Focus on technology

Financial futures
Ranganath Mavinakere on the skills needed by CFOs in a digital age

The real thing?
Jeanne Boillet says AI will help auditors to work better, smarter and faster

Data detectives
How investors are using technology to analyze corporate information

The new face of finance
From analytics to robotics, technology is transforming the roles of the CFO and the auditor
Dear readers,

Data analytics, robotic process automation (RPA), artificial intelligence (AI) and blockchain are progressively shifting the way that many of us work.

These and other new technologies are allowing finance teams to perform existing tasks in a more efficient way than before, and to undertake new ones they could never have contemplated in the past. As Reporting’s cover feature (page 12) demonstrates, we are entering a new era where the finance function can make the impossible possible.

With less time spent handling basic transactions and preparing financial statements, more emphasis can be placed on providing insight that drives better business performance and stronger growth.

However, this more strategic, forward-looking finance function does require a new approach by its leaders. As Ranganath D. Mavinakere, CFO of India tech giant Infosys, makes clear in our profile of him (page 4), CFOs have to “embrace technology” and “change the strategy in order to adapt to new technology.”

Auditors have been key participants in this race to the future. We have developed the use of analytics, RPA and AI to dig deeper into the ever-increasing amounts of data in order to find hidden meanings and patterns.

By using new technology, auditors work better, smarter and faster. They bring a new level of insight and perspective to the audit and, in turn, to a company’s business operations.

But there are limits to what can be achieved through technology alone. As EY’s Jeanne Boillet points out in “Welcome to the machines” (page 18), we cannot rely on AI to deliver skepticism and judgment. The auditor’s role remains crucial.

Other features in the magazine look at the wider impact of new ways of working. In “Information overload?” (page 20), we discuss how investors are using AI and other innovations to analyze financial data, and “The poll” (page 8) examines views on high-tech ways to combat unethical workplace behavior. Meanwhile, Malcolm Finn, Global Financial Controller at Costa, considers the impact of new technology on finance teams (page 30).

Beyond the technology theme, our regular features include Peru’s impressive growth as an emerging market (page 32), the “Buy side” view of infrastructure (page 24) and the wish list of independent non-executive director Conway Lee (page 28).

And don’t forget that you can find online-only features, infographics and videos on the Reporting insights hub at ey.com/reporting.

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In line with EY’s commitment to minimize its impact on the environment, this document has been printed on paper with a high recycled content.
Ranganath D. Mavinakere, CFO of Indian tech company Infosys, explains why finance leaders in the digital age need to have an all-round view of the organization and a role in corporate strategy and execution.

The results of two regional EY surveys suggest that technology can provide new insights that could be a crucial element in the ongoing battle against unethical and illegal corporate behavior.

As evolving digital technology continues to transform the world of finance, we look at the implications for businesses, auditors and regulators, and find out how CFOs are exploiting the potential of new tech.

Jeanne Boillet, EY Global Assurance Innovation Leader, is excited about the potential for AI to transform the audit, but says there are limits to what technology can achieve.

In the search for an edge over their competitors, investors now use AI and similar technologies to analyze company information. But is there more that could be done to standardize data for users?

We find out why investors in infrastructure businesses need to look beyond the financial statements for the information they need about a company’s operations and performance.

Conway Lee, an independent non-executive director at several Chinese companies, shares his views on corporate governance.

Malcolm Finn, Global Financial Controller at coffee store chain Costa, talks about his current reporting challenges and the changing role of the CFO.

We discover how Peru became one of the world’s leading emerging markets.

Read a selection of publications from EY, plus new and recently published books.
You expect the CFO of a large corporation such as Infosys to be a disciplinarian with a firm voice and a straight face. But 55-year-old Ranganath D. Mavinakere (commonly known as Ranga) has neither. He is soft-spoken, affable and ever ready with a smile, even if he has just walked into his office in Electronic City in Bengaluru after a long-haul flight from the US. Asked if he is suffering from jet lag, he replies with a disarming grin, “Not at all.”

Mavinakere has his own cure for insomnia. “Every night, when I go to bed, I think whether the three principles of integrity, transparency, and meritocracy are safe at Infosys or not. And the answer is always in the affirmative. These principles are never compromised,” he says. Hence, he never loses sleep.

There’s a lot to keep him alert through the day, though. The most exciting part of his job as CFO is to “navigate through the complexities of Infosys in a legal and ethical manner.” And the complexities are many. The famous Bengaluru-headquartered tech services and consulting company, which was set up in 1981 by seven engineers in a garage, is today a truly global organization with an employee base of 200,000, spread across 45 countries. And 750,000 investors have put their money into Infosys, two-thirds of whom reside outside of India.

THE BANKER AT INFOSYS

Mavinakere studied engineering and then did his MBA before joining ICICI Bank on the credit side in 1991. He took on leadership roles in the areas of treasury and planning at the bank. He joined Infosys in 2000, initially in financial services consulting, with some of India’s largest banks as clients. Then, in 2008, he was appointed Chief Risk Officer (CRO), a role that was yet to evolve in those days. As a result, he had to conceptualize what enterprise risk management is. “We worked toward making risk management a centerpiece of our discussions and deliberations,” he
recalls. “It was not just about financial risk. We also looked at strategic risk and the external regulatory environment. In fact, we looked at the risks to strategy execution.”

According to Mavinakere, strategy is all about decisions. “When you make a choice, there are certain risks you automatically get exposed to,” he explains. In the case of Infosys, the majority of the organization's markets are outside India, so it automatically exposed itself to foreign currency risks.

The CRO role gave Mavinakere a well-rounded perspective on governance, audit and compliance. This also helped him, and thereby Infosys, to weather the global financial crisis without much credit loss.

“Back in 2008, one-third of our revenues came from banks that were in distress,” he says. So the biggest risk facing Infosys was receivables.

In early 2008, Mavinakere's team began keeping a close watch on the credit default swap rate of every large client, particularly these banks — and not just their credit risk ratings.

“This gave us a six- to eight-month headroom to plan things out, direct all our collection efforts of receivables, or request progress payments and mitigate our risks by not taking on more projects for them,” says Mavinakere.

As a result, the actual credit loss for Infosys during the financial crisis was negligible. This attracted the interest of Robert S. Kaplan, an accounting academic at Harvard Business School, who invited Mavinakere to talk about how Infosys was managing the global financial crisis at the school's centenary celebrations in 2008.

