FM
Financial Management

Driving innovation in management accounting | October 2023

AI
6 ways to future-proof your career
8

AICPA & CIMA
Together as the Association of International Certified Professional Accountants

AICPA & CIMA

Together as the Association of International Certified Professional Accountants

Master the power of automation for business efficiency.

Learn more

The Association of International Certified Professional Accountants, powering leaders in accounting and finance around the globe.

CONTENTS

5 THE VIEW FROM THE PRESIDENT
Sarah Ghosh, FCMA, CGMA, CIMA president and co-chair of the Association of International Certified Professional Accountants, says combining knowledge of new technologies with creativity and empathy will future-proof careers and advance the profession.

6 BUILDING CYBER-RESILIENCE
Andrew Harding, FCMA, CGMA, chief executive–Management Accounting at AICPA & CIMA, together as the Association of International Certified Professional Accountants, says accounting and finance professionals need to evaluate cybersecurity risk and mitigations as a part of ERM strategy.

8 6 WAYS TO FUTURE-PROOF YOUR CAREER IN AN AI WORLD
Focus your efforts on what AI cannot do, keep your skills fresh, and stay informed about your own and adjacent sectors.

10 GENERATIVE AI — WHAT'S THE POTENTIAL?
The impact of generative AI is expected to be greatest on knowledge work — especially tasks involving decision-making and collaboration.

12 GMAP 2.0: REVISED GUIDANCE FOR A RAPIDLY CHANGING WORLD
The second edition of AICPA & CIMA's Global Management Accounting Principles offers updated guidance to enhance decision-making and create sustainable business value.

16 HOW HUMAN INTERVENTION CAN IMPROVE PREDICTIVE ANALYTICS' PERFORMANCE
A recent study identifies when manager discretion can supplement predictive analytics to improve forecasting.

20 MARKET SEGMENTATION AND PRICING: THE ROLE OF FINANCE
Management accountants can support sales and marketing colleagues negotiating with B2B customers and contribute to product or customer segmentation exercises.

ON THE COVER: PHOTO BY XH4D/IKON IMAGES; TOP RIGHT: IMAGE BY MF3D/GETTY IMAGES; MIDDLE RIGHT: IMAGE BY GREMLIN/GETTY IMAGES; MIDDLE LEFT: IMAGE BY WEIQUAN LIN/GETTY IMAGES; BOTTOM LEFT: IMAGE BY ILONA NAGY/GETTY IMAGES

PHOTO BY ANADOLU AGENCY/GETTY IMAGES

24 DEI STRATEGIES FROM THE UK ARMY'S MANAGEMENT ACCOUNTING UNIT
A unique specialism within the British Army, composed of an uncommonly diverse group of soliders, officers, and civilians, has achieved a robust and supportive culture.

28 BI TOOLS: POWER QUERY, POWER PIVOT, AND POWER BI
Excel MVP Liam Bastick, FCMA, CGMA, provides an introduction to three business intelligence tools and an applied example using Power Query.

34 INSTITUTE NEWS
Get updates on issues affecting the profession and your membership.

36 ROBO-MEALS
The market in food delivery robots is projected to grow by a 33.7% compound annual growth rate in the period to 2028, according to research.

AICPA & CIMA
Together as the Association of International Certified Professional Accountants

United Kingdom
The Helicon, One South Place. London EC2M 2RB
Tel.: +44 (0)20 8849 2251

United States
220 Leigh Farm Road, Durham, NC 27707-8110
Tel.: +1 919-402-4500

www.aicpa-cima.com

FM
Financial Management

www.fm-magazine.com
CONTACT US

Editorial inquiries:
fm-magazine@aicpa-cima.com
+1 919-402-4449

Advertising inquiries:
Advertising inquiries (media kits): adsales@aicpa-cima.com
Ad Production inquiries: adprod@aicpa.org
+1 919-490-4324

Publisher: Alistair Nevius
(Alistair.Nevius@aicpa-cima.com)

Editor-in-Chief: Oliver Rowe

Managing Editor: Rocky S. Rosen

Assistant Managing Editor: Jeffrey Gilman

Creative Director: Michael Schad Johnstone

Senior Editors: Jeff Hagan, Alexis See Tho, Sabine Vollmer

Digital Publisher: Amelia Rasmus

Contributing Editors: Matthew Fiander, Eleanor C. Hamlin

Copy Editor: Todd Conard

SARAH GHOSH, FCMA, CGMA

Embracing technology

'We are on the cusp of a digital revolution that is going to change our roles beyond recognition.'

On becoming CIMA President and co-chair of the Association of International Certified Professional Accountants, representing AICPA & CIMA, I said that one of the key areas I wanted to focus on is embracing innovation to advance our profession. I firmly believe this is how we will future-proof our careers and make sure that management accountants maintain their position at the very heart of the business world.

This is a very exciting moment for us. New innovations are changing the way finance functions operate across the globe. Emerging technologies such as artificial intelligence (including machine learning) and robotic process automation are streamlining processes, increasing efficiency, and driving more value.

My own background is in computer science. I've worked on IT projects with major publicly listed clients, developing operational and financial systems across the motor manufacturing and banking industries. I can say from experience: We are on the cusp of a digital revolution that is going to change our roles beyond recognition. We are only beginning to glimpse at the possibilities that AI and the power of quantum computing will open up.

This is not speculation about the future. Generative AI technology such as GPT-4 is already being incorporated into the business world. Finance professionals are using it today to help polish their presentations and to provide more context on problems and issues they are facing — to support decision-making. By allowing us to work better and faster it follows a line of productivity enhancing tools. Even if you are not using this and other new technologies, remember that your competitors are.

In its exploration of how businesses are using AI to develop strategy, McKinsey & Co. cites the example of a company that uses AI to adjust its financial planning based on pricing patterns it observes in the market. This one example shows how the business can quickly react to create more capacity when required and maintain the highest possible level of profitability.

Our Future of Finance 2.0 research is highlighting the shape of the changes to come. The very structure of our profession is evolving. The recording and control tasks that once took up so much of our time are being automated. Meanwhile, modern computing power allows faster data processing and more accurate forecasting. It is also allowing us to interrogate large volumes of historic data to gain insights into trends to inform future strategic decisions.

These are the possibilities I am talking about when I say I want us to embrace innovation. Seizing this opportunity will mean that all of us, at every level of the profession, need to upskill. That does not mean that all our existing skills and knowledge will become obsolete. Technology is a productivity enhancer for finance professionals, not a way of replacing us. If we take the time to understand these new technologies, use them properly, and combine them with our creativity and empathy, we will make the finance profession more agile, efficient, and productive.

Those who become adept at using the new technology and understand its impact will have nothing to fear, but those who don't embrace a digital mindset are at risk of being left behind.

These innovations are here to stay; it is incumbent on us to adapt to them. Lifelong learning is essential for embracing the digital world, keeping up with market changes, and remaining employable. More important than ever before, innovation ensures not only the long-term resilience of the profession, but also the organisations we serve and careers for ourselves and future generations.

KEEP IN TOUCH

Follow me on X (formerly Twitter): @CIMA_President #SeizeTheFuture

PHOTO BY BARNEY JAMES/TIMELESS PICTURES

Building cyber-resilience

By Andrew Harding, FCMA, CGMA

I have written before about the possibilities the digital age opens up for accounting and finance professionals. However, the flip side is the new risk that technology exposes organisations to, including the danger of cybersecurity breaches. Unfortunately, dealing with these threats has become one of the costs of doing business in the digital economy.

That cost can be frighteningly large. Attacks that result in the loss of personal data can result in expensive litigation and a huge amount of reputational damage for the targeted organisation. IBM estimates that, globally, the average total cost of a data breach is $4.45 million in 2023. A recent cyberattack on an outsourcing company in the UK will cost an estimated £15–£20 million to clean up.

Make no mistake, this threat is real, and it is happening all the time. A 2022 survey by Palo Alto Networks of 1,300 C-suite leaders from around the globe found that 96% had experienced at least one cybersecurity breach or incident in the prior year. Of those surveyed, 33% said they experienced an operational disruption as a result of a breach.

The presence of organised criminal groups and state-backed actors means that cyberthreats are becoming more sophisticated. To mitigate against this increased risk, more time and resources will inevitably have to be deployed. Palo Alto found that none of the C-suite leaders it surveyed thought their cybersecurity budget would decrease this year, while 68% of them were anticipating an increase of up to 10%.

There is a temptation to see cybersecurity as an issue for an organisation's IT department to deal with, but that would be deeply misguided. The risks associated with cybersecurity from a business interruption perspective have escalated the level of concern of governing boards, their audit and risk committees, investors, as well as customers and suppliers in the enterprise value chain.

This level of stakeholder concern means we as finance professionals need to familiarise ourselves with the potential threats our organisations face and the possible mitigations we need to put in place. This must be a core part of our ERM strategy.

To help guide you in this task, the research team at AICPA & CIMA produced the CGMA Cybersecurity Tool: Risk, Response, and Remediation Strategies. It provides guidance for minimising the financial, brand, and reputational impact of cybersecurity attacks, and covers topics that include:

- Building cyber-resilience by developing solutions and promoting effective practices across digital ecosystems.
- Developing the capacity to respond quickly and effectively to cyberattacks and minimising the costs involved by containing breaches that do occur.
- Determining the necessary steps to take in the event of a ransomware attack. These steps range from isolating impacted systems to containment, eradication, and post-incident response activities.

This is cybersecurity awareness month, so now is a good time to make use of our resource to make sure you are not caught off-guard by a cyberattack. In the digital age you cannot afford to be unprepared. ■

Andrew Harding, FCMA, CGMA, is chief executive–Management Accounting at AICPA & CIMA, together as the Association of International Certified Professional Accountants.

6 ways to future-proof your career in an AI world

Focus your efforts on what AI cannot do, keep your skills fresh, and stay informed about your own and adjacent sectors.

