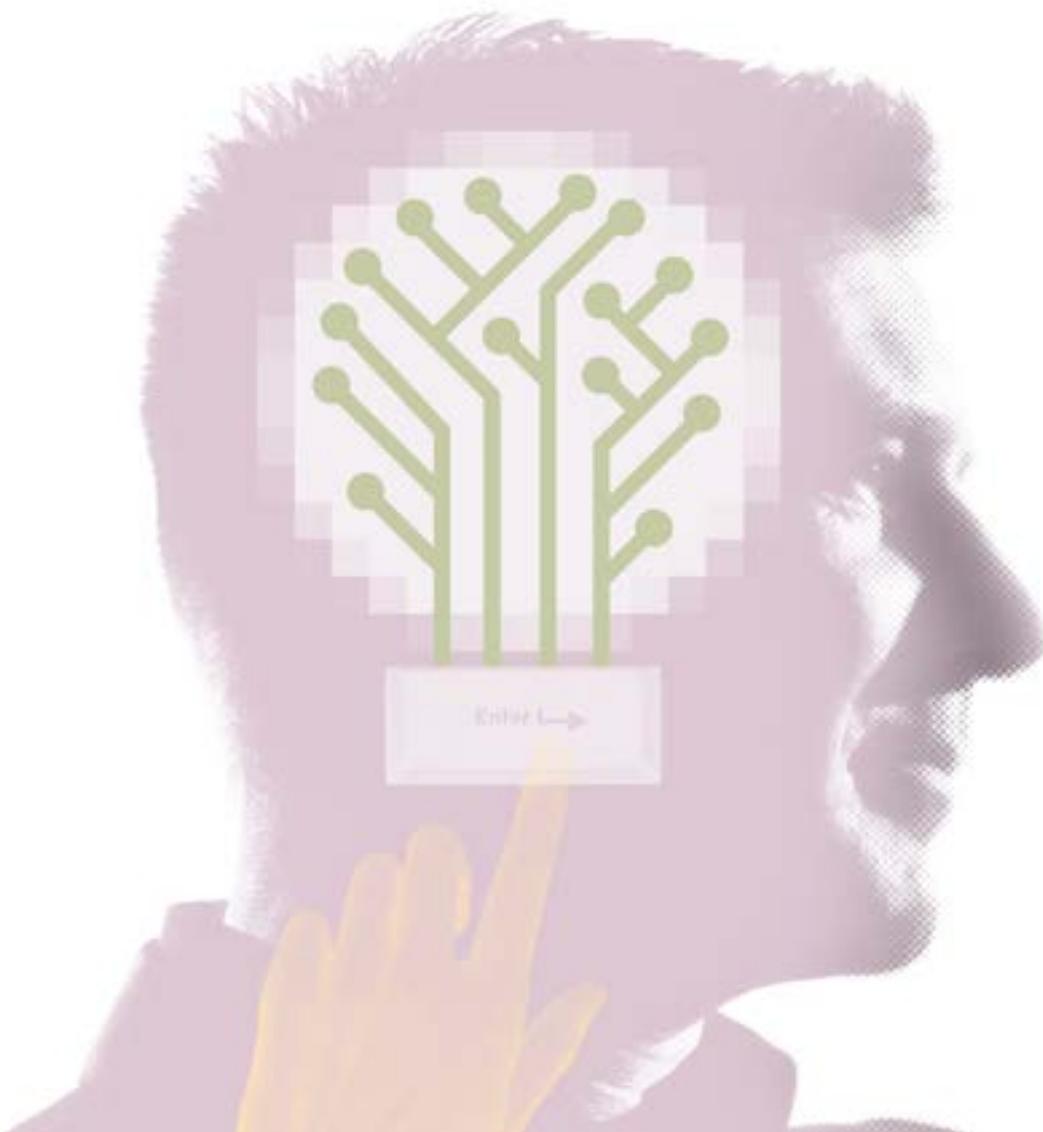


*Providing leadership
in a digital world*



ICAEW Making information systems work initiative

The IT Faculty is the focal point for ICAEW's activities on technology and the future of the accountancy profession. The faculty's work focuses on four transformational technology trends for accountants – Artificial Intelligence, Blockchain, Cyber security and Data (ABCD). We take a research-based approach to understanding these technologies, how they apply across different areas of the accountancy profession and what impact they may have in the future. Our work brings together leading thinkers and practitioners from business, research, technology and public policy through panel discussions, reports and lectures. Reports include *Providing leadership in a digital world*, *Artificial intelligence and the future of accountancy*, *Blockchain and the future of accountancy*, *Audit insights: cyber security*, *Big data and analytics: what's new?*, and *Big data in Chinese businesses: international perspectives*

The IT Faculty's thought leadership programme, Making information systems work, looks at how technology is transforming the way that we do business and interact with each other. It draws on three themes which are essential to the success of IT – value, trust and standards. Previous reports include *Measuring IT returns*, and *Building trust in a digital age: rethinking privacy, property and security*.