**EVERYTHING HAS A FINANCIAL OUTCOME**

Today, the CFO’s role has evolved considerably. “It is not limited to finance and accounts. Increasingly, CFOs are playing a central role in strategy formulation and execution,” says Mavinakere.

Ultimately, the outcome of corporate strategy is measured in financials, be it revenues, margins, earnings per share or the return on capital employed. And all risks — whether they relate to people, technology, HR or strategy — have a financial implication, he says.

As a result, the CFO and the finance organization must have an extraordinary view of the enterprise – a view that other function leaders cannot have. “We are in a better position to work with other business functions, to advise them, and to help them make the right strategic choices,” he adds.

In today’s world, technology has a huge impact on organizations. “Forget the CFO – every business leader in any industry has to be fully aware of
how technology can change the market, as well as the internal processes of the organization.” And technology affects strategy: “You have to change the strategy in order to adapt to the new technology. We have to embrace technology, not just for cost-effectiveness, but for hygiene.”

Yet strategy is just the starting point. Given the finance team’s vantage point, providing timely information is extremely important, he says. Moreover, this information has to be predictive as well.

So the new-age CFO, according to Mavinakere, is someone who not only takes on the traditional roles of financial control, financial integrity, transparency, timely accounting, and checks and balances, but also has a 360-degree view of the business.

This helps in two ways, he explains. “First, it helps us challenge some of the business assumptions more confidently and emphatically. Second, it helps predict the financial impact of any business decision more accurately.” That’s because every decision, big or small, has either a profit-and-loss impact or a balance-sheet impact.

**MOTIVATING THE TEAM**

In order to have a better understanding of the organization, Infosys inducts people from non-finance backgrounds into Mavinakere’s team.

“Our finance function does not have only chartered accountants,” he says. “For instance, we have a program manager who understands our IT and information system.” Moreover, he believes in giving people within the finance function different experiences. “People who join the taxation team are rotated. They may have to move to revenue recognition, for instance.”

Once they gain a better perspective on the organization, he motivates them to aspire to be the CFO of Infosys or some other company. “If you have to be the CFO, you must know all the processes of the organization,” he adds. He also believes in engaging the younger members of his team in decision-making.

One of the core expectations he sets for his team is to differentiate Infosys in the marketplace, while meeting all other objectives, such as compliance, transparency and financial integrity.

He says his biggest strength is his strong and competitive team, which is always ready to shoulder responsibility. “I am sure the challenges will only grow in the future, and that’s why I devote a lot of time to team development and engagement. I ensure I interact with every junior employee of the finance team, so that they are excited about their job.”

**CHANGING MINDSETS**

As Infosys is a tech company, the average age of the finance team is young – between 28 and 29. “The good thing is that they are tech savvy,” says Mavinakere, adding that mindset is more of a problem for team members who have been in the system for longer. “The ability of leaders to be open to change, to not be afraid of it and to adapt to it is the biggest and the most complex problem – not just for Infosys, but for any company.”

Just as a CFO needs to get a good perspective on the organization, so Mavinakere feels the business leader needs to understand the financial implications of all decisions undertaken. “Having said that, it’s very difficult to anticipate what is going to happen in the future,” he says. A “black swan” event can occur any time.

Thus, one of the biggest challenges facing CFOs and other C-suite leaders is the need to constantly question the status quo.

“We need to question the processes and our business assumptions. What worked in the past may not work in the future,” says Mavinakere.

However, there is one thing that has worked in the past and will continue to work in the future, and that is a strong value system. According to Mavinakere, a value system based on integrity, transparency and meritocracy has stood the test of time. And performance is a by-product of these principles.
The poll

As fraud, bribery and corruption continue to pose risks for businesses, two recent regional EY fraud surveys suggest that new technological solutions are a crucial element of an effective program to combat unethical and illegal behavior.

Businesses today are operating in an increasingly uncertain world, driven by a period of rapid political, regulatory and economic change. This environment has created new risks for companies as they seek to meet ambitious revenue targets, and two EY fraud surveys published this year – one covering the Europe, Middle East, India and Africa (EMEIA) region and the other Asia-Pacific (APAC) – examine what this means for fraud and corruption.

Both surveys were commissioned by EY’s Fraud Investigation and Dispute Services (FIDS). Despite increased spending on compliance programs and other initiatives, they suggest that tolerance of unethical behavior continues. In APAC, significant numbers of the almost 1,700 employees surveyed believe a wide range of unethical behaviors are justified to help a business survive, and more than one third of respondents report that bribery is commonplace in their industry:

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<th>Percentage</th>
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<tr>
<td>52%</td>
<td>of APAC respondents believe that ethical standards have not improved in their local business operations.</td>
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<tr>
<td>43%</td>
<td>of APAC respondents have seen people with questionable ethical standards being promoted.</td>
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Meanwhile, the EMEIA survey (which consisted of 4,100 interviews across 41 countries with people working in a range of roles, company sizes and sectors) found that 20% of respondents would be prepared to act unethically to improve their own career progression, and 40% believed their colleagues would be prepared to do so.

**GENERATION Y WORRIES**

Alarmingly, the EMEIA survey found that respondents from Generation Y (25- to 34-year-olds) are more likely than any other age group to justify unethical behavior to help a business survive, to meet financial targets and for their own career progression: one in four of Generation Y respondents could justify offering cash payments to win or retain business, compared with one in ten aged over 45.

The APAC survey findings were similar. Even though Generation Y employees in the Asia-Pacific region are the group least willing to work for unethical companies, they are more likely than any other age group to be prepared to offer cash payments to win or retain business – 38%, compared with 28% of all other employees. Similarly, 42% of Generation Y would extend the monthly reporting period to meet financial targets, compared with 31% of all other employees.

These findings underscore the importance of companies providing younger staff with clear guidance and ethical training. This generation is the future of our businesses. If companies do not take action now to combat unethical conduct at all levels of their organizations, such behaviors may increase in the future.