By Rhymer Rigby

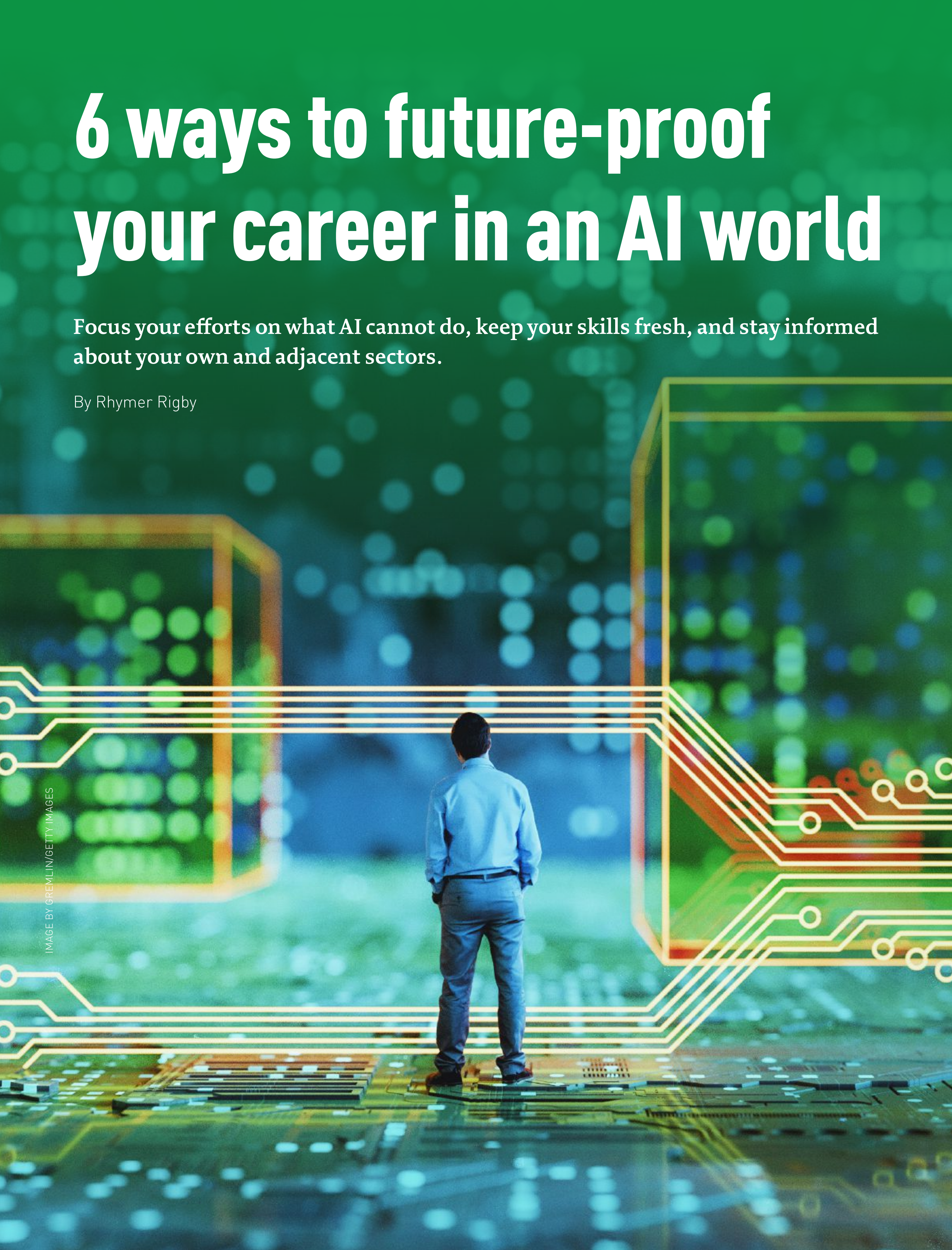


IMAGE BY GREMLIN/GETTY IMAGES

Thanks to tools like the AI chatbot ChatGPT, there's a lot of concern that AI is coming for accounting jobs. But is this really the case — and what can you do to future-proof your career against the rise of the machines?

Firstly, don't panic. "The machines will take our jobs" has been a refrain since the Luddites were smashing up British looms in the early 19th century. And yet, the Industrial Revolution did not create mass unemployment, nor did the information revolution of the 20th century.

If you need more proof that automation doesn't equal unemployment, note that South Korea (which has high levels of robotic automation) has a far greater percentage of its workforce employed in manufacturing than the US (which has much lower levels of robotic automation).

Historically, automation has tended to increase production efficiency and make goods cheaper. The jobs don't go, but the product you make or the service you offer becomes available to more people. Remember, too, that for all the concerns about AI, in many advanced economies high-skilled vacancies currently exceed workers.

Increased use of AI and other new technologies means changes. Instead of fretting over what may happen to your profession, prepare for whatever new reality awaits. Try the following strategies to future-proof your career and keep yourself moving forward.

Assess your starting position

The low-hanging fruit for technology has almost always been relatively low-value and repetitive tasks. The current iteration of the information revolution has also seen the automation of tasks that involve crunching masses of data (looking at medical X-rays is the classic example — and paralegals and more-junior accountancy roles are also thought to be at risk). Assess your job and ask yourself how much of it falls into (or is likely to soon fall into) at-risk categories like these.

Focus on what AI cannot do

The list of what machines aren't good at is currently a long one. They can't, for instance, inspire and lead a team, their "emotions" are simulated rather than real, they can't develop long-term strategy, and they can't deal with complex, multifaceted client relationships. They're not yet good at genuinely creative and innovative tasks, and, while they're great at recognising patterns, they're far less adept at making intuitive connections between disparate fields. So focus your efforts on areas like these and do more of them.

Embrace change and keep your skills fresh

The pace of change is accelerating — the knowledge and skills that once endured for decades now last a few years. It sounds almost counterintuitive, but the best way to protect your role from being made obsolete by changing technology is to clasp technology as close to you as possible. Adopt a positive mindset. Avail yourself of any training that is offered and constantly look for new ways to do your job and new technologies you can use. Incorporate those technologies into your job and automate tasks that can be automated.

You need to strike a balance, though. Don't grab at every fashionable new development because many of these will be forgotten in a year. Be discerning and look for tools that actually make you more productive and useful. Be proactive, too — if the training or tools you want aren't offered, ask your company if they can be made available. And although it's oft-repeated advice, rewriting your CV every year as a kind of personal progress report is a really good idea.

Keep up with developments

Stay abreast of developments and news in your sector. You want to know what's coming down the line — good or bad. Nothing should come as a surprise.

Don't focus too narrowly. Read about what is happening in adjacent fields. This will make you more rounded and more adaptable and will deliver more insights. These nearby sectors may also provide escape routes if AI or other technologies disrupt your own field or company. Dozens of businesses have pivoted from one area to another nearby sector when they saw the writing on the wall. Netflix, perhaps the most famous sector pivot, was for the first ten years of its life a postal DVD rental business. You want to be Netflix, not Blockbuster.

Remember relationships

Jobs are still largely about relationships — and companies are still composed of people. Whether it's your boss, your team or your clients, relationships with those around you and your network will remain hugely important. Moreover, emotional connection is a thing that AI cannot replicate — at the moment. AI is essentially guessing patterns and so will give you a likeliest response, not genuine feeling. Work on real human connection with colleagues and clients. Actually spend time with them in the same physical space, get them to trust you, know you, and rely on you.

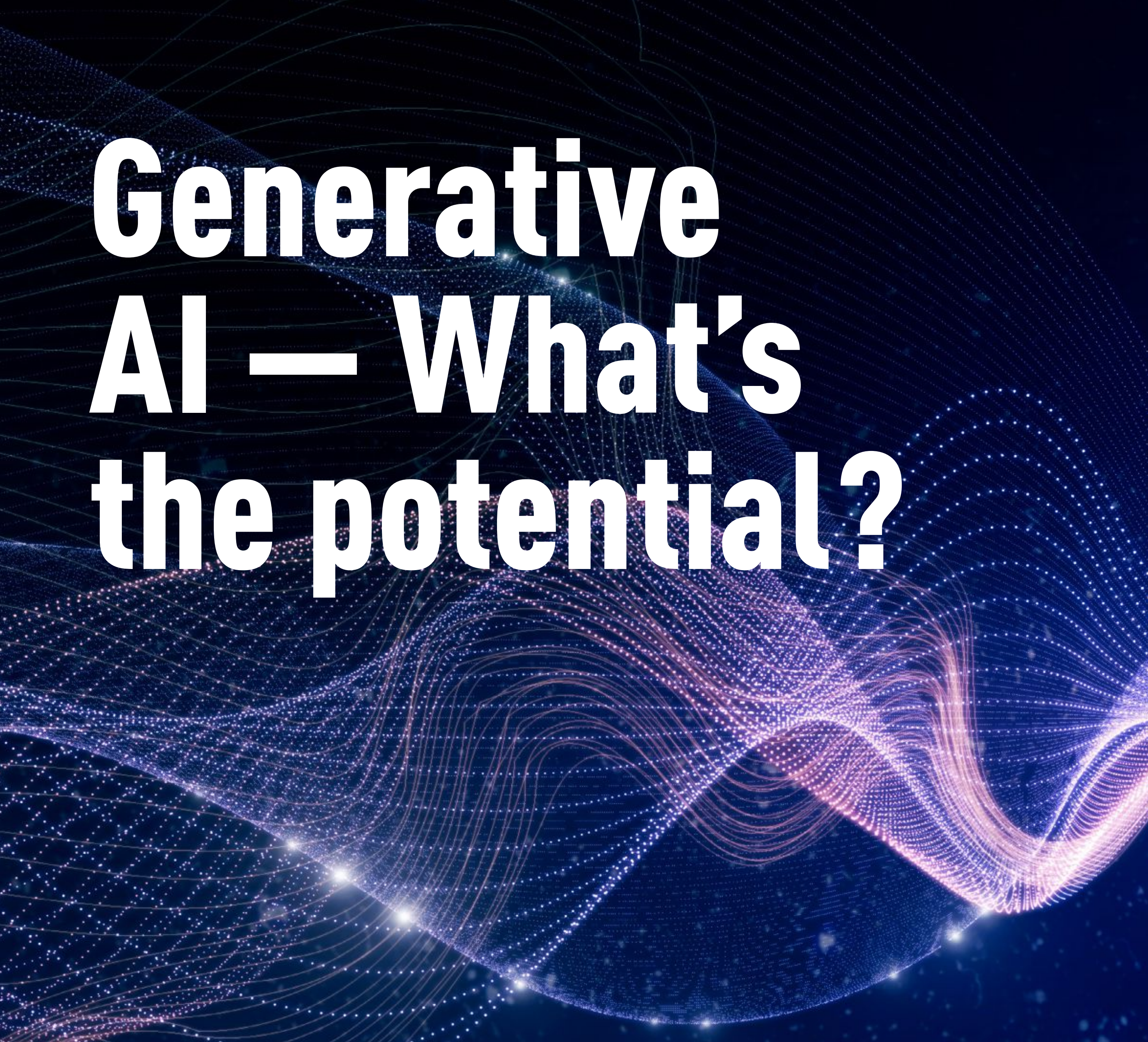
> **Emotional connection is a thing that AI can't replicate.**

Work on your personal brand

In an increasingly fluid and fast-changing world, being widely known as a skilled and dependable professional is hugely valuable. Put some real effort into building your reputation. Be strategic here. Think about what you want to be known for and the context — for instance, someone who deeply understands the intersection of finance and technology. Then get your name out there. Here, you might opt to go a bit pre-COVID-19 pandemic. Attend events. Offer to appear on panels. Best of all, put yourself forward to speak at events. The person on stage always looks like a leader. Why shouldn't that person be you? ■

Visit the Global Career Hub from AICPA & CIMA for help with finding a job or recruiting.