For more information on the IT Faculty, please visit icaew.com/joinitf

For more information on the IT Faculty and how to get involved, visit icaew.com/itfac or contact Richard Anning at richard.anning@icaew.com, or on +44 (0)20 7920 8635.

Summary

- Digital technology is transforming businesses, economies and societies, and increasingly affecting the accountancy profession. This presents many opportunities to serve businesses and the wider public interest better by improving the way accountants work, enabling valuable new services and providing access to fresh markets and networks.
- But the digitisation of the economy also raises risks of marginalisation and irrelevance if the profession fails to adapt. To maximise the opportunities and manage the risks of a fast-changing business environment, it must evolve to deliver valuable and relevant tasks, build differentiated skills and encourage responsive organisations.
- While innovation will be primarily driven by individual accountants and organisations, the profession also needs to work together to ensure that it is well positioned for the future. Through this initiative, ICAEW offers leadership and engagement to support stakeholders in three ways – as a trusted information source, an institutional partner and a hub for innovative thinking. This draws on our role as an independent and expert body, as well as our experience in encouraging change and fresh thinking in other areas of the profession.

Introduction

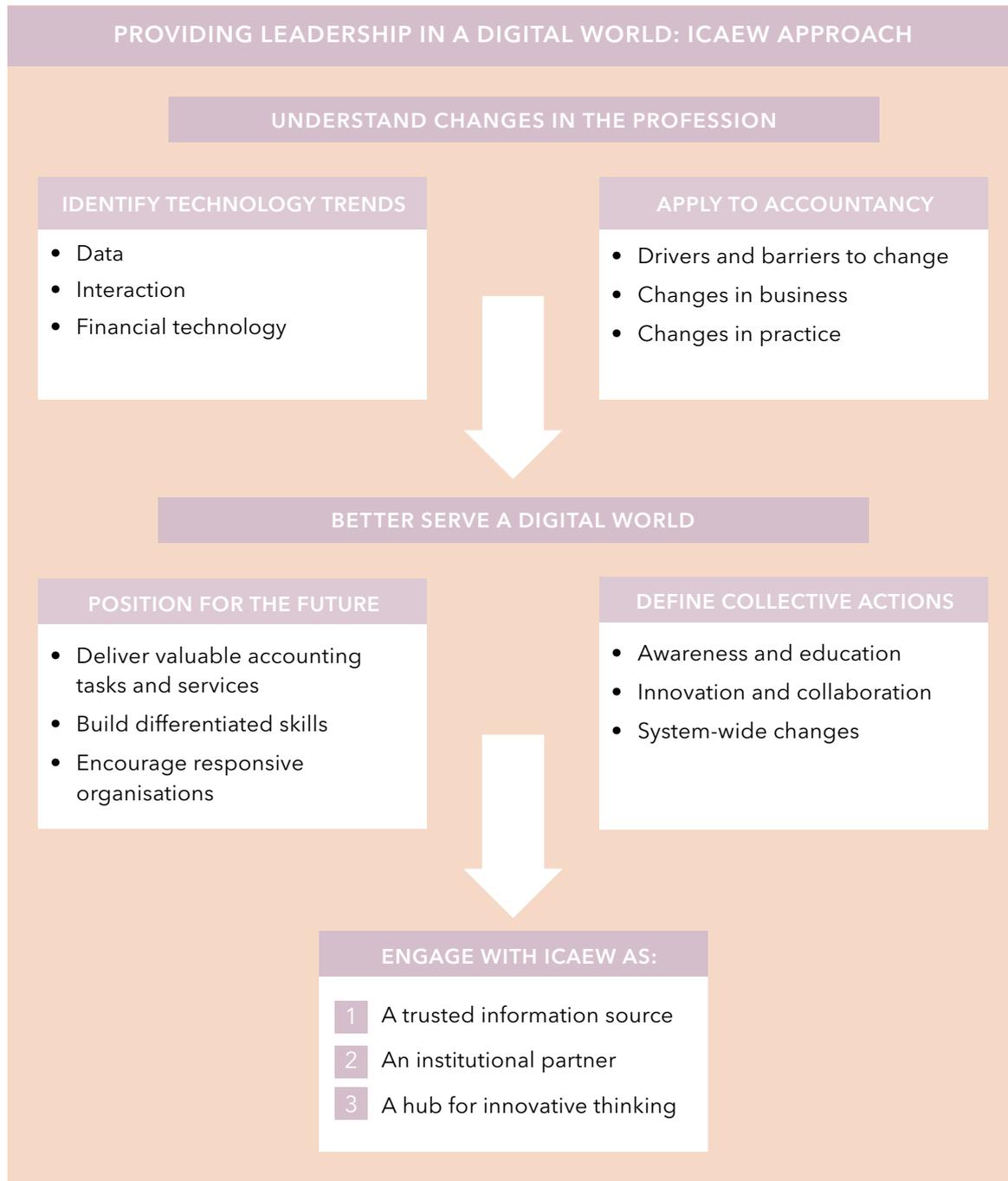
Digital technology is transforming businesses, economies and societies. The digital infrastructure is a powerful democratising force, providing access to networks and markets for many more people and businesses around the world. The nature of work is changing, as software increasingly automates tasks, freeing up people to create novel types of value. Innovative business models are emerging based on platforms and ideas of a sharing economy.