**BLOWING THE WHISTLE**

While the vast majority of large companies appear to have whistleblowing hotlines in place, only 21% of respondents to the EMEIA survey were aware of their existence. Moreover, those who were aware weren’t necessarily comfortable with the idea of using them:
The survey also found that 73% of respondents would consider providing information about fraud, bribery and corruption in their business to a third party, although the majority said they would only do so if no action was taken after reporting internally. Of those who said they would provide information to a third party rather than reporting internally, 57% said they would report to a law enforcement agency, 49% to a regulator and 15% to a journalist.

The APAC survey findings also suggest a lack of faith in whistleblowing hotlines. Given the choice, only 27% of respondents would opt to report misconduct using their in-house whistleblowing hotline, with 23% preferring to go directly to senior management. In contrast, 20% would prefer to go directly to the law enforcement authorities:

1 in 4 respondents say their colleagues are aware but do not report fraudulent activities.

1 in 5 respondents do not have confidence in their organization to protect them if they report misconduct.

respondents would rather take a whistleblower report direct to law enforcement.

Source: APAC Fraud Survey 2017
HOW TECHNOLOGY CAN HELP
While allegations of impropriety made through whistleblowing hotlines often uncover unethical practices from the bottom up, technology can offer a top-down alternative. The EMEIA survey highlights how advances in technology have given companies access to new information, insights and ways of working that can help in the fight against fraud, bribery and corruption.

By focusing on behavioral patterns, such as anomalies in employee work hours, attempts to access restricted work areas and the use of unauthorized external storage devices, companies can identify individuals who may pose a higher risk to the business.

Despite the need to collect such data, the survey identified a tension between opinions about what channels companies should monitor and the types of surveillance that their employees consider a violation of privacy (see chart below). Companies should bridge this gap by raising awareness of the importance of collecting such data and

![What should be monitored?](chart.png)

**Q:** Which of the following data sources do you think that your company should monitor to reduce the risk of fraud, bribery and corruption?

**Q:** Do you consider monitoring any of the following data sources as a violation of your privacy?

Source: EMEIA Fraud Survey 2017
of the potential consequences if company data is leaked or stolen. Employees need to understand that companies can only protect themselves from such exposure by embedding an integrated insider threat program into their business.

When it came to cybercrime — another key threat to companies worldwide — only 37% felt that their company had a robust cyber breach management plan in place. In fact, only 59% thought their company needed one, which seems to indicate that this very real threat is not being taken as seriously as it should be.

As for APAC, there appears to be a wide range of levels of understanding of cybersecurity threats and how to guard against them. The survey identifies personal mobile devices as a specific area where organizations are vulnerable to cyber breaches through their employees. Just under half (47%) of respondents said their organizations have no policies against using personal devices for work-related activities. Almost half (49%) admitted to conducting business using their personal mobile device, even though their organization provided them with a work device — and 36% do so frequently. These figures were even more prevalent among senior management, 53% of whom said they frequently conduct business using their personal mobile device.

| 53% | of senior managers in APAC said they frequently conduct business using their personal mobile device. |

**OPPORTUNITIES AND THREATS**
Both reports suggest that technology creates an opportunity and a threat. The APAC report says that “cyber and insider threats are part of one larger risk that will require a holistic approach for its detection, investigation and prevention,” while the EMEIA report concludes: “Information is the key to mitigating the risks and businesses should maximize the value they get from their data. This can be achieved by making better use of machine logic and embracing the opportunities arising from an increasingly disrupted world.”

**Let’s be clear**
One of the key issues highlighted by the research, and by previous studies conducted by FIDS, is a lack of clarity in organizations’ compliance policies, coupled with a lack of consistency in the way they are applied.

Chris Fordham, EY Asia-Pacific Leader for FIDS, comments:
“Organizations need to rethink their approach to compliance. Employees are telling us that compliance policies are too complex, they are full of jargon and are difficult to comply with. Employees need absolute clarity around what policies mean and what compliant behavior looks like.”

Please go to ey.com/fraudsurveys to download the reports:
• Human instinct, Machine logic: Which do you trust most in the fight against fraud and corruption? Europe, Middle East, India and Africa Fraud Survey 2017
• Economic uncertainty, Unethical conduct: How should over-burdened compliance functions respond? Asia-Pacific Fraud Survey 2017
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
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 swaths 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 successful that it will be a key component of creating guaranteed income for a large part of the global economy.”

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.”

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

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.

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Dylan Smith, Box

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.
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
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 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.

“You’ve got to be able to use the output of the data analytics to ask challenging questions of management to support your audit.”

Mark Babington, Financial Reporting Council

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.
Welcome to the machines

EY Global Assurance Innovation Leader Jeanne Boillet says that Artificial Intelligence has the potential to transform audit, but it will never replace the auditor.

Artificial Intelligence (AI) could be a game-changer for business generally, and professional services in particular. With the rapid developments in machine learning, data mining and cognitive computing, the next decade promises to see huge leaps forward.

While the excitement over the potential applications of AI is understandable, there are some misconceptions – and indeed fears – developing. Central to that is the fear that AI will in fact replace humans in the value chain – doing the tasks we currently do, but faster and more accurately, and thus rendering many of us redundant.

At EY, we are trying to dispel these myths and explain how AI will in fact enable us to work better, smarter and faster, rather than simply replacing humans in the workplace.

UNDERSTANDING THE WORLD

We are currently at the beginning of that journey. Following a lull in the pace of development, the last three years have seen applications of AI becoming more mainstream across professional services.

I call this phase “understanding the world.” By that, I mean that AI is getting better at handling, organizing and analyzing a range of inputs; most critically, huge amounts of structured and unstructured data. To a large extent, this is because we now have the critical mass of data to allow that to happen. The digital revolution has created the fuel to feed the AI engine, and its application to a number of narrow tasks is now beginning to yield some very interesting results.

Take, for instance, the issue of lease accounting. This is a hot topic, given the recent accounting changes that demand that companies scrutinize their position with regard to leases and recognize related liabilities.

Until now, analysis of lease accounting has mainly been performed using human review. However, current pilot programs indicate that AI tools may allow the analysis of a larger number of lease documents in a much shorter timeframe. These pilots show that AI tools would make it possible to review about 70%-80% of a simple lease’s contents electronically, leaving the remainder to be considered by a human. With more complex leases (in real estate, for instance), that figure would be more like 40%, but as the tools improve, and the machines learn, it is likely that more complex contracts and data can be read, managed and analyzed.

