

# MANAGEMENT & COST ACCOUNTING

**Alnoor Bhimani • Charles T. Horngren  
Srikant M. Datar • Madhav V. Rajan**

Seventh Edition

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# **MANAGEMENT AND COST ACCOUNTING**



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**Alnoor Bhimani**

London School of Economics and Political Science

**Charles T. Horngren**

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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.

**Alnoor Bhimani**

London School of Economics and Political Science

**Srikant M. Datar**

Harvard University

**Madhav V. Rajan**

University of Chicago

**AB:** For all women who bring balance to the world

**SD:** Swati, Radhika, Gayatri, Sidharth

**MVR:** Gayathri, Sanjana, Anupama



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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
<b>PART 1</b>																							
101	<b>The European Savings Bank:</b> Legal and ethical issues involved in software piracy.	short	SS			●			●														Europe
102	<b>The ethical dilemma at Northlake:</b> How far does the notion of 'different costs for different purposes' extend?	mid	M			●	●														●		Canada
103	<b>Electronic Boards plc:</b> Design of costing systems for a firm operating in a high-tech environment. Simplistic vs complex costing.	short	M	●				●	●		●						●				●		N/A
<b>PART II</b>																							
201	<b>Permaclean Products plc:</b> Analysis of costs and price-demand information using past sales data to make decisions on product pricing.	mid	M		●						●	●										●	UK
202	<b>The Good Night Motel:</b> Break-even and contribution margin analysis to assess whether to accept or reject an offer.	mid	S		●							●											Canada
<b>PART III</b>																							
301	<b>Zeros plc:</b> Use of ROI to measure divisional performance. Use of costing systems to produce meaningful profit statements.	mid	M	●	●				●		●	●	●				●					●	UK
302	<b>Instrumental Ltd:</b> 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
	<b>PART IV</b>																						
401	<b>BBR plc:</b> Transfer-pricing problem where divisional interests are pitted against total corporate profitability.	mid	M	●	●	●			●		●	●		●			●	●					UK
	<b>PART V</b>																						
501	<b>High-Tech Ltd:</b> Importance of strategy and cost allocation within the IT manufacturing industry. Considers just-in-time inventory systems.	long	M & SS		●			●	●		●	●			●	●			●	●	●		UK/France
502	<b>Tanner Pharmaceuticals and the price of a new drug:</b> Issues of pharmaceutical drug prices in the light of competitive strategy.	mid/long			●							●									●		USA
503	<b>Osram:</b> 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 concerns, enterprise governance and new business model strategies which influence how firms utilise management accounting information.

To ensure currency and coverage of modern applications of management accounting, we have introduced more than twenty new accountancy examination questions in this edition of the book. Throughout the book, we place emphasis on ensuring company-relevant examples and illustrations of management and cost accounting practices. So although 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 added new case studies that have recently been used very successfully by 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 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. Finally, we have included in this edition, many new survey and study results to illustrate actual management accounting concerns by executives from across the world.

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 in this edition by providing the very latest in corporate examples, survey findings and case studies. This ensures that you will become familiar with concepts that are of relevance and concern to organisations 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 text 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.

## Appendix B: Compound and interest rate tables

Students will need to use these tables in studying Chapter 13 of the text and undertaking the end-of-chapter exercises. For ease of reference, we recommend students make a photocopy of these pages.

## 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 and overhead projector masters, 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.

*Alnoor Bhimani*  
*Srikant Datar*  
*Madhav Rajan*  
March 2019

### Lecturer Resources

For password-protected online resources tailored to support the use of this textbook in teaching, please visit [www.pearsoned.co.uk/bhimani](http://www.pearsoned.co.uk/bhimani)



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# CHAPTER 1

## The manager and management accounting

Former accountants have headed many large companies across the world, including Coca-Cola, Siemens, Accenture, P&O, Vodafone, Bass, Royal Bank of Scotland, Asda and Nike. Finance leaders' roles in organisations change continuously. In the UK, 55% 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 and one in four are qualified accountants (Robert Half 2018). About 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 and 15% headed the finance function before taking the helm (Ndegwa 2017). The rapid rise of the Chief Financial Officer (CFO) is unrivalled by any other corporate role. This is partially because accounting executives help guide companies at the most senior level and need to adopt an ever-widening and shifting focus of attention.