These changes are starting to impact on the accountancy profession. Change, of course, is nothing new. While the task of accounting for economic activities has deep roots, the associated tools and techniques have altered radically over time, greatly increasing the efficiency, effectiveness, speed and scale of accounting tasks and relationships.

Capabilities such as cloud computing and data analytics are enabling accountants to do things even quicker, cheaper, better and with less human intervention. There are also more radical opportunities to create innovative services and different organisational models, as well as serve entirely new markets and utilise fast-growing networks.

But a digitally-based economy creates challenges too. Trends like automation, self-service and information on demand raise real risks of marginalisation, reduced relevance or even redundancy if the profession fails to adapt to the changing environment. So, how can accountants maximise the opportunities of digital technology to better serve the economy and wider good?

This initiative will draw together knowledge from across the profession on the effect of technology, and lead debate on how to meet future challenges. Our approach is based on two elements. It asks how the profession needs to position itself to serve a digital world better, and how it needs to work together to achieve this. Successful positioning for the future, though, needs to be grounded in a good understanding of the present and reflection on lessons from history. We therefore also need to build a strong knowledge base of how technology is changing aspects of the profession today. Our approach is shown in the following diagram.



Identify technology trends

The exponential growth in computing power is at the heart of disruptive digital trends. This enables increasing leaps in computing capability in short periods of time, resulting in a very high pace of change. The development of the driverless car clearly illustrates this speed - from being unable to finish a race course in 2004 to fully autonomous vehicles being tested in the UK in 2015.

Exponential growth, though, can be difficult to comprehend. There is a tendency to overestimate what is possible in the short term, as implementation issues are worked through, but to underestimate significantly what is possible in the medium term. As a result, accurate prediction is extremely difficult. However, ignoring the possibilities is also dangerous, as change can happen very quickly.

There are many new technology capabilities that have broad application across the business and consumer environment. For the purposes of this report, we focus on 12 trends that have particular application to the accountancy profession, based on the specific activities of accountants. These divide into three broad areas - trends in data, interaction and financial technology.

None of these trends are, in isolation, revolutionary. In aggregate, though, they can cause significant disruption to the way that things are done, and what accountants need to do to be successful.

DATA

Accounting tasks are grounded in data. Therefore, improvements in the ability to capture, process, store, analyse, visualise and share data will have particular relevance to how accountants undertake their work. Key trends are outlined below.

TREND	WHAT IS IT?
Big data and analytics	Ability to capture, store and process large volumes of data from new sources and combine it with other data to give fresh insights. New sources of data include unstructured data, open data, and data from the internet of things, whereby physical items are connected to the internet. Insights typically come from the use of analytical tools and techniques that focus on identifying correlations, outliers and exceptions, as well as building predictive models.
Automation	Use of artificial intelligence techniques to perform a wide range of tasks which were previously done by people. This can range from automated vehicles to automated customer service to e-discovery processes in legal cases.
Cyber security	Extension of traditional security practices which aim to protect the confidentiality, integrity and availability of information. Cyber security reflects broader risks resulting from sophisticated attackers, the higher impact of failures and new areas of vulnerability, such as integrated supply chains.
Data standards	Electronic tagging of items based on standard definitions, enabling easier comparability and analysis of data, as well as greater automation of data flows. XBRL, the data standard for financial reporting, is one example.

Identify technology trends

INTERACTION

Accountants interact with many other parties both internally and externally, such as business functions, auditors, filing authorities, investors, standard-setters and clients. Trends that change the ways people interact with one another will also be highly influential. Key trends are outlined below.

TREND	WHAT IS IT?
Cloud computing	A model of computing which is accessed over the internet, based on a service model rather than buying computing assets and maximises efficiency through sharing resources between different users. There are many distinct models of cloud.
Mobile	The use of mobile technology, primarily smartphones and tablets, to access internet-based services on demand, at any time and any location. This includes improvements to video and conferencing capabilities which can enhance flexible working and provide new ways of communicating.
Online services	Delivering services over the internet, thereby reducing physical or telephone contact and minimising the use of paper-based processes.
Social media	Primarily free, internet-based applications which enable users to connect, share information and richer content, and follow each other's activities.