This illustrates some of what narrow AI can deliver. It cannot, as yet, replace the judgment, skepticism or experience that humans bring to their work. Making comparisons or value judgments is not the function of this type of AI.

PREDICTIVE CAPABILITIES

But the real benefit I am now beginning to see through this type of application is in its predictive value. We recently used deep learning technologies to “learn” from seven years of financial statements through six machine learning algorithms. This enabled us to survey enough data to better evaluate where restatement risks lie. The technologies make it possible to predict where future risks may occur and enable audit teams to revisit and refine their approach. They also present intriguing possibilities for the detection of fraud.

That predictive ability marks the next step in the evolution of AI, and allows auditors to carry out work like this more efficiently and with greater accuracy.
INTERACTING WITH THE WORLD

I describe the second phase of AI’s development as “interacting with the world.” This is already beginning to take shape in consumer products such as Amazon’s Alexa and Microsoft’s Cortana. These rely on voice recognition and other tools, and through the clever use of AI, they can respond to user demands in an intuitive way.

This interaction phase is still at an early stage, with relatively unsophisticated applications, but the work going into this is likely to transform the ways in which AI can be used to improve corporate performance. The convergence of technologies such as drones and the internet of things will enable AI to interact better with the material world and power what’s becoming known as the Fourth Industrial Revolution.

But the impact of AI won’t just be felt in the type of work auditors do with companies. In practical terms, its growth and development may well change the way talent is recruited. Indeed, rather than AI replacing professionals — and accountants in particular — I am sure that it will in fact demand different and new profiles.

We may need differently skilled people who are able to work across a wider range of disciplines. This next generation will need to understand accounting, the relevant industry, and AI, blockchain and machine learning — as well as grasping how all these disruptive elements work together in a faster-paced, more complex world — to continue to deliver an added-value, high-quality audit.

These technologies, if applied thoughtfully and effectively, will improve quality, reduce risk and enhance confidence. In fact, the biggest challenge for both companies and their auditors and advisors goes beyond the technology: it’s about change management and the potential confusion over how AI is applied. But we should all be reassured; AI can do a lot, but there’s also a lot it cannot do, and we cannot rely on it to deliver skepticism and judgment.

The future isn’t here yet, but AI brings it closer.
Today, technology is enabling investors to analyze corporate financial information in ways that were previously unthinkable. The Financial Reporting Lab project, which has researched investors in 14 countries, has found widespread use of such technology. Thomas Toomse-Smith is the Director of the project, which is run by UK regulator the Financial Reporting Council (FRC). He says: “Many investment companies are experimenting with AI in the back and middle office for a wide range of uses, from placing trades to analyzing sentiment. One large global investor told us that it is using AI as a first reader of almost every piece of company information in its process. “This investor uses natural language processing to read and interpret structured and unstructured data released by companies – and by others about companies – and flags relevant items for the analyst to look at.” Todd Castagno, an equity strategist covering accounting and tax policy at global financial services giant Morgan Stanley, explains some of the cutting-edge techniques that have been adopted. “Investors are becoming more systematic and using more automation in the investment process to gain efficiencies,” he says. “For example, they are using technologies such as AI on traditional corporate reports, and also on alternative data – anything that falls outside traditional reports.” Castagno says most of this AI is used to structure data, which means enabling computers to recognize and sort it by using data tags. “The downfalls of using structured data formats such as eXtensible Business Reporting Language (XBRL) are mis-tagging and poor data quality in preparer submissions,” he explains. “We are working with vendors who are taking XBRL or alternatively sourced data and applying machine learning to structure the data and solve quality issues. Their automated techniques read filings and capture relevant data in the financial statements systematically. “This is a substantial improvement over the traditional manual brute force, enabling us to solve data collection and quality issues in hours. Just five years ago, it could take weeks.”

FURTHER TO GO
Despite these advances, CFA Institute, which represents investment professionals around the world, believes that today’s financial reporting system has a long way to go in adopting technologies that will make data more helpful to users. It says current reporting requirements still presume that humans consume the information, and much of the annual report is not in a machine-readable format, which would be more useful. One major improvement, it suggests, would be for preparers to structure data at an early stage in the reporting process, rather than adding tags later. Mohini Singh, CFA Institute’s Director of Financial Reporting Policy, says she welcomes regulators’ emerging support of inline XBRL (iXBRL), a
process that supports early structuring by allowing preparers to incorporate XBRL tags into an HTML-formatted financial statement, rather than filing a separate XBRL document. But she adds that there is still an urgent need for education. “We surveyed our members in September 2016 and 90% said they were not familiar or not up to date with XBRL,” she says. “I think they are using the data, but they just don’t know it is XBRL data.

“Often, that is because of the many problems with the quality of data being filed [in some countries]. Where the data isn’t clean, data providers are having to clean it, which makes it costlier.”

Toome-Smith adds that the introduction of the European Single Electronic Format will also have a major effect. From 2020, this will require all European Union listed companies to produce their annual reports in Extensible Hypertext Markup Language (XHTML) with tagged primary statements. “This will mean that data is more accessible and usable, and could lead to innovation in this space,” he says.

MAXIMIZING EFFICIENCY

Use of electronic platforms where data sources can be married together effectively is also increasingly important, according to Castagno. “For example, I use a program called AlphaSense, which locates filings and transcripts extremely quickly,” he says. “And we are increasingly using technologies such as Tableau, Spotfire or QlikView that can handle extremely large data sets much more efficiently than an Excel spreadsheet can.”

Jeff Casson, Investment Director, Global Emerging Markets, at Martin Currie Investment Management, agrees with Singh that regulators should require more standardization of data. “Without standardization, individual companies will report different information to the extent that it becomes too much to process, materiality is lost and transparency is reduced, not enhanced,” he says. “Standardization also allows companies to engage more proactively with management on nonfinancial aspects of their business, such as environmental, social and governance (ESG) issues and strategic planning.”

INTERACTIVE REPORTING

Professional body Accountancy Europe has also carried out research with users. Deputy CEO Hilde Blomme says it agrees with the need for more structuring of financial and nonfinancial data, and that the current paper/pdf-based system that many companies use is “underwhelming.” Accountancy Europe wants to encourage a more interactive approach to reporting through a so-called “core and more” concept. Blomme recommends that companies produce “a core executive summary, with key information that all users need, as quickly as possible. This would then connect to more detailed information for those who are interested.”

