in the accounting profession and is a current board member of the Accounting and Finance Association of Australia and New Zealand (AFAANZ). David is also a member of the Chartered Institute of Management Accountants' (CIMA) Centre of Excellence Australasia Research Panel.

About this edition

In response to requests from adopters, each chapter contains a number of changes. On average, more than 40 per cent of the end-of-chapter learning activities (review questions, exercises, problems and cases) are either completely new or include new data. Major changes to each chapter, including changes to the end-of-chapter material, are described in the table below.

New to this edition	Points of interest
Chapter 1 Management accounting: information for creating value and managing resources	
<ul style="list-style-type: none"> • Extensive revisions simplify and modernise the material. • The Wendy's case that was the chapter focus in prior editions has been replaced with a range of more recent case examples. • The 'Strategy and the management accountant' material has been updated. • New 'Real lifes' covering big data and the management accountant, and the accountant in the modern environment have been added. Other 'Real lifes' have been updated. • Seventeen of the 42 end-of-chapter questions are new or include new data. 	<p>Management accounting is presented as supporting managers in their role of enhancing customer and shareholder value through the efficient and effective use of organisational resources. The link between strategy and management accounting lays a foundation for the strategic focus that permeates this book.</p>
Chapter 2 Management accounting: cost terms and concepts	
<ul style="list-style-type: none"> • This classic chapter, which lays the foundation by introducing students to a range of commonly used cost concepts, has not required any significant updates, although 19 of the 42 end-of-chapter questions are new or include new data. 	<p>This chapter introduces students to the terminology of management accounting before covering concepts in more detail later in the book.</p>
Chapter 3 Cost behaviour, cost drivers and cost estimation	
<ul style="list-style-type: none"> • One new 'Real life' has been added and another has been updated, and linked to end-of-chapter questions. • Fifteen of the 43 end-of-chapter questions are new or include new data. Several questions allow students to respond by constructing an Excel® spreadsheet. 	<p>This chapter maintains the current approach to explaining cost behaviour, cost drivers and cost estimation.</p>
Chapter 4 Product costing systems	
<ul style="list-style-type: none"> • One 'Real life' example has been updated. • Seventeen of the 43 end-of-chapter questions are new or include new data. 	<p>Chapters 4 and 5 focus on traditional approaches to product costing, focusing primarily on job costing systems.</p>
Chapter 5 Process costing and operation costing	
<ul style="list-style-type: none"> • Twenty of the 45 end-of-chapter questions are new or include new data. 	<p>Chapters 4 and 5 focus on traditional product costing approaches of process costing and operation costing.</p>
Chapter 6 Service costing	
<ul style="list-style-type: none"> • Nineteen of the 48 end-of-chapter questions are new or include new data. 	<p>This chapter presents traditional and activity-based approaches to the costing of services, in a range of different service contexts.</p>

Chapter 7 A closer look at overhead costs

- Twenty-two of the 45 end-of-chapter questions are new or include new data.

Chapter 7 helps students develop a deeper understanding of the processes for allocating overhead costs to products. It includes an introduction to activity-based approaches to estimating overhead costs.

Chapter 8 Activity-based costing

- Three new 'Real life' examples have been provided—one looking at costing in the UK's National Health Service, one on the use of activity-based costing in the New Zealand Blood Service, and one focusing on calculating the cost of childhood immunisations.
- Eighteen of the 49 end-of-chapter questions are new or include new data.

This chapter describes common problems with traditional product costing systems and outlines the steps used in activity-based costing.

Chapter 9 Budgeting systems

- A new 'Real life' on budgeting for major events has been added and the 'Real life' on budgeting practices in Australia has been updated.
- Twenty-two of the 42 end-of-chapter questions are new or include new data.

This chapter presents a step-by-step guide to the budgeting process and describes some of the behavioural issues associated with budgeting.

Chapter 10 Standard costs for control: direct material and direct labour

- The 'Real life' on cost pressures and variance analysis in hospitals has been updated.
- Material on standards and behaviour has been brought together in a single section.
- Twenty of the 46 end-of-chapter questions are new or include new data.

Chapter 10 focuses on traditional approaches to estimating and controlling product costs through standard costing, focusing on the material and labour components.

Chapter 11 Standard costs for control: flexible budgets and manufacturing overhead

- A new 'Real life' on adapting standard costs for modern times is included.
- Nineteen of the 45 end-of-chapter questions are new or include new data.

This chapter explains flexible budgets and standard costing for overhead. It also outlines the criticisms and advantages of standard costing.

Chapter 12 Managing and reporting performance

- This chapter has a new title to better reflect its focus.
- Some of the chapter has been restructured: the sections on the purposes and the characteristics of performance measurement systems have moved here from Chapter 14.
- A new 'Real life' on the principles for reporting performance outcomes has been added.
- Sixteen of the 45 end-of-chapter questions are new or include new data.

