

Making the *impossible* possible

Technology is transforming finance – and audit and assurance along with it. *Sally Percy* investigates the potential impact on businesses, auditors and regulators.

In the 21st century, technology has transformed the way we live, work and communicate with each other. It is disrupting virtually every industry that exists, overturning old business models and creating new ones. Myriad start-ups are harnessing the power of technology to find innovative solutions to complex problems.

Some of these are problems that have vexed humans since the dawn of time, such as generating more food from an unproductive field or finding ways to prevent the spread of a virulent disease. Others are exclusively modern

issues – for example, automating the trading of cryptocurrencies.

"This is not science fiction," says Dr. James Canton, CEO and Chairman of the Institute for Global Futures and author of *Future Smart*. "We're at the edge of creating smarter, connected, vastly more powerful digital platforms that may end up transforming industries such as agriculture and health care, as well as finance and trading."

"We are also on the edge of creating autonomous thinking machines," he believes. "Within 20 years, artificial intelligence (AI) will have become so

Case study: Box



Dylan Smith is the co-founder and CFO of cloud content management company Box, which is based in California in the US.

"I work closely with our CEO and business leaders on strategic and financial planning. I'm responsible for all the general and administrative functions within the organization, and I also oversee IT and analytics. Making sure our people have access to the information and data to make better decisions in real time is critical."

"The rise of new technologies has changed how we communicate as an organization, and also how we collaborate with our auditors."

"Like many tech companies, Box has a big focus on diversity. A year ago, we started using predictive analytics to get a better sense of the backgrounds of the candidates in our funnel and to improve attrition and engagement."

"We're also building teams with diverse skillsets – whether that's technical accounting, financial planning and analysis, or our HR business partners. We're hiring people who might not be from a traditional finance or HR background into these teams to infuse their cultures with new ideas and ways of working. We want to bring data and analytics into everything we do."

successful that it will be a key component of creating guaranteed income for a large part of the global economy."

THE FUTURE OF FINANCE

What does this smarter, more connected world mean for finance teams? It has been widely forecast that they can expect to hand many of their routine manual tasks over to machines – jobs such as account reconciliation, financial modeling and report generation. With less of their time taken up with handling basic transactions and preparing financial statements and reports, they can focus instead on providing valuable insight that helps to drive business performance and growth. In other words, finance is evolving from being a compliance-driven, backward-looking function to a more strategic, forward-looking one.

In many organizations, the transformation of finance into a technologically savvy business partner is already well under way. This has been aided by the move toward digital reporting and the



obligation for companies to digitally file tax returns or tag their accounts using extensible business reporting language (XBRL) or inline XBRL (iXBRL) in various jurisdictions.

"Momentum toward digital reporting is growing at the moment," says Phil Fitz-Gerald, Director of the Financial Reporting Lab of the UK's Financial Reporting Council (FRC). "That's helped by the fact that all EU companies will have to report digitally by 2020."

Today's finance functions want technological tools that "connect" (e.g., software that allows them to scour swathes of data to identify trends and challenges), that "automate" (e.g., robotics that process expenses) and that are "smart" (e.g., advanced predictive analytics that model the future direction of the business). These tools allow finance functions to perform existing tasks in a more efficient and less time-consuming way than before and to undertake new tasks that they could never perform in the past. In other words, they are enabling the finance function to make the impossible possible.

AN OCEAN OF DATA

Arguably, the need to interrogate an ever-growing ocean of data is the biggest driver behind the reinvention of the finance organization. "Big data will enable finance functions to reduce a lot of the financial risks that organizations face, such as credit risk and default risk," notes big data strategist Mark van Rijmenam. "Risk is related to uncertainties. If big data gives you more insight into your competitors or your clients, you can manage the uncertainties. You can use analytics to forecast what is going to happen so that you can reduce your risks."

Cloud content management specialist Box (see panel) is one company that is taking advantage of these possibilities. "Predictive analytics is

Case study: Yum China



Jacky Lo is the CFO of Yum China, a Fortune 500 fast food restaurant company with joint headquarters in Plano, Texas and Shanghai, China. Yum China operates the KFC, Pizza Hut and Taco Bell brands in China.