She says that innovative companies are currently experimenting with making reports more interactive, enabling investors to tailor pieces of information for their needs, which would require more use of structured data. The US regulator, the Securities and Exchange Commission, is also starting to encourage companies to provide more interactive financial statements.

BETTER NONFINANCIALS

Singh says that technology can also enable better reporting of nonfinancial information, again through the use of machine readable data. Many investors are calling for this as the amount of external information about companies that is available grows.

For example, Josh Kendall, ESG analyst at Insight Investment, says: “We integrate ESG factors into fundamental evaluations, as we believe it can impact long-term risks and performance, and we expect ESG issues to be disclosed alongside regular financial reporting. But there is huge variability in the quality of ESG disclosures, which can make them challenging to use effectively.”

“Without standardization, individual companies will report different information to the extent that it becomes too much to process.”

Jeff Casson, Martin Currie Investment Management

Investors and providers are also finding their own solutions to improve the usefulness of nonfinancial data. Jens Peers, CIO and Portfolio Manager at Paris-based asset management company Mirova, says: “As asset managers increasingly seek data on ESG performance, the number of providers of this data are swelling, and the sophistication of delivery and depth of analysis is developing.

“Mirova is developing an interface between [research tool] FACTSET and an internally developed database, allowing us to analyze investment opportunities comprehensively across market, financial statement and ESG data.”

Castagno explains that Morgan Stanley has analyzed gender diversity by looking at the composition of female executive roles. It found a significant relationship between long-term performance and gender diversity. “That is a good example of using quantitative techniques to leverage value from ESG data,” he says.

ALTERNATIVE DATA

The amount of alternative data available to support investment decisions has grown rapidly over the
last few years. This includes information from corporate websites and social media, and from other websites.

According to a blog by US-based consultant Opimas, the explosion of available information is leading to a fundamental change in asset managers’ models. To stay competitive, managers increasingly need to incorporate new, alternative data that stretch well beyond traditional market intelligence.

“These alternative data sets come from a bewildering array of sources, including satellite and drone imagery; GPS tracking for cars, trains and mobile phones; transactional data for credit cards and other payments; sentiment analysis for social media; and news feeds,” says Opimas.

Justin Zhen, co-founder of Thinknum – one of the growing number of alternative/big data providers that index information about companies from a large number of websites – says: “The amount of information online is impossible for a human to track and grade. For example, there are now huge amounts of data on social media, such as how many people are booking restaurants, talking about a brand on Facebook or following a company’s Twitter handle. This can tell you how well a company is doing before everyone else knows.”

Zhen emphasizes that big data is not making traditional corporate reports obsolete. But it should lead to fewer earnings surprises and force companies to be more transparent, since it is easier to verify their claims. It should also enable investors to ask companies more informed questions about performance.

“Investors that have worked out how to use this data are greatly outperforming their peers,” he says. “So alternative data analysis is already becoming a major trend in most investment firms, and understanding big data is a prerequisite for new hires.”

But alternative data analysis has its limitations. Blomme says that, in her research with users, “there is some doubt about the integrity and reliability of this data. It was only meaningful with interpretation. “In contrast, financial statements have a clear and structured framework. Big data is much looser, with thousands of ways to present the information,” she explains. “What benchmark or framework is used for each piece of information? How does it link to the financial reports? What assurance do we have in that information?”

Castagno says: “These days, investors will take any data set and test it for significance in producing returns. It’s a data arms race. But even data sets with return signals could be difficult to trade on practically. Also, if everyone has the same data, the advantage will arbitrage away.”

Casson suggests that the increase in alternative data is a positive development, but that it also challenges users. “It goes back to the need for standardization and understanding what is material to the business,” he says. “Not all information is material, and it can create noise.”

MORE TIMELY REPORTS?
As users of financial information can now get so much real-time data, some also are demanding more timely reports from companies. Blomme says that most want material information released as soon as possible, not just in quarterly reports. But there are drawbacks to this approach. Casson says: “Increasing reporting frequency is not a benefit of the adoption of technology, as it would further exacerbate a short-term focus.”

Toomse-Smith agrees. “Long-term investors and analysts have not been keen on getting information more quickly, as constant reporting would create the need for constant monitoring, trading and market rebalancing,” he says.

Investors today have the technology to sift through the large amounts of information they receive to improve analysis, and their uses for such technology are likely to keep growing. The consensus is that investors want regulators to require better quality data as standard, which would open a trove of valuable data for all. Though some say that better quality data can be expensive to achieve, it would increase efficiencies for companies and investors, and would ultimately be likely to make capital markets stronger. ■
Infrastructure has been grabbing headlines since Donald Trump promised US$1t of investment in the sector during his US presidential election campaign. If he can stimulate significant investment, it will go some way to addressing the huge problem of aging infrastructure in the country, which is mirrored in many other Western nations.

Andrew Maple-Brown and Lachlan Pike, two of the portfolio managers in the Maple-Brown Abbott Global Listed Infrastructure strategy team, say that Trump’s election, and promises of infrastructure investment from other politicians globally, may create opportunities for owners of existing assets. But they believe the biggest impact on valuations will continue to come from other, more asset-specific factors.

Investors in infrastructure often look beyond the financial statements to find important information about a company’s operations and performance, say two of the portfolio managers of the Maple-Brown Abbott Global Listed Infrastructure team. Tim Cooper finds out more.

More research work is needed to identify and analyze these factors, and the fund managers say they usually need to look beyond the financial statements of infrastructure companies. Fortunately, says Maple-Brown, infrastructure companies often provide the extra detail they require within regulatory disclosures.

The fund’s investment process starts by identifying around 115 companies with the basic attractive qualities of core infrastructure assets, such as low cash flow volatility and natural inflation-linked returns. Around half of these are regulated businesses such as water, gas and electricity suppliers; a quarter are in transportation, such as toll roads, airports and railway tracks; and the rest are subject to long-term contracts – for example,
Maple-Brown Abbott strongly emphasizes corporate governance in its investment process and welcomes recent improvements in environmental, social and governance (ESG) reporting in infrastructure companies.

Maple-Brown says governance is particularly important in the infrastructure sector because many assets were originally in public ownership. This can create weaknesses in corporate governance; for example, if the state continues to own a stake in the business.