Modern and traditional approaches to measuring financial performance are integrated with responsibility accounting performance reports. Includes real-time reporting, the impact of shared services and team-based structures. Transfer pricing scenarios clearly illustrate issues of goal congruence and incentives.

Chapter 13 Financial performance measures and incentive schemes

- The chapter has a new title, to reflect the change in focus from 'reward systems' to the more modern term 'incentive systems'.
- The 'Real life' examples have been updated and linked to end-of-chapter questions.
- Sixteen of the 42 end-of-chapter questions are new or include new data.

This chapter presents internal financial reports and traditional financial measures, and an expanded section on value-based management. Up-to-date material on incentive systems is also included.

Chapter 14 Strategic performance measurement systems

- The chapter title and the learning objectives have been revised to reflect changes in coverage of some material in the chapter.
- The section on strategic performance measurement systems, including balanced scorecards and strategy maps, has been reorganised.
- A new 'Real life' on measuring performance in charitable organisations has been added.
- Twenty-one of the 44 end-of-chapter questions are new or include new data.

This chapter focuses on the design of strategic performance measurement systems—financial and non-financial performance measures, the design of strategic performance measurement systems, and benchmarking.

Chapter 15 Managing suppliers and customers

- The material has been updated throughout the chapter.
- Two new 'Real life' examples have been added on supply chain management at Coles, and using social media to manage customers. Other 'Real lifes' have been updated.
- Twenty-one of the 46 end-of-chapter questions are new or include new data.

Supply chain management is covered, with a focus on managing suppliers, inventory, customers and time. Activity-based approaches to the analysis of supplier and customer costs and performance indicators are outlined.

Chapter 16 Managing costs and quality

- The material has been revised throughout the chapter.
- The section on throughput accounting has been simplified.
- A new 'Real life' example on lean thinking has been added. Other 'Real lifes' have been updated.
- Eighteen of the 50 end-of-chapter questions are new or include new data.

Cost management techniques include activity-based management, business process reengineering, life cycle costing, target costing and managing throughput. Quality concepts and cost of quality reporting are explained.

Chapter 17 Sustainability and management accounting

- Major revision and modernisation of the material throughout the chapter.
- Modern sustainability frameworks of the GRI and integrated reporting are now included.
- A number of new exhibits and four new 'Real life' examples have been added on corporate responsibility around the globe, sustainability reporting, sustainability scorecards, and the valuation of environmental impact.
- Fifteen of the 41 end-of-chapter questions are new or include new data.

Chapter 17 explains sustainability reporting and the implications for management accounting systems and techniques, including cost analysis and management, performance measurement systems, and capital expenditure analysis.

Chapter 18 Cost volume profit analysis

- Two new 'Real lives' on the use of CVP analysis in the Tasmanian salmon farming industry and in the management of coffee shops.
- Twenty-seven of the 46 end-of-chapter questions are new or include new data.

Cost volume profit analysis is presented as a tool to model the profit impact of changes in selling prices, costs and product mix, and formula-based and graphical approaches. Methods for incorporating activity-based concepts are also included.

Chapter 19 Information for decisions: relevant costs and benefits

- The section on costing by-products has been moved from the Appendix to the main chapter.
- New 'Real life' examples on the role of accountants in management decision making and sustainable solutions for by-products have been added.
- Nineteen of the 46 end-of-chapter questions are new or include new data.

This chapter demonstrates how management accounting information can be used for a variety of tactical decisions: accept or reject a special order; add or delete a product, service or department; and sell a joint product or process it further.

Chapter 20 Pricing and product mix decisions

- Material on the legal constraints on pricing has been updated.
- Two new 'Real life' examples on the airline industry and price fixing have been included.
- Fourteen of the 44 end-of-chapter questions are new or include new data.

This chapter includes factors that influence pricing strategies, models of cost-based pricing, and the legal restrictions of pricing behaviours. Techniques for considering product mix decisions are also covered.

Chapter 21 Information for capital expenditure decisions

- Includes a new section on real-options pricing analysis.
- The 'Real lives' have been updated.
- Sixteen of the 47 end-of-chapter questions are new or include new data.

This chapter presents techniques for analysing data for long-term investment decisions. The limitations of using traditional techniques to justify investments in advanced technologies are covered.

About the digital resources

Management Accounting 7e comes with McGraw-Hill Connect—a digital teaching and learning environment that responds to contemporary students' needs. Connect brings every learning resource that accompanies this text together in one place, and can also integrate and interact with your LMS.

Connect provides access to interactive versions of selected end-of-chapter exercises and problems with worksheet and graphing functionality to allow students to practise what they are learning. Quizzes have been prepared for each chapter to provide the opportunity to check knowledge and understanding of chapter concepts.

Instructors also have access to an Instructor Manual including solutions to end-of-chapter activities, PowerPoint® presentations and the testbank.