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, communication and digital transformation roles. CPA Canada, a national organisation representing the Canadian accounting profession with 210 000 qualified members, considers that: 'To excel, CFOs today must go beyond stewardship to act as catalysts of change and strategists, harnessing resources across the organisation to accomplish strategic and financial objectives, helping to create a risk-intelligent culture, transforming data into information and insights and defining the company's future alongside the CEO' (CPA Canada 2018). 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. Managers' use of management accounting information goes beyond this, however, to encompass making decisions about research and development, production planning, budgeting, pricing, and the products or services to offer customers. Strategic action in enterprises can also be extensively informed by management accounting.

### 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 scorekeeping, 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
- Understand how companies add value
- Explain why digitalisation is management accounting's most important 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 represents today the greatest challenge to 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. The Chartered Institute of Management Accountants (CIMA) – the largest management accounting body in the world – 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.

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:

- inform strategic decisions and formulate business strategy
- plan long-, medium- and short-term operations
- determine capital structure and fund that structure
- design reward strategies for executives and shareholders
- inform operational decisions
- control operations and ensure the efficient use of resources
- measure and report financial and non-financial performance to management and other 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 item 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 philosophy is underpinned by its belief that promoting confidence in corporate reporting and governance can make the creation of wealth more likely. In France, the Autorité des Normes Comptable (ANC), a public body, oversees accounting legislation, whereas in Denmark, the Føringen 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. In contrast, management accounting is not restricted by accounting principles that guide financial reporting. 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 is not in accordance 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 summarises 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

**Exhibit 1.1****Major differences between management and financial accounting**

	<b>Management Accounting</b>	<b>Financial Accounting</b>
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 2019 prepared in 2018)	Past-oriented (reports on 2018 performance prepared in 2019)
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

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 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?* Procter & Gamble, for example, issued new debt and equity to fund its strategic acquisition of Gillette, a maker of shaving products.

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. New societal and enterprise forms are being created to serve individual end-users. 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 Facebook fall into this new category. Digital interactive technologies allow consumers greater self-determination. The owner of a tablet computer, for instance, is allowed a new experience where consumption is self-defined at a fraction of the old cost. Assets, information, relationships and management are now ‘distributed’ because of the availability of the internet, mobile computing, wireless broadband and new software applications. As a result, individualised goods and services can today be experienced at very low costs. Management accountants are now called upon to understand, control and manage such new cost structures.

Even though many management accounting concepts used in traditional industrial and service sectors continue to find application, new circumstances are also reshaping management accounting activities. For instance, some firms invest into digital transformation initiatives, which can involve the use of different technologies such as cloud computing, the **Internet of Things**, **big data**, and **artificial intelligence**, which we discuss in Chapter 22. Consider Virgin Holidays, which uses artificial intelligence (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 learnings on how best to promote holidays where the company had assumed that any big promotion (such as 50% off) required the message to lead in all emails. But the AI system indicated 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’. The Royal Bank of Scotland deploys a chatbot to help with customer queries, such as changing an address on a bank account or activating a new credit card. The result is that the AI approach answers more than 200 000 queries a month, which frees up staff to deal with more complex problems or queries that might need a human touch (Marketing Week Reporters 2018). Organisations like Rolls-Royce (see Concepts in Action box below), Virgin Holidays and Royal Bank of Scotland as well as smaller enterprises can use digital technologies to bring about smarter planning decisions, enabling the reduction of costs, gain deeper and broader insights into their supply chains, extensively improve decision-making processes (Gaus et al. 2018). Digital and other

innovations are and will continue to be of interest to management accountants because they link in to measuring, analysing and reporting of financial information and non-financial information that are intended to assist managers in fulfilling enterprise strategies.

## Accounting systems and management controls

What are the objectives of accounting systems? Is Tata's management control system more effective than Audi's? Is Nestlé's more effective at planning than Cadbury'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 systems in almost every organisation. This system aims to provide information for five broad purposes:

- *Purpose 1: Formulating overall strategies and long-range 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 European 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 from particular 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
- 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 need to recognise 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.

