Eighth Edition

MANAGEMENT AND COST ACCOUNTING

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Srikant M. Datar Madhav V. Rajan

Pearson

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In memory of Charles T. Horngren 1926–2011

Chuck Horngren revolutionised cost and management accounting. He loved new ideas and introduced many new concepts. He had the unique gift of explaining these concepts in simple and creative ways. He epitomised excellence and never tired of details, whether it was finding exactly the right word or working and reworking assignment materials.

He combined his great intellect with genuine humility and warmth and a human touch that inspired others to do their best. He taught us many lessons about life through his amazing discipline, his ability to make everyone feel welcome, and his love of family.

It was a great privilege, pleasure, and honour to have known Chuck Horngren. Few individuals will have the enormous influence that Chuck had on the accounting profession. Fewer still will be able to do it with the class and style that was his hallmark. He was unique, special and amazing in many, many ways and, at once, a role model, teacher, mentor and friend.

He is deeply missed.

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Madhav V. Rajan
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AB: For all women who bring balance to the world

SD: Swati, Radhika, Gayatri, Sidharth

MVR: Gayathri, Sanjana, Anupama

BRIEF CONTENTS

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GUIDE TO THE CASE STUDIES

Case number	Case details	Short/long	Manufacturing/service	Budgeting	Pricing	Ethical issues	Environmental issues	Activity-based costing	Behaviour/organisation factors	Cash flow	Costing system	Profit/loss measurement	ROI	Transfer pricing system	Management control system	Balanced scorecard	Performance measurement	Variance	Market assessment/ competitor analysis	Tableau de bord	Strategic issues	Profitability	Country/area of origin
	PART 1																						
101	**The European Savings Bank:** Legal and ethical issues involved in software piracy.	short	SS			●			●														Europe
102	**The ethical dilemma at Northlake:** How far does the notion of 'different costs for different purposes' extend?	mid	M			●	●														●		Canada
103	**Electronic Boards plc:** Design of costing systems for a firm operating in a high-tech environment. Simplistic vs complex costing.	short	M	●				●	●		●						●				●		N/A
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201	**Permaclean Products plc:** Analysis of costs and price-demand information using past sales data to make decisions on product pricing.	mid	M		●						●	●										●	UK
	PART III																						
301	**Zeros plc:** Use of ROI to measure divisional performance. Use of costing systems to produce meaningful profit statements.	mid	M	●	●				●		●	●	●				●					●	UK
302	**Instrumental Ltd:** Analysis of budgeted vs actual performance for different organisational functions. Considers strategic vs operational issues.	mid	M	●	●					●	●	●					●	●			●		UK

Case number	Case details	Short/long	Manufacturing/service	Budgeting	Pricing	Ethical issues	Environmental issues	Activity-based costing	Behaviour/organisation factors	Cash flow	Costing system	Profit/loss measurement	ROI	Transfer pricing system	Management control system	Balanced scorecard	Performance measurement	Variance	Market assessment/ competitor analysis	Tableau de bord	Strategic issues	Profitability	Country/area of origin
	PART IV																						
401	**BBR plc:** Transfer-pricing problem where divisional interests are pitted against total corporate profitability.	mid	M	●	●	●			●		●	●		●			●	●					UK
	PART V																						
501	**High-Tech Ltd:** Importance of strategy and cost allocation within the IT manufacturing industry. Considers just-in-time inventory systems.	long	M & SS		●			●	●		●	●			●	●			●	●	●		UK/France
502	**Tanner Pharmaceuticals and the price of a new drug:** Issues of pharmaceutical drug prices in the light of competitive strategy.	mid/long			●							●									●		USA
503	**Osram:** Analysis of potential savings made by newer, more efficient consumables as opposed to traditionally used ones.	mid/long	M	●	●						●	●							●			●	Germany

PREFACE

Accounting influences our lives. Whether or not one uses accounting information, accounting alters our social, economic and physical environment. And of course, it impacts organisations and altering what we do and the decisions we make. Corporate action regarding new product developments, pricing strategy, staff recruitment and salary levels are usually directly influenced by accounting information. At times, accounting motivates certain types of managerial behaviours and discourages others. This book is about understanding the preparation and use of management and cost accounting information, taking account of how it influences decisions. But accounting is not a pre-given in form or process and in this sense accounting is also continuously being reshaped by its context. The book therefore also extensively discusses how different factors alter accounting techniques and processes.

