



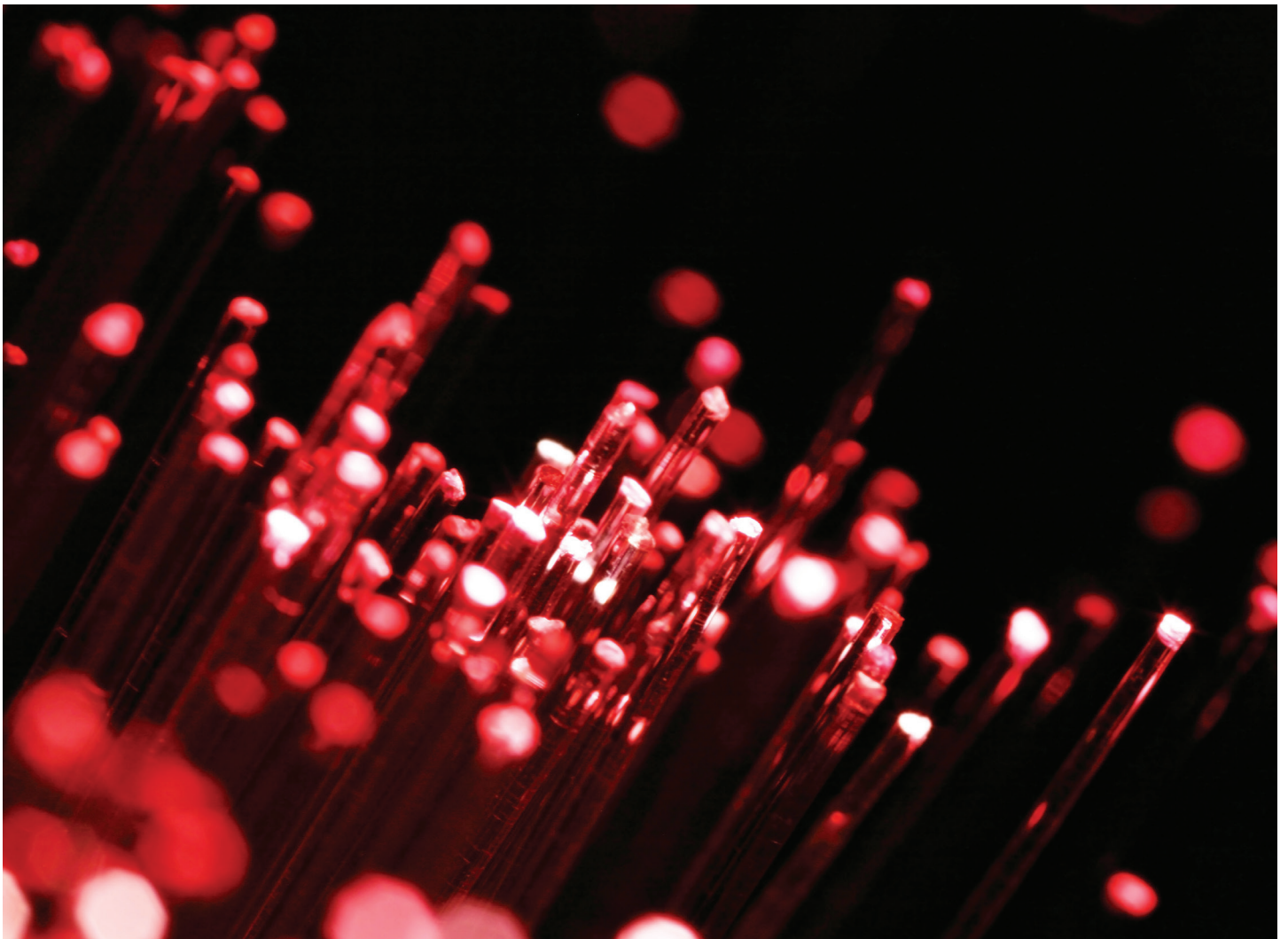
The Association of  
Accountants and  
Financial Professionals  
in Business

The global  
body for  
professional  
accountants



Accountancy Futures Academy

## Big data: its power and perils



# FIVE MINUTES ON...

## Big data and the future of the global accountancy profession



The amount of information published was growing exponentially before the world embraced computers and information became digital. Converging technology trends, the shift from analogue to digital, widespread mobile device adoption, internet-connected systems and 'exhaust data' from physical objects (also known as the internet of things, or the internet of everything: IoE) have combined to create the vast amounts of structured and unstructured data we now call 'big data'.