Rhymer Rigby is an FM *magazine contributor and author of* The Careerist: Over 100 Ways to Get Ahead at Work. *To comment on this article or to suggest an idea for another article, contact Oliver Rowe at Oliver.Rowe@aicpa-cima.com.*



Generative AI — What's the potential?

Its impact is expected to be greatest on knowledge work — especially tasks involving decision-making and collaboration.

IMAGE BY WHO IS DANNY/ADOBE STOCK

The impact of generative AI — such as ChatGPT and its competitors — is likely to be a business automation and productivity game-changer. McKinsey & Co. estimates it would raise the financial value created by other types of AI by 15% to 40%.

Generative AI and other technologies have the potential to automate tasks that currently take up 60% to 70% of employees' time, according to a recent McKinsey report, *The Economic Potential of Generative AI*.

The biggest impact of generative AI could be seen in four areas: customer operations, marketing and sales, software engineering, and research and development.

Previous automation technology was particularly good at collecting and processing data — and these tasks can be further automated by generative AI's natural language ability.

However, generative AI's greatest impact is projected to be on knowledge work — especially tasks involving decision-making and collaboration. For example, according to McKinsey, the potential to automate management and develop talent (ie, the share of these tasks' worktime that could be automated) increased from 16% in 2017 to 49% in 2023. ■

Automation potential: Tasks

	With generative AI	Without generative AI	Generative AI advantage (percentage points)
Applying expertise	59%	25%	34
Managing	49%	16%	33
Interfacing with stakeholders	45%	24%	21
Processing data	91%	73%	18
Collecting data	79%	68%	11

Source: *The Economic Potential of Generative AI*, McKinsey & Co.

Automation potential: Roles

	With generative AI	Without generative AI	Generative AI advantage (percentage points)
Educator and workforce training	54%	15%	39
Business and legal professionals	62%	32%	30
Creatives and arts management	53%	28%	25
Office support	87%	66%	21
Managers	44%	27%	17
Customer service and sales	57%	45%	12
Production work	82%	73%	9
Transportation services	49%	42%	7

Source: *The Economic Potential of Generative AI*, McKinsey & Co.

GMAP 2.0: Revised guidance for a rapidly changing world

The second edition of AICPA & CIMA's Global Management Accounting Principles offers updated guidance to enhance decision-making and create sustainable business value.

By David Hackett

Today's business decisions are influenced by a rise in remote working, the emergence of digital business models, automation, and data analytics, and the growing importance of environmental, social, and governance (ESG) factors.

Much has changed since AICPA & CIMA issued the first Global Management Accounting Principles (GMAP) in 2014. The second edition reflects these changes. The principles have been substantially revised and updated based on insights provided by CEOs, CFOs, academics, regulators, and finance professionals in 20 countries.

The four updated, revised principles draw on the competencies laid out in AICPA & CIMA's 2019 CGMA Competency Framework to enhance long-term, sustainable decision-making and global business leadership, and offer a path to higher-value outcomes for organisations. The revised principles are not only relevant within finance functions but also useful to the board and business operations, particularly for major strategic investment decisions. (See the sidebar "How to Leverage the 4 Principles".)

What hasn't changed is the definition of management accounting. It remains "the sourcing, analysis, communication, and use of decision-relevant financial and nonfinancial information to generate and preserve value for organisations".

Sustainability gains importance

In 2014, the ESG reporting agenda was in its infancy. The concept of the integrated report existed, but it was largely conceptual and voluntary in its adoption. The introduction in June 2023 of two new sustainability standards by the International Sustainability Standards Board means that, for the first time, investors and other stakeholders will have access to internationally comparable, assured sustainability information on which to base decisions.

This is reflected in the reference to sustainable value in the revised GMAP. No longer should application of the principles focus solely on the financial aspects of value. Management accounting best practice can now be viewed in terms of long-term sustainable value creation.

The new focus on sustainability and resilience is also made possible by technological advances that allow management accountants to be more effective. Data analytics pull together disparate, contextual, and real-time data for predictive judgements. Automation frees up management accountants to communicate these insights and participate in higher-level activities. And stewardship that aligns sustainability with strategy protects the reputation and the value of the business.

The revised principles refer to existing tools, such as the CGMA Business Model Framework, which can be useful in applying GMAP at a strategic level.

Bolstering performance management

The revisions include suggestions for how the principles can be applied to

IMAGE BY MF3D/GETTY IMAGES

How to leverage the 4 principles

The following four principles from the GMAP will help you fuse strategy with the business model:

Principle 1: Communication influences and creates impact
Management accountants who can clearly articulate and communicate information across functions and with stakeholders will bring the most value to their organisations.

Translating financial information into language anyone can understand and explaining why it's relevant for the business are valuable skills that will lead to better strategic decision-making.

External communication is also vital. Past performance, present operations, and forecast expenditures should be communicated regularly, openly, and comprehensively. Clear and transparent reports secure the trust of regulators and bolster the loyalty of investors, lenders, suppliers, and customers.

Principle 2: Information is relevant
With an overwhelming amount of data at management accountants' fingertips, it's imperative to determine whether the data is accurate and relevant in order to help execute the appropriate strategy and drive value.

Key decisions in executing strategy are picking the projects to invest in, determining how to raise necessary funds, and allocating the amount of cash that is paid to shareholders as dividends without impeding the business's cash needs.

In an interconnected world, management accountants need to always keep a finger on the pulse of microeconomic indicators, governmental policies, and sociopolitical factors to recognise risks and opportunities. Adopt a strategic-thinking mindset to focus on your organisation's future and experiment with various strategic scenarios.

Principle 3: Analysis generates sustainable value
Management accountants have always had to analyse data, but now there is a greater emphasis on analysis that generates sustainable value. Sustainability in a broad sense includes ensuring financial, environmental, and social elements, and that resources are available for the business on an ongoing basis.

Delivering benefits that meet the needs of stakeholders to the standards required and at the lowest possible cost is the goal.

Principle 4: Stewardship builds trust
Stewardship is about managing relationships, resources, assets, and reputation of the organisation to ensure that value is enhanced.

To promote stewardship, governance structures must be designed to meet the needs of stakeholders. Business processes must be transparent. Strategy implementation and control processes and procedures should be effective, and management accountants should leverage business partnering.

Audits must be carried out and findings shared with individuals responsible for governance. When all is done, lessons should be learned, and recommendations acted upon.

performance management that provides an incentive for the right level of risk-taking and to measure progress and results. There is a tool to show how the strategy, plan, execute, review (SPER) concept can be applied to the principles using question checklists.

There is also a new section on wider corporate governance, which previously focused on compliance, to reflect the greater strategic role the management accounting profession is playing here. And there is additional emphasis on business transformation rather than mere project management as the pace of business model change has picked up.

The revised principles act as signposts to new key concepts and trends that have emerged, such as value partnering and data visualisation. Together with the CGMA Professional Qualification syllabus and CGMA Competency Framework, the principles form three pillars of the profession. While they may evolve over time, they remain foundational. ■

AICPA & CIMA resources

Reports

Global Management Accounting Principles, 2nd edition, June 2023

CGMA Competency Framework, January 2019

CGMA Business Model Framework, Global Consultation Paper 2017

Podcast

"Global Management Accounting Principles: The Art of Thinking and Doing", *FM* magazine, 6 June 2023

David Hackett is senior manager for technical research at AICPA & CIMA, together as the Association of International Certified Professional Accountants. To comment on this article or to suggest an idea for another article, contact Oliver Rowe at Oliver.Rowe@aicpa-cima.com.

IMAGE BY WEIQUAN LIN/GETTY IMAGES

How human intervention can improve predictive analytics' performance

A recent study identifies when manager discretion can supplement predictive analytics to improve forecasting.

By Jen Choi, Ph.D.; Ewelina Forker; Isabella Grabner, Ph.D.; and Karen Sedatole, Ph.D.

The past two decades have seen an explosion in organisations' use of increasingly sophisticated predictive analytics models to improve forecasting and planning. The extensive availability of big data on customer, market, and competitor information, paired with lower data storage costs and faster data processing, has accelerated this trend. Since these models are less susceptible to the biases and organisational politics that can often undermine managerial forecasts, organisations face a critical question: Is human involvement necessary when making decisions with predictive analytics?

The research study

The shortcomings of human judgement in forecasting are well known. People tend to be overly optimistic or ignore information that does not fit their preconceived notions. Managers often use shortcuts and rules of thumb that are ineffective.

However, predictive analytics models have their own set of limitations. They have poor predictive capabilities in cases of substantial uncertainty or when historical data is limited. They are also typically slow to reflect changing conditions.

These drawbacks present an opportunity for managers to seek out information that is not or cannot be digitised and use their expertise and intuition to improve upon the predictive model's recommendations.

Knowing when to incorporate manager discretion in predictive analytics is critical for organisations as they seek to improve forecasting performance with limited resources. Our CIMA-sponsored research, "(When) Does Human Intervention in Predictive Analytics Judgements Help or Hurt? A Management Control Perspective", provides new evidence on when having a person in the loop is more beneficial than using predictive analytics models on their own.

Research approach

This study utilises proprietary data from an automotive parts retailer to examine product assortment planning decisions where a predictive analytics model and manager judgement jointly determine which products to stock at which retail locations.

The retailer supplies nearly a half-million unique parts, but an average retail store can only stock about 25,000. The predictive analytics model identifies parts that are most likely to sell based on a large and varied dataset related to product and store attributes. The model is used to make stocking decisions for thousands of retail locations. As in many settings, a handful of managers at this company have the authority to override the product stocking recommendations.

What we found

Our study of one product category found that managers override the predictive analytics model's product stocking recommendation about 48% of the time. And in 53% of all decisions, managers make the "right" decision — that is, they follow the model's recommendation when justified (they either make no override or override the model in the appropriate direction).