Golden Company's total overhead cost at various levels of activity are presented below

Month	Machine-Hours	Total Overhead Cost
March	49000	\$190480
April	39000	\$164280
May	59000	\$216680
June	69000	\$242880

Assume that the overhead cost above consists of utilities, supervisory salaries and maintenance. The breakdown of these costs at the 39000 machine-hour level of activity is as follows

Utilities (variable)	\$ 58500
Supervisory salaries (fixed)	45000
Maintenance (mixed)	60780
Total overhead cost	\$ 164280

The company wants to break down the maintenance cost into its variable and fixed cost elements

Required:

- Estimate how much of the \$242880 of overhead cost in June was maintenance cost. (Hint: To do this it may be helpful to first determine how much of the \$242880 consisted of utilities and supervisory salaries. Think about the behavior of variable and fixed costs within the relevant range.) (Do not round intermediate calculations.)

Maintenance cost in June \$

- Using the high-low method estimate a cost formula for maintenance. (Round the "Variable cost per unit" to 2 decimal places and "Fixed cost" to the nearest dollar amount.)

$Y = \$$ $+$ \$ X

Draw a rough graph of the cost behaviour for each of the following costs incurred by the Valley View Hospital. The hospital measures monthly activity in patient days. Label both axes and the cost line in each graph.

- The cost of food varies in proportion to the number of patient days of activity. In January, the hospital provided 2800 patient days of care and food costs amounted to \$22,400.

Gweneth Norris BCom, MCom, PhD, FCPA, CMA

Gweneth prepared the Instructor Manual.

Gweneth retired from Charles Darwin University as Professor of Management (Accounting), where she was responsible for the accounting program and accounting research. She also spent many years at the University of South Australia and at Deakin University in Geelong, Victoria. She is a past vice-president of the Institute of Certified Management Accountants (ICMA), and worked on the Geelong Branch Council of CPA Australia for 11 years, serving terms as chair and deputy chair. Gweneth was also a presenter of the ICMA graduate course 'Advanced Management Accounting' in Asia, teaching in both Singapore and Hong Kong.

Robyn Parry BBus (Acc), MEd, MComm, CPA, AFAANZ

Robyn prepared the testbank, PowerPoint slides and online chapter quizzes.

Robyn has been an academic for over 12 years. She has taught accounting for decision making, financial and management accounting, corporate accounting, accounting theory and auditing in undergraduate and postgraduate accounting programs. Robyn is part of the academic team at the University of Queensland and was previously with James Cook University (Brisbane) and CQ University (Brisbane).

Robyn's career has evolved through public practice, including in the mining, construction and government sectors, before moving to accounting education. She has a keen interest in the development of accounting education and promoting the professional accounting bodies to students.

Text at a glance

'Real life' features

Theory is one thing—but what happens in reality? These short case studies provide examples of management and management accounting in action largely within Australian and New Zealand organisations.

COST BEHAVIOUR AND COST MANAGEMENT AT QANTAS

REALLIFE

Managing costs is very important in the increasingly competitive airline industry and the key to **long-term health** is understanding cost behaviour. Since its 1995 listing, Qantas has **maintained** its reputation for tight cost management despite an increasingly turbulent environment. During the late 1990s, the Asian financial crisis had a major impact on most businesses in the region. In the early 2000s, Qantas faced even greater challenges with the effects of the terrorist attacks on the World Trade Center towers, the war in Iraq and the outbreak of the SARS pandemic in Asia. Then, in 2007, Qantas experienced the unsettling effects of a failed takeover bid from Airline Partners Australia and soaring fuel costs.

Despite these challenges, Qantas's profit over the period continued to grow. For example, Qantas recorded a record pre-tax profit of \$103 billion for the year-ended 30 June 2007, a 54 per cent increase on 2006. This result reflected the effectiveness of the company's strategies to grow revenue as well as to tightly control costs. Airlines have high fixed costs, which require careful long-term management, and even though variable costs are relatively less important, they also have a major impact on profitability.

In August 2005, Qantas introduced its Sustainable Future Program, which had a target of \$3 billion in cost savings by 2010. Initiatives under this program focused on saving both fixed and variable costs and included engineering to fabricate products and components through staff



Chapter introduction

The chapter introduction is an overview of the material to be covered, including links to relevant topics in previous chapters.

3 Introduction

Managers in almost any organisation need to know how costs will be affected by changes in the organisation's activities. You will recall from Chapter 2 that understanding cost behaviour involves examining the relationship between a cost and the level of activity. Managers need to know what activities drive or cause the major costs within their business.

Knowledge about cost behaviours can help managers to manage resources more effectively. To plan operations and prepare budgets, managers at Jacobs Creek winery use their knowledge of cost behaviour and predictions about future activity levels. To control the costs of providing services to the community, local government councils need to know the costs they would incur at various levels of activity, so that they can then compare actual costs to these planned costs. In addition, the councils can actively manage and reduce costs by managing the major cost drivers.