New types of data will throw up new challenges as well: over the next decade, new standards for measuring and valuing data will be developed, with the inclusion of new and more diverse datasets in reporting, modelling and forecasting. There are less measurable issues too, such as those concerning

ethics and privacy. The debate about the impact and implications of these has barely begun – but getting them wrong could prove to be explosive.

These are early days in the evolution of big data. Only time will tell where the insights and inspiration it can provide may eventually lead. Accountants are already preparing.

This report presents a balanced picture of the impact of big data on the accountancy and finance professions in the coming five to ten years by identifying specific opportunities and challenges for the accountancy and finance professions.

**Faye Chua**

Head of future research, ACCA

# About the report

'Big data' has become a business buzzword. Its promise and its pitfalls are gaining increasing attention in businesses across the world, as corporate leaders come to terms with the risks and opportunities it will mean for them.

The combination of new data and new analytics is aligning with other deep shifts in the way that companies work, transforming the business landscape. Organisations are becoming more flexible, more fluid, more open: they are becoming creatures of increasing complexity.

As business is transformed by the impact of big data and big data analytics, so the role of finance professionals will change as well. Some skills that were once valued will become commoditised, as has already happened in other

professions. Other skills that were previously misunderstood or overlooked could become more valued.

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Big data can offer accountants and finance professionals the possibility of reinvention, the chance to take a more strategic, 'future-facing' role in organisations.



The transition, however, will not be easy.

The accountants and finance professionals who differentiate themselves will be those who develop new skills and new ways of thinking, and who form new collaborations and partnerships.

**For the full report: [www.accaglobal.com/bigdata](http://www.accaglobal.com/bigdata)**

## The big data boom

Big data is commonly used, but not commonly understood. It refers primarily to the vast amount of data continually collected through devices and technologies such as credit cards and customer loyalty cards, the internet and social media and, increasingly, WiFi sensors and electronic tags. Much of this data is 'unstructured' – data that does not conform to a specific, pre-defined data model.

### **BIG DATA AND THE FUTURE OF ACCOUNTANCY: CHALLENGES AND OPPORTUNITIES**

Accountants and finance professionals have already spotted the potential of big data. In the 2012–13 ACCA–IMA technology trends survey, 78% of respondents said that they expect widespread adoption of big data within the next two years (ACCA–IMA 2013). The same survey identified big data as the second most impactful technology trend in terms of its potential to significantly reshape the business and accountancy landscape. (See Figure 1 for scores by region)

The increased demand for high-level analytic skills creates important opportunities for accountants and finance professionals. Trained to structure, gather and analyse financial information, they can apply their core skills to non-financial and other datasets. The increase in the value they bring to organisations could, therefore, be dramatic. There could, in the next five to 10 years, be a qualitative change that sees the finance department develop from a service function to a business-critical service, central to strategic decision making.