However, managers are not perfect. For about 10% of stocking decisions, we found that managers fail to intervene when they possibly could have improved on the model's recommendation, and, in 38% of cases, they override the model when they likely shouldn't have.

Manager judgement appears more valuable, though, when managers override the model's recommendation based on information and insights not contained within the historical data that the model uses. This may occur when historical data is limited, as with new products. For example, the odds a manager will override a model recommendation are 10% higher for a brand new product than for a part that is five years old.

Manager insights also add value when environmental uncertainty is

When managers should override stocking decisions

	Should the manager intervene?	Does the manager intervene?	Does manager intervention improve the stocking decision?
Newer parts	Yes. The model has little data with which to make a prediction.	Sometimes. Managers are more likely to intervene for newer parts.	Yes, on average.
Uncertain environment	Yes. Sales variability hampers the predictive ability of the model.	Sometimes. Managers are more likely to intervene when environmental uncertainty is greater.	Yes, on average.
Independently owned stores	No. Manager decisions should be based on improving prediction accuracy, not on store owner preferences.	No more or less frequently than for company stores. However, when they do, they are more likely to override in the downward direction, in line with store owner preferences.	No, on average.

LEARNING RESOURCES

CQ Originals: Critical Thinking

Become a critical thinker and pave the way for improved problem-solving communication and collaboration skills.

COURSE

Forecasting and Predictive Analytics Certificate

Gain the fundamental techniques used for predictive analytics, so you can implement an analytics practice in a practical way.

COURSE

Managing Risk Analytics

This product teaches valuable analytical tools for managing risks and making informed decisions.

COURSE

greater, such as when there is higher volatility in expected demand. When the model identifies parts that have high demand volatility, the odds are 5.71% higher that managers will override the recommendation as compared to parts with low volatility. The study finds that manager discretion improves stocking decisions in these instances because managers anticipate changes in probability the product will sell better than the model.

These findings suggest that managers can capitalise on the weaknesses of predictive analytics models, even when they have no explicit indicators of the model's performance. They use their expertise and intuition to effectively choose when to override the model, and their decisions result in superior forecasting decisions (see the chart "When Managers Should Override Stocking Decisions").

Impact of stakeholder pressure

Though managers have discretion to override the model, their decisions are not made in a vacuum. These decisions are informed by the political pressures and conflicts of interest inherent in any organisational context.

Our analysis shows the impact of these external pressures. For example, managers faced with pressure from key external stakeholders with misaligned incentives (independent store owners) tend to accommodate stakeholder preferences at the expense of forecasting quality. Managers report that independent store owners appear more cash conscious and view the predictive analytics model as a sales ploy rather than a tool to improve assortment planning.

According to our results, managers are no more likely to override model stocking recommendations for independent stores than they are for company-owned stores. However, when managers override the model for company stores, they do so downward only 7% of the time. When managers override the model for independent stores, however, they override downward 37% of the time, in line with independent store owner preferences. This means the manager is more likely not to stock a product that the model recommended to stock. In these situations, manager discretion results in worse stocking decisions because managers are often choosing not to stock a product that likely would have sold.

Improving forecasting performance

The study reveals that organisations can improve forecasting performance by incorporating manager discretion, especially in cases when predictive analytics models have limited historical data or there is greater environmental uncertainty.

While human judgement can improve decision-making over predictive analytics alone, that improvement can be undermined by other people in the process with competing interests and incentives. That is, while managers can outperform sophisticated models in certain circumstances, they are also susceptible to institutional pressures stemming from misaligned incentives across the organisation.

To ensure high-quality forecasting, organisations can take steps to limit the influence of stakeholders with preferences that may be at odds with the organisation's objectives. They may also put control mechanisms into place (for example, contractual provisions like selling on consignment) to better align stakeholders' incentives with those of the organisation.

Organisations face increasing pressure to curb manager discretion in favour of data-driven decision-making across various management tasks including demand forecasting, inventory planning, budgeting, and performance evaluation. Our study, however, highlights the value of human judgement in the process, especially when the management control systems support decision quality. ■

AICPA & CIMA resources

"4 Ways CFOs Can Maximise the Benefits of Predictive Analytics", *FM* magazine, 24 May 2023

"How Algorithms and Human Conversations Can Remove Forecasts' Bias Perception", *FM* magazine, 26 July 2021

Jen Choi, Ph.D., is an assistant professor of accounting at the University of Michigan in the US; Ewelina Forker is an assistant professor of accounting and information systems at the University of Wisconsin-Madison in the US; Isabella Grabner, Ph.D., is a professor at the Institute for Strategy and Managerial Accounting at WU Vienna in Austria; and Karen Sedatole, Ph.D., is the Asa Griggs Candler Professor of Accounting at Emory University in the US. To comment on this article or to suggest an idea for another article, contact Oliver Rowe at Oliver.Rowe@aicpa-cima.com.

AICPA & CIMA

Together as the Association of International Certified Professional Accountants

Be a real-life superhero — safeguard against cyber threats.

Learn more

The Association of International Certified Professional Accountants, powering leaders in accounting and finance around the globe.

Market segmentation and pricing: The role of finance

Management accountants can support sales and marketing teams in negotiating with B2B customers and contribute to product or customer segmentation exercises.

By David Dugdale, Ph.D., ACMA, CGMA

Editor's note: *This article is based on research supported by CIMA's General Charitable Trust Fund and culminating in the author's recently published book, Strategic Pricing and Management Accounting.*

IMAGE BY ILONA NAGY/GETTY IMAGES

Market segmentation is becoming increasingly important as companies target different customer groups while seeking to extract maximum value. A simple example of this is where price-insensitive customers have inelastic demand and will pay a higher price for a product, whereas a price-sensitive customer will seek to pay the lowest price possible. This may be for the same or different products or services. (See the sidebar "Product-Based Segmentation: Good-Better-Best Pricing".)

A single price for one, all, or some products and services leaves money on the table by giving price-insensitive customers a bargain (because they would be willing to pay more) while simultaneously losing the price-sensitive customers unprepared to pay the single price.

Business-to-business negotiations

The principles of segmentation are important in B2B markets. A cardinal rule of negotiation is to *avoid giving something for nothing*. If a customer insists on the lowest price, *the customer must make concessions*. The key is to provide sales representatives with a "menu" of options as a basis for negotiation. For example, for physical products, these can include a warranty, delivery, rush orders, contract changes, and a customer helpline. Options for digital services include service availability, data storage capacity, service speed, time-sensitive information time lag, and access to cloud storage.

There are several types of B2B customers and not all are price driven. They may be value driven, wanting a product that meets their needs at a fair price, or they may be price-insensitive, prepared, for example, to pay a premium for reliability or immediate service or support. The emphasis, during negotiation, is on understanding what the customer values.

- Price-driven clients should be offered a minimal service. More functions and better service can be negotiated — at a price.
- Value-driven customers should be offered a range of options. This helps to pin down exactly what the customer values.
- Relationship customers who trust the supplier must be fostered. They probably value service and support, and the menu should offer services that they are prepared to pay for. If they have problems, they must be taken seriously.

Finance's role

Management accountants have the key skills and techniques to make a vital contribution in supporting marketers and sales representatives in B2B negotiations on pricing. They can:

- Analyse customer sales data to determine whether the price paid, after considering all discounts and services provided, is satisfactory — taking account of the level of sales for each customer and the customer's strategic importance.
- Analyse customer prices and sales volumes to gain insight into the type of customer: price-driven, value-driven or relationship.
- Act as a facilitator, coordinating marketing, product development, and finance, in preparing product variants.
- Work with marketers and product development to identify the minimum service that can be offered to price-sensitive customers, and its cost and price.
- Work with colleagues to identify a range of value-adding options that enhance the minimum service, and their costs and prices. This "menu" provides the basis for identifying what customers value, a vital step in negotiations.
- Support salespeople in determining costs and prices for special requests from value-driven and relationship customers.

The total cost of supply is not just the physical cost of the product: There are costs of inventory, credit, delivery, customer support, and warranties. The finance team, understanding the principles of activity-based analysis, can create the menu of costs and prices to be pre-approved by marketing management. (See the sidebar "Management Accountants' Contribution to a Segmentation Exercise".)

This approach means the sales representative can be empowered to negotiate with the customer without recourse to higher levels of management.

Product-based segmentation: good-better-best pricing

There are many examples of good-better-best pricing: airlines' first, business, and economy seats; Zoom's basic, pro, and business packages; and so on.

Finance should have a key part to play in designing product ranges, pricing, and value propositions. An increased product range comes at a cost. The incremental costs need to be calculated and compared to estimated incremental revenue. And, while a wider range of products targets more customers, it risks confusing the customer and creating misalignment with both strategy and/or propositions for the products.

A range of products is needed to explore these three recommended pricing approaches:

- **Extreme aversion.** Customers tend to move to the central options and companies can profit from this, as "value" customers are tempted to move up the range.
- **An anchor**. Here the product range allows inclusion of a high-priced, prominently displayed, top-of-the-range item that can help *anchor* the customer's price expectation; other products seem good value by comparison.
- **A decoy.** A product that is obviously inferior to another directs customers to the superior product — even though there may be better value elsewhere in the product range.

Sales transaction data can also be analysed to understand how different customer segments behave after a price change or a promotional discount.

Higher managers may agree a deal without full understanding of context or implications and such access leads the customer to believe that a better price is possible by negotiating hard.

Product-based segmentation: Product use

Some products have many uses, and this can be important in segmenting the market. The chemical industry provides many examples, as chemicals can have many different uses, such as in producing fertilisers and in beauty products.

For example, Oriental Carbon & Chemicals (OCC), an India-based company, specialises in the production and sale of sulphuric acid and insoluble sulphur. Sulphuric acid is used in vehicle batteries and in industrial applications such as the manufacture of phosphate-based fertilisers, explosives, and detergents. Insoluble sulphur is important in vulcanising rubber during manufacture of many products including shoes, cables and, especially, tyres.

OCC has invested heavily to improve product performance and to comply with increasingly strict environmental regulations. To differentiate its product range, OCC has patented several grades of insoluble sulphur under the brand name Diamond Sulf, targeting different market segments.

Other types of segmentation

In addition, segmentation can be based on location, demography, time, and quantity.