Information about cost behaviour can also help managers as they decide how to enhance customer value and shareholder wealth. In deciding whether to add a new intensive care unit, a hospital's administrators need to predict the cost of operating the new unit at various levels of patient demand. In deciding which products to produce at Toyota, or which investment services to offer at Westpac,

Key terms/margin definitions

Key terms are bolded in the text where they first appear, defined in the margin and listed at the end of the chapter. Use the end-of-chapter Key terms checklist to test yourself when you finish the chapter. The definitions are also repeated in a full glossary at the end of the book.

These are assigned to activities that are performed for each unit of output.

Each level costs relate to a particular level of activity. Each level costs are fixed costs. These are costs that do not vary with the level of activity.

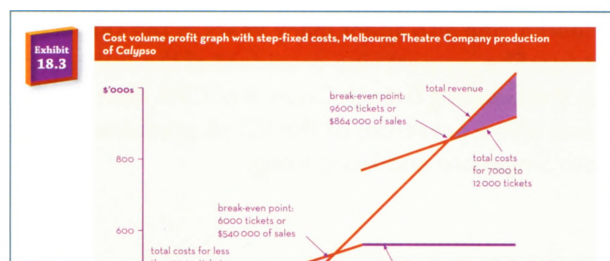
Direct Level costs produce a measurable benefit to the organisation. The cost of developing a new product for the number of products may be the only cost that has no obvious cost driver.

Indirect Level costs are costs that do not have an obvious cost driver. These are costs that are incurred in the production process but are not directly related to the production of a specific unit of output. An interesting example of the concept is the cost of a factory building.

Cost Driver is the factor that causes a cost to be incurred.

Exhibits

These visual overviews of concepts, flow charts, handy checklists, examples of documents and worked examples add another dimension to the topics covered and help to reinforce learning.



Chapter summary

The chapter summary is presented in dot point form for easy reading and revision, and links back to the learning objectives.

3 Summary

In this chapter we considered the relationship between cost behaviour, cost estimation and cost prediction, and described various approaches to identifying cost behaviour and estimating costs. Key points include:

- Cost behaviour refers to the relationship between a cost and the level of activity or cost driver. Cost estimation is the process of determining the cost behaviour of a cost item, and cost prediction uses a knowledge of a cost's behaviour to forecast the level of cost at a particular level of activity.
- The term 'cost driver' is used to describe an activity or factor that causes a cost to be incurred. Traditional management accounting systems use various measures of production volume as cost drivers to analyse cost behaviour. These cost drivers are called volume-based cost drivers. More recent

which is the range of activity over which a cost function is expected to remain valid.

- In predicting costs it is useful to recognise that some costs can be classified as engineered costs, where they bear a physical relationship to output. Fixed costs can be classified as committed or discretionary.
- Several approaches can be used to estimate costs. These include managerial judgment, the engineering method and various quantitative techniques. Engineering methods of cost estimation are based on a detailed analysis of the process in which the costs are incurred.
- Quantitative techniques are based on an analysis of past cost data observed at a variety of activity levels and include the high-low and regression methods.

References

The end-of-chapter references list material quoted in the chapter and provide opportunities to undertake additional in-depth research on specific topics.

REFERENCES

ABC News, 18 February 2008. Refuses to rise after Qantas profit drop. www.abc.net.au/news/2008-02-18/qantas-profit-drop/10182130, viewed 6 August 2010.

Anthony, C. 2008. In the new workplace, jobs morph to suit 'real change of pace'. *The Wall Street Journal*, March 3, pp. B1, B3.

Australian Grain Harvesters Association 2008. 'Contract harvesters costs calculator'. www.agha.org.au/index.php?page=costs-calculator, viewed 16 April 2008.

Berenson, M.L., Levina, D.M. & Kraibiel, T.K. 2009. *Basic Business Statistics: Concepts and Applications*, 10th edn. Prentice Hall, Upper Saddle River, NJ.

Blackwell, E. 2010. 'Short work week, "making good"'. www.news.com.au/business/short-work-week-creating-working-poor/story-001rflw12526403578P4z2iw5PZKDB, accessed 13 August 2010.

Charvat, D.H. & Langfield-Smith, K. 1990. *Manufacturing Systems: A Study of Five Manufacturing Companies*. Australian Society of CPAs, Melbourne.

Evans, T. 2015. It's crunch time for business. *In the Black* (CPA Australia). www.inblack.com.au/news/105/103/

GM Holden 2010. www.holden.com.au/corporate/about-holden/environmental/activities, viewed 2 March 2008.

Gregg, P. 2004. Address to UBS Australian Transport Conference, 31 March.

Hair, J.F., Black, W.C., Babin, B., Anderson, R.E. & Tatham, R.L. 2003. *Multivariate Data Analysis*, 6th edn. Prentice Hall International, Upper Saddle River, NJ.

