

The Impact of Technology on the Accountancy Profession

Risks and Opportunities

September 2020



Introduction

This report seeks to put into focus the technology-related challenges and opportunities for the accountancy profession, as currently experienced and envisaged by accountants in practice and in business, and, for balance, technology specialists.

Although the author adds some limited opinion commentary, the report is predominantly based on findings from a series of interviews carried out at the start of 2020. Interviewees comprised senior managers and technology leaders in a range of firms¹ and businesses. In addition to their views on the technology-related challenges and opportunities for their respective organisations they also offered their perspectives on some of the broader issues of technology for society as a whole.

It is interesting to note that some of the later interviews took place in the context of an increasing COVID-19 lockdown in the UK, and that the discussions were underpinned by the need for technology to provide for business continuity.

Executive Summary

Irrespective of the type or size of firm or business, three main concerns were identified by the interviewees:

- cyber-security – with clear efforts by all interviewees' organisations to guard against cyber threats through technological means as well as staff protocols and training;
- insufficient basic knowledge and awareness about technology across business owners and decision-makers; and
- the difficulty of keeping up with the pace of technological changes.

When categorising the responses further into business types, the following key points emerged:

Large firms

Significant investment is being made, especially in the larger firms, on technology and data analytics to enable the provision of technology services, internally and for clients, and the application of data analytics to audit. Against sometimes unrealistic stakeholders' expectations, the latter appears to continue to be limited to very specific client data populations even in the largest of audits, given the wide variety of data formats in existence, and the varying compatibility with firms' software packages or platforms. It is also becoming evident that a considerable competitive advantage is to be gained by firms from commoditising and digitising their advisory services, the spectre of data-driven third-party organisations from other sectors entering the market being a very real concern.

Small firms

Technology is also a competitive field for smaller firms, allowing greater focus on value-added advisory services to clients. Making Tax Digital (MTD) has been instrumental in forcing clients to move to cloud-based technology (such as Xero), providing the opportunity for greater integration, automation and real-time client servicing. Many smaller clients, facing this new challenge, often turn to firms for support and advice, thereby requiring those firms to upskill staff accordingly. Small firms' strategies often focus on the short to medium-term, and, whilst many are accommodating clients on a variety of software packages, a drive to increase efficiency means that most of them are seeking to specialise on a smaller number of packages. New-start spin-off firms drive competition by keeping the cost-base low through using a very specific suite of software packages.

¹ 'firms' in this report refers to professional accountancy firms

Businesses

Speed of technological change, cyber-threats and the lack of basic technology knowledge and awareness are affecting all businesses, although these impact differently in each sector. Certainly, for technology-driven businesses, the lack of client knowledge and awareness and the need to keep up with the pace of change are particularly acute.

Current Concerns

High profile examples of cyber-security incidents in recent years - think Equifax in 2017 exposing just under 148 million consumers' personal information, or to a lesser extent Boots Advantage Card and Virgin Media breaches both in March 2020 – have shown that the damage can be significant not only in terms of operational disruption and actual cost, but also reputational harm for the businesses involved. It is no surprise therefore that cyber-attacks, particularly in the context of increasing usage of cloud computing, are one of the most common concerns highlighted.

So, what emerged as the key current concerns?

- **Cyber-security:** Cloud computing and rising web inter-connectedness represent a real data security risk, with concerns heightened by those having already experienced some form of attack. Staff training as well as strong security protocols - such as robust encryption and business continuity planning - are seen as paramount risk mitigants. Although smaller organisations are often more vulnerable and easier to hack, they also tend to underplay the risks by believing that bigger, higher profile organisations are the prime targets.
- **Understanding and awareness:** Staff at all levels in organisations lack basic knowledge and expertise to understand the technology-related risks they face. Board members can also be ill-equipped to adequately assess or challenge technology issues and proposals.
- **Dependence on Technology:** Despite mitigating controls such as manual workarounds and back-up locations, outages of cloud-based packages or breakdowns of automated processes have the potential to slow or halt operations. As time progresses and reliance on technology increases, fewer manual workarounds may become possible.
- **Technology components:** A concern possibly prompted by recent public debate on the use of Huawei in critical 5G infrastructure, is that 'spy software' may be present in components purchased as part of businesses' technological research and development (R&D) or manufacturing process. Such software could produce data breaches, and could also be used by competitors, foreign governments or criminals for nefarious purposes.
- **Audit technology:** Although the use of technology and data analytics by audit firms is increasing, it is still limited in its scope - for example, focussed mainly on revenue transactions and on system-generated journals. Larger firms are also those that might principally be using and developing said technology, conferring them significant competitive advantage.
- **Speed of change:** Keeping up with the ever-increasing pace of technological change is exacerbated by the large number of applications and software solutions being introduced into the market. Some of the resulting issues can be difficulties in meeting increasing customers' needs and expectations in using the latest technologies, maintaining data security, financing the technological investments required, updating processes and training staff, and indirect impacts on business models such as for the transport industry where technology substitutes travelling to meetings with video-conferencing.