Location. In territories across the world, local conditions are paramount in determining what price is acceptable. Finance needs to assess overseas sales, including consideration of transport costs, taxes, exchange rate risk, and the possibility of a grey market. This is where a product purchased in a cheaper market is re-exported into a more expensive market. To combat this, companies may limit the price differences between

Management accountants' contribution to a segmentation exercise

By Karl White

Finance can support a product or customer segmentation exercise by:

- Providing price and volume data for cluster analysis to identify products and customers that can be grouped into similar categories. For example, a distributor of building material might analyse data to see which customer segments in different geographical locations pay higher or lower average prices for a given product. Another example might be a fast-food restaurant analysing data to understand which products are typically purchased together and therefore may be good candidates for menu bundling.

- Sales transaction data can also be analysed to understand how different customer segments behave after a price change or a promotional discount. Regression analysis can show which customer segments are more or less price-sensitive. Analysis may also reveal cross-price elasticities where a price change in one product affects the volume of another product. Using the fast-food example again, if a burger meal is often purchased with a dessert, regression may show that a price rise on a burger meal reduces the propensity to purchase a dessert from the premium range.

- Scenario modelling is a crucial stage in pricing strategy development and finance should have a key role in assessing the financial impact of possible price changes and promotional activities. An example of this could be a software company developing a new technology to sell to its existing customer base. The sales and margin impact of likely demand across different price points needs to be modelled, taking account of likely migration of customers across the revised product range. Sensitivity analysis helps to inform management of the potential upside and risk of the new product pricing strategy.

Karl White is commercial director at AICPA & CIMA, together as the Association of International Certified Professional Accountants.

markets. However, this solution may be insufficient and, instead, it may be worthwhile to differentiate the product destined for a low-price area, for example by its packaging, warranty conditions, or even limiting its function, so that it cannot easily be re-exported. However, branding and marketing can be expensive and management accountants should be involved in assessing the relevant costs and projected revenues.

Demography. Different prices for different customers are common — some retail businesses and entertainment venues offer deals to seniors, students, some employment groups, and loyal customers. Again, the finance team should be involved. These schemes are likely to increase sales volume but need careful attention because some customers previously paying full price will switch to take advantage of the deal.

Time. Time-based segmentation is prevalent for technology and fashion products: a high price initially, but decreasing over time. Apple iPhones, for example, are not withdrawn when a new model is released, and significant savings are possible by waiting one or two years. Unsold fashion goods are often offered at reduced prices in end-of-season sales.

Finance needs to assess the profitability of these policies, taking account of changing prices over the lifetime of the product. For fashion goods, significant first and second reductions often work well. Any remaining inventory might be sold in bulk to third parties to avoid further "giveaway" price reductions.

Quantity. Volume discounts are commonplace in both B2C and B2B markets and with good reason. Selling costs are likely to be little changed if more product is sold but the extra volume generates extra contribution. The market is segmented as high volume, price sensitive where customers are charged a lower price per unit; and low volume, relatively price insensitive where customers are charged a higher price per unit.

The safest discount gives a lower price only for *incremental* volume above a threshold. However, total volume discounts are also common, as in "£4 off when you spend £40" in supermarkets. Total quantity discounts need to be handled carefully.

Conceding, say, a 1% discount for extra volume seems trivial, *but not if it applies to the whole volume*. Another trap to be avoided is the customer claiming that the whole of a price increase should not apply because of an already negotiated discount. To concede would be disastrous — it would mean a reduced price increase while the customer retains the discount.

Conclusion

Segmentation techniques are many and varied but the underlying theme is always the same. It is to extract the value that the customer sees in the product or service, targeting price-sensitive and -insensitive customers separately with appropriately designed and promoted products or services. Finance should understand the techniques and the part that they can play in supporting their marketing, pricing, and product development colleagues. ■

LEARNING RESOURCES

Pricing Strategies

Learn pricing models and strategies that can help you determine the right prices for your customers and to achieve revenue goals.

COURSE

Finance Business Partnering: The Essentials

Course covers critical finance business partnering competencies such as business acumen, people skills, and leadership skills.

COURSE

AICPA & CIMA resources

"4 Ways CFOs Can Maximise the Benefits of Predictive Analytics", *FM* magazine, 24 May 2023

"Valuing Customers: Part 1 – Profitability Based on Past Performance", *FM* magazine, 19 October 2022

David Dugdale, ACMA, CGMA, is Emeritus Professor of Management Accounting at Bristol University in the UK. To comment on this article or to suggest an idea for another article, contact Oliver Rowe at Oliver.Rowe@aicpa-cima.com.

DEI strategies from the UK Army's management accounting unit

A unique specialism within the British Army, composed of a diverse group of soldiers, officers, and civilians, has achieved a robust and supportive culture.

By Beth Roessner

PHOTO BY RUPERT WEIDEMANN/GETTY IMAGES

The British Army's Management Accountant Services (Army) — known as MAS(A) — is an exemplar in its diversity, equity, and inclusion (DEI) practices thanks, predominantly, to an unflinchingly meritocratic recruitment process.

A meritocratic approach does not play out in the same way in every organisation — it works for MAS(A) because of the unit's purely egalitarian recruitment and advancement ethos.

The result of MAS(A)'s approach is an elite, 54-person unit composed of just over half non-white/British personnel (both soldiers and officers), compared to around 10% of UK Regular Forces personnel who identify as non-white. Women occupy around a third of senior MAS(A) officer roles and the unit has personnel who openly identify with the lesbian, gay, bisexual, transgender, and queer community (LGBTQ+).

"Because of the nature of our work, because it's so complex and so high profile, we need the most talented people — whatever their background," said outgoing Chief of Staff Lt. Col. Paul Carcone, FCMA, CGMA.

The resulting mutually-supportive culture is one based on shared military experiences, a strong sense of belonging, and the collective idea that each and every member of the organisation is talented, dedicated, and fully deserves their place — and these are key traits of an inclusive and equitable workplace.

MAS(A)'s success with diversity

MAS(A) is an outlier in diversity recruitment even compared to the already highly diverse British Armed Forces, said Carcone, because the specialism's reputation draws candidates from so many backgrounds.

"We're asking them to undertake incredibly complicated and high-profile projects, almost immediately," he said.

During recruitment, MAS(A) focuses purely on overall performance and attributes meritocracy as a key to success, both professionally and in terms of DEI. The result is that every person joining the unit has an equitable opportunity to contribute and provide their strengths and diverse perspectives. (Learn more about the recruitment process in the sidebar "How the British Army Recruits Management Accountants".)

"We home in on the potential people have and allow people to thrive with the abilities that they have and the skillsets that they bring," Warrant Officer Class Two Shami Muzavazi, ACMA, CGMA, said. "Everyone has a different skillset, but whatever your skillset, it's really celebrated."

MAS(A)'s success in building a diverse and inclusive culture led to the unit's nomination for the Team of the Year category in the 2022 European Diversity Awards and a win at the Ministry of Defence Finance Awards in a diversity category in the same year.

The rich diversity within the unit also creates an unapologetically robust and fiercely-guarded esprit de corps.

"The culture is very much based on professionalism," Muzavazi said. "Everyone treats everyone with respect because we have a level of understanding that everyone is there to learn and to do their job in the best way possible. If you're not supportive of your peers, it reflects badly on everyone."

Tips to embrace and support DEI

The way an organisation prioritises and implements DEI initiatives is not a one-size-fits-all approach and takes continual work to ensure policies and the culture evolve positively.

Additionally, as organisations prioritise DEI and hire more diverse candidates or promote them into leadership positions, an organisation's internal policies or procedures may need to be reassessed to ensure an equitable and inclusive culture.

Carcone and Muzavazi share their best practice on how to build and sustain a diverse and inclusive culture:

Be patient. A diverse, inclusive, and high performing workplace requires patience to cultivate. "Forcing diversity

How the British Army recruits management accountants

The personnel within the Management Accountant Services (Army) or MAS(A) unit have a unique blend of military and financial expertise. Selected around the middle of their military career, applicants go through a rigorous selection process. MAS(A) recruitment happens on an as-needed basis, generally about once per year.

After applying to MAS(A), approximately 16 personnel are selected to undertake an intensive nine-day skills assessment and training course that ends with management accounting and finance skills examinations. Generally, the strongest six applicants are then chosen for sponsorship and progress through MAS(A)'s training framework. Applicants must score at least 80% on both of their recruitment examinations to progress, and if they do not reach that benchmark, they don't have another opportunity to try again.

Ultimately, only around two make it into the specialisation having worked towards achieving the CGMA designation, which takes about two years.

"A lot of soldiers join the Army in the hope that we are [what] they get selected for," said outgoing Chief of Staff Lt. Col. Paul Carcone, FCMA, CGMA.

Most applicants do not have a financial background prior to applying for MAS(A) and positions are open to anyone in the Army, but they must be at least a Staff Sergeant on arrival — equivalent to about ten years' experience in the military.

The unit is composed of 54 soldiers and officers, all trained as management accountants, and two civilians who perform administration duties. Fourteen are officers and the rest are senior non-commissioned officers. MAS(A) adapts workplace practices to assist soldiers with long-term injuries and those with families. Resilience and stress management training are also offered as part of MAS(A)'s continuing professional development programme.

Whilst it doesn't happen often, MAS(A) soldiers can still deploy on military operations and officers return to the mainstream Army to retain currency. Carcone was recently posted to HQ NATO in Brussels, as an example.

MAS(A) personnel don't do "traditional accounting", said Carcone, but instead are involved with cost models and investment appraisals of major strategic projects, including contract management for the UK Defence Academy, costing childcare provision for the entirety of the Ministry of Defence, developing the ten-year army budget, costing military deployments and exercises, and other sensitive projects.

"We offer a world-class qualification and an opportunity to serve the nation," Carcone said. "Our soldiers and officers ... routinely work on projects that [are] at the cutting edge of defence and Army capability. They have unparalleled levels of responsibility and work both individually and as a team to deliver with aplomb."

> **‘The culture is very much based on professionalism. … Everyone treats everyone with respect because we have a level of understanding that everyone is there to learn and to do their job in the best way possible.’**
>
> Warrant Officer Class Two Shami Muzavazi, ACMA, CGMA

clumsily [creates a] danger of being counterproductive … it’s more likely to build resistance or endanger an improving culture,” Carcone said.

Embrace differences. Each employee’s lived experience is an asset to an organisation, and Carcone believes that differences, when celebrated, add to organisational cohesion. MAS(A) also uses religious and cultural holidays as all-rank bonding moments.

“We embrace individual and cultural differences and, where appropriate, balance the leveraging of strengths with identifying development areas,” Carcone said.

Focus on culture and team building. Fostering connections builds inclusivity and a sense of belonging.

