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NEW TECHNOLOGIES SET TO POWER AN AUDIT

We are seeing rapid digitisation of our society and our lives, where everything creates data

Words Shaaheen Tar-Mahomed

More data was produced in 2017 than in the previous 5 000 years of humanity.¹

New and disruptive technologies are emerging at a rapid pace. Blockchain, the cloud, robotic process automation (RPA), digital labour, machine learning, deep learning, quantum computing, natural language processing (NLP) – all of these have huge potential to change how business operates. In all likelihood, the pace of development will be faster than anyone can imagine.

These technologies will have implications for an audit in the future. The impact they will have – and are already having – can hardly be overstated.

In the analogue world where accounting was done with manual tools like physical ledgers, the auditor would validate processes and transactions using statistically valid sampling or similar techniques. In today's digital world, where data is proliferating across digital networks and systems, we are bringing new capabilities to mine the mountain

of data to identify audit risk, highlight anomalies and outliers, and perform further analysis.

Already, new technology is dramatically enhancing the analytical power of an audit. Using RPA, auditors can analyse 100% of certain datasets through various lenses. This means quickly identifying the outliers that need further examination. For example, recently an audit engagement team analysed a complete set of about 250 million transactions, isolating 50 to 60 that were identified as outliers and brought these forward to the organisation for an in-depth discussion.²

On top of RPA processes, auditors are also applying machine-learning techniques where complex algorithms can scan information, model it against thousands of assumptions drawn from external scenarios and highlight risks and insights. This predictive analytics is a step towards deep learning where, in the future, the application will be able to 'think' for itself, learn from the results and run more scenarios and tests accordingly.

One of the critical development areas in the coming years is the analysis of unstructured data. Structured data – found in spreadsheets and ledgers – can already be comprehensively analysed using Data and Analytics and automated capabilities. But more than 80%³ of data today is in unstructured formats such as contracts, emails, PDFs and other documents. A key battleground is to develop digital assistants that can read this data and identify key information. Having a bot, for example, analyse the accuracy of one of those unstructured files. The development of NLP capabilities to read emails is another example. By using the processing power of intelligent machines, we can use correlation theory to extract data from unstructured sources.

But the future of technology is by no means only about intelligent tools to analyse data. We are seeing momentous changes in the way data is hosted – in the cloud. While some organisations may prefer to keep their data in on-premise servers, there is no doubt



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that the move to the cloud is likely to continue to grow, offering greater flexibility, processing power and functionality.

One key issue, regardless of how powerful new technology has become, is accessing the organisation's data. In the future, we could see the development of technology to enable more seamless transmission of data from the organisation to auditors. Enterprise resource planning (ERP) systems tend to be customised by each user company, and they may have multiple systems and legacy systems – so streamlining them to aid the ease of data extraction and transmission is likely to be in every party's interests.

Running alongside all of this is the development of an exciting new technology system – blockchain. Creating a permanent and immutable record of transactions, blockchain could have wide applications, from such things as trading derivatives and interfirm payments in financial

services, to supply chain and logistics in businesses more widely. With access to the blockchain, auditors will be able to review all the transactions across it; it could change the work auditors do in verifying information – and create new responsibilities such as evaluating that the blockchain is reliable and accurate.

The array of new technologies will enable us to obtain – more easily, quickly, accurately and extensively than ever before – the corroborating evidence that is needed in an audit.

With so much happening on so many fronts so quickly, there has probably never been a more exciting time to be an auditor.

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NOTES

- 1 R Harris, More data will be created in 2017 than the previous 5,000 years of humanity, *Big Data*, 23 December 2016, <https://appdeveloper magazine.com/4773/2016/12/23/more-data-will-be-created-in-2017-than-the-previous-5,000-years-of-humanity/> (accessed 10 October 2018).
- 2 Outliers being defined as exceptions based on our audit lenses assessing the transactions were not consistent with an industry expectation, an accounting principle or our expectation on how controls would have processed the information, among others.
- 3 Juliette Rizkallah, The big (unstructured) data problem, *Forbes*, 5 June 2017, <https://www.forbes.com/sites/forbestechcouncil/2017/06/05/the-big-unstructured-data-problem/#2c4df5ee493a> (accessed 20 October 2018).