"We have made digital one of our most important strategic

initiatives. We had built our loyalty program up to over 100 million members at the end of May 2017 and have launched our own KFC and Pizza Hut proprietary apps to enhance our customers' experience. In May 2017, over 40% of our sales were on a cashless basis through mobile payment apps. In addition, customers may have placed delivery orders through third-party aggregators.

"With so many transactions from different channels, the finance function needs to handle a lot of information each day. We analyze the large volumes of data we hold so that we can make predictions about the operations and facilitate better decision-making in areas such as pricing, product offerings and resource allocation. This, in turn, leads to enhanced profitability.

"We have a sub-function within the finance function called Finance Excellence, which consists of a mix of people with finance and IT backgrounds. It serves as the bridge between our technology-driven business initiatives and our finance systems and related processes, and constantly looks for ways to improve our operational efficiency and effectiveness."

transforming the role of the CFO and the finance function," says CFO Dylan Smith. "We have access to a lot of data that we can process to gain insights – everything from understanding the ROI of different marketing programs, to which products are working and where we should be making new investments, to which sales reps are most productive. By providing insights to our budget holders and stakeholders, the finance function acts as a strategic catalyst."

Given the way that finance is changing, it's hardly surprising that CFOs are looking for individuals with

“By providing *insights* to our stakeholders, the finance function acts as a *strategic catalyst*. ”

Dylan Smith, Box

good interpersonal skills and the ability to support corporate decision-making when they make new hires.

"Finance staff are becoming integral to decision-making processes," says Matt Weston, a Director at recruitment company Robert Half UK. "Automation is facilitating this change by taking away a number of labor-intensive and time-consuming tasks." He also highlights that CFOs are becoming "much more involved in determining a company's strategic direction, focusing on performance and business growth."

"Personally, I believe that technology is an enabler for CFO success," says Jacky Lo, CFO of fast food restaurant group Yum China (see panel, above). "CFOs need to take advantage of advanced technologies such as analytics, and be involved in data management and governance initiatives. By understanding the information that is available, they

can help their organization to implement strategies that drive performance."

THE DIGITAL AUDIT

Just as technology is enabling finance teams to do things they have never done before, so it is for auditors. The basic premise of audit today remains what it has always been; to provide assurance to the capital markets that a company is appropriately reporting its financial results. Nevertheless, auditors are now beginning to use powerful technological tools to deliver audits with a goal of improving quality.

These tools also save time that can be spent focusing on complex areas of the audit and those that require judgment. And because the tools enable the analysis of a complete data population, they can allow the auditor to add value by commenting on processes and discussing related business issues with audit committees and company boards.

Robotic process automation (RPA) – the automation of rule-based processes and routine tasks using software applications known as "bots" – is one of the digital enablers of the transformation of the audit. RPA is a fast, accurate and efficient way of processing structured data from bank accounts and financial systems. It can be used to perform general ledger analysis – for example, finding journal entries that do not balance, are duplicated or are of a particularly high value – and to create audit-ready work papers.

Indeed, in Australia, a number of EY's bank audit confirmations for the recent 30 June year-end were lodged by a robot. The robot submitted confirmation requests, managed the process (including certain exceptions) and produced work papers for the audit team, along with the formal confirmation. This allowed the audit teams to focus on judgmental areas rather than administration, accelerated and identified issues earlier, reduced potential

audit surprises and improved client service. Further solutions that employ RPA are now being developed.

ADVANCED ANALYTICS

One of the technologies that is having the biggest impact on the audit today is data analytics – the technology that discovers and analyzes patterns, deviations and inconsistencies in data. This enables an auditor to analyze an entire population of data rather than simply rely on a sample of data, which has been the traditional practice. As well as being more accurate than sampling, thus allowing the auditor to make better-informed risk assessments, analytics also supports monitoring that can be carried out remotely instead of on the client site.

"When you can analyze full populations, you achieve much higher audit quality than you do with sampling," says Hermann Sidhu, EY Global Assurance Digital Leader. "The data tells a comprehensive story that the sampling approach

may not have caught in the past. You can also take insights back to the client."