“People getting to know each other has an amazing effect on the culture,” Muzavazi said. “Allowing each other to be in each other’s company really helps to build that inclusive culture.”

Adventure training, team breakfasts, and joint professional development opportunities all fortify the bonds of the MAS(A) unit.

Celebrate strengths and strengthen weaknesses. Personnel within MAS(A) are assigned to projects based on their strengths and all successes are openly celebrated. Soldiers also know that if they have a knowledge gap, they won’t be ridiculed for asking for help. Oftentimes, it will be junior members of the organisation assisting. Muzavazi also appreciates that MAS(A) commits to each person’s professional development, and soldiers “are expected to work on their weaker areas and are expected to deliver where [they are] not particularly strong”.

“A lot of projects are matched based on what you can bring that’s additional to being an accountant as well,” Muzavazi said.

Establish communication forums. A positive benefit of MAS(A)’s inclusive culture that Carcone has noticed is that personnel are willing to speak up early on emerging issues as they are motivated to maintain the interdependent culture.

“We’ve set up forums where our senior soldier gathers views [of] the Staff Sergeants, and other Warrant Officers,” Carcone said. “The team [is] reassuringly forthcoming with views, which are listened to, evaluated, and integrated wherever possible.”

And for further resources and support, Muzavazi is one of two equality, diversity, and inclusion advisers and is a workplace mediator for the UK Army.

A ‘close-knit community’

MAS(A) may be an elite unit, but its inclusivity is highly valued by Carcone and Muzavazi.

“We have an incredibly close-knit community where no one is envious of each other,” Carcone said. “I’ve never worked in an organisation where there has been such a beautiful sense of belonging.” ■

LEARNING RESOURCES

Inclusion: Building a Sustainable Culture of Diversity

This fast-paced course updates one’s strategic view of the world of diversity and inclusion and applies it to the specialised world we work in.

COURSE

Working Together: Four Generations in the Workplace

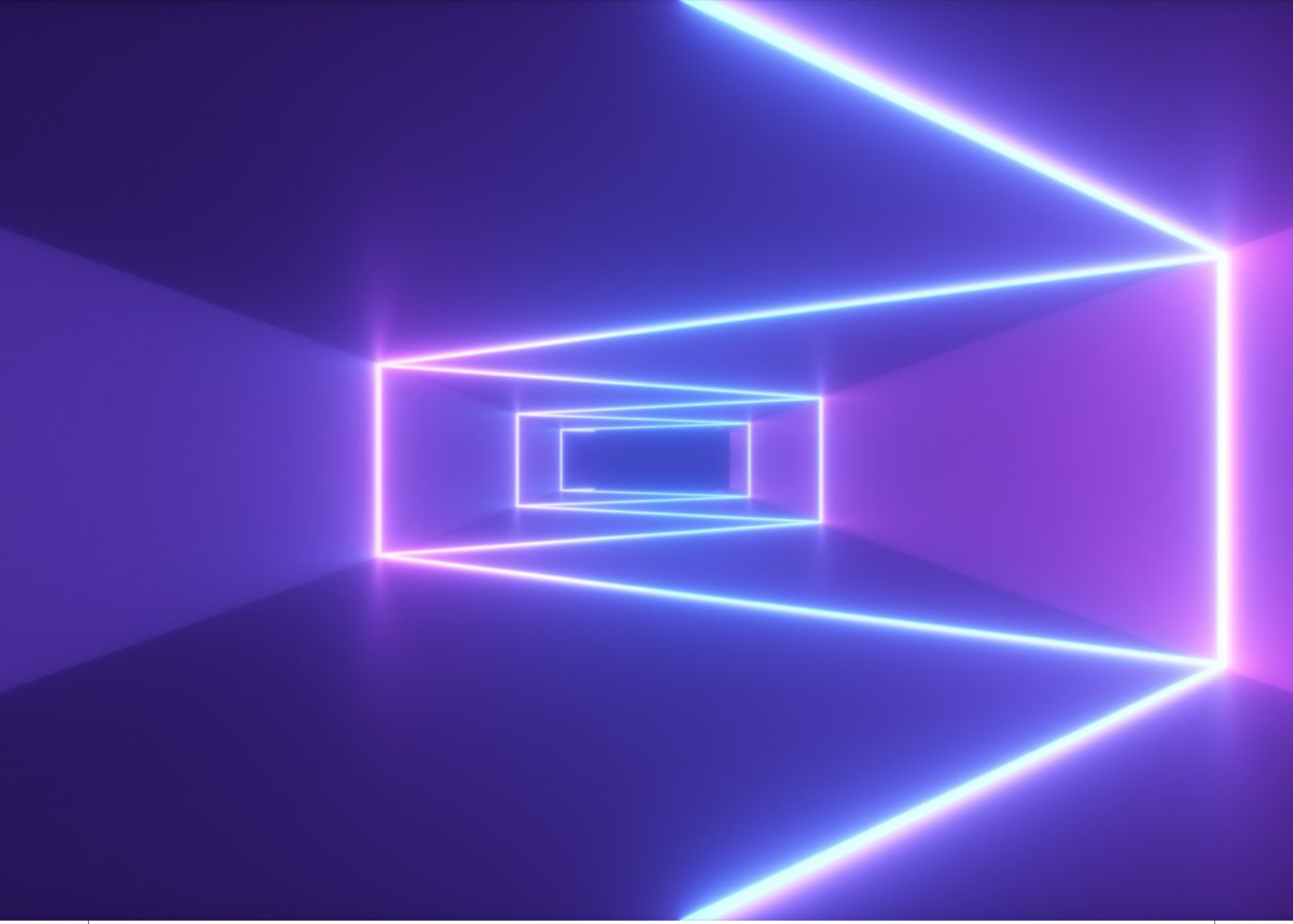
Through this course you will identify differences in how each generation works, recognise their strengths and values, and learn how to engage with them.

COURSE

AICPA & CIMA resource

“Promoting Equity in Government Entities”, February 2022
This resource explores tools and techniques used by government entities to define and promote diversity, inclusion, and equity in their workforce.

Beth Roessner is a senior content writer at AICPA & CIMA, together as the Association of International Certified Professional Accountants. To comment on this article, contact Oliver Rowe at Oliver.Rowe@aicpa-cima.com.



IMAGES BY FLASHMOVIE/GETTY IMAGES

BI tools: Power Query, Power Pivot, and Power BI

Excel MVP Liam Bastick introduces three business intelligence tools and provides an applied example using Power Query.

By Liam Bastick, FCMA, CGMA

I write about Microsoft Excel tips and tricks all the time. You may have learned a thing or two along the way. But are you using Excel and its associates to their full potential? There are three business intelligence (BI) tools you really need to know about, if you are not using them already:

Power Query

Power Query (known as "Get & Transform Data" in Excel 2016 and later versions and Office 365 and found on the Data tab of the Ribbon) is an extract, transform, and load (ETL) tool. This software allows you to connect to data from a variety of sources (eg, Excel files, internet data, SAP business warehouses, Access files, and other databases), then manipulate it, say, by removing unnecessary data, removing additional spaces, and unpivoting elements. Finally, it allows you to load the tailored version of the combined files in such a way they may be used by Excel, eg, Power Pivot (see below), for further analysis. Not only that, but the same set of tasks can then be repeated on similar data at the click of a button. It's not the most exciting end of the BI suite of tools, but it's absolutely essential.

Power Pivot

Power Pivot is often referred to as "PivotTable on steroids". This software was the first of the "big three" BI tools to hit the market, but its entrance was sadly muted. It is built into most editions of Excel since 2013 — you just need to enable it by going to **File -> Options -> Add-Ins -> Manage -> COM Add-ins -> Go.** Checking the box for Microsoft Office Power Pivot for Excel enables the Power Pivot tab on the Ribbon.

Power BI

Power BI has evolved in terms of its scope. Initially, it referred to the entire suite of Microsoft BI tools out there, such as Power Maps and the now-defunct Power View, together with Power Pivot and Power Query. However, it has moved on from that now, and refers to the dashboarding and reporting side of things.

Power BI Desktop is a stand-alone piece of software you may download from powerbi.com for free. It includes a powerful version of the Power Query engine, which can link to many more types of data source than the Excel version. Power BI uses the same language as Power Pivot to allow you to create measures (these are calculations that may be used inside PivotTables) and visualisations, and analyse your information in seconds.

Once you are satisfied with what you have created, you can publish to the cloud using the Power BI Service to share your insights and create interactive dashboards and reports. Data may be restricted depending upon users' roles (a restriction known as "Row-Level Security" or RLS, which allows users access only to certain rows/records in a table).

Applied example using Power Query

So now that you have been formally introduced, let me show you an applied example — in this instance, using Power Query. Imagine you work in Accounts, and you receive a bank download of credit card expenditure for your staff — see the screenshot "Example expenditure".

Example expenditure

1	01-Jan-23
2	Candlelit Supper
3	Hyacinth Bucket
4	45.60
5	
6	02-Jan-23
7	Service Station Sandwich
8	Mo Toway
9	3.50
10	
11	03-Jan-23
12	Meal Deal
13	Alan Cluded
14	3.60
15	
16	04-Jan-23
17	Buffet

Look familiar? This causes analysts significant grief as they try not to undertake some repetitive, manual procedure to put this data into a more usable format — see the screenshot “Usable format”.

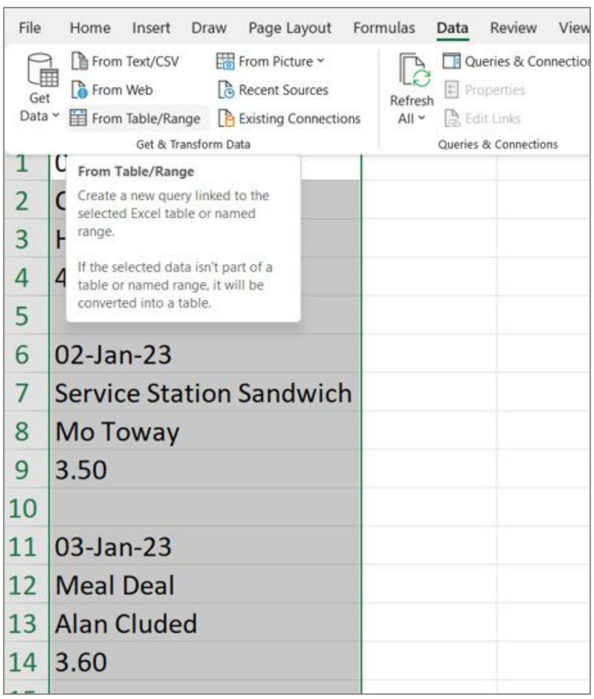
Usable format

	A	B	C	D
1	Date	Description	Name	Amount
2	01/01/2023	Candlelit Supper	Hyacinth Bucket	45.60
3	02/01/2023	Service Station Sandwich	Mo Toway	3.50
4	03/01/2023	Meal Deal	Alan Cluded	3.60
5	04/01/2023	Buffet	Van Pireslayer	50.00
6	05/01/2023	Picnic	Bea Magnet	24.00
7	06/01/2023	Steak House	Angus Rare	65.40
8	07/01/2023	Fabulous Lunch	Deb Enare	45.60
9	08/01/2023	Bottomless Brunch	Lotty Morsels	45.60
10	09/01/2023	Wine Bar	Chardonnay Grape	45.60
11	10/01/2023	Fast Food	Justin Ahurry	45.60

Now wouldn’t it be something if you could automate and produce this in seconds? You can do this with Power Query/Get & Transform (it is called the latter in Excel until you open the editor; it then reverts to its old name).