As we'll see in Chapter 1, management accounting is concerned with providing managers with financial and other types of information so they can pursue diverse goals. Cost accounting, which is sometimes used interchangeably with management accounting, is more concerned with information on the acquisition and consumption of resources. We want to address issues relating to the design, use and role of accounting information in the management of organisational activities. We will do this by balancing technical detail with enterprise insight so we can focus on how to best support management action.

Management and cost accounting is a dynamic discipline which differs across firms, nations, industrial settings and management functions. It entails the application of different techniques, which must constantly adapt given the fast pace of changes facing enterprises today. Consequently, the book covers a comprehensive suite of techniques and areas including job costing and process costing, cost–volume–profit relationships, capital investment decisions, budgetary control and responsibility accounting. It looks also at quality costing, throughput issues, non-financial performance measures and strategic analysis. But we are especially concerned with the forces that impact these management accounting practices right now. So all these techniques are discussed in the context of changes witnessed by organisations on an ongoing basis. We argue that the most significant force affecting firms today is technological change and innovation. Digital technologies are rapidly impacting business models and organisational processes and they are doing so in a deep and extensive way. This new edition of the book is thus packed with coverage on how organisations are being digitally transformed and what this implies for management accountants. We look at numerous illustrations of companies using 'big data' and analytics as they draw insights from digitised data. We consider how the 'Internet of Things', robotics, artificial intelligence and other digital innovations are impacting management accounting information deployment. Aside from the digitalisation of enterprises, we consider also the relevance of sustainability and environmental concerns which influence how firms deploy management accounting information.

New to the 8th edition

To ensure currency and coverage of modern applications of management accounting, we have added new material in this edition. Environmental issues have been of concern to organisations for decades but the past few years have demonstrated much more active engagement by business in this light. We have therefore introduced across several chapters, discussions and illustrations of companies which have extensively invested in sustainability initiatives and indicators of their performance in this domain. Chapter 1 discusses why this has become such a priority for many enterprises and subsequent chapters provide numerous illustrations of how companies approach sustainability factors affecting their pursuits and activities. Chapter 22 in particular reflects the significance of sustainability issues tied to management accounting with a new title for the whole chapter and wide-ranging content revisions and new coverage areas. Technological changes and digitalisation have likewise evolved and altered organisational functions and processes in the very recent past. The rise of increasingly advanced digital applications such as blockchain systems, the Internet of Things, smart contracts and artificial intelligence are altering not only what management accountants must report on but the very mechanisms of reporting and the growing divisions between machine versus human decision making. This is reshaping the work and roles played by management accounting in organisations. The impact of digital technologies is fast transforming the field and most chapters discuss aspects of the nature and forms of such changes. From Chapter 1 through, especially to Chapter 22, we identify how the digital technologies are altering the substance of management accounting and the relevance of conventional as well as new accounting and control tools deployed by firms.

Also included in this edition are novel illustrations and survey results of management accounting mechanisms and corporate concerns. We have tried to ensure the inclusion of company-relevant examples and illustrations of changing management and cost accounting practices. While general aspects of different topics and issues are extensively covered, we also discuss situational and organisational adaptations of generic techniques to ensure that you understand the applicability of management accounting approaches. To achieve this, we have numerous case studies used by many business schools across the globe. We ensure that the reality of enterprise management is reflected in the book and so, rather than accord a separate chapter to consider strategic, organisational and behavioural aspects of management accounting, we integrate this throughout chapters in the book. We further cover global themes that are of relevance to managers in modern enterprises in terms of corporate responsibility and ethical issues.

We draw comfort in observing that other management accounting writers try to use our approach of practical examples, case studies and coverage of research findings, while also sharing our preference for the format and structure adopted here. We sharpen this by providing the very latest in corporate examples, survey findings and case studies. This ensures that you gain familiarity with concepts that are of relevance and concern to enterprises today.

Deciding on the sequence of chapters in a management and cost accounting textbook that spans introductory through to relatively detailed analysis of material is a challenge we have met successfully. Professors tend to have a preferred way of organising their course material. The five-part structure of this book and the sequencing of chapters have been designed to facilitate flexibility and diversity in the teaching of different topic areas and the use of the text for a range of courses and levels. An outline of the coverage and component chapters of each part is given in the part openers.