“We use a bottom-up approach to choose a more concentrated portfolio of stocks in which we have a high conviction,” says Maple-Brown. “Our investment process relies on digging deep and using as much publically available information as possible, much of which is not necessarily produced for financial investors such as ourselves.”

SPLITTING OUT EARNINGS
Maple-Brown says that, in the case of regulated utilities, the financial accounts are helpful in providing a snapshot. “They tend to provide the greatest information in areas such as debt facilities, interest rates on debt, interest rate hedging and the balance sheet,” he says. “But, as they don’t have the granularity we need to make forward-looking assumptions, we use the much more detailed reporting on operational information available through the company’s regulatory filings.

“For example, for larger companies with multiple assets, if we just rely on the financial accounts it can be difficult to split out the earnings and the balance sheets of individual assets. This splitting can be important, because these assets can have very different durations and revenue drivers.”

The importance of good governance
Maple-Brown Abbott strongly emphasizes corporate governance in its investment process and welcomes recent improvements in environmental, social and governance (ESG) reporting in infrastructure companies.

Maple-Brown says governance is particularly important in the infrastructure sector because many assets were originally in public ownership. This can create weaknesses in corporate governance; for example, if the state continues to own a stake in the business.

“Also, infrastructure investments are typically large in value and have long lifespans,” he adds. “This means that any bad management decisions can destroy a lot of value. We use a scoring system to select stocks and a fifth of that score is based on our assessment of the management and corporate governance in each company. It is the second most important factor in the process, after our valuation. The factors we consider for scoring include management alignment with shareholders, management skill and strategy, board independence, whether certain shareholders have a higher split of decisions, and board length of tenure.”

Maple-Brown says the level of governance disclosure has improved in recent years, but his team's analysis shows that some regions score more strongly in this area than others. “Generally, infrastructure companies in North America, the UK and Australia have stronger corporate governance, while some emerging markets are weaker,” he says. “Also, management alignment in Europe is often weaker. For example, management teams in Europe don't tend to hold as much stock as elsewhere and may have limited alignment with shareholder returns.”

He says the big improvement in ESG reporting is due to companies recognizing the importance of environmental factors, as well as increased shareholder activism, including proxy voting and shareholder requests to companies for information on ESG.

“The G20 initiatives on climate-related disclosure are also driving that and affecting what information is released,” he adds. “This is important, as it helps us ensure that companies focus on these issues.”
He says this is true in North America, where many of the regulated assets in the fund are based, and in most other countries too.

“We also use regulatory filings when analyzing regulated water, gas and electricity businesses across Europe, Australasia and Latin America,” he adds. “For companies that report under IFRS, financial reporting does not follow regulatory reporting, so accessing the regulatory filings becomes even more critical in evaluating the drivers of asset value.

“For example, when researching UK regulated water utilities, we need to analyze closely the total expenditure allowances from the regulator, which are provided in regulatory documents. The regulator applies a ratio to the total expenditure to derive the costs to be recovered from revenue and the value added to the regulated asset base. These regulatory splits are crucial to modeling the UK water utilities and are different to the statutory reporting of operational expenditure and capital expenditure.”

VALUABLE SOURCES
Pike adds an example of pipeline companies in North America. “When analyzing these companies, we build dividend discount models of at least 10 years, focusing on variables such as contracted positions and annual tariff adjustments,” he says.

This information can be found in documents including the 10-Q (quarterly) and 10-K (annual) US Securities and Exchange Commission reports, which are detailed, but relatively standardized across companies. But, as Pike explains, major interstate natural gas pipelines also have to submit filings to the Federal Energy Regulatory Commission (FERC), such as Form 2, which is a compilation of financial and operational information with up to 200 pages of detail.

These filings are typically used by shippers or producers, but are also valuable sources of information for financial analysts. “For example,” Pike says, “in a 10-Q or 10-K, you only have to report major customers over a certain size. But the FERC filings typically disclose all of the contracted customers on the pipeline.”

The team monitors a wide range of regulatory filings on potential investments. But the largest source of information comes in regulatory rate cases. The rate case examines the value of investments into the asset so that the regulator can determine a fair return. It also calculates a total revenue requirement, which is used to determine customer charges.

“Infrastructure companies often provide the extra detail investors require within regulatory disclosures.”

The rate case examines the value of investments into the asset so that the regulator can determine a fair return. It also calculates a total revenue requirement, which is used to determine customer charges. Maple-Brown explains that these rate cases give much more information than SEC filings, including a detailed, asset-based breakdown, current revenue requirement and a forecast of revenue growth through the regulated period. They also provide capital expenditure forecasts, customer and sales forecasts by customer type, customer bill comparisons and more detailed tax breakdowns.

“In most regulated assets, we have a clear decision-making process that runs through the revenue requirement, asset base and expenditures,” he concludes.
CONTINUE TO BUILD INVESTOR RELATIONS
Investor relations (IR) has become a major industry in mainland China and Hong Kong as communication with stakeholders increases in importance. Listed companies in general recognize the need for good in-house IR, and I hope they continue to build this function and improve their communication with investors and others.

At WH Group, where I am an INED, we have a full-time internal IR officer and hire professional IR firms to advise us. We do regular roadshows and release corporate information through various media to make sure investors are kept up to date about the status of our company.

KEEP IMPROVING CORPORATE GOVERNANCE
Both the mainland Chinese and Hong Kong regulators have taken corporate governance very seriously, with heavy penalties imposed for rule breaches. The quality of Chinese companies has improved tremendously, partially as a result of this. We can see this, for example, in the way that two major Chinese organizations became Global...
500 companies in a short period of time. More and more Chinese companies are joining that league, but we cannot be complacent, and we should all aspire to keep improving corporate governance.

**A STRONG VOICE**

Business environments are rapidly evolving, and regulators are constantly trying to catch up and cope with this. That’s understandable, but their new regulations can become a big burden for many businesses. What’s more, the changes are one-sided. The regulators update the regulations to suit their needs. We, as companies, don’t have the power to do that.

So companies need a strong voice to counter such changes, and the accounting bodies and Big Four firms are best placed to provide that. To cope with new regulations, directors also need regular training and professional advice, especially on the more complicated issues.