FINANCIAL TECHNOLOGY

Accountants are primarily concerned with financial resources. Therefore, innovations in financial technologies may have a significant impact on the way that accountants access, move and manage financial resources. Key trends are outlined below.

TREND	WHAT IS IT?
Cryptocurrencies and distributed ledger systems	Currencies such as Bitcoin, which only exist in a digital form, and underlying ledger systems, such as the blockchain. These systems operate in a decentralised way, so that transactions are recorded and validated on shared public records through cryptology, with no need for a central authority.
Payment systems and mobile money	Diverse range of innovations to enable the transfer of money using the digital infrastructure, including online payments, mobile money and digital wallets.
Platforms	Platforms which connect providers and users of financial services, including peer-to-peer lending, trading platforms, personal wealth platforms and aggregators.
Analytics-based financial services	A variety of innovations in financial services which are based on new data and analytics capabilities. These include innovations in credit referencing, capital markets and insurance services.

Apply to accountancy

Technology capabilities are only part of the picture. They need to be applied into a specific business context in a way that provides value. Furthermore, the pace of change in technology is typically faster than change in human behaviour. Therefore, even where capabilities exist, altering the way we do things can still be a long process.

Adoption of technology is driven by many elements, including economics, business demands, culture and human nature. It also needs to be put in a wider context of trends such as globalisation, urbanisation, shifting demographics and the economic challenges of the post-financial crisis era.

In this section, we build understanding of how technology is being applied to the specific domain of accounting, and how it is changing what accountants do, how they work, and what successful accounting organisations look like. We start by considering what encourages or slows down change across the profession.

DRIVERS AND BARRIERS TO CHANGE

Many elements encourage the adoption of new technology in accountancy, including:

- Different business demands, eg, changes to the information that users want, when they want it and how they want it.
- Evolving expectations of staff, eg, the influence of younger generations moving into the workplace or greater tech-savviness in existing staff.
- Demands of regulators or filing authorities, eg, the need for greater standardisation of accounts presentation achieved through XML-based reporting or the shift to online filing capabilities.
- Business benefits, eg, the return on investing in new technologies.

There are other elements which can slow down adoption, such as:

- Implementation challenges, eg, replacing legacy systems or managing complex integration issues.
- People issues, eg, changing culture and behaviour to use systems effectively.
- Regulation and accountancy standards, eg, where new methods fall outside existing standards.
- Business costs, eg, where there are heavy costs of investing in systems.

The available digital infrastructure can also cause issues. Even in highly developed economies, large geographic areas can have poor broadband connections, severely limiting adoption of cloud-based services. In less developed economies, there are tremendous opportunities to leapfrog an entire generation of technology and move straight into cloud-based and mobile services. However, many areas still struggle to achieve basic connectivity.

Another specific challenge in accountancy is the complex eco-system of stakeholders, including investors, regulators, standard-setters, auditors and others, who have diverse views, priorities and interests. Major changes may need actions across this ecosystem, but it can be difficult to achieve all the right incentives to drive multiple actions.

The implementation of the financial reporting data standard XBRL shows the difficulty of achieving technology-driven change across this wider eco-system. Despite the clear benefits of a data standard, such as process efficiency and enhanced data comparability, it required many different actions - investment in systems, consideration of the impact on audit, and modifications in filing processes, as well as substantial effort in defining the standard. Individual, voluntary actions were not sufficient to drive change through the complex environment; widespread adoption was only achieved through regulatory compulsion.

The remainder of this section provides a snapshot of some of the ways that accountants are applying new technological capabilities to their work.

CHANGES IN BUSINESSES

Accountants undertake many tasks within organisations, with the main components being:

- Strategy and risk management.
- Funding, including investor relations and debt management.
- Financial management and control, including budgeting, management information and internal audit.
- Compliance, including statutory reporting and tax.
- Accounting, including the processing of transactions and the production of accounts.

The business environment is changing quickly, with many businesses moving more and more operations online. This creates new risks to manage, such as cyber security. The explosion of social media amplifies reputational risks, putting greater pressure on organisational resilience and response. The spread of digital disruption across industry sectors requires greater business flexibility and agility, potentially challenging traditional approaches to strategy and risk management.

Finance systems and processes are increasingly moving online. Many businesses, especially smaller ones, are moving finance systems into the cloud to take advantage of the flexibility of the model, as well as the integrated functionality of some packages and their add-on applications. Finance functions have also seen compliance processes shift online, with online tax filing and the implementation of the XBRL data standard across much tax and statutory financial reporting.