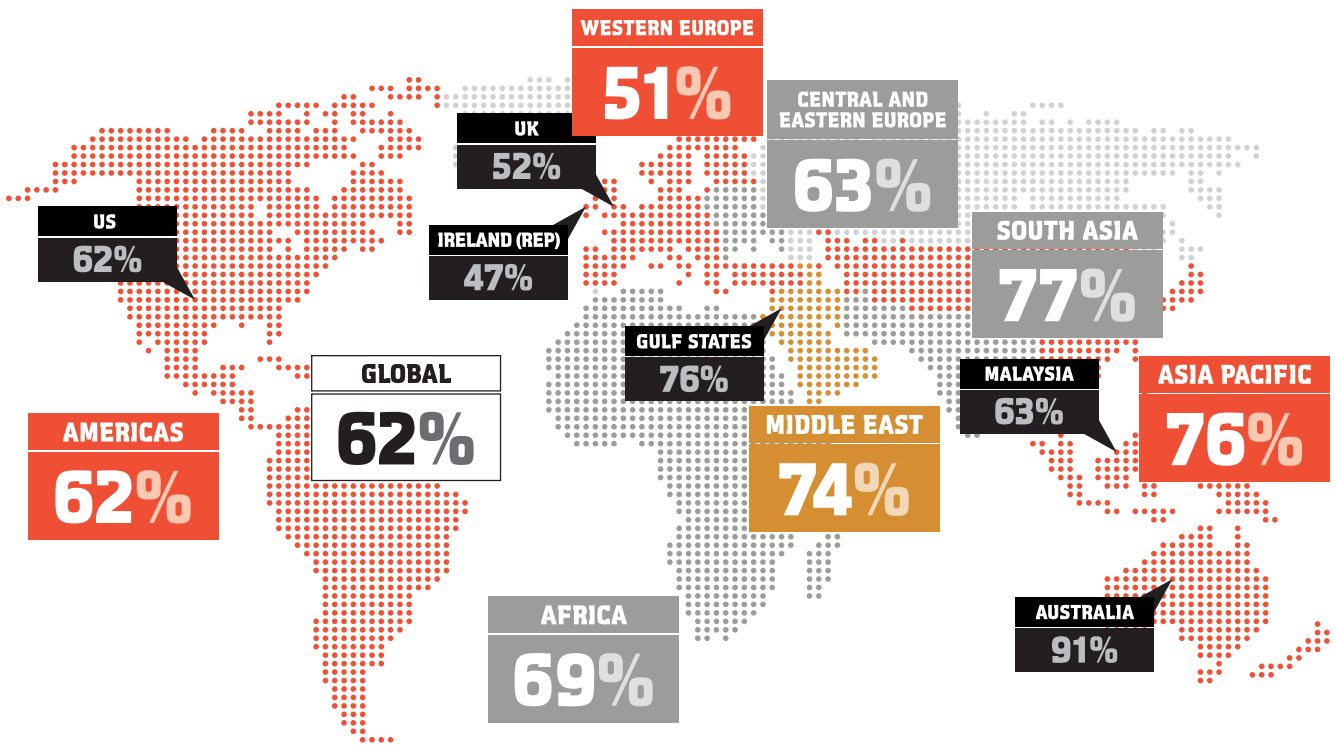
The management of big data for accountants and finance professionals means more than 'game-changing' opportunities. It means new challenges. The future is not just about a 'straight' transference of skills: it is about developing new ones. Finance professionals will need to find ways to use big data to measure organisational performance and both organisational and investment risks. In addition, as the importance of big data in business grows, they will need to find ways

to measure its intrinsic value as an organisational asset.

### **THE NEXT FRONTIER**

The paradox of new technology is that it offers the chance to replace the value lost as it commoditises traditional skills. Advances in automation, such as self-service data retrieval, are freeing accountants and the finance function from the more routine aspects of internal reporting and compliance work – and creating opportunities for them to alter their profile in business radically. Finance professionals and accountants can provide a new and critical service: making big data smaller, 'distilling' vast amounts of information into actionable insights. Accountants are responsible for the 'integrity' of reports and accounts, they can help act as custodians of non-financial datasets and set quality and ethical standards for the information used in making strategic decisions. This role will become increasingly important as more companies look for ways of developing new products and services from data they generate and own,

**FIGURE 1:  
THE IMPACT OF BIG DATA ON BUSINESS OVER THE NEXT 5 TO 10 YEARS**



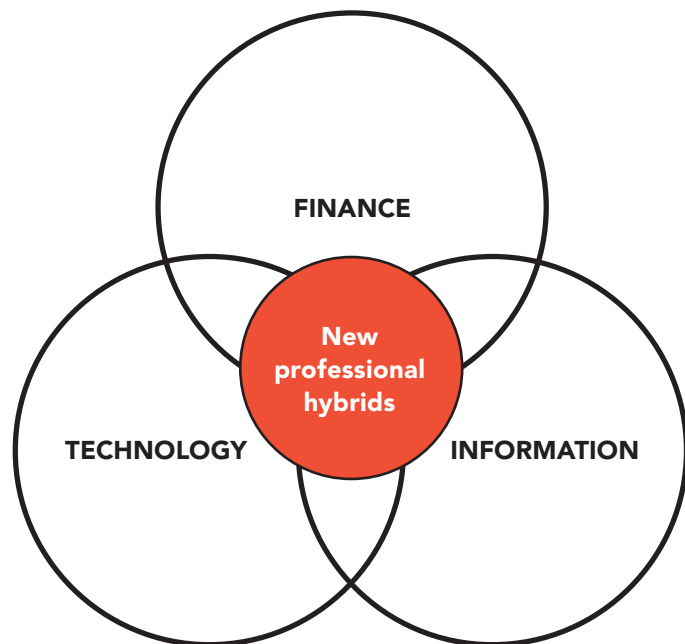
particularly within the context of growing concerns around privacy and ethical data usage.