In Office 365, highlight the original data and go to the Data tab of the Ribbon; click From Table/Range in the Get & Transform Data group (see the screenshot “Selecting From Table/Range”).

Selecting From Table/Range



(Depending upon your version of Excel, your interface may look slightly different.)

Having confirmed your Table area and indicated that there are no headings, this opens the Power Query Editor, which displays the complete list highlighted. You can delete the Changed Type step (which decides whether the field contains text, numbers, dates, etc.) by using the cross next to it. Since the column has mixed data types, the types can be defined later when you have split them up. (See the downloadable screenshot “Deleting the Changed Type Step”.)

Going to the Add Column tab of the Ribbon, select From 0 in the drop-down list of Index Column (see the downloadable screenshot “Adding Column From 0”).

This creates a sequential counter in a second column starting from zero [0] (see the downloadable screenshot “Creating a Sequential Counter”).

Do you see how the steps are being detailed in the APPLIED STEPS section of the Query Editor (in the right-hand pane)? Power Query is recording the steps, so you only need to make these transformations once and use them at your leisure thereafter.

Now, highlight the Index column and select Divide (Integer) from the Standard drop-down box on the Add Column tab of the Ribbon — see the downloadable screenshot "Selecting Divide (Integer)".

This allows you to add another column where you can divide the index by a number and it returns just the whole number, eg, 28 divided by 8 is 3 remainder 4, so would return a value of 3. The number we want, though, is the index number for the first row of the second block of data (here, this is 5) — see the downloadable screenshot "Entering a Number in the Integer-Divide Dialogue Box".

Once you click OK, a second column is added — see the downloadable screenshot "Inserting the Integer-Division Column".

It's time for me to explain. The third column, Integer-Division, is going to represent the row number for the data (so all the rows with the same Integer-Division number will end up on the same row of the final table to be generated). The second column, Index, was needed to generate it. Now, I need to use Index for something else.

Highlight the Index column again and select Modulo from the Standard drop-down box on the Transform tab of the Ribbon. Again, we use the number five [5] for the same reasons as earlier (see the downloadable screenshot "Selecting Modulo from the Standard Drop-Down Box").

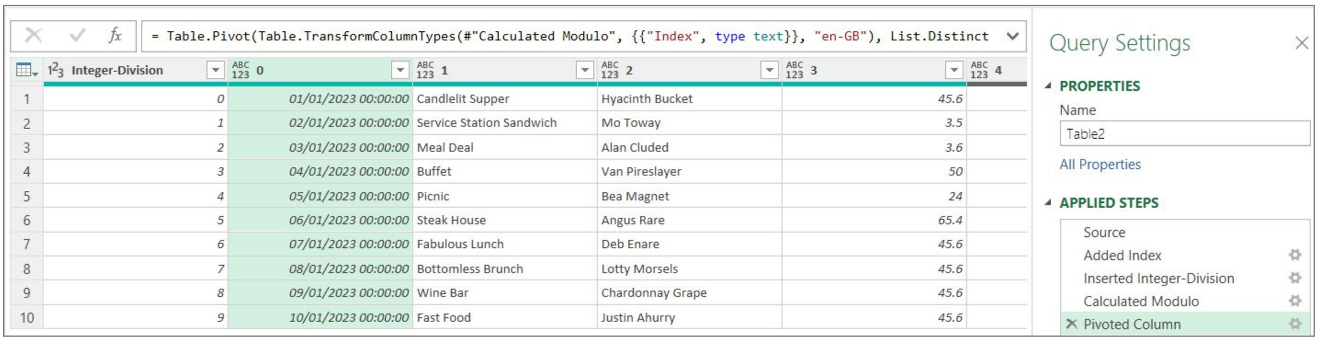
Clicking OK creates the recurring sequence 0, 1, 2, 3, and 4 in the Index Field (see the downloadable screenshot "Creating Recurring Sequence in the Index Field").

Can you see where this is going? If I use the third column (Integer-Division) as my row number and Index as my column number, I have my coordinates for each value in Column1. All I need to do is select the Index column and click on Pivot Column on the Transform tab of the Ribbon (see the downloadable screenshot "Selecting Index Column and Clicking on Pivot Column".)

From the resulting dialog box, select Column1 for the values. That's not enough, though, as we will only get a count of the items. From the Advanced options box, select Don't Aggregate from the Aggregate Value Function (this allows the value to be displayed when it is text) — see the downloadable screenshot "Selecting Column1 and Don't Aggregate".

Clicking OK makes everything come into sharp focus (see the screenshot "Clicking OK".)

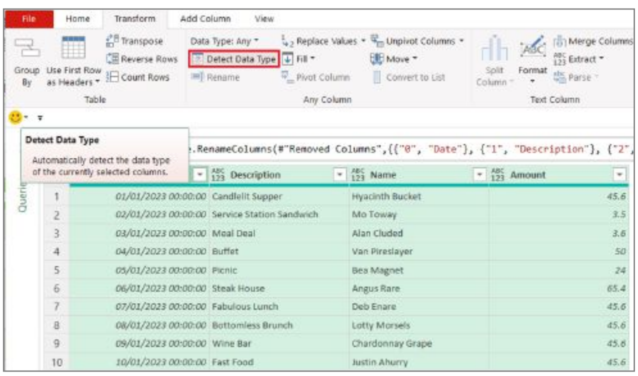
Clicking OK



	Integer-Division	0	1	2	3	4
1	0	01/01/2023 00:00:00	Candlelit Supper	Hyacinth Bucket	45.6	
2	1	02/01/2023 00:00:00	Service Station Sandwich	Mo Toway	3.5	
3	2	03/01/2023 00:00:00	Meal Deal	Alan Cluded	3.6	
4	3	04/01/2023 00:00:00	Buffet	Van Pireslayer	50	
5	4	05/01/2023 00:00:00	Picnic	Bea Magnet	24	
6	5	06/01/2023 00:00:00	Steak House	Angus Rare	65.4	
7	6	07/01/2023 00:00:00	Fabulous Lunch	Deb Enare	45.6	
8	7	08/01/2023 00:00:00	Bottomless Brunch	Lotty Morsels	45.6	
9	8	09/01/2023 00:00:00	Wine Bar	Chardonnay Grape	45.6	
10	9	10/01/2023 00:00:00	Fast Food	Justin Ahurry	45.6	

To tidy up, remove the first and last columns and rename each field (right-clicking on each column allows access to these options). Then use CTRL + A to select all the columns and use Detect Data Type on the Transform tab to select the appropriate data types using Power Query's algorithms (see the screenshot "Tidying Up in Power Query Editor".)

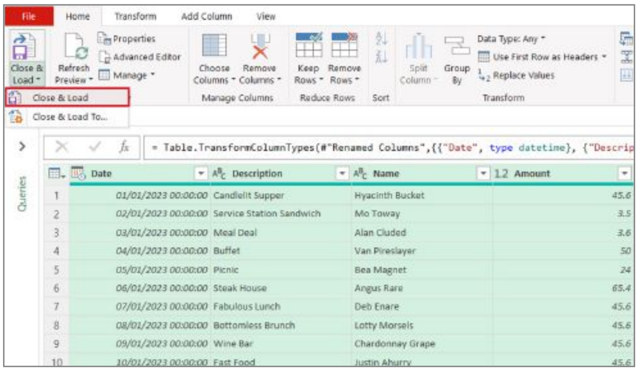
Tidying up in Power Query Editor



	Date	Description	Name	Amount
1	01/01/2023 00:00:00	Candlelit Supper	Hyacinth Bucket	45.6
2	02/01/2023 00:00:00	Service Station Sandwich	Mo Toway	3.5
3	03/01/2023 00:00:00	Meal Deal	Alan Cluded	3.6
4	04/01/2023 00:00:00	Buffet	Van Pireslayer	50
5	05/01/2023 00:00:00	Picnic	Bea Magnet	24
6	06/01/2023 00:00:00	Steak House	Angus Rare	65.4
7	07/01/2023 00:00:00	Fabulous Lunch	Deb Enare	45.6
8	08/01/2023 00:00:00	Bottomless Brunch	Lotty Morsels	45.6
9	09/01/2023 00:00:00	Wine Bar	Chardonnay Grape	45.6
10	10/01/2023 00:00:00	Fast Food	Justin Ahurry	45.6

Once finished, from the Home tab, simply select Close & Load (see the screenshot "Select Close & Load".)