News.com.au, 26 March. www.news.com.au/business/short-work-week-creating-working-poor/story-001rflw12526403578P4z2iw5PZKDB, viewed 13 August 2010.

Phillips, M. 2012. 'More with less'. *IN THE BLACK* (CPA Australia), 11 May. <http://www.inblack.com.au/opinion/2012/05/more-with-less/>, accessed 21 January 2016.

Qantas 2007. *Qantas Annual Report 2007*. www.qantas.com.au/~/media/2007/07/2007AnnualReport, viewed 16 August 2008.

Qantas 2012. *Qantas Group Financial Results 2012* (2012). 2012 release. www.qantas.com.au/~/media/2012/08/2012FinancialResults, accessed 18 May 2012.

Sydney Morning Herald 1 July 2001. www.smh.com.au

Self-study problems and solutions

These problems provide the perfect opportunity to better understand and revise key topics and techniques covered in the chapter.

Self-study

3

SELF-STUDY PROBLEM 1: USING THE HIGH-LOW METHOD

The Elswood Library has incurred the following costs in its Loans Department over the past year:

Month	Number of loans	Cost
January	6100	\$90 000
February	5300	87 000
March	4900	76 200
April	4800	78 100
May	5050	80 700
June	3050	61 000
July	4500	74 500
August	7100	99 000

Revised end-of-chapter material

Every chapter contains a significant amount of new and updated end-of-chapter material.

Review questions

Short-answer questions test your knowledge of key words, terms and concepts presented in the chapter.

Exercises

These exercises provide an opportunity to apply some of the techniques and concepts relating to the chapter.

Review Questions

- 18.1** Briefly explain how the break-even point is calculated.
(a) In sales units.
(b) In sales dollars.
(c) Using a graph. LO 18.1, 18.2, 18.3
- 18.2** What information is conveyed by a cost volume profit (CVP) graph in addition to a company's break-even point? How does a CVP graph differ from a profit volume graph? LO 18.2, 18.3
- 18.3** Explain how the formula to estimate break-even sales revenue can be adjusted to estimate the sales revenue required to achieve a target net profit (both before and after tax). LO 18.4
- 18.4** Malaka Oyster Company has increased its variable costs per kilogram of oysters harvested. However, its fixed costs decreased as a result of these changes. Why might this happen and how will these changes affect the firm's break-even sales volume? LO 18.5

Exercises

- E3.21** **Cost drivers: service firm**
Friendly Skies Travel is a travel agency that has branches in many major shopping centres. A typical branch employs five full-time staff: a manager and four customer service staff. Casual customer service staff are called in for periods of high demand and are normally employed for three-hour shifts. Customer service staff book flights for customers on most major airlines. These staff also assist in identifying accommodation and rental car options for customers.
- LO 3.2**
- Required:**
- 1 Prepare a list of five major costs likely to be incurred by Friendly Skies Travel.
 - 2 For each cost, suggest a possible cost driver that could be used to estimate cost functions and

Problems

Longer, more in-depth problems allow you to apply quantitative techniques as well as theoretical concepts to organisational situations.

Cases

Cases provide more comprehensive scenarios that require you to demonstrate your skills in applying both quantitative techniques and theoretical issues. The cases provide opportunities for higher-level analysis and may require you to integrate material from more than one chapter.

Problems

- P18.31** **Cost volume profit calculations; multiple break-even points; CVP graph; manufacturer**
Scholar Backpacks Pty Ltd has estimated that budgeted production and sales of its backpacks during the coming year will be 70 000 units at an average price of \$30 per unit. Variable manufacturing costs are estimated to be \$12 per unit, and variable marketing costs \$6 per unit sold. Fixed costs are expected to amount to \$540 000 for manufacturing and \$216 000 for marketing. There will be no beginning or ending work in process inventory, or finished goods inventory. (Ignore income taxes.)
- LO 18.2**
18.5
18.4
18.5
- Required:**
- 1 Calculate the company's budgeted break-even point in sales dollars for the coming year.
 - 2 Calculate the number of sales units required to earn a net profit of \$540 000 during the coming year.
 - 3 If the company's variable manufacturing costs are 20 per cent higher than budgeted, calculate the

Cases

- C3.41** **Cost estimation: hospital**
"I don't understand this cost report at all," exclaimed Jeff Mahoney, the newly appointed administrator of Bunyip General Hospital. "Our administrative costs in the new paediatrics clinic are difficult to understand. One month the report shows \$8300, and the next month it's \$16 100. What's going on?" Mahoney's question was posed to Megan McDonough, the hospital's accountant. "The main problem is that the clinic has experienced some widely varying patient loads in its first year of operation. There seems to be some confusion in the public's mind about what services we offer in the clinic. When do they come to the clinic? When do they go to the outpatients' department? That sort of thing. As the patient load has varied, we've frequently changed our clinic administrative staffing. Also, we have found that the number of emergency procedures varies each month, and emergency procedures cause additional staff costs."
- LO 3.6**
3.9
3.11

Appendices

To help you extend and build your knowledge, end-of-chapter appendices provide in-depth information on specific topics.