Big data offers the accountancy and finance professions the possibility of moving into a more strategic, proactive role in business. It is important, however, to understand the realities of what it means: the opportunities are matched by the challenges.

To differentiate themselves in the marketplace in the next 5 to 10 years and turn big data to their advantage, accountants and finance professionals will need to do three things:

- 1 develop methods and services for the valuation of data – and extend their role in compliance and internal control to the ethical and effective stewardship of data assets.
- 2 use big data to offer more specialised decision-making support – often in real time – and decide when data can most usefully be shared with internal and external stakeholders or ‘monetised’ as new products.
- 3 use big data and its associated tools not only to identify risks in real time and improve forensic accounting but also to evaluate the risks and rewards of long-term investment in new products and new markets.

**FIGURE 2: NEW ACCOUNTING AND FINANCE PROFESSIONAL HYBRIDS**



## SUMMARY OF THE OPPORTUNITIES AND CHALLENGES BIG DATA PRESENTS THE ACCOUNTANCY AND FINANCE PROFESSION

AREA	OPPORTUNITY	CHALLENGE
<b>1 Valuation of data assets</b>	<p>Helping companies value their data assets through the development of robust valuation methodologies</p> <p>Increasing the value of data through stewardship and quality control</p>	<p>Big data can quickly 'decay' in value as new data becomes available</p> <p>The value of data varies according to its use</p> <p>Uncertainty about future developments in regulation, global governance and privacy rights and what they might mean for data value</p>
<b>2 Use of big data in decision making</b>	<p>Using big data to offer more specialised decision-making support in real time</p> <p>Working in partnership with other departments to calculate the points at which big data can most usefully be shared with internal and external stakeholders</p>	<p>Self-service and automation could erode the need for standard internal reporting</p> <p>Cultural barriers might obstruct data sharing between silos and across organisational boundaries</p>
<b>3 Use of big data in the management of risk</b>	<p>Expanding the data resources used in risk forecasting to see the 'bigger picture'</p> <p>Identifying risks in real-time for fraud detection and forensic accounting</p> <p>Using predictive analytics to test the risk of longer-term investment opportunities in new markets and products</p>	<p>Ensuring that correlation is not confused with causation when using diverse data sources and big data analytics to identify risks</p> <p>Predictive analytic techniques will mean changes to budgeting and return-on-investment calculations</p> <p>Finding ways to factor failure-based learning from rapid experimentation techniques into processes, budgets and capital allocation</p>

### A NEW PROFESSIONAL AGENDA

The opportunities and challenges suggest three imperatives in the next 10 years, those of:

- developing new metrics
- learning new analytical skills
- creating a visual language of data 'art'.

Combined, these imperatives make up a new professional agenda.

Accountants and finance professionals must find ways not only to measure big data as an organisational asset but also to use it as a measure of organisational performance. The trend towards integrated reporting <IR> and the inclusion of non-financial 'capitals' in

company reports and accounts makes adopting this approach all the more urgent. It will increasingly be necessary to combine 'hard' financial data with 'softer' and non-financial datasets to provide the bigger picture of performance. Meanwhile, there will also be requirements to extract value from big data through advanced analytics – and to interpret the meaning of big data in 'visual language' that can be used in company dashboards, decision-making 'cockpits' and information 'hubs'. Finance professionals who succeed in the future will form a bridge between data science and data art, combining

analytical skills and sophisticated models developed by mathematicians and statisticians with the skills of data art and data 'storytelling'.