Future Expectations

Technological advances open up tremendous opportunities, such as replacing mundane repetitive jobs resulting in more interesting roles for individuals. Tellingly however, most of the timespan envisaged focusses on what technology may bring over the next 2 to 5 years, with scarcer consideration of how new technologies and AI on a longer time horizon may create new opportunities and affect business models. As a case in point, business and IT strategies often fail to be considered as a whole, but rather continue to be pursued separately with IT driven by dedicated departments rather than as a direct enabler to the overall business model.

- **AI, Robotics, Blockchain**

Despite media coverage of AI, Robotics and Blockchain, the timing and likely breadth of these developments remain unclear. Considerable work is already taking place on RPA (Robotic Process Automation), the benefits of which are positively correlated to the level of standardised transactions within organisations, with an expected impact over the next 2 to 5 years. Although some aspects of AI are already being built into current solutions, AI is still perceived to be in its infancy. Likewise, Quantum computing is not believed to become widely available or affordable before at least another ten years.

- **Firm Strategy**

A wide variety of firm strategies and policies exist for the onboarding of clients – in particular in order to be accepted by certain firms, clients are required to hold their data on the cloud, and be required to operate specific accounting software.

Initial fears of software packages leading clients to undertake their own accounting work have proved unfounded. With the advent of the cloud, automation and widely available software packages, even smaller firms are reducing time spent on compliance matters to the benefit of value-added services. As a result of new third-party entrants to the market, the pricing of routine services is continuously squeezed, placing yet further emphasis on the need for more advisory focus that will require skilled and experienced staff to deliver the service.

Generally, Boards need to fully understand the impact and implications of new technology on their business model, to ensure the design of a digital disruption strategy – so they can respond quickly where new technology disrupts a business model.

- **Remote working**

The ability for staff to work digitally and remotely has increased exponentially – which is important in a global firm where geographically-dispersed colleagues may wish to access papers at any time. The benefits of uniform global digital processes are thus increasingly being realised by most of the larger firms.

- **Rules-based Technology support**

Accounting frameworks have become so complex and increasingly rules-based that it is impossible for individuals to hold all that expertise. In the context of auditing by some large firms, specialised departments have been set up to exercise judgement on particularly technical topics or those which an auditor might rarely come across. This rules-based approach can facilitate technological assistance, as demonstrated by the example of a large firm using machine learning to help auditors make judgements.

Issues To Address

To capitalise on those future expectations and utilise the opportunities offered by technological advances, the current concerns identified require addressing.

For instance, where lack of understanding and awareness of technology are concerned, one of the strategic decisions to be made by organisations is whether this expertise is required in-house or contracted out to technology advisory businesses – one view offering that smaller organisations would probably generally be better off with the latter. In any case however, an adequate skill-base on Boards is required to enable business strategy options to be adequately evaluated, and holistic decisions made that encompass technology considerations.

Similarly, staff training is crucial to guard against security threats, and to become and remain proficient with the technology tools used within organisations. Further, an important issue to consider is the training model within firms and for the profession in general. As technology replaces old processes, where will the basic work be found to train individuals on the fundamentals of accounting? Similarly, as greater experience and expertise will be required, given the loss of routine work and the increase in added-value advisory services, where will individuals acquire these finer skills from?