Appendix

18

COST STRUCTURE AND OPERATING LEVERAGE

The **cost structure** of an organisation is the relative proportion of its fixed and variable costs.¹ Cost structures differ widely between industries and between firms within an industry. A company using a computer-integrated manufacturing system has a large investment in plant and equipment, which results in a cost structure dominated by fixed costs. In contrast, the cost structure of a retail store has a much higher proportion of variable costs (particularly salaries). The highly automated manufacturing firm is capital intensive, whereas the retail store is labour-intensive.

An organisation's cost structure has a significant effect on the sensitivity of its profit to changes in volume. A convenient way to portray a firm's cost structure is shown in Exhibit 18.9, which describes the cost structures of three firms: A, B and C. Although these three firms have the same sales revenue (\$500 000) and

LO 18.11

cost structure: the relative proportions of an organisation's fixed and variable costs.

Acknowledgments

We would like to thank a number of people who have helped us with the development of this textbook, including the hundreds of management accounting students we have taught over many years and the numerous managers and management accountants with whom we have interacted. Their enthusiasm, comments, questions and experience have assisted our understanding and appreciation of management accounting. We also thank our academic colleagues from around Australia and New Zealand who have provided feedback or reviewed parts of the manuscript. They include the following:

Seventh edition

(including their affiliation at that time)

Rafuiddin Ahmed, James Cook University
Zahir Ahmed, Auckland University of Technology
Ranjith Appuhami, Macquarie University
David Bedford, University of Technology, Sydney
Mandy Cheng, University of New South Wales
Glenda Davis, University of Western Sydney
John Donald, Deakin University
Yuan Yuan Hu, Massey University
David Huelsbeck, The University of Melbourne
Zubaidah Ismail, Edith Cowan University

Kenneth Ke, Curtin University
Sumit Lodhia, University of South Australia
Kathy Michael, Victoria University
Carly Moulang, Monash University
Greg Van Mourik, Monash University
Jayce Naidoo, Victoria University
Nirmala Nath, Massey University
John Niven, ADFA
Jean Raar, Swinburne University of Technology
Vg Sridharan, Deakin University
Natasja Steenkamp, Central Queensland University
Nicole Sutton, University of Technology, Sydney

We thank Ian Langfield-Smith for providing the technical check, Gweneth Norris for her assistance with the solutions manual and Robyn Parry for her work on the accompanying digital resources. We would also like to express our gratitude to the people at McGraw-Hill Education who guided this book through the publication process. In particular, we thank Robert Ashworth, Rosemary Noble, Carolina Bodin, Cynthia Morali, Claire Linsdell and Marisa Rey Bulen.

Previous editions

(including their affiliation at that time)

Robyn Alcock, Central Queensland University
Vimala Amirthalingam, Curtin University
Vicki Baard, Macquarie University
Kevin Baird, Macquarie University
Pamela Baker, Macquarie University
David Bedford, University of Technology, Sydney
Dawn Cable, Macquarie University
Andrew Chew, University of Technology, Sydney
Bruce Clayton, Deakin University
Michael Clemens, RMIT University
Henry Collier, University of Wollongong
Glenda Davis, University of Western Sydney
Steven Dellaportas, RMIT University
Colin Dolley, Edith Cowan University
Lyndal Drennan, Queensland University of Technology
John Dumay, University of Sydney
Chris Durden, James Cook University
Evangeline Eljido-Ten, Swinburne University of Technology

David Emsley, Macquarie University
Hai Wei Fan, University of Canberra
Aldonio Ferriera, Monash University
Peter Foreman, Deakin University
Carolyn Fowler, Victoria University of Wellington
Geoff Frost, University of Sydney
Lynn Gallagher, Queensland University of Technology
Peter Graham, University of Canberra
Vicki Golsby, Flinders University
Bruce Gurd, University of South Australia
Eva Heidhues, Macquarie University
Kerry Jacobs, La Trobe University
Stephen Jones, Open Polytechnic
Louise Kloot, Swinburne University of Technology
Dawn Lamminmaki, Griffith University
Michele Leung, University of Western Australia
Phil Lignier, Central Queensland University
Noel Loganathan, Northern Territory University
Tony McMurtrie, The University of Adelaide
Suzie Maloney, University of Southern Queensland
Bernie Mills, The University of Adelaide

Graeme Mitchell, University of Western Sydney
Jodie Moll, The University of Manchester, Manchester
Business School
Reza Monem, The University of Queensland
David Moore, University of Tasmania
Shane Moriarity, The University of Auckland
Carly Moulang, Monash University
Greg Van Mourick, Monash University
Nihal Mudalige, Monash University
Rahat Munir, Macquarie University
Nirmala Nath, Massey University
Gweneth Norris, Deakin University
Robert Nyamori, Massey University
Majella Percy, Queensland University of Technology
Ron Peterson, The University of the South Pacific
Graham Purchas, University of Canterbury
Jim Richards, Murdoch University
Sue Robertson, RMIT University