Assessment material

This book includes a high quantity and broad range of assessment material to further facilitate the use of the text on a diverse range of courses:

- **Review questions:** These short questions encourage students to review and/or critically discuss their understanding of the main topics and issues covered in each chapter, either individually or in a group.
- **Exercises:** These comprehensive questions are graded and grouped by their level of difficulty: basic, intermediate and advanced. Each question is preceded by a note of its topic coverage and an indication of the time it should take to complete. Where appropriate, the exercises include questions taken from examinations of several professional accountancy bodies. Fully worked solutions to a selection of exercises in each chapter (identified by an asterisk) are provided in Appendix A.

Case study problems

At the end of each of the five parts are problem-based illustrative cases. Each is more substantive and typically more demanding than the end-of-chapter exercises, integrating topics from several chapters in each of the core parts of the text, allowing you to apply your understanding of accounting concepts, issues and techniques within a broader organisational context, and to develop your critical thinking and analytical skills. The questions which follow the case material include some aspects suitable for group discussion/assignment.

Glossary

This comprises an alphabetical listing of all the key terms, including a concise definition, so allowing revision of all the key concepts and techniques in the text.

Academic supplements

Academics and lecturers who adopt this text are provided with a range of additional materials to assist in the preparation and delivery of courses. These include:

- complete, downloadable Instructor's Manual with teaching ideas and solutions to end-of-chapter exercises not given in the text;
- suggested teaching notes to all case study problems;
- editable PowerPoint slides, organised by chapter, allowing you to provide a lecture or seminar presentation (and/or to print handouts). These incorporate colourful graphics, outlines of chapter material, text exhibits, additional examples and graphical explanations of difficult topics;
- solutions to additional questions and spreadsheet problems.

This text is supported by its own MyLab Accounting which is an environment that gives unlimited opportunities for practice and assessment using a range of questions, and which provides timely feedback. Updates to MyLab Accounting include alignment of the questions to match new content in the book and the addition of over 100 exercises that are new to this edition to improve coverage across the most important topics. In addition to the useful self-study suggestions in the Study Plan, and the vast range of exercises (over 800) to select from, a better mix of questions has been incorporated into MyLab Accounting for this edition, allowing teaching staff to better test students' performance using a greater variety of question types. Finally, four new short videos explaining essential concepts can be used within teaching to consolidate your students' understanding or support self-study and revision.

For access to MyLab Accounting, students need both a course ID and an access card (see the advert on the inside front cover of the book).

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Madhav Rajan
November 2022

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The Institute of Chartered Accountants of Scotland
The Chartered Institute of Management Accountants
The Institute of Chartered Accountants in Ireland

PART I

Management and cost accounting fundamentals

The first part of the book is intended to provide an introduction to fundamental concepts and ideas in management and cost accounting. Chapter 1 considers the role of accounting and accountants in organisations. Chapters 2–7 discuss relevant technical and broader organisational issues in the design and functioning of cost systems. Specifically, Chapter 2 provides an introduction to costing terminology and its aims. Chapters 3 and 4 discuss what might be considered ends of a continuum in costing systems: job order costing and process costing. Chapter 5 addresses fundamental cost allocation issues while Chapter 6 deals with joint-costing situations. The final chapter in this part discusses absorption costing and variable costing as two distinct approaches to stock costing.

CHAPTER 1

The manager and management accounting

Former accountants have headed many large companies across the world, including PepsiCo, Coca-Cola, BT, Siemens, 3i, Shell, Rolls-Royce, Vodafone, Burger King, Royal Bank of Scotland, Asda and Nike. Finance leaders' roles in organisations change continuously. More than half of Chief Executive Officers (CEOs) of FTSE 100 (a share index of the 100 companies listed on the London Stock Exchange with the highest market value) have a background in accounting or financial management (Global Accounting Network, 2022) and 30% of Fortune 500 (the 500 largest US industrial corporations by revenue) CEOs spend the first four years of their careers developing a strong foundation in finance. In the financial sector, almost a quarter of CEOs previously held the role of CFO (Amato, 2022). The rapid rise of accounting and finance executives is unrivalled by other corporate roles. This is partially because they help guide companies at the most senior level, offering strong analytical skills, organisational acumen, a dedication to continuous improvement and widening stakeholder engagement.