Many finance functions have focused on increasing operational efficiency through capabilities such as automation. We are seeing a renewed focus on shared service centres, global process hubs and outsourcing, where economies of scale justify substantial investments in extensive process automation. Some finance functions are exploring sophisticated capabilities such as artificial intelligence and natural language processing. For example, trials have been reported of virtual assistants replacing finance staff in answering questions from suppliers on invoices and payments, and on the training needs of employees.

Innovations in financial services are also providing new products and services, as well as access to different markets. For example, crowdfunding platforms are providing alternative ways to access funding. There are online platforms which aggregate the buying and selling of debts. New sources of data offer opportunities for novel credit rating services which could help smaller businesses gain access to finance.

CHANGES IN PRACTICE

Accountants working in practice support businesses in their financial responsibilities, with key services being:

- Basic accounting services such as bookkeeping, payroll and accounts preparation.
- Tax services, including preparation and filing of tax returns and tax advice.
- Other compliance work such as the filing of statutory reports.
- Audit and assurance, primarily of financial information.
- Corporate finance services, such as M&A support, re-financing and insolvency services.
- Advisory services, including finance systems implementation.

The large audit firms are investing substantially in big data and analytics to support new approaches to audit, as well as their other services. The shift to full dataset analysis means less reliance on data sampling when undertaking testing procedures. This allows for greater emphasis on spotting patterns, outliers and exceptions, focusing audit activities on the areas of greatest risk. The audit process is being increasingly standardised and automated, leading to greater consistency in quality. Additional sources of data and predictive models provide opportunities to identify business risks and better plan audit activities.

The shift to online, cloud and mobile platforms significantly impacts on the way that accountants interact with others. The ability for both accountant and client to access accounting information on demand typically empowers clients and changes the nature of the relationship. Moving online also renders location increasingly irrelevant. Without the need to pass receipts, invoices and other paperwork regularly from the client to accountant, the relationship can be managed with minimal, if any, physical contact. Capabilities such as Skype and Google Hangouts support this trend. As a result, accountants can attract clients from anywhere. Conversely, their clients have a far greater choice of accountant.

Furthermore, tax authorities and filing authorities have embraced digital platforms and moved their interaction increasingly online. For example, HMRC, the UK tax agency, has been at the forefront of digital filing strategies, with most tax filing now online. In future, it intends to develop greater personalisation for tax payers, including the pre-filing of essential information into online forms. It is also developing digital tax accounts, where users will be able to see and amend all their tax information throughout the year.

These changes are opening up accountancy markets to fresh sources of competition and leading to far greater self-service by clients and tax payers. In this context, traditional services are reducing and the accountant's role is shifting to a more proactive and advisory one, identifying errors and helping clients to understand their financial data or to plan for the future.

Position for the future

While there is a lot of change across many aspects of the profession, it can broadly be seen as incremental. It is not challenging the fundamentals of what accounting is or what accountants do. But as technology continues to improve, more radical disruption is possible.

This report takes a fundamentally positive view of the future, focusing on the ways that the profession can use new technology to serve people and businesses better. But of course, there are other possible paths. For example, some fear growing marginalisation and reduced relevance as the business environment changes radically. There are fears about the future role of accountants as artificial intelligence steadily takes over many accounting tasks. There is also the threat of growing competition from other sectors, such as technology companies.

How does the profession ensure that it is well positioned to take advantage of the opportunities and manage the risks of more radical and disruptive change? This section highlights three ways in which it needs to prepare for the future.

DELIVER VALUABLE ACCOUNTING TASKS AND SERVICES

Accounting tasks are grounded in the needs of businesses and their stakeholders. If those needs change, some of the fundamental practice of accounting may need to evolve to reflect that. Where practices do not adapt, they could become increasingly irrelevant and ultimately superseded by information provided by others.

So, for example, balance sheet information could become increasingly irrelevant as corporate values rely evermore on data and other intangible assets. Historic financial reporting could become marginalised by new sources of real-time information about company performance gleaned from the internet or accurate predictive models. This is already being seen with traditional approaches to economic statistics being challenged by 'nowcasting' models, based on real-time internet data.

Growing use of automation, cloud computing and business process outsourcing could challenge current approaches to internal control, as more and more transactional activities take place in other organisations or through software. Widespread use of machine learning algorithms throughout business operations, which operate as 'black boxes' with results that cannot be unpicked, could undermine established controls and management techniques.

But the profession cannot simply defend traditional ways of doing things. Accountants can potentially exploit enhanced capabilities to improve what they do in many ways. Greater use could be made of different sources of data to bring fresh insights about customers, operations or strategy. Predictive models could play a larger part in strategy, planning and control activities, with risks and opportunities more clearly identified and understood.

