CFO

MARCH 2017 | WWW.CFO.COM

BETTING ON BLOCKCHAIN

TAX POLICY TURMOIL

RESISTANCE TO DATA ANALYTICS

Hire Expectations

Finance leaders target candidates who possess a broader skill set


DISTANCE
298.6
YARDS
ACCURACY
64.22%
114
MPH
SPIN 2,154 RPM
14°
SMASH FACTOR
1.50
SPEED 165 MPH
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The Microsoft Cloud helps the PGA TOUR® transform countless data points into unique insights that are shaping golf today. This deep analysis will help players get smarter about how they approach their game while letting fans experience the TOUR in a whole new way.
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FEATURES

March 2017
Volume 33, No. 2

Cover: Getty Images; clockwise from top left: Getty images, Thinkstock

March 2017
Volume 33, No. 2

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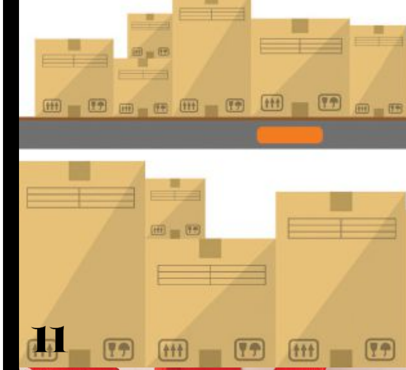
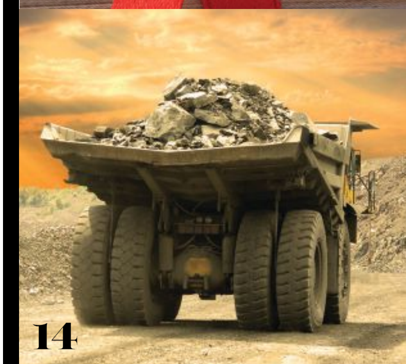
Up Front





By the Numbers

Clockwise from top right: Thinkstock (5)

FROM THE EDITOR

Stay Cool

››The animal spirits—the emotional mindset that John Maynard Keynes wrote of—have truly taken hold, or at least seem to have, in the stock markets. Among corporate executives the confidence is less strong but certainly there. The Duke/University *CFO* Magazine Optimism Index was at its highest level in a decade in December. Bolstering that confidence is the promise of large corporate tax cuts (See "Planning for Tax Policy Turmoil," page 34) and cutbacks in regulation.

The signaling from the Federal Reserve Open Market Committee is also positive. The Fed is on the cusp of raising interest rates again and the indications are it may pull the lever two more times in 2017.

CFOs may be wondering: Is all this sanguineness warranted? Perhaps. Consumer confidence recorded a near all-time high in January, and retail spending rose 5.6% year-over-year. But politics is also keeping Main Street on hair-trigger alert. Many experts, for example, seem to be discounting the potential economic effects of a repeal of the Affordable Care Act. The anecdotal evidence is that it is a real worry for many consumers and could cause them to tighten their purse strings.

In addition, even economic events that are good for some industries may hurt consumers. One consequence of higher interest rates, for example, is greater interest expenses on consumers' outstanding revolving debt, which has grown substantially over the past two years. Larger credit card payments will put a dent in monthly household budgets.

So while many corporate executives cheer a more business-friendly president, they must also realize that the situation is tenuous. Strong free cash flow will allow for more investment in growth and give companies the ability to return a greater portion of earnings to shareholders. But soaring share prices leave senior management a smaller margin for error. A fully priced market means it won't take much of an earnings miss (or a public relations mishap) to cause investors to flee an individual company's shares.

In general, as stewards of a company's capital, CFOs are the cool heads in the room when the markets get overconfident. At this particular point in American politics and in the current economic cycle, that's a very good thing.

Vincent Ryan
Editor-in-Chief

Mark Bennington

EDITOR'S PICKS

RISK MANAGEMENT

It's not too early to be planning for CFO's Risk Management Summit, which takes place Sept. 7-8 in Boston. Speakers slated thus far include the international internal audit manager at AutoZone and the head of global FP&A risk management at Welch's. For more information, go to https://theinnovationenterprise.com/summits/risk-management-summit-boston-2017.