Across virtually all organisations, accountants' duties involve management planning, control and decision making, although the enterprise context determines the specific accounting and financial management responsibilities they must deliver on. The demands on accounting and finance professionals always differ and there is no one-size-fits-all in management accounting. Recently, many accountants have broadened their activities to include risk management, business strategy, sustainability objectives and digital transformation roles. CPA Canada, a national organisation representing the Canadian accounting profession, with 210,000 qualified members, considers that its members must be 'broad-minded, forward-thinking professionals who undertake appropriate analysis, exercise good judgment, communicate effectively and act to protect the public interest' (CPA Canada 2022). Managers in all companies, whether small or large, must understand how revenues and costs behave or they risk losing control of the performance of their firms. But this is not sufficient and managers' use of management accounting information must go beyond this to include making decisions about research and development, production planning, budgeting, pricing, and the products or services to offer customers. Strategic action in enterprises is increasingly informed by management accounting input.

Learning objectives

After studying this chapter, you should be able to:

- Differentiate management accounting from financial accounting
- Recognise the growing role of strategy in management accounting processes
- Identify five broad purposes of accounting systems
- Understand how accounting can influence planning, control and decision making
- Distinguish between the score-keeping, attention-directing and problem-solving functions of management accounting
- Recognise that economic benefits, costs as well as contextual and organisational process issues are relevant to accounting systems design and operation
- Assess how companies add value
- Understand why digitalisation is management accounting's key challenge today

How managerial activities and decisions link to accounting intelligence continuously evolves. This book addresses questions such as: What types of decisions do managers make? How can accounting help managers make these decisions? Are managerial needs proactively being met by management accounting solutions? In this first chapter, we look at some dimensions of the role of management accounting in modern enterprises, why management accounting is subject to continual change and what digital technologies imply for the field. A consideration of these issues will give us a framework for studying the succeeding chapters.

Management accounting, financial accounting and cost accounting

A distinction is often made in practice between management accounting and financial accounting. **Management accounting** measures, analyses and reports financial information and non-financial information that are intended primarily to assist managers in fulfilling the goals of the organisation. A management accounting system is an important facet of overall organisational control, as is discussed later in this book. CIMA Global sees management accounting as an integral part of management. It considers management accounting as combining accounting, finance and management with leading-edge techniques that drive successful businesses. Individual managers often require the information in an accounting system to be presented or reported differently. Consider, for example, sales order information. A sales manager at Porsche may be interested in the total amount of sales in Euros to determine the commissions payable to salespeople. A distribution manager at Porsche may be interested in the sales order quantities by geographic region and by customer-requested delivery dates to ensure vehicles get delivered to customers on time. A manufacturing manager at Porsche may be interested in the quantities of various products and their desired delivery dates so that they can develop an effective production schedule. To simultaneously serve the needs of all three managers, Porsche creates a database consisting of small, detailed bits of information that can be used for multiple purposes. For instance, the sales order database will contain detailed information about a product, its selling price, quantity ordered, and delivery details (place and date) for each sales order. The database stores information in a way that allows different managers to access the information they need.

Many managers now use data analytic techniques to gain insights into the data they collect. This is popularly referred to as 'big data' and is associated with machine learning and artificial intelligence. The most common application of machine learning and artificial intelligence is in making predictions. For example, using historical purchase data and other characteristics of a customer, a company like Netflix predicts which movie a particular customer might like and recommends that movie to the customer. Netflix then obtains feedback on whether the customer liked the movie or not and incorporates this feedback into the model, improving and refining it. In this sense the machine learns from its correct and incorrect predictions and is seen as acting intelligently. The vast quantity and variety of data have led to the development of many new prediction techniques.

Professional management accountants apply the principles of accounting and financial management to create, protect, preserve and increase value for the shareholder of for-profit and not-for-profit enterprises in the public and private sectors. They might engage in the identification, generation, presentation, interpretation and use of relevant information relevant to:

- develop, communicate and implement strategies
- plan long-, medium- and short-term operations
- determine capital structure and fund that structure
- design reward strategies for executives and shareholders
- coordinate design, operations and marketing decisions and evaluate performance

- control operations and ensure the efficient use of resources
- measure and report financial and non-financial information to stakeholders
- implement corporate governance procedures, risk management and internal controls
- explore the potential for managerial and organisational value creation.