Furthermore, new technologies open the way for innovative services which can add greater value to businesses. Investors and other stakeholders may want to take advantage of improved system capabilities to get more information about businesses performance and risk management. There are significant opportunities to develop further audit and assurance services over non-financial information as well as in areas such as cyber security. Data analytics may make other assurance products possible, which are based purely on data interrogation.

New technology also raises concerns about privacy and surveillance. Extensive use of personal information, the growth in profiling of individuals and increased selling of data can result in widespread unease in the actions of businesses and they will need to find ways to build and retain trust in their use of data. Given the strong ethical basis of the profession, there are opportunities to develop new services in this area too.

There is also the prospect of accessing entirely new markets and better supporting accounting and financial services around the world. Digital technology is a great democratising force, enabling low cost or even free access to platforms and services for anyone with an internet connection. It is at the heart of financial inclusion initiatives and will enable many more people to access financial and accounting resources and advice. Accountants have tremendous opportunities to work alongside digital platforms to deliver advice and services to these markets in all kinds of innovative ways.

BUILD DIFFERENTIATED SKILLS

While accounting tasks can remain central to organisational success, it is not necessarily the case that accountants will still be needed to do them. Trends such as automation threaten to take over many basic tasks and accountants need to position themselves with the skills to deliver higher-value services.

Through sophisticated machine learning algorithms and improved capabilities in natural language processing it is becoming possible to automate work that is based on knowledge and patterns, not simply the application of rules. On this basis, many argue that software will increasingly replace many types of accounting work, such as in audit testing, compliance and bookkeeping. This presents significant challenges to the future shape, size and role of the profession, as well as the role of accountants.

But accountants have always been subject to pressures of automation. The profession has grown by being flexible, embracing the chance to eliminate manual work and focusing on higher-value tasks, such as advisory work. This approach will be essential, as accountants see their time freed up from more manual or basic tasks. As a result they will need to concentrate on areas which remain difficult to automate, such as where human judgement or a deep understanding of the business environment is required or where tasks depend on the knowledge and application of highly complex rules. Specialist or niche products are also difficult to automate on the basis of economic return and therefore present good ways to develop differentiated skills.

Accountants working in businesses have the chance to extend their influence across organisations. As data becomes increasingly important to business success, their deep skills around financial data and qualities such as professional scepticism, integrity and ethics could have broader application across other types of data.

However, are traditional accounting skills enough to enable a leading role in a data-centric economy? The exploitation of data requires three broad sets of skills:

- Technical data skills, such as knowledge of data formats, flows and issues of quality.
- Statistical skills and the ability to use algorithms to build models.
- Domain knowledge to enable the interpretation of data in the context of the specific organisation.

Accountants have strong domain knowledge around financial data. But to provide greater leadership on the exploitation of data, accountants may well need stronger technical skills around data, and greater understanding of statistics to challenge the method, assumptions and output of predictive models. Different skills may also be needed to support existing or innovative services. Greater emphasis on audit analytics, for example, will require stronger IT and data knowledge in auditors. New assurance services in areas such as cyber security will require further domain knowledge.

Furthermore, accountants will need a mind set and attitude which enables them to embrace opportunities and change. This is especially important given the difficulty in predicting how technology may evolve and be applied across businesses. Accountants will need to focus on the differentiated value that they can offer businesses, the economy and the wider public interest. The environment will emphasise personal characteristics such as flexibility, collaboration and openness to change. It will also require a willingness to learn and acquire fresh skills throughout a career.

ENCOURAGE RESPONSIVE ORGANISATIONS

Improved technology capabilities open up fresh possibilities in organisational models which will likely result in greater competition. But, as with individual skills, predicting success in this fast-changing environment will be difficult and good accounting organisations will need to be highly responsive and flexible if they are to thrive.

For example, organisational models will need to exploit trends such as automation and globalisation to maximise efficiencies and minimise costs. But they will also need to attract and retain increasingly high-skilled employees who may have more choice in career paths and different attitudes to employment. This could lead to alternative models which emphasise employee empowerment, engagement and flexibility.

Are successful organisations likely to be big or small? On the one hand, the economics favour big organisations. They concentrate power and encourage economies of scale in processing information. Data-driven services are improved by having more data, rewarding those in possession of large data sources. The economics of network effects leads to a small number of dominant platforms, as most users want to be on the biggest network. Using data to understand customers and personalise services also enables large organisations to reduce the advantage that some small organisations get from more direct customer contact.

Therefore, the growing importance of data and technology-driven services could favour large organisations. They have the resources to invest in robust and resilient infrastructures, as well as the skills and talents they need. They have economies of scale and can potentially take more risks.

But digital technology is also a democratising force, connecting anyone with internet access. The openness of systems and the low cost of using many platforms and applications can therefore aid smaller organisations. The digital infrastructure facilitates business models with few staff and other physical assets, lowering the costs of starting up businesses and entering markets. Smaller organisations can be more responsive, innovative and specialist. There are also options to build more flexible networks of specialists rather than full-service firms, or for greater collaboration and cooperation across and between organisations.