**REDUCE EXISTING REGULATION**

There is also a need to simplify or reduce existing governmental bureaucracy, as capital markets have become conservative and over-regulated. An example is regulations around the process of vetting initial public offerings (IPOs). I am working on an IPO now, but the Hong Kong Stock Exchange is conservative in its regulatory line on IPOs, which makes it very difficult.

**SHARE INFORMATION RESOURCES**

If external firms can leverage internal auditor resources, they can reduce the time and the fee, so they should do it more. I always encourage internal auditors to exchange information with external auditors, but it doesn’t always happen. Globally, these two sides often exchange a lot of information on companies, but many in Hong Kong and mainland China don’t, and I don’t know why.

**KEEP EXPLORING BIG DATA**

Many industries are using big data analytics techniques for planning, which is highly effective. As part of this, auditors use sophisticated analytics programs to achieve optimal audit objectives and provide business insights, which clients appreciate.

Often, auditors cannot verify 100% of the supporting information, but they can use analytics to maximize the assurance level. There is definitely room for companies and their auditors to explore the use of big data further.

**INSIST ON INTEGRITY**

The biggest thing I learned after working at EY for 30 years is to insist on integrity in everything I do. Without integrity, you have no soul.

I always remind myself that the role of an INED is to protect minority stakeholders’ interests. In conflicts, I need to exercise my judgment in how to balance that with the interests of major shareholders within the rules and laws. That is why you need to be selective in accepting an INED position and make sure the major shareholders have the same level of integrity that you have.

**VALUE YOUR INEDS**

Many smaller listed companies in Hong Kong do not appreciate the value of having INEDs on their board at all, as they think of them simply as a regulatory requirement: a company’s major shareholders appoint the directors, but the Hong Kong Stock Exchange’s rules state that not less than one third must be INEDs.

A good example of the value of INEDs is where a major shareholder wishes to increase their percentage shareholding by exchanging their own assets for shares. As INEDs, we make sure the injected assets are valid and properly valued, with help from advisers and accountants if necessary. We would make sure the exchange is subject to independent shareholder approval and hold an extraordinary shareholders’ meeting, in which the major shareholders would not vote. If the advisers accept that the asset injection is good, we can advise the independent shareholders to vote in favor. If not, we could advise them against it.

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**PROFILE**

Conway (Kong Wai) Lee is an independent non-executive director at a number of companies in China, including major names such as WH Group and Guotai Junan Securities. He started his career at EY predecessor organization Turquands Ernst & Whinney in 1980. In 1983, he joined Arthur Young, working in Hong Kong and then Australia. In 1989, he returned to Hong Kong and rejoined Ernst & Whinney, which became EY the following year. He became a partner in Ernst & Young Hua Ming LLP in 1993 and managing partner of the Beijing office in 2000. In 2009, he left EY and started working as an INED.
Malcolm Finn is Global Financial Controller at Costa, the coffee store chain that is part of the UK-based Whitbread Group. Reporting asked him about some of the challenges he faces and how reporting is changing.

Q: WHAT ARE THE MAIN CHALLENGES YOU FACE IN YOUR REPORTING?
A: At the moment, we're dealing with the three big changes that are coming up; IFRS 9 (Financial Instruments), IFRS 15 (Revenue Recognition) and IFRS 16 (Leases).

Many corporates anticipate that IFRS 15 and IFRS 16 will have the most significant impact, not only at the financial reporting outcome level, but also on internal processes and controls. Additionally, the changes will not only be felt in finance, but cross-functionally. For example, will reward teams need to realign bonus and incentives schemes? Will procurement think about contract design, acquisition and management in the context of pricing, bid costs and ongoing top-line performance relative to the performance obligations? The financial and IT investment needed to track and sustainably produce new data and disclosures from an understanding of source contracts is potentially huge.

More generally, there is an incessant increase in reporting requirements, at the same time as there's a pressure to make the reporting clearer and more transparent. You have to constantly ask yourself how you can get the right message across without diluting it. You've always got to take a step back and think about what the user wants, how we can show our transparency and how we can build trust.

Q: HOW DO YOU DEAL WITH THESE CHALLENGES?
A: If you get things wrong, it can damage your reputation, so we have to keep upskilling the team. At the same time, we can't do everything in-house, so we also use advisers, which gives us instant access to all the latest knowledge and skills.
Q: HOW IMPORTANT IS SUSTAINABILITY TO COSTA?
A: It’s very important to us. For example, coffee products in all markets are 100% Rainforest Alliance Certified and we have a group-wide sustainable supplier program. We have also been successful in reducing carbon emissions (by 21% against 2014 baseline), diverting waste from landfill and recycling waste. Our new roastery was the first industrial processing site to reach BREEAM “Outstanding” accreditation under the new 2014 standard. Over the last year I have been lobbying for us to go from 70% to 100% renewable energy in our equity stores, and I am pleased to say we got there.

Q: HOW IS THIS REFLECTED IN YOUR CORPORATE REPORTING?
A: Corporate reporting is not just about financial information, and we continue to see increased transparency of the business and the environment in which it operates, together with an understanding of risks – both current and emerging. A clear, concise and authentic communication that articulates how the organization operates differently from its peers should help attract the right investors for that organization, and the new framework proposed by the Taskforce on Climate-Related Financial Disclosures could be helpful in this regard.

However, we should always consider the design of annual reports as reporting increases, and discussions on sustainability shouldn’t really be presented in isolation from other content. I have often talked about how the business model concept can be used as an integrating framework for annual report commentaries on strategy, risk and performance, which should also encompass sustainability disclosures.

Q: HOW DO YOU VIEW THE CONCEPT OF INTEGRATED REPORTING?
A: Everyone should be thinking about Integrated Reporting now. It’s part of the challenge of keeping the reports manageable and relevant.

There are also things you can’t measure. When you think of triple-bottom-line reporting – planet, people, profit – there’s a lot of reporting on planet and profit, but not so much on people. How do we talk about culture? How do we talk about the engagement of teams in the context of the performance of the company? It’s becoming increasingly relevant, because analysts are now commenting on corporate failures caused by culture.

Ultimately, the human factor in organizations is critical, so why is this not reported? This is probably the next thing that’s coming, and I’d love to lead the way in that.
Twenty years after the end of a period marked by hyperinflation and terrorist activity, Peru has come to be seen as one of the world’s leading emerging markets. In the view of the International Monetary Fund, it has become a “rising star,” with a good base of economic stability, low inflation and steady GDP growth.