STRATEGY

In "Why CFOs Need a Bigger Role In Business Transformations," McKinsey partners Ryan Davies and Douglas Huey explain why CFOs must be leaders, not sideline players, in business transformation efforts. Read the article at http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/why-cfos-need-a-bigger-role-in-business-transformations.

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THE BUZZ ON CFO.COM

A Feb. 14 article by Matthew Heller (**"GOP Group Pushes Tax on Carbon Emissions"**) described a proposal to replace former President Obama's Clean Power Plan with a $40-per-ton tax on carbon emissions. The group floating the plan included three prominent Republican former cabinet members.

The proposal did not sit well with some readers. "I find it curious that this conservative proposal waves the banner of free market principles and limited government," one wrote, "while using the government's taxing authority to directly interfere in the free market system."

The reader tagged the plan as a shell game that merely **"moves the pieces around without increasing or decreasing the number or value of the pieces.** So, we're going to tax businesses, thereby increasing their expenses, which will inevitably increase their prices and decrease their competitiveness. So much for pro-growth, pro-jobs, pro-competitiveness, and balancing trade."

Indeed, he continued, "The increased prices of their goods/services will translate to higher consumer prices for everyone, whether taxpayers or not. If a taxpayer buys these goods or services, whatever perceived increase in their buying power by the distribution of the taxes collected will be offset by the higher prices they pay for these goods/services.

"Meanwhile, if there is in fact any job growth, it will come at the expense of the environment, because the **businesses are not going to control their pollution just because of taxes if they can effectively shift the tax burden to the consumer….** Bottom line: Nothing more than a shell game to make it 'conservative' and to be able to say they've 'ticked off everything on Donald Trump's list.'"

In "**Master of All Metrics**" (Feb. 3), contributing writer Russ Banham wrote about the rising importance of nonfinancial performance indicators like customer satisfaction, employee engagement, and brand loyalty.

The article inspired this insight from one CPA: "KPIs, whether financial or nonfinancial, are great for looking at how a business is performing. However, the CFO must remind the organization that **ultimately there is only one KPI that matters: profitability.** All other KPIs are merely a means to that end. Time and energy spent chasing KPIs is often time and energy *not* spent improving profitability."

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www.argyleforum.com

PRESIDENT & CEO Danny Phillips
VP & MANAGING DIRECTOR, CFO Scott Pierce

CFO Magazine/cfo.com

EDITOR-IN-CHIEF
Vincent Ryan (vinceryan@cfo.com)

MANAGING EDITOR Deana Colucci

DEPUTY EDITORS:
David M. Katz (davidkatz@cfo.com)
David McCann (davidmccann@cfo.com)

WEB EDITOR Sean Allocca (seanallocca@cfo.com)

CFO Marketing Services

DIRECTOR, MARKETING SERVICES
Chris Schmidt

EDITORIAL DIRECTOR, CUSTOM CONTENT & RESEARCH
Joe Fleischer

CONTENT MANAGER
Kim Zimmermann

Advertising Sales

NORTHEAST
Haley Moore, (646) 277-6478; fax: (646) 219-7860
Brian Kleve, (646) 556-7653; fax: (646) 219-7860

MIDATLANTIC/SOUTHEAST
Matt Moore, (212) 488-4702; fax: (646) 219-7860
Brian Kleve, (646) 556-7653; fax: (646) 219-7860

CENTRAL/CENTRAL MIDATLANTIC
Brian Kleve, (646) 556-7653; fax: (646) 219-7860

MIDWEST, PACIFIC NW
Brian Kleve, (646) 556-7653; fax: (646) 219-7860

WEST COAST
Judy Hayes, (925) 736-7617
Brian Kleve, (646) 556-7653; fax: (646) 219-7860

Editorial Offices

295 Devonshire St., Suite 310
Boston, MA 02110
(617) 345-9700

122 West 26th St., 2nd Floor
New York, NY 10001
(646) 839-0012

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Please Recycle This Magazine