Management accounting information and reports do not have to follow set principles or rules. The key questions are always: (1) how will this information help managers do their jobs better; (2) do the benefits of producing this information exceed the costs; and (3) does the information recognise what is specific about the organisational context?

Financial accounting and management accounting have different goals. **Financial accounting** focuses on external reporting that is directed by authoritative guidelines. Organisations are required to follow these guidelines in their financial reports to outside parties. Financial accounting is guided by prescribed accounting standards. Principles define the set of revenue and cost measurement rules and the types of items that are classified as assets, liabilities or owners' equity in balance sheets which form the standards applicable. Sources of authority for accounting regulation differ across countries. In Spain, for instance, the Instituto de Contabilidad y Auditoria de Cuentas (ICAC) has been appointed by the government for this purpose. In the UK, the Financial Reporting Council (FRC) has the authority to issue accounting standards. The FRC's regulator views its objective to 'regulate auditors, accountants and actuaries' and to 'set the UK's corporate governance and stewardship codes' (FRC, 2022). Its work is aimed at 'investors and others who rely on company reports, audit and high-quality risk management'.

In France, the Autorité des Normes Comptable (ANC), a public body, oversees accounting legislation, whereas in Denmark, the Føreningen af Statsautoriserede Revisører (FSR), a professional accounting body, oversees the setting of accounting standards. Other bodies which are concerned with accounting standards include: in Australia, the Australian Accounting Standards Board (AASB); in China, the China Accounting Standards Committee (CASC); and in South Africa, the South Africa Accounting Standards Board. While conceptions of how accounting information should be reported can have a high degree of national specificity, across the world over 140 national jurisdictions use International Financial Reporting Standards (IFRS) which are issued by the IFRS Foundation and the International Accounting Standards Board (IASB).

In contrast to adhering to financial reporting standards, management accounting is not restricted by accounting principles. For example, a car manufacturer may present a particular estimated 'value' of a brand name (say, the Volvo brand name) in its *internal* financial reports for marketing managers, although doing so does not have to accord with the legal framework within which externally oriented financial reports can be prepared in Sweden.

While the work of management accountants and financial accountants tends to be organisation-specific, some broad differences generally exist. They may be categorised as follows:

- *Regulations.* Management accounting reports are generally prepared for internal use and no external regulations govern their preparation. Conversely, financial accounting reports are generally required to be prepared according to accounting regulations and guidelines imposed by law and the accounting profession.
- *Range and detail of information.* Management accounting reports may encompass financial, non-financial and qualitative information which may be very detailed or highly aggregated. Financial accounting is usually broad-based, lacking detail and intended to provide an overview of the position and performance of an organisation over a time period. It tends to focus on financial information.
- *Reporting interval.* Management accounting reports may be produced frequently – on an hourly, daily or weekly basis, possibly to span several years. The interval covered by management accounting information will be dictated by the decision-making and control needs of the information users. Conversely, financial accounting reports are produced annually. Some large companies also produce semi-annual and quarterly reports.

- *Time period*. Management accounting reports may include historical and current information, but also often provide information on expected future performance and activities. Financial accounting reports provide information on the performance and position of an organisation for the past period. They tend to be backward-looking.

Exhibit 1.1 outlines the major differences between management accounting and financial accounting. Note, however, that reports such as balance sheets, income statements and statements of cash flows are common to both management accounting and financial accounting.

Cost accounting measures and reports financial and non-financial information related to the organisation's acquisition or use of resources. It provides information for both management accounting and financial accounting. For example, calculating the cost of a product is a cost accounting function that meets both the financial accountant's stock-valuation needs and the management accountant's decision-making needs (such as deciding how to price products and choosing which products to promote). However, today most accounting professionals take the perspective that cost information is part of the management accounting information collected to make management decisions. Thus, the distinction between management accounting and cost accounting is not so clear-cut, and we often use these terms interchangeably in the book.