But there is unlikely to be a one-size-fits-all solution, with different models competing and collaborating depending on the context. We see this approach today in financial services markets. There are many start-ups which are developing data-driven solutions for a variety of financial services. Large technology companies are also developing offerings, especially around payments and consumer credit. In some cases, they are competing directly with the large incumbent banks, and potentially taking some market share. But in other cases, banks are partnering with or buying up start-ups with good ideas. As a result, we see a developing eco-system of big and small companies, sometimes competing and sometimes partnering to provide innovative customer services.

Define collective actions

Individual accountants and organisations will define their own responses to the changing business environment, developing their services, skills and organisational models accordingly. But there is a limit to what individual actions can achieve. There are areas of common interest and opportunities to share knowledge for mutual benefit. Deep changes may also require system-wide actions.

As a result, there is an important role for co-operation between different stakeholders, including:

- Accountants working in business and practice
- Users of accounting information
- Employers in business and practice
- Professional bodies
- Accounting and business software providers
- Researchers and educators
- Standard-setters
- Regulators, filing bodies and governments.

Specific actions will vary depending on the area, such as tax, reporting or audit. But there are some common themes.

AWARENESS AND EDUCATION

The first theme is education and raising general awareness of technology trends. This is critical to help accountants prepare and position themselves for new challenges, and covers all aspects of education:

- Ensuring that accounting qualifications and training programmes equip accountants with the skills and knowledge that they need.
- Providing ongoing training and education so that accountants can acquire fresh skills and capabilities throughout their careers.
- Sharing knowledge and raising general awareness of changing practices, opportunities and risks.

These activities also help organisations understand the benefits and risks of technologies and manage their strategy and operations accordingly. Furthermore, businesses, policy makers, regulators and others need to appreciate what is changing so that they can make good decisions.

For those outside the largest firms, for example, there may be little awareness of new audit analytics capabilities. There would be significant benefit to sharing knowledge and experience of these changes with many others, including smaller practices, who may have to build up their own proficiency in the area, businesses who are buying audit services, audit standard-setters and training providers, if auditors need different skills in the future.

In addition, the profession needs to support accountants in building the soft skills and personal characteristics which will underpin future success. It must encourage them to engage with technology and think laterally about its use. Efforts to broaden access to the profession and encourage diversity will be an important enabler in this context, as will initiatives which enable accountants to share knowledge and experience directly with one another.

INNOVATION AND COLLABORATION

Innovation in accountancy is primarily driven by business needs and market forces. Finance functions innovate to provide greater value to businesses. Accountancy practices innovate due to competition in the market and the need to provide value to clients.

But innovation can sometimes be helped by collaboration. In the early stages of product development, before competition sets in, working together can help to develop markets, test ideas and set standards. Shared solutions can be useful where mutual benefits outweigh the possibility for competitive advantage. Common platforms can reduce the investment required by individual organisations so that change becomes economically viable. They also enable a degree of integration between different players that ultimately benefits all. Furthermore, failure to collaborate can hamper innovation, as there may be multiple competing platforms or frameworks, with no clear path to follow.

There are many models for collaboration. It can be driven from the top down, if clear opportunities are identified. However, in many cases, it is a bottom-up process, with interested parties choosing to work together in a focused way to achieve a specific goal. Specific examples include:

- Open or common data standards, such as XBRL.
- Frameworks to underpin new services, such as assurance models over sustainability reporting or other forms of reporting.
- User groups for software systems, enabling the sharing of experience and providing communications channels between software houses and users.

ACHIEVING SYSTEM-WIDE CHANGE

There are occasions when stronger intervention is required, such as when amendments to standards or regulations are needed. In these cases, regulators and standard-setters have a key role in driving change. But they require support from many other parties.

In particular, there needs to be evidence and a case for change or continuity. This can be provided by accountants working in the relevant area. The academic community can develop radical thinking about the theory of accounting and build independent, robust evidence on specific cases. Professional bodies can collate evidence about the practical experience and implications of change, as well as convene different interest groups to debate and co-ordinate actions.

Consideration also needs to be given to how to incentivise diverse stakeholders. Is regulatory compulsion needed? Will the market encourage adoption? Are software providers incentivised to invest in any required software development? Building good understanding of how change has happened in the past can provide useful insight into what works in specific circumstances.

ICAEW leadership and support

Accountants have tremendous opportunities from the shift towards a digitally-based economy, as well as profound challenges. Through this initiative, ICAEW will lead and support the profession in this process of change, based on two core principles.

Actions should be demand-led and based on the needs of different stakeholders. There are many areas of potential activity, and prioritisation is an important step.