Other issues to be addressed include the following:

- **Infrastructure:** The challenge is to ensure the right digital infrastructure is established to capitalise on the existing technology experience and expertise of specialist staff, both for internal purposes and to service clients effectively. In a multi-disciplinary firm for example, data analysts and other technology experts could be useful in many of the different disciplines and geographical locations. However, such experience and expertise could be better controlled and co-ordinated within a more centralised digital hub, to maintain the exchange of ideas and experience, and to service needs in an effective and efficient manner
- **Choice of Software Solutions:** A plethora of cloud solutions, apps and software add-ons continue to emerge, which makes technology investment decisions a never-ending conundrum, particularly when coupled with a lack of basic understanding of technology. The speed of decision-making is also important: with so many new start-ups and new solutions, it is difficult to determine which will stand the test of time and when to invest – early adopting of a relatively untested solution by a potentially equally unviable provider, vs. ‘missing the boat’ and investing too late in a technology already becoming outdated. Many organisations tend to use well established providers as a safer strategy for quality products and solutions, and continuity of support. As a result, some are calling for an independent and objective third-party source of information to guide businesses seeking software solutions. Further, it is noted that whilst the younger generation and a desire to increase efficiency have driven the changes towards greater flexibility, home working etc., it often remains the older generation who make the investment decisions.
- **Interaction between systems and Data Analytics:** The plethora of technological propositions raises the issue of different software packages and systems not interfacing with one another, and data format incompatibilities. This pressure point can arise over the full spectrum: from inflexible internal legacy systems when seeking to embrace new technologies, to interfacing between different technological solutions required within one organisation or between a firm and its clients. Format, quality, robustness and reliability of data, as well as validation of the output of AI processes are key for data analytics.
- **Regulation:** Regulators are considering how to regulate technology so that ‘it’ acts in the interest of customers, handles and processes data in an ethical and transparent manner, and can be extended to current financial services regulation to cope with new technological developments without stifling innovation.
- **Capacity for automation:** Automation requires a certain level of standardisation. For example, management commentary in annual reports is potentially very informative but, despite XBRL-tagging of non-financial information, it is difficult to process through technology owing to the wide variety of potential narrative information. Similarly, within firms, efforts can be seen to transfer traditional paper-based activities onto digital media. Key benefits of this are greater standardisation and transferability within the firm. Evidently, until autonomous AI or the introduction of quantum computing, it is difficult to see how the efficiency of less standardised processes can be improved through technology.
- **Assurance:** As discussion of annual reporting shifts from paper or pdf to XBRL-tagged reports, how will users know what information has been subject to audit (or other form of assurance) and what has not?
- **Culture:** An all-pervasive consideration is how to establish an organisational culture which facilitates, accepts and works with innovation and disruption – at speed? Culture is the single most imperative barrier to overcome – there needs to be an intellectual and operational desire to move from *the way we have always done things*.

Societal Impacts

Technology is largely viewed as a positive force and, provided safeguards are established, as an enabler for efficiencies and better customer service. Potential impacts on human society need to be addressed to ensure that this vision is realised.

- **Data privacy and protection:** Although this can be open to interpretation, data had been largely self-regulated (including through social media), and even with the introduction of the General Data Protection Regulation (GDPR), boundaries continue being pushed and individuals in the main do not understand the amount and usage of data obtained by organisations. Of particular concern is the extent to which this is being used to influence individuals' behaviours – a simple example being personalised pop ups on internet browsers through search history analysis. The use of data in this way is creating value not recognised before.
The Cambridge Analytical scandal has been held out as a defining moment in the evolution of technology and use of data, with more regulation likely and good data security and transparency likely to become competitive advantages.
- **Dependence on Technology:** Particularly acute in the context of public services and utilities, critical reliance on technology and the internet are a momentous risk in case of paralysing 'outages'.
- **Personal Behavioural issues:** Trends can begin to be seen from the increasing usage of technology -
 - ✓ A view by some that the concentration span of the younger generation is shortening, and uncertainty as to that might prove a strength or a weakness in the longer term?
 - ✓ Is being '*always connected*' actually disconnecting us from other human beings, and is the all-invasive social media involving constant comparison with others at risk of creating unrealistic expectations and damaging individuals' mental health?
 - ✓ Similarly, what is the impact of home-working on mental health, and should social interaction prove so critical to wellbeing to trump this trend?
 - ✓ Are instant deliveries, e.g. Amazon parcels, email replies, real-time reporting, or instant gratification such as social media 'likes', what we should strive for? Or is society just 'following the herd' without questioning if cost reductions and efficiency gains are paramount or even ultimately compatible with *quality* of life?
- **Automation and Human unemployment:** The speed of technological advancement makes it very easy for individuals and businesses to be left behind and marginalised. Opinions are polarised where robotic process automation is concerned - where robots replace people in routine standardised roles: will it lead to redundancies or to more interesting roles for individuals within organisations? Certainly, the benefits of group human interactions are recognised as a way of exchanging and advancing ideas, and the fostering of social relationships makes such exchanges more fluent.
An interesting question was posed however, challenging the desirability of the overall direction of travel and being forced into an environment where everything is done by machines: '*Why is the human race trying to make itself redundant?*'

Skills Availability

Technology is expected to drive a different dynamic within the demography of many firms, with a balance required between accounting knowledge and business acumen on one hand, and technology expertise on the other.