A central task of managers is cost management. We use the term **cost management** to describe the actions managers undertake in the short-run and long-run planning and control of costs that increase value for customers and lower the costs of products and services. An important component of cost management is the recognition that prior management decisions often commit the organisation to the subsequent incurrence of costs. Consider the costs of handling materials in a production plant. Decisions about plant layout and the extent of physical movement of

Exhibit 1.1 Major differences between management and financial accounting

	Management Accounting	Financial Accounting
Purpose of information	Help managers make decisions to fulfil an organisation's goals	Communicate an organisation's financial position to investors, banks, regulators and other outside parties
Primary users	Managers of the organisation	External users such as investors, banks, regulators and suppliers
Focus and emphasis	Future-oriented (budget for 2024 prepared in 2023)	Past-oriented (reports on 2023 performance prepared in 2024)
Rules of measurement and reporting	Internal measures and reports do not have to follow relevant accounting standards but are based on cost-benefit analyses	Financial statements must be prepared in accordance with relevant accounting standards and be certified by external, independent auditors
Time span and type of reports	Varies from hourly information to 15 to 20 years, with financial and non-financial reports on products, departments, territories, and strategies	Annual and quarterly financial reports, primarily on the company as a whole
Behavioural implications	Designed to influence the behaviour of managers and other employees	Primarily reports economic events but also influences behaviour because manager's compensation is often based on reported financial results

materials required for production are usually made before production begins. These decisions greatly influence the level of day-to-day materials handling costs once production begins. For this reason, cost management has a broad focus. It typically includes the continuous reduction of costs and encompasses the whole life cycle of the product from product conception to deletion. Cost management is often carried out as a key part of general management strategies and their implementation. Examples include enhanced customer satisfaction programmes, quality initiatives and more efficient supplier relationships management via the internet. In other words, cost management is not only about reducing costs. Cost management also includes making decisions to incur additional costs with the goal of enhancing revenues and profits. Whether or not to enter new markets, implement new organisational processes, and change product designs are also cost management decisions. Information from accounting systems helps managers to manage costs, but the information and the accounting systems themselves are not cost management.

Ultimately, management accounting's primary purpose is to enhance value creation within both private and public sector organisations. The management accountant must make use of a sound body of knowledge, as well as abide by ethical guidelines (discussed in the appendix of this chapter). Of particular relevance is the growing contribution which management accountants make to strategic financial management information production and analysis and to strategic management action itself.

Strategic decisions and management accounting

Many organisations seek to be more expansionist, entrepreneurial, risk taking and innovative as a conscious move away from inwardly focused management techniques. Entirely new markets are emerging for products and services and avant-garde innovative firms are reaping significant benefits through innovative management approaches and a growing focus on action through focused strategic information.

A company's strategy specifies how the organisation matches its own capabilities with the opportunities in the marketplace. In other words, strategy describes how an organisation creates value for its customers while distinguishing itself from its competitors. A business might be thought to follow one of two broad strategies (we consider this further in Chapter 20). Some companies, such as EasyJet and Carrefour, follow a cost leadership strategy. They profit and grow by providing quality products or services at low prices and by judiciously managing their costs. Other companies, such as Apple and Bang & Olufsen, follow a product differentiation strategy. They generate profits and growth by offering differentiated or unique products or services that appeal to their customers and are often priced higher than the less popular products or services of their competitors.

Deciding between these strategies is a critical part of what managers do. Management accountants work closely with managers in various departments to formulate strategies by providing information about the sources of competitive advantage, such as (1) the company's cost, productivity or efficiency advantage relative to competitors; or (2) the premium prices a company can charge over its costs from distinctive product or service features.

Management accounting information helps managers focus on strategic issues by answering questions such as the following:

- *Who are our most important customers, and what critical capability do we have to be competitive and deliver value to our customers?* After Amazon's success selling books online, management accountants at Waterstones, a British book retailer, outlined the costs and benefits of several alternative approaches for enhancing the company's information technology infrastructure and developing the capability to sell books online. A similar cost–benefit analysis led Toyota to build flexible computer-integrated manufacturing plants that enable it to use the same equipment efficiently to produce a variety of cars in response to changing customer tastes.
- *What is the bargaining power of our customers?* Kellogg Company, for example, uses the reputation of its brand to reduce the bargaining power of its customers and charge higher prices for its cereals.