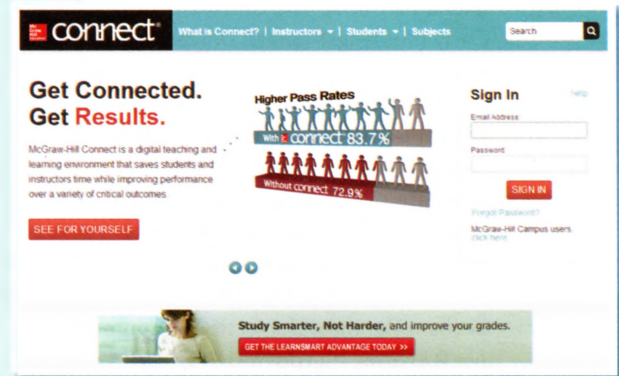
Graeme Russell, Deakin University
Suzanne Salmon, La Trobe University
John Sands, Griffith University
Axel Schulz, The University of Melbourne
Yvonne Shanahan, University of Canterbury
Sharelle Simmons, The University of Queensland
Ciorstan Smark, University of Western Sydney
David Smith, The University of Melbourne
Nava Subramaniam, Griffith University
Mohammad Iqbal Tahir, Griffith University
Carol Tilt, Flinders University
Ted Watts, University of Wollongong
Kim Watty, RMIT University
Carly Webster, Monash University
Robert Williams, University of Wollongong
Maria Xydias-Lobo, Flinders University
Prem Yappa, RMIT University
Mary Zajkowski, The Open Polytechnic of New Zealand

Q Students ...

Want to get **better grades**? (*Who doesn't?*)

Ready to interact with **engaging online assignments** that help you apply what you've learned? (*You need to know how to use this stuff in the real world ...*)

Need **new ways** to study before the big test? (*A little peace of mind is a good thing ...*)



A With McGraw-Hill Education Connect



STUDENTS GET:

- **Interactive, engaging** content
- Opportunities to **apply** concepts learned in the course
- **Immediate feedback** on performance (*No more wishing you could call your lecturer at 1 am*)
- **Quick access** to quizzes, interactive practice materials and much more (*All the resources you need to be successful are right at your fingertips*)

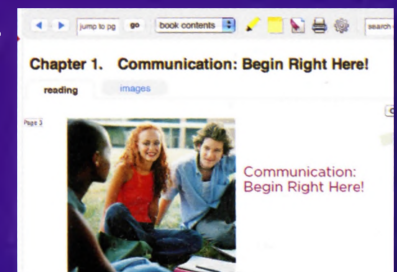
Q Want to access Connect?

A **Connect** is available if your lecturer has elected to use **Connect** for your course. Ask your lecturer about access.

Q Want an online, searchable version of your textbook?

A Connect Plus ebook

Connect Plus provides a searchable online version of your book that is integrated with your other online tools. It also offers features like topic search, direct links from assignments, jump to page number and adjustable text size. Available separately or as an upgrade.



Q Lecturers ...

Would you like your **students** to show up for class better **prepared**? (*Let's face it, learning is much more fun if everyone is engaged and prepared ...*)

Want ready-made **interactive assignments**, student progress reporting and auto-assignment grading? (*Spend less time marking ...*)

Want an **instant view of student or class performance** relative to learning objectives? (*No more wondering if students understand ...*)

Need to **collect data and generate reports** required for administration or accreditation? (*Say goodbye to manually tracking student learning outcomes ...*)

report types



Find out all you can do with Connect Reports.

[view our success tips](#)

assignment results

See assignment scores listed by student and color-coded into high, medium, and low score ranges, and customize results.

student performance

See an individual student's submitted assignment scores, and the status of assignments-in-progress.

assignment statistics

See this section's highest, lowest, and average scores on each assignment

A With McGraw-Hill Education Connect

LECTURERS GET:

- Simple **assignment management**, therefore less administration time
- The ability to **identify** struggling students at the click of a button
- **Auto-graded** assignments, quizzes and tests to save time
- **Detailed visual reporting**, where student and section results can be viewed and analysed at a glance
- Sophisticated **online testing** capabilities
- A **filtering and reporting** function that allows easy assigning and reporting on materials that are correlated to accreditation standards and learning outcomes

Q Think learning should be a bit more interesting?

A Find out more about Connect and Connect Plus

To see how you can access these exceptional digital resources, go to www.mcgraw-hill.com.au/digital/connect



Part 1

Introduction to management accounting

CHAPTER 1

Management accounting: information for creating value and managing resources

The first part of this book introduces management accounting, its purpose and basic concepts.