Select Close & Load



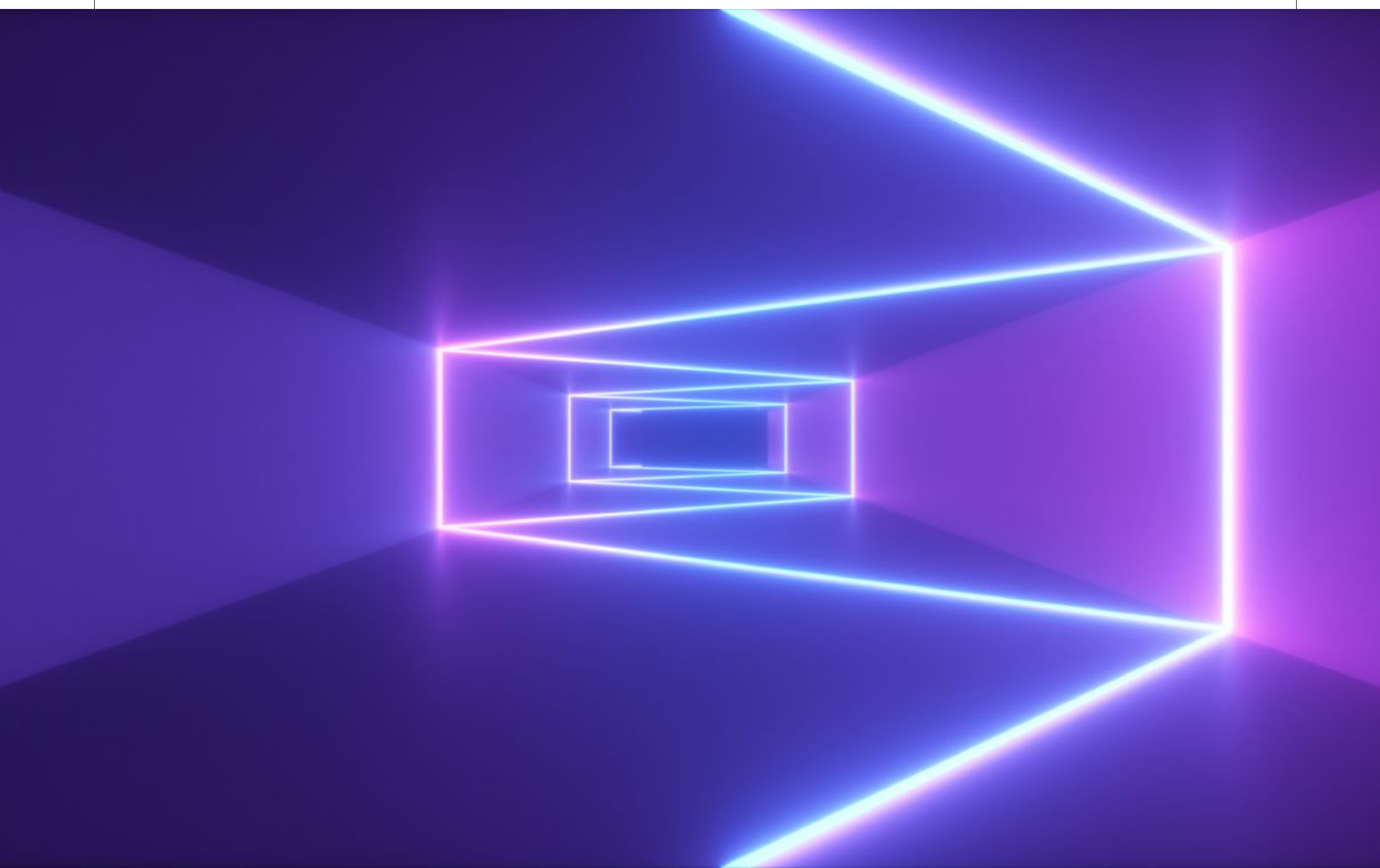
And there you have it! (See the screenshot "Final Table".)

Final table

	A	B	C	D
1	Date	Description	Name	Amount
2	01/01/2023	Candlelit Supper	Hyacinth Bucket	45.60
3	02/01/2023	Service Station Sandwich	Mo Toway	3.50
4	03/01/2023	Meal Deal	Alan Cluded	3.60
5	04/01/2023	Buffet	Van Pireslayer	50.00
6	05/01/2023	Picnic	Bea Magnet	24.00
7	06/01/2023	Steak House	Angus Rare	65.40
8	07/01/2023	Fabulous Lunch	Deb Enare	45.60
9	08/01/2023	Bottomless Brunch	Lotty Morsels	45.60
10	09/01/2023	Wine Bar	Chardonnay Grape	45.60
11	10/01/2023	Fast Food	Justin Ahurry	45.60

The great thing about having performed this using Power Query is that if the table changes, the final table can be refreshed with just a click (of the Refresh button). ■

Liam Bastick, FCMA, CGMA, FCA, is director of SumProduct, a global consultancy specialising in Excel training. He is also an Excel MVP (as appointed by Microsoft) and author of Introduction to Financial Modelling *and* Continuing Financial Modelling. *Send ideas for future Excel-related articles to him at liam.bastick@sumproduct.com. To comment on this article or to suggest an idea for another article, contact Oliver Rowe at Oliver.Rowe@aicpa-cima.com.*



INSTITUTE NEWS

AICPA & CIMA academic research: Calculating sustainability

Research by scholars from Alliance Manchester Business School in Manchester, UK, and SDA Bocconi School of Management at Bocconi University, in Milan, Italy, proposes a new Sustainable Value Table (SVT) to reconcile the financial and nonfinancial dimensions (specifically relating to the UN's Sustainable Development Goals) of business performance and corporate reporting.

The SVT is a powerful strategic planning tool that supports and guides the decision-making process within organisations globally.

The research is part of AICPA & CIMA's global academic research programme.

AICPA & CIMA brief: *Accounting for Climate Resilience*

AICPA & CIMA, together as the Association of International Certified Professional Accountants, recently launched *Sustainability and Business: Accounting for Climate Resilience* — an educational brief to help finance professionals build their sustainability literacy so they can lead and support their organisations, firms, and clients as they adapt business models and operations in response to increasing climate-related risks.

Accounting for Climate Resilience is the last in a series of four interactive "*Accounting for*" briefs focused on sustainability and business. The three previously published are: *Accounting for Carbon*, *Accounting for the Sustainable Development Goals (SDGs)*, and *Accounting for Nature*.

CIMA signs agreements with Nigeria accounting bodies

CIMA has signed dual-designation agreements with two of Nigeria's leading accounting bodies — the Institute of Chartered Accountants of Nigeria (ICAN) and the Association of National Accountants of Nigeria (ANAN).

These agreements will enable Nigerian accounting and finance professionals to enhance their skillsets and seize new career opportunities. Specifically:

- The CIMA–ICAN agreement will enable their respective members who satisfy the qualifying criteria to take on dual membership and use both the Chartered Global Management Accountant (CGMA) and the Associate Chartered Accountant (ACA) or Fellow Chartered Accountant (FCA) designations.
- The CIMA–ANAN agreement will enable their respective members who satisfy the qualifying criteria to take on dual membership and use both the Chartered Global Management Accountant (CGMA) and the Certified National Accountant (CNA) designations.

In addition, CIMA will extend its collaboration with both ICAN and ANAN on thought leadership and research initiatives, member events, and jointly promote their qualifications and resources in Nigeria.

TOP LEFT: IMAGE BY EMRAH TURUDU/GETTY IMAGES; BOTTOM LEFT: IMAGE BY OLEKSII LISKONIH/GETTY IMAGES

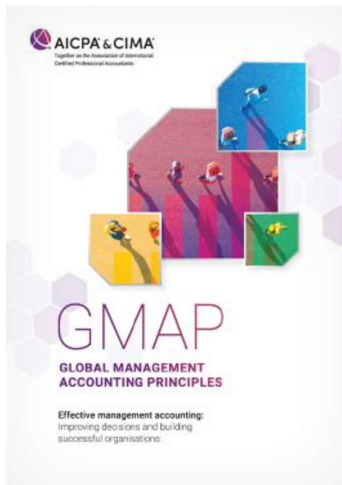
MoU with Chamber of Financial Auditors of Romania

AICPA & CIMA, together as the Association of International Certified Professional Accountants, have signed a memorandum of understanding with the Chamber of Financial Auditors of Romania (Camera Auditorilor Financiari din România, or CAFR).

The collaboration highlights a shared commitment to promote the role of the financial auditing profession, enhance public trust, and boost career growth for auditing professionals in Romania.

Through the agreement, CAFR members will be able to access AICPA & CIMA continuing professional development resources and subscribe to the CGMA Finance Leadership Program. Future collaboration will include delivering events and webinars and knowledge sharing for auditing and accounting professionals.

Global Management Accounting Principles, second edition



AICPA & CIMA, together as the Association of International Certified Professional Accountants, have released a second edition of their Global Management Accounting Principles (GMAP). The principles are a route map of good practice to help management accountants work with business decision-makers to create and preserve value within their organisation's business model.

The first edition was launched in 2014 and the principles have been substantially revised and updated based on insights provided by CEOs, CFOs, academics, regulators, and finance professionals in 20 countries.

There is a new focus on sustainability and resilience — the principles' application no longer focuses solely on the financial aspects of value.

Together with CIMA's CGMA Professional Qualification syllabus and the CGMA Competency Framework, the principles form the three pillars of the profession. (Read the feature on p12, "GMAP 2.0: Revised Guidance for a Rapidly Changing World".)

Do you need to register as a CIMA member in practice?

Are you a self-employed accountant? Do you offer accountancy services directly to clients? If the answer to both questions is yes, you may be required to register as a CIMA Member in Practice (MiP). The MiP regulations require all CIMA members coming under the definition of a CIMA MiP to register with the Institute.

Your application must meet the mandatory requirements and confirm that the relevant prescribed documents are in place. Details of the mandatory documents are outlined in CIMA's Member in Practice Rules.

The application is completed online via your CIMA membership account through the AICPA & CIMA website. On completion of your application being approved by the panel of assessors, you will be issued with a practising certificate.

Any member meeting CIMA's definition of a Member in Practice as set out in CIMA regulations (Byelaw 8) who does not comply with the requirements can be subject to disciplinary action as set out in the Member in Practice Rules. Under the Money Laundering Regulations, any member who is not registered for anti-money laundering supervision when required is committing a criminal offence.

If you are unsure, please contact CIMA.MIPs@aicpa-cima.com for advice.

Further information about completing the MiP application process and the mandatory requirements can be found on the Application and Assessment page of the Members' Handbook section of the AICPA & CIMA website.

TOP LEFT: IMAGE BY DEEPBLUE4YOU/GETTY IMAGES

Robo-meals

The market in food delivery robots, which is driven by the rise in ecommerce and a desire to cut labour costs, is projected to grow by a 33.7% compound annual growth rate in the period to 2028, according to research.

Grocery stores and takeaway restaurants use these small autonomous vehicles to make "last-mile" customer deliveries.

With automation also coming to the food stores themselves (Walmart expects 65% of its stores to be serviced by automation within three years), there is considerable potential for productivity gains and better inventory management.

And, by 2024, the UN's Food and Agriculture Organization (FAO) expects to use AI-powered autonomous vehicles in conflict and disaster zones to deliver food parcels to those affected. International Food Day, which marks the founding of the FAO in 1945, is recognised on 16 October each year.

A food delivery robot named Mateusz rides the street in Lublin, Poland, on 10 February 2023.

PHOTO COURTESY OF ANADOLU AGENCY/GETTY IMAGES