- *What is the bargaining power of our suppliers?* Management accountants at Dell Computers consider the significant bargaining power of Intel, its supplier of microprocessors, and Microsoft, its supplier of operating system software, when considering how much it must pay to acquire these products.
- *What substitute products exist in the marketplace, and how do they differ from our product in terms of features, price, cost and quality?* Hewlett-Packard, for example, designs, costs and prices new printers after comparing the functionality and quality of its printers to other printers available in the marketplace.
- *Will adequate cash be available to fund the strategy, or will additional funds need to be raised?* Tesla CEO Elon Musk's bid to buy Twitter with a $46.5 billion takeover offer in April 2022 included debt and equity commitment letters filed with the US Securities and Exchange Commission.

Research reveals that companies that emphasise creating long-term value for shareholders are likely to outperform those that focus on preserving shareholder value in the short term. Companies whose primary focus is on internal control and value preservation do not increase their stock market valuations as effectively as those that look outside for opportunities to create value. Outperformers in business are those with the strategic and external awareness to evolve and change when the need arises. Studies have also revealed that performance-based pay, focusing on highly tangible near-term measurable variables damages the creation of longer-term shareholder value. Management accounting information is called upon not only to help managers make balanced decisions in the face of organisational challenges and the opportunities their environments bring, but increasingly also to monitor and evaluate strategic progress.

The trend for professional institutes of management accounting has been to reorient the field towards strategic management information preparation and analysis and the actual participation of management accountants in such activities. Operational accounting techniques and issues continue to be relevant, but their roles are being recast in the context of their contributions and relationships with organisation-wide financial management and strategic concerns.

The shift towards managerial and strategic engagement rather than just acting as providers of largely financial information about enterprises allows management accountants to align their work to the changing business and organisational landscape. The beginning of the millennium has seen a radical shift in the economic context in which companies operate. Early in the twentieth century, the Ford Motor Company demonstrated the ability of mass production to lower the price of a product by 60% or more. This enabled consumption to move its focus away from elite consumers to the masses. Today, another transformation is taking place away from mass consumption to a focus on individuals. Consumers, in many sectors, are building platforms, tools and relationships which enable a high degree of personalisation. Companies such as Amazon, eBay, Apple, YouTube and Meta fall into this new category. Digital interactive technologies allow consumers greater self-determination. A smartphone allows the user to define the experience desired from the device at very low cost. Assets, information, relationships and management are now 'distributed' as the internet, mobile computing, wireless broadband and new software applications have been created. As products and technology offer different experiences to the consumer, management accountants need to adapt to understand, control and manage attendant cost structures.

Many established management accounting concepts that were developed to serve traditional industrial and service sectors continue to find usage across many enterprises, but the manner in which they are deployed is being reshaped. Many firms are pursuing digital transformation initiatives, which can involve the use of different technologies such as cloud computing, the **Internet of Things**, **big data** and **artificial intelligence (AI)**. Consider Virgin Holidays, which uses AI to test its email marketing approach. In one campaign, the company tested different subject lines and text within emails to work out what was most effective. This enabled insights into how best to promote holidays including questioning whether a big promotion (such as 50% off) requires the message to lead in any communications sent. The AI-generated insights revealed that the best results came from emails that had messages like 'Book before Monday' or offered a getaway from stress at work or bad weather in London instead of a specific sales message. Saul Lopes who led the AI project at Virgin Holidays notes that 'The AI took away all of the bullsh*t and we are no longer led by human ego or human bias but by numbers and results' (Digitalfix, 2018). Consider also the Lloyds Banking Group's use of big data analytics to better understand its retail and commercial activities and to develop strategy and pricing approaches. One application has been the use of big data analytics to explore the integrated customer information, marketing and digital aspects of the bank. Rajput (2020) reports that, '24% of the bank's income came from leads generated by the analytics system. The bank has also been able to establish a new product strategy using customer data from the analytics system. It has also been able to manage costs, detect potentially fraudulent activities, and build credit risk models.'

Organisations like Rolls-Royce (see 'Concepts in action' box below), Virgin Holidays and Lloyds as well as smaller enterprises can use data analytics especially as more and more digital technologies are invested into by enterprises to inform planning decisions, manage costs, unravel insights and generally improve decision-making activities. These are all tasks at the forefront of management accountants' raison d'être given their concern to measure, analyse and report both financial and non-financial information intended to assist managers to identify and pursue enterprise strategies.