Our involvement will focus on areas in which ICAEW can bring particular value based on its experience and its position as an independent and expert body. This leads to three specific offers of engagement as:

- 1 a trusted information source;**
- 2 an institutional partner; and**
- 3 a hub for innovative thinking.**

1 TRUSTED INFORMATION SOURCE

It is vital to provide tangible support to accountants and help them build confidence in new technology capabilities and their practical application. This support can be based on established methods, such as publications, lectures, online content and webinars. It may also be possible to facilitate knowledge sharing and peer learning, which can be a particularly powerful form of learning.

Trust underpins successful information and knowledge sharing, especially in a field which is highly technical. ICAEW can add particular value by retaining independence and acting as a trusted information source and facilitator. While working with the technology industry enables us to benefit from their expertise and experience, independence and trust must always be retained.

THE IT FACULTY AS A TRUSTED INFORMATION SOURCE

The IT Faculty has been part of ICAEW since 1991 and provides independent guidance to its members on many aspects of IT, from cloud computing to cyber security. It aims to demystify trends and help members make best use of technology.

Therefore, ICAEW's first offer of engagement is to build on the existing work of the faculty, based on the needs of members for further information, support and knowledge sharing.

2 INSTITUTIONAL PARTNER

The profession needs to ensure that it has the right institutional framework to support the kind of collective actions highlighted. This means that regulators and standard-setters, for example, need to be able to appreciate technology-driven changes, and respond to a quickly evolving environment. Qualification bodies and training providers need to be well connected to the needs to businesses to ensure new generations of accountants are learning the right things.

This demands an approach based on collaboration and partnership between institutions. ICAEW has deep understanding of business, accountancy and finance which can be brought to bear to help drive change and identify barriers.

INSTITUTIONAL PARTNERSHIPS IN CYBER SECURITY

Improving cyber security across the economy is a major challenge which requires high levels of co-operation between multiple parties. ICAEW has partnered with many institutions to build understanding of the issues, contribute the experience of members to the debate and share knowledge of good practices. This has included working with different parts of the UK government, other professional and regulatory bodies, such as the Law Society and the Takeover Panel, and the largest audit firms.

Therefore, ICAEW's second offer of engagement is to partner with other organisations to input the knowledge and experience of members, facilitate collaboration and help to resolve practical issues.

3 HUB FOR INNOVATIVE THINKING

The profession also needs to encourage fresh thinking about some of the challenges highlighted in this report. How can accountants serve the public interest better? What are the higher-value tasks that can replace automated tasks? How do novel platforms enable accountants to engage with other markets? What capabilities do new competitors bring to the marketplace?

This needs a systematic approach to bringing together stakeholders and encouraging thought-provoking discussions. This could involve diverse groups sharing distinctive perspectives to spark ideas. Alternatively, it could involve focused thinking among experts to identify opportunities for change.

INNOVATIVE THINKING ACROSS THE PROFESSION

ICAEW initiatives such as the Finance Innovation Lab and AuditFutures demonstrate diverse stakeholder engagement in a way that generates ideas and specific projects to catalyse change. Another initiative, Tomorrow's Practice, focuses on the evolution of accountancy practices, based on input from different stakeholders. The IT Faculty's work on the efficient and safe use of spreadsheets through its Twenty Principles project is a further illustration of expert thinking which encourages accountants to focus on higher-value analysis.

Therefore, ICAEW's third offer of engagement is to work with experts and leading thinkers across and beyond accountancy to explore the changing business environment and the resulting opportunities and risks for the profession.

Next steps: engage with us

We welcome feedback on the ideas presented in this report, views on the main priorities for future activities and approaches from relevant stakeholders on our three offers of engagement.

To get involved visit icaew.com/itleadership or contact Richard Anning at richard.anning@icaew.com, or on +44 (0)20 7920 8635.

For more information on the IT Faculty visit icaew.com/itfac

ICAEW IT FACULTY

ICAEW's IT Faculty is a leading authority on technology and the finance profession. It provides its members with information that allows them to make the best possible use of IT and keep up to date with IT issues and developments. Membership is open to finance professionals with an interest in technology, to join visit icaew.com/joinitf

ICAEW connects over 147,000 chartered accountants worldwide, providing this community of professionals with the power to build and sustain strong economies.

Training, developing and supporting accountants throughout their career, we ensure that they have the expertise and values to meet the needs of tomorrow's businesses.

Our profession is right at the heart of the decisions that will define the future, and we contribute by sharing our knowledge, insight and capabilities with others. That way, we can be sure that we are building robust, accountable and fair economies across the globe.

ICAEW is a member of Chartered Accountants Worldwide (CAW), which brings together 11 chartered accountancy bodies, representing over 1.6m members and students globally.

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