Whilst the production of accounts will become increasingly automated, qualified accountants will continue to need to undertake reviews of the output. Firms will also require staff with broader skills and experience, to help relationship building, understand the nature of client businesses, exercise professional judgement, and provide the value-adding client advisory services previously highlighted.

In contrast, the challenge of getting, often older, staff to upskill and embrace new technology is recognised. A suggestion is for continuous professional development (CPD) on technology-related matters to be prioritised despite the existence of other immediate client priorities – in effect future-proofing staff skills levels and investing in future client service.

It is also recognised that it is difficult to recruit people into the required technology-related roles, where scarcity of key skills can result in a war for talent and higher salaries. Younger people also tend to be those easier to recruit into technology roles, although their shorter-term horizon means that staff tend to move on much quicker so that a more continuous recruitment and onboarding process is needed.

As an alternative to recruiting technological expertise in the market, some – larger – firms train up new graduates, who may not necessarily come from an IT background, and sponsor them through external courses in Digital and Technology Solutions.

A question nonetheless arises as to whether accounting trainees will be recruited in their current numbers in the future, or whether a greater mix of skills will be sought including data analysts, data scientists and programmers. The technology advisers' view is that in-house expertise and experience within single businesses can become stale against an environment of fast paced technological development, whilst the broader perspectives of external experts are maintained through exposure to a wide range of clients. In practice, many larger firms use a hybrid model combining in-house staff (internal IT functions) and external advisers (advice on new technologies).

Data Management, Data Processing, Data Analytics

The benefits of data analytics, particularly in conjunction with AI, are recognised. However, as previously highlighted, this is heavily dependent on availability and ability to access and extract the right data of the right quality. The next big expectation and field of competition between firms is data management and manipulation, to provide insights for firms and their clients.

As echoed in the recent ICAS response to the FRC discussion paper 'Technological resources: using technology to enhance audit quality', *the use of AI and other advanced technological tools has the capability of enhancing audit quality, beyond efficiency gains*. A belief indeed exists that technology will fundamentally change audit, through automating basic transaction testing.

The extent of usage of data analytics in audits varies widely, particularly between small and larger firms but also depending on clients' systems. Key issues rest with the availability of quality data and the compatibility of data and systems/platforms. Exploring the introduction of common data standards may be a potential way forward in this respect.

It is important to note however that auditor judgement will continue to be key – the benefits of human interaction to spot unusual items should not be under-estimated. Further, to maintain [or not erode further] confidence in audits, it is also essential to manage stakeholders' expectations in relation to data analytics, to ensure clarity over the extent to which it is currently used and the level of assurance that can therefore be delivered.

Finally, current auditing standards may also need to be revisited to ensure that they do not inadvertently frustrate technological innovations. The International Auditing and Assurance Standards Board (IAASB) should continue to explore potential revisions, as it has done with International Standard on Auditing (ISA) 315, Identifying and Assessing the Risks of Material Misstatement, and is currently considering in the context of ISA 500, Audit Evidence.

Conclusions

The potential benefits and opportunities offered by the advancement of technology in the accountancy profession are certainly plentiful and potentially incredibly powerful, which many firms are embracing and are working towards realising. Harnessing those opportunities, within acceptable risk levels, provides the potential to deliver exponentially on the aspirations of the profession, and the needs and wants of stakeholders and the wider public. Ethics will continue to have a central role to play to ensure that technology does not dehumanise our work and that we continue to live up to the highest ethical obligations that fall upon our profession. An appropriate balance of actions between members, firms, businesses, regulators, professional bodies and other stakeholders, to address this and ensure technology serves our ultimate purpose, will need to be found.

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Contact us

CA House, 21 Haymarket Yards, Edinburgh, UK, EH12 5BH

+44 (0) 131 347 0100

connect@icas.com | [icas.com](https://www.icas.com)

 @ICASaccounting  ICAS – The Professional Body of CAs