In Chapter 1, management accounting is defined as processes and techniques that are focused on the effective and efficient use of organisational resources to support managers in their task of enhancing both customer value and shareholder value. We outline the recent changes in the business environment that have influenced the development of management practices and management accounting systems, and management accounting is distinguished from financial accounting.

The processes and techniques of management accounting that are used to enhance value include systems to support the formulation and implementation of strategy; process improvement and cost management techniques to help develop and manage a firm's competitive advantage; planning and control systems to help managers manage resources; and estimates of the cost of products (goods or services) to support strategic and operational decisions.

In this first chapter we also consider factors that influence the design of a management


CHAPTER 2

Management accounting: cost terms and concepts

accounting system, including an awareness of the behavioural implications of management accounting information, and the costs and benefits of designing, producing and using management accounting information. We also recognise that the design of management accounting systems can be influenced by a wide range of factors such as the organisation's competitive environment, strategies, size, and organisational culture, as well as by institutional forces that encourage the adoption of management accounting practices that are used by other organisations.

Chapter 2 introduces some of the basic concepts and terminology used in management accounting. Management accounting systems often include costing, budgeting and performance measurement systems. Modern management accounting systems may also include cost management systems, which focus on the identification and elimination of wasteful activities.

Much of this chapter focuses on the different ways in which costs can be classified and reported to managers. These classifications include variable and fixed costs, direct and indirect costs, and



controllable and uncontrollable costs. We use the concept of the value chain to explore the various cost classifications, paying particular attention to the classification of manufacturing costs as direct

material, direct labour and manufacturing overhead costs. The key message in this chapter is that costs can be classified in different ways to meet the different information needs of managers.

Chapter 1

Management accounting: information for creating value and managing resources



Learning objectives

- 1.1 Describe the changes that have taken place in the business environment in recent years.
- 1.2 Define *management accounting* in terms of value creation.
- 1.3 Describe the major differences between management accounting and financial accounting information.
- 1.4 Explain where management accountants are located in organisations.
- 1.5 Describe the major processes that management accounting systems use to create value and manage resources.
- 1.6 Explain the basic concepts of strategy and how management accounting systems can support strategies.
- 1.7 Recognise how various management accounting techniques have been developed to support a firm's competitive advantage.
- 1.8 Explain how planning and control mechanisms can be used to support resource management.
- 1.9 Explain how costing systems can provide information to support a range of operational and strategic decisions.
- 1.10 Describe the factors that may influence the design of management accounting systems, including behavioural issues, cost-benefit trade-offs and the implications of contingency and institutional theories.
- 1.11 Identify the organisational responses and management accounting responses to changes in the business environment.
- 1.12 (After studying the appendix) describe how the focus of management accounting has evolved.
- 1.13 (After studying the appendix) discuss the professional qualifications that are relevant to becoming an accountant, and the ethical standards to which accountants must adhere.

Introduction

We all deal with many different types of organisations as part of our daily lives. Manufacturers, retailers, service providers, not-for-profit organisations¹ and government enterprises provide us with a vast array of goods and services. These organisations seem very different, but they have three things in common. First, every organisation should have a stated purpose and objectives. For example, a police department may state that its purpose is to make the community a safer place in which to live. The specific objectives of an organisation flow from its purpose. In the case of the police department, the objectives may be to reduce the crime rate by 50 per cent and decrease the number of road fatalities by 30 per cent within the next five years. The objectives of organisations generally focus on adding value from the perspective of major stakeholders—in particular, owners and customers.

Second, in pursuing objectives managers need to make many decisions, and for this they need information. The information needs of managers extend across financial, production, marketing, legal and environmental areas. Generally, the larger the organisation, the more complex are its operations, and the greater is management's need for information. In the police department, senior officers will need information to assess progress towards objectives. Relevant information could include crime statistics for each quarter of the year, explanations of why crime rates may be meeting or exceeding targets, and details of the strategies put into place to reduce crime.

Last, to help achieve the organisation's objectives, managers need to manage their resources effectively and efficiently. Resource management can involve using resources more effectively (i.e. achieving better outcomes) and using resources more efficiently (i.e. using fewer resources to achieve an objective). In the police department, management will need to know the cost of new crime-reduction programs that have been put in place.

Management accounting information helps to satisfy the information needs of managers so that they can manage resources effectively and efficiently and add value for customers and the organisation as a whole.

We start our discussion by exploring the business environment in which management accounting has evolved and operates.

AUSTRALIAN ORGANISATIONS IN THE TWENTY-FIRST CENTURY

In the last 20 years, many Australian organisations have become exposed to global competition for the first time. Australian companies can no longer ignore the activities of companies operating in Asia, Europe and the United States (US). Import tariffs, quotas and, over time, subsidies have been gradually reduced or eliminated. Many overseas companies are now direct competitors for Australian businesses. For example,



¹ In New Zealand, not-for-profit organisations (NFPs) are known as public benefit organisations, reflecting the fact that they are generally organised for socially beneficial purposes.