Topline

STATS OF THE MONTH

REACHING MATURITY

$1.06 trillion
U.S. speculative grade nonfinancial debt maturing between 2017 and 2021

$633 billion
Amount of those maturities that are bank credit facilities

16%
Percentage of companies with maturing debt that have "negative outlooks" from Moody's

$319 billion
Maturing debt of companies with leverage in excess of six times earnings, 2017–2021

Source: Moody's Investors Service

HUMAN CAPITAL

Companies Shaken By Travel Ban

Tech firms oppose President Trump's executive order; others try to discern how many employees it affects.

From vowing to shred the current regulatory framework to championing a major cutback in corporate tax rates, President Donald Trump made a number of promises during his campaign that positioned him as business-friendly.

Companies didn't have much to say, at least publicly, about another idea he floated: "a total and complete shutdown of Muslims entering the United States until our country's representatives can figure out what's going on."

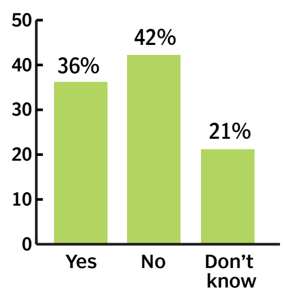
But in response to the President's January 27, 2017, actions toward that stated goal, including his ban on inbound travel by nationals of seven countries, companies are starting to push back against their presumed ally.

In early February, 97 companies, most of them in the technology field, signed a motion in support of a lawsuit against the travel ban brought by the attorneys general of two states, Minnesota and Washington. The companies include such heavy hitters as Apple, eBay, Facebook, Google, Intel, Microsoft, Netflix, Salesforce.com, and Uber.

As of press time, the travel ban was on hold, following a February 9 ruling by the 9th U.S. Circuit Court of Appeals that refused to reinstate the ban. The Trump administration is reportedly rewriting the ban to get around legal and constitutional objections.

Impact on Employees

Does the executive order directly affect employees at your company?



Source: Institute for Corporate Productivity, survey of 261 companies

The motion signed by the 97 companies—an amicus curiae (or friend-of-the-court) brief—states that the president's order "hinders the ability of American companies to attract great talent; increases costs imposed on business; makes it more difficult for American firms to compete in the international marketplace; and gives global enterprises a new, significant incentive to build operations—and hire new employees—outside the United States."

Meanwhile, the Institute for Corporate Productivity (i4cp), a research organization, revealed the results of a poll showing that some companies were experiencing effects from the travel ban before its suspension.

The 261 participants included representatives, mostly human resources executives, of i4cp's member organizations (mostly *Fortune* 1000 and Global 1000 companies) and large government agencies. More than a third of the respondents said their organizations have employees that are directly affected by the president's executive order. (See chart, facing page.)

Also, almost a quarter of those polled said they anticipated the order would have a negative effect on organizational productivity this year. Many more companies than that may ultimately end up being harmed, however, as more than 40% of the participants said they were either undecided or didn't know what effect the travel ban would have.

"These are large organizations, many of which have expatriates working in other countries and employees with green cards that they didn't know about," says Kevin Martin, chief research officer for i4cp.

In fact, Martin notes, many companies can't even generate a list of workers that are nationals of the seven countries. That's because, while employees are managed in human resource information systems, contractors are often managed in vendor-management systems. "They literally need to have people self-identify that they're affected" by the executive order, says Martin.

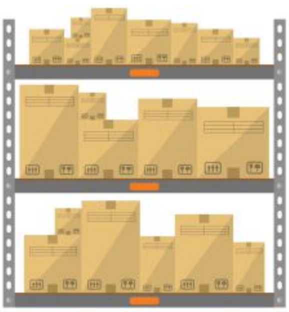
"Think about their ability to move talent around, which for many companies is critical to growth," he adds. "Maybe there's a certain project that only one person has the right knowledge for."