They will collaborate closely with the IT and information management departments in cross-functional and multidisciplinary teams: the future could see the emergence of a new professional 'hybrid', the chief financial technology officer (CFTO) or chief financial information officer (CFIO). Most importantly, they will form partnerships with senior leaders in the development of strategy and the management of risk – and provide a service critical to the future of business.

IN SHELL, WE'RE MOVING TOWARDS A SPACE WHERE WE MANAGE INFORMATION AND DATA IN AN INTEGRATED WAY. THE CONTROL AND ASSURANCE SKILLS NEEDED SAT NATURALLY WITH THE FINANCE FUNCTION'

IAN BETTS, FCCA, DATA MANAGER UPSTREAM AND PROJECTS AND TECHNOLOGY AT SHELL

AS TECHNOLOGIES ALLOW BUSINESSES TO VERY SECURELY CAPTURE, STORE AND ANALYSE INCREASING VOLUMES OF DATA FROM INCREASINGLY DIVERSE SOURCES, ACCOUNTANTS THAT CAN HELP EXTRACT THE RIGHT INFORMATION FROM DATA AND MAKE IT EASILY AVAILABLE TO PEOPLE IN THEIR ORGANISATION AT THE RIGHT TIME WILL CREATE A COMPETITIVE ADVANTAGE'

AGATA WATERLOOS, FCCA, CFO, MICROSOFT SLOVAKIA

'THE FUTURE OF THE CFO IS AT STAKE...THE CFO IS IN A UNIQUE POSITION: THEY BRING WITH THEM A DISCIPLINE OF PERFORMANCE THAT NO ONE ELSE IN THE ORGANISATION HAS. THEY UNDERSTAND THE VALUE DRIVERS OF THE BUSINESS, AND HOW THESE SUPPORT SHAREHOLDER VALUE. ONLY THE CFO AND FINANCE FUNCTION ARE ABLE TO CONNECT SHAREHOLDER VALUE TO THE VALUE STREAM OF THE BUSINESS.'

TONY LEVY, DIRECTOR, PRODUCT MARKETING, IBM BUSINESS ANALYTICS

LEVERAGING BIG DATA IS A CRITICAL PART OF THE EQUATION OF HOW COMPANIES EXECUTE THEIR ENTERPRISE STRATEGY AND GAIN COMPETITIVE ADVANTAGE, AND FINANCE PROFESSIONALS COULD PLAY A MAJOR PART.

ASHTON DALLSINGH, FCCA, VICE PRESIDENT AND CFO EMEA AND RUSSIA, CISCO SYSTEMS



## About ACCA

ACCA (the Association of Chartered Certified Accountants) is the global body for professional accountants. We aim to offer business-relevant, first-choice qualifications to people of application, ability and ambition around the world who seek a rewarding career in accountancy, finance and management.

We support our 162,000 members and 428,000 students throughout their careers, providing services through a network of 89 offices and centres. Our reputation is grounded in over 100 years of providing world-class accounting and finance qualifications. We champion opportunity, diversity and integrity, and our long traditions are complemented by modern thinking, backed by a diverse, global membership. By promoting our global standards, and supporting our members wherever they work, we aim to meet the current and future needs of international business.

## About IMA<sup>®</sup>

IMA<sup>®</sup> (Institute of Management Accountants), the association for accountants and financial professionals in business, is one of the largest and most respected associations focused exclusively on advancing the management accounting profession. Globally, IMA supports the profession through research, the CMA<sup>®</sup> (Certified Management Accountant) program, continuing education, networking, and advocacy of the highest ethical business practices. IMA has a global network of more than 65,000 members in 120 countries and 200 local chapter communities. IMA provides localised services through its offices in Montvale, N.J., USA; Zurich, Switzerland; Dubai, UAE; and Beijing, China.

## The Accountancy Futures Academy

The Accountancy Futures Academy contributes to ACCA's research and insights work with powerful visions of the future. It provides a platform to look forward, to tune into the emerging trends and discussions in the global business and policy spheres and the latest reforms facing the world of finance.

By looking to the future it helps the profession stay at the cutting edge. The Academy's work fosters fresh thinking and innovative discussions, identifies the barriers to and facilitators of tomorrow's successes, and identifies the potential strategies that will enable business and finance to navigate the choppy waters that lie ahead.

[www.accaglobal.com/futures](http://www.accaglobal.com/futures)