For example, the new lease accounting standard has had a significant impact on the audit, and this is an area where analytics may provide some value – especially on the audits of large, international groups. These may have thousands of contracts around the world, in different languages, that they need to report on their balance sheet. Reviewing these contracts would be a huge task for humans. Technology can be used to scan the relevant data sets from a company's procurement and legal teams to determine whether a document appears to be a contract, and whether there appears to be an embedded lease contained within that contract. Then AI reads through the relevant contracts and applies judgment, on the basis of its knowledge of various legal terms and phrases, to extract key information about leases.

"This technology follows the same process that we've used for 15 years with legal document review," explains Jay Sonbolian, Principal in EY LLP's Forensic Technology and Information Governance service. "Whenever there is litigation or an investigation, there is a massive amount of data that needs to be reviewed. We've written algorithms that are able to mimic the type of review decisions that attorneys are making on those legal cases."

In the future, the audit process may be further transformed by so-called "deep learning," a form of AI that can be trained to recognize patterns in vast volumes of data, including unstructured data such as emails, social media and conference call audio files. By mining this ocean of data, auditors could gather supplementary audit evidence on a scale that was never possible before. Such

Case study: Aetna



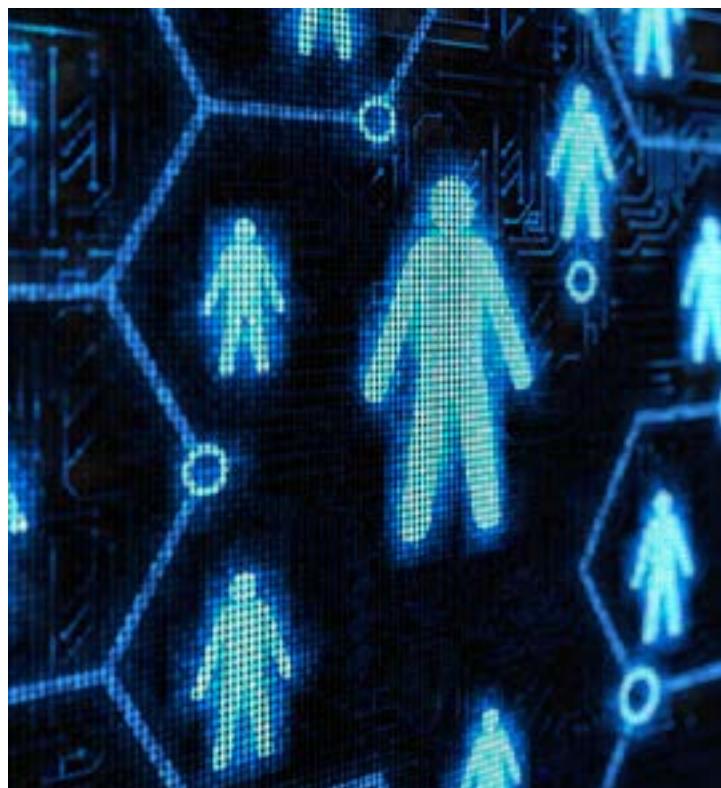
Sharon Virag is the Vice President, Controller and Chief Accounting Officer at health care company Aetna, which is headquartered in Connecticut in the US.

"A big focus for Aetna is using data to understand our customers' needs at a more detailed level. The finance function is supporting this strategy by working with our data scientist colleagues to build a data lake called the 'finance data repository'. It brings together the company's structured and unstructured data with some external data.

"Thanks to the data lake, we will be able to combine unstructured demographic information with structured finance data. Then we can use analytics to answer questions such as: which marketplace should the company be in 10 years from now? We will also be able to provide our auditors with audit evidence much faster.

"Today, our auditors have to go through multiple transaction-processing platforms to gather what they need. But if all that data is in a data lake, they can simply gather information from a single source. It will also allow them to make more use of analytics instead of traditional sampling.