Respondents to the i4cp survey didn't necessarily indicate that large numbers of employees are affected. Despite the size of the organizations polled, 42% of those that said employees were affected put the number of affected employees at 20 or fewer. For 63%, the number was 100 or fewer. And 27% said they didn't know how many were impacted.

Still, the issue appears to have unsettled multinationals. Martin says that in a conference call with eight large companies, all said the travel ban and the potential impact on productivity has taken on a significant sense of urgency. "The travel ban is one thing, but the bigger thing is a general uncertainty," says Martin. "These companies don't know what else may be coming their way. On the call, we talked about the need for companies to start doing different kinds of scenario planning, to think about and plan for scenarios that are almost unthinkable." **DAVID McCANN**

ACCOUNTING

FASB Eyes Inventory Disclosure



After more than 60 years of little change in the requirements for disclosing inventory, U.S. accounting standard setters are proposing to update the standards.

Prompted by financial statement users who want more details about changes in inventory during reporting periods, the Financial Accounting Standards Board in January issued a proposed accounting standards update aimed at beefing up inventory disclosures in the footnotes of financial statements. Constituents have until March 13 to comment on the proposal.

One major change would require public companies that break out the reporting of their operating segments to, in certain cases, disclose the inventory balances of each of those segments. (Operating segments might be the financial or manufacturing units of a corporation, for instance.)

Further, such companies would have to disclose the segments' inventory components—for example, how much inventory consists of raw materials, work-in-process, finished goods, and supplies. In fact, private companies as well as public ones that don't engage in segment reporting would also have to provide component breakdowns.

Component disclosures would supply investors with crucial information about a company's revenue and cash-flow prospects, says Georgia Tech accounting professor Charles Mulford.

For example, even if a company reports a substantial amount of inventory, an analyst might not know the company doesn't have enough finished goods on hand to meet purchaser demand. Another previously undisclosed risk, according to Mulford: "What if I have no raw materials, and there's a supply chain disruption?"

An additional key provision in the update would require companies to disclose nonroutine reasons for changes in inventory other than the routine buying, selling, and manufacturing of goods. An example of a nonroutine change might be the acquisition of a company that has a large supply of inventory. Other nonroutine changes might stem from company divestitures or writedowns of the value of goods.

Armed with such disclosures, investors could regard the nonroutine changes as anomalies and then possibly get a truer picture of a company's actual inventory turns. Yet another big change—at least for the many retailers that use the retail inventory method of accounting—would be for companies reporting under RIM to disclose "the critical assumptions used in the calculation of inventory," according to the update. **DAVID M. KATZ**

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COMPENSATION

Performance Bonus Payouts High

If you're a top executive at a very large company that offers performance-based bonuses and you don't get one, you're part of an unfortunate, small minority.

Compensation Advisory Partners (CAP) examined incentive payouts from 2010 through 2015 by 100 publicly held companies—each with at least $18 billion in annual revenue—across 9 industries. The firm found that 95% of executives at companies that offered such programs achieved at least "threshold" performance, meaning they qualified for at least a partial bonus.

"Target" performance was also achieved by a large majority—75%—of executives at those companies. However, only 15% of them qualified for the maximum bonus stipulated in their incentive plan.

"This pattern indicates that target performance goals are challenging but attainable, while maximum goals are achievable through highly superior performance," CAP said in a study report.

Executives most often earn 50% of their target bonus for reaching threshold performance and 200% for achieving maximum performance, according to CAP.

Sixty-one percent of companies with performance-based bonus programs used three or more metrics for such calculations. In CAP's 2014 study, only 48% of companies did so.

CAP also reviewed the relationship between annual incentive payouts and company performance with respect to three metrics: revenue growth, earnings-per-share growth, and growth in earnings before interest and taxes (EBIT).

While payouts were generally aligned with revenue and EPS growth, they most closely tracked EBIT growth, CAP found. "Companies may seek to align bonus payouts with operating measures, such as EBIT, as they capture an executive's ability to control costs and improve operational efficiency," the study report said. **D.M.**

AUDITING

Audit Committees Challenged

With continued economic uncertainty and a presidential administration promising sweeping policy changes, audit committee members are bracing for unforeseen risks in 2017 and urging their companies to ramp up risk management programs.