Now the sixth-largest economy in South America, Peru has continued to grow while larger nations such as Brazil and Argentina have faltered. This has enabled the country to reduce unemployment and poverty, and it has even started to be talked of as a potential middle-income country (one of the categories the World Bank uses to classify economies; Brazil, India and China are all middle-income countries).

The Government of President Pedro Pablo Kuczynski, elected in July 2016, is now trying to consolidate this progress by prioritizing investment in technology and infrastructure projects, and positioning the country as a hub for international trade in the region. These initiatives are being supported by structural and regulatory reforms aimed at making it easier to do business in Peru.

Structural reforms include a new institutional framework for public and public-private infrastructure investment, aimed at reducing red tape, along with reductions in administrative procedures, changes to the labor market and a new, more efficient tax regime for SMEs. These are building on the reforms that got under way in the 1990s. In the intervening years, Peru has increased its competitiveness and dismantled trade barriers, with average import tariffs falling to just 1.1%.

ECONOMIC CHALLENGES

Julio Velarde, Governor of the Central Reserve Bank of Peru, highlights the fact that economic growth has averaged more than 5% per annum since 2000, and suggests that there is still room for improvement. “President Kuczynski is planning a new phase of growth based on pushing investment
in infrastructure and increasing domestic demand," he says.

He sees three main economic challenges facing the country. "First, the last Government had a higher deficit than the new Government was expecting, which has meant reductions in public expenditure. Second, Peru — like many countries in Latin America — has been affected by the corruption scandals related to Brazilian companies such as Odebrecht. Third, earlier this year, we had the worst flooding in the north of the country since 1925."

Indeed, estimates suggest that the floods, which were linked to the El Niño weather cycle, could take more than 1% off growth this year. However, increased spending on infrastructure may offset some of the negative impact.

Velarde points out that, despite these challenges, Peru still has many strengths. Foreign Direct Investment (FDI) into Peru totaled US$2.05b in the first quarter of 2017, an increase of 61% over the same period last year.

There are other indicators of a healthy economic trajectory, too. "In 2015, we had a trade deficit of US$2.9b. Now we forecast a trade surplus of US$4.9b for 2017, because we have been one of the most successful countries in boosting exports, which grew by around 15% during the last 12 months," says Velarde. He adds that Peru is the world's second-largest producer of copper, and copper production this year is expected to be 90% higher than three years ago. Textile exports are also beginning to increase.

"We are pursuing responsible macroeconomic policies that are good for growth and good for investment."

**Julio Velarde, Central Reserve Bank of Peru**

**ATTRACTING INVESTMENT**

The country's traditional strength in mining and minerals remains a strong attraction for foreign investors, according to Roque Benavides, Chairman of Buenaventura, Peru's largest publicly traded precious metals mining company. (He is also currently the President of Peru's National Confederation of Private Business Associations.)

The company reported a 24% increase in net sales in Q1 2017 to US$272.8m, underlining the relatively healthy condition of the sector.

Peru is one of the world’s biggest producers of base and precious metals, and among the top four producers of silver, lead, zinc, tin and molybdenum.

This strength is proving to be a compelling proposition for investors. An estimated 70% of current exports are raw material, mainly minerals.

"There are some social issues that have affected mining projects, but in general terms, the investment environment for mining is quite strong, particularly in terms of taxation," says Benavides.

He continues: "Peru is blessed with natural resources, but it is what has happened around it – such as the building of infrastructure worthy of an advanced economy, and the creation of a secure..."
environment for investors – that has really attracted investment, both Peruvian and foreign.”

The Government’s relentless focus on implementing investment facilitation measures has been supported by steps designed to make it easier to do business in Peru. In the World Bank’s Ease of Doing Business 2017 rankings, Peru retains third position among Latin American countries and is 54th globally. This has incentivized both Peruvian and foreign investment. According to Benavides, around 80% of private investment in Peru is from Peruvian nationals.

**GOOD GOVERNANCE**

Efforts to implement high corporate governance standards have played a key role in affirming confidence in the investment climate. IFRS is standard in financial reporting in Peruvian firms.

According to Juan Paredes, Assurance Leader at EY Peru, the current generation of management is highly professional and fully committed to a strong reporting process. Listed firms comply with the separation of CEO and chairman functions and have begun to implement other corporate governance leading practices. “We have some big companies that are listed abroad and that have adopted strict internal regulations with respect to disputes between board members, management and the audit committees,” he adds.

Buenaventura, one of the country’s largest companies, has put good corporate governance at the heart of its operations. “We’ve adapted to international norms and, like most Peruvian companies, we feel that we are getting a boost from adopting IFRS,” says Benavides.

Velarde adds that the Peruvian companies that have received a premium in the value of their equity on the stock exchange are the ones that have made an effort to incorporate better corporate governance standards.

The issue of corporate governance has risen to the top of the agenda in Latin America since the Odebrecht scandal, which affected most of the region. The scandal broke in late 2016, when Brazil’s largest construction company pleaded guilty in a US federal court to having paid US$788m in bribes to government officials throughout Latin America in order to secure public works contracts.

The shockwaves spread quickly across the continent. Velarde says Peru was particularly badly affected, as Odebrecht established itself in the country more than 40 years ago. “That has not only affected Brazilian companies, but also some Peruvian companies that were partnering with them,” he explains. “In turn, that has affected public investment in Peru.”

Lessons are being learned. One side effect of the Odebrecht affair should be a more intense oversight of contracts in future. “Companies will need more time to look at projects, because of the trust issue that has arisen out of this,” says Benavides. “Some people will be looking at contracts much more closely, and that means projects could be delayed, or will take additional time to complete.”

Despite these challenges, the impressive economic performance of the last decade and a half won’t be undone overnight. The reforms have burnished Peru’s reputation as an investor-friendly location.

“I’m optimistic about Peru’s prospects, as I am about many countries in Latin America,” Velarde concludes. “We have put behind us the days of hyperinflation and fiscal deficits, and we are pursuing responsible macroeconomic policies that are good for growth and good for investment.”

To find out more about investing in Peru, download Peru’s Business and Investment Guide.
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