Accounting systems and management controls

What are the objectives of accounting systems? Is Renault's management control system more effective than Audi's? Is Nestlé's more helpful in planning than Cadbury's? Is Equinor's superior to BP's? This section provides an overview of the broad purposes of accounting and management control systems, illustrating the role of accounting information.

The major purposes of accounting systems

The accounting system is among the most significant quantitative information system in almost every organisation. This system aims to provide information for five broad purposes:

- *Purpose 1: Formulating overall strategies and plans.* This includes new product development and investment in both tangible (equipment) and intangible (brands, patents or people) assets, and frequently involves special-purpose reports. Increasingly, many organisations seek market-, supplier- and customer-based information for determining longer-term strategic action.
- *Purpose 2: Resource allocation decisions such as product and customer emphasis and pricing.* This frequently involves reports on the profitability of products or services, brand categories, customers, distribution channels, and so on.
- *Purpose 3: Cost planning and cost control of operations and activities.* This involves reports on revenues, costs, assets, and the liabilities of divisions, plants and other areas of responsibility.
- *Purpose 4: Performance measurement and evaluation of people.* This includes comparisons of actual results with planned results. It can be based on financial or non-financial measures.
- *Purpose 5: Meeting external regulatory and legal reporting requirements where they exist.* Regulations and statutes often prescribe the accounting methods to be followed. Financial reports are provided by some organisations to shareholders who are making decisions to buy, hold or sell company shares. These reports ordinarily attempt to adhere to authoritatively determined guidelines and procedures which exist in many countries.

Each of the purposes stated here may require a different presentation or reporting method. Accountants combine or adjust the method and data to answer the questions posed by different internal or external users.

The nature of management-oriented accounting information alters in line with changes in the business environment. Over the past decade, many enterprises have experienced a shift from a traditional monitoring and control perspective to a more business- and support-oriented focus. This requires a broad-based understanding of the business, with management accountants working alongside managers, as partners within cross-functional teams rather than in a separate accounting function. Some present-day key influences on changes in accounting information include:

- an increased pace of change in the business world
- shorter product life cycles and competitive advantages
- organisational responses to infrequent events such as pandemics and wars
- a requirement for more strategic action by management
- digital transformation of companies and new business models
- the outsourcing of non-value-added but necessary services
- increased uncertainty and the explicit recognition of risk
- novel forms of reward structures
- increased regulatory activity and altered financial reporting requirements
- more complex business transactions
- increased focus on customer satisfaction
- new ethics of enterprise governance
- the rise of intellectual capital
- enhancing knowledge management processes.

In this book we consider the accounting information implications of many of these developments.

Planning and control

There are many definitions of planning and control. Study the left side of Exhibit 1.2, which uses planning and control at *The Sporting News* (SN) as an illustration. We define **planning** (the top box) as choosing goals, predicting results under various ways of achieving those goals, and then deciding how to attain the desired goals. For example, one goal of SN may be to increase operating profit. Three main alternatives are considered to achieve this goal:

1. Change the price per newspaper.
2. Change the rate per page charged to advertisers.
3. Reduce labour costs by having fewer workers at SN's printing facility.

Assume that the editor, Bérangère Saunier, increases advertising rates by 4% to €5200 per page for March 2023. She budgets advertising revenue to be €4 160 000 (€5200 × 800) pages predicted to be sold in March 2023. A **budget** is the quantitative expression of a plan of action and an aid to the coordination and implementation of the plan.

Control (the bottom box in Exhibit 1.2) covers both the action that implements the planning decision and deciding on performance evaluation and the related feedback that will help future decision making. With our SN example, the action would include communicating the new advertising-rate schedule to SN's marketing sales representatives and advertisers. The performance evaluation provides feedback on the actual results.

During March 2023, SN sells advertising, sends out invoices and receives payments. These invoices and receipts are recorded in the accounting system. Exhibit 1.3 shows the March 2023 advertising revenue performance report for SN. This report indicates that 760 pages of advertising (40 pages less than the budgeted 800 pages) were sold in March 2023. The average rate per page was €5080 compared with the budgeted €5200 rate, yielding actual advertising revenue in March 2023 of €3 860 800. The actual advertising revenue in March 2023 is €299 200 less than the budgeted €4 160 000. Understanding the reasons for any difference between actual results and budgeted results is an important part of **management by exception**, which is the practice of concentrating on areas not operating as expected (such as a cost overrun on a project) and placing less attention