Of 832 audit committee members polled by KPMG, more than 4 in 10 (41%) say the effectiveness of risk management programs poses the greatest challenge to their organization in the next 12 months. Only 38% say their company has a robust risk management system in place, while 42% say their company's systems require substantial work.

"The audit committee's job isn't getting any easier," says KPMG partner Jose R. Rodriguez, "particularly given today's uncertainty and volatility."

Just over half of respondents say their committees have enough time and know-how to grapple with growing risks. In addition, 31% say they would benefit most by having additional expertise, particularly in cybersecurity and technology.

While audit committee members are generally confident in the quality of financial statement audits, new revenue recognition standards are beginning to worry some committee members. The plurality of respondents (24%) say their boards are still assessing the effects of the new revenue recognition rules and have yet to develop a plan for implementation. **SEAN ALLOCCA**

Audit Committees' Top Challenges for 2017

Challenge	% ranking it as top 3
Effectiveness of risk management program	41%
Legal/regulatory compliance	34%
Managing cybersecurity risk	28%
Maintaining the control environment in company's extended organization	28%
Tone at the top and culture	24%

Source: KPMG 2017 Global Audit Committee Pulse survey

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CAPITAL MARKETS

IPO 'On-Ramp' a Qualified Success

The Jumpstart Our Business Startups Act's most successful section is Title I, the so-called "IPO On-Ramp" legislation. Designed to re-open the capital markets for emerging growth companies (EGCs), the provisions in Title I allow issuers to meet reporting obligations gradually and submit an S-1 filing confidentially. The provisions are successful in that many companies use them.

As of September 2016, about 88% of emerging growth companies (GAAP revenue of less than $1 billion in their most recently completed fiscal year) had taken advantage of the ability to confidentially keep their initial IPO filing out of the public's eye, according to Ernst & Young.

The appeal of Title I is a "confidential review period with the SEC, where you can get all the bugs and warts taken care of before you release the information to the public," says Wayne R. Pinnell, a managing partner of accounting firm Haskell & White. "It also gives the issuer time to test the waters, to see whether investors are going to buy the deal."

Many EGCs have also chosen to take advantage of the disclosure relief in Title I. Ninety-six percent of EGCs have provided reduced execution compensation disclosures in their IPO registration statements, and 69% have chosen to provide two years of audited financial statements instead of the normally required three, says EY.

A large number of pre-IPO companies also plan to exclude auditor attestation of internal controls over financial reporting (called for under Sarbanes-Oxley) following their IPOs, as Title I allows.

While the JOBS Act relaxes some public company reporting, in some areas prospective issuers can't afford to look less transparent than their publicly held peers. For example, only 15% of EGCs have indicated they would follow the easier private company effective dates for new accounting standards, choosing instead to follow the public company dates. VINCENT RYAN

DISCLOSURE

Mineral Rule ‘Misguided’: SEC Chair

The Republican commissioner temporarily leading the U.S. Securities and Exchange Commission called the conflict mineral disclosure rule “misguided” and directed staff to reconsider how companies should comply with it.

The rule, mandated by the Dodd-Frank financial reforms, was intended to help determine whether the supply chains of public manufacturing companies contained even trace amounts of minerals linked to violence in Africa.

The SEC modified its guidance on compliance after a federal appeals court ruled in 2014 that part of the rule was unconstitutional. In February, Acting Chairman Michael Piwowar announced he had directed staff to consider “whether the 2014 guidance is still appropriate and whether any additional relief is appropriate in the interim.”

“While visiting Africa last year, I heard first-hand from the people affected by this misguided rule,” he said in a statement, claiming it had caused “a de facto boycott of minerals from portions of Africa” and forced legitimate mine operators out of business because of the onerous costs of compliance.

The oil industry has been a particularly vocal critic, complaining that the rule would put them at a competitive disadvantage to foreign firms and be unduly expensive. The SEC staff could issue interpretive guidance to scale back the rule’s requirements or even choose not to enforce it.