"Companies are under pressure to be nimbler and more consumer-focused, and we are investing in a suite of cloud-based, flexible, user-friendly tools. For example, we are bringing in software that will automatically reconcile our accounts. To begin with, it will gather data from our enterprise resource planning software, but in the future, we think it will work directly in our data lake."



technologies may cause shifts in the scope of audits in the future.

Deep learning has proven to be very effective in understanding and analyzing unstructured data. For example, it can help auditors review contracts more efficiently by pointing to a few relevant clauses within a 500-page contract. It can also produce continuous improvement in results and become more relevant over time. "By connecting this technology with a large volume of unstructured data and the expertise of subject matter experts, deep learning provides huge opportunities for finance departments and professional services," says Jeanne Boillet, EY Global Assurance Innovation Leader. "It is estimated that 80% of the world's data is unstructured, so the opportunity is huge."

As the nature of audit evolves, so the skillsets of auditors are evolving, too. Finance functions and auditors alike are changing their people and talent mindset, encouraging innovation and trying to create a culture of trust, in order to accelerate the adoption of new ideas.

"We are building more diverse teams, which we call 'suits and jeans,'" explains Boillet. "This is where we want to take the best of the traditional way of working, our people's experience, expertise and knowledge, and mix that with the new generation – the 'jeans' – who are more open to doing things differently and questioning why have we been doing things a certain way."

Sharon Virag, Vice President, Controller and Chief Accounting Officer of health care company Aetna (see panel, on previous page), agrees. "The world is changing fast, which means finance professionals have to be very flexible," she says. "Over the past couple of years, we have used training and leadership messaging to revamp the culture of finance with the goal of introducing flexibility and an innovation mindset. We take the view that we must all grow together toward our future state."

Overall, the development of audit technology is enabling a much more forward-looking process. "In the past, our audit was mostly focused on the past – what had happened and what we could do to limit potential risk," Boillet explains. "In the future, we will be able to build scenarios, anticipate what will happen and alert a business to trends so that it can adapt ahead of potential changes."

ON THE REGULATORS' RADAR

Technology in general is evolving so fast that it is difficult to keep up with it.

From a finance point of view, digital currencies (also known as cryptocurrencies) have attracted the greatest regulatory attention to date because of their threat to national currency systems and their attractiveness to criminals. Following the 2014 Mt. Gox scandal (when a Tokyo-based bitcoin exchange collapsed), Japan has recognized bitcoin as a legal method of payment. It has also brought

its bitcoin exchanges under anti-money-laundering rules. Numerous other countries are also looking to regulate the currency.

Accounting standard setters also have cryptocurrencies on their radar. The US-based Financial Accounting Standards Board is exploring the idea of creating an accounting standard for digital currencies, while the Australian Accounting Standards Board has called for the International Accounting Standards Board to do likewise.

Regulators are also taking an increasingly close interest in how technology is applied in the audit process. In May 2017, Jeanette Franzel, a board member of the Public Company Accounting Oversight Board (PCAOB), announced that it had a number of interdisciplinary initiatives under way to "evaluate the implications of new audit innovations

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Mark Babington, Financial Reporting Council

and technologies on PCAOB auditing standards, inspections, and oversight generally."

Mark Babington, Deputy Director of Audit Policy at the FRC, believes that any tool that allows an auditor to gain an understanding based on a much wider interrogation of the data and a much wider understanding of the issues should be welcomed. "But in any audit situation, we always challenge the application of appropriate professional skepticism," he adds. "Just because you're relying on data analytics, it doesn't mean you simply trust the box. You've got to understand why, and you've got to be able to use the output of the data analytics to ask challenging questions of management to support your audit."

Ultimately, the convergence of technologies such as RPA, analytics and AI is creating the platform for something close to a real-time audit – an audit that will provide an integrated vision of risks and that will be more forward-looking, with a broader and deeper scope. With these technologies set to give audit and finance professionals the opportunity to do much that would have been almost unthinkable not so long ago, what can possibly be left? In the fast-moving world of new technology, we probably won't have to wait long for the answer to that question. ■

NB: Since the interview with Sharon Virag took place in October 2017, she has left her role at Aetna.

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