According to research by Tulane University, companies shelled out roughly $709 million and dedicated six million staff hours in 2014 to comply with the rule. In addition, the Government Accountability Office found in 2015 that 67% of a sample of companies had been unable to trace the source of the conflict minerals used in products, citing difficulty obtaining the necessary information from suppliers because of delays and other challenges in communication. The four conflict minerals are gold, tin, tungsten, and tantalum. **MATTHEW HELLER**

LEGAL

Companies Losing Wage Suits

For plaintiffs’ lawyers, it’s growing easier to get class-action cases about workers’ wages certified and to win settlements from employers. The dollar volume of settlements of class-action litigation against U.S. companies over employee-compensation practices soared in 2016 for a second year in a row, and 2017 is likely to bring more of the same, according to law firm Seyfarth Shaw.

The value of settlements in so-called “wage-and-hour” cases last year was more than three times the 2014 level. By comparison, settlements for the other three major types of workplace lawsuits—employment discrimination, ERISA, and government-enforcement cases—all fell in 2016 after reaching all-time highs in 2014 and 2015.

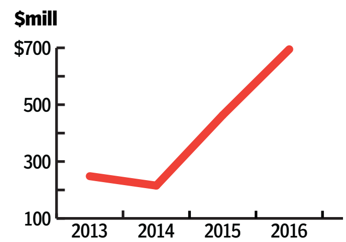
While last year there were several costly settlements of wage-and-hour suits, which are brought under the Fair Labor Standards Act, the number certified actually ticked down a bit. But overall they’ve been increasing over the past few years, and it’s not hard to see why: they are very likely to be successful. In 2016, 76% of such class actions were granted certification, opening the door to a possible settlement. By comparison, 66% of ERISA cases and 50% of employment-discrimination cases were certified, according to Seyfarth Shaw.

“Magnet” jurisdictions for such cases, where case law favors workers and certification rules are lax, include California, New York, New Jersey, Pennsylvania, Massachusetts, Florida, Michigan, and Missouri.

“For a plaintiffs’ lawyer viewing litigation as an investment, the highest return is with wage-and-hour cases,” notes Gerald Maatman, co-chair of the law firm’s class-action defense group. He says that in 37 years of defending class-action cases, he’s never seen the focus on shoring up pay systems, compensation practices, and employee classifications as urgent as it has been in the past few years. **D.M.**

Wage and Hour Woes

The amount of money companies paid to settle class-action lawsuits regarding employee compensation has exploded over the past two years.



Source: Seyfarth Shaw

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How Auditing Will Incorporate AI

Can we trust the auditing of financial statements to artificial intelligence?

By Bill Brennan, Michael Baccala, and Mike Flynn

Artificial intelligence advocates speak of a time to come when these systems will be capable of auditing 100% of a company's financial transactions. These visionaries foresee the day when AI will enable auditing that is a continuous and real-time process, not a prolonged exercise requiring large teams of accountants working overtime after the close of a fiscal year.

But is AI in auditing a good idea? Or do we even have a choice—is it just part of the data-focused technology wave that all companies must embrace?

We've approached our development of AI in auditing from the ground up to ensure that human values remain at the core of our audit work and that auditors have the tools they need to continue to improve audit quality. Here's what we've learned:

The details matter. Data acquisition is at the heart of auditing. Auditors need to obtain raw business data before they can "audit" it—check the accuracy and alignment of data sets like purchase orders, billing, receivables, payments, expenses, and compensation. Further, auditors regularly consider external data sources to understand risks, plan the audit, and confirm company assertions. To incorporate AI into their audit methodology, auditors need to understand systematically how those data sets are structured; how they differ from one industry, client, or source system to another; and how to transform the data reliably for use in solutions.

While virtually all business records today are kept in one electronic data format or another, some data is more easily digestible by software programs than other data. For example, many insurance companies keep their policies in PDF files, while information on claims made against those policies is stored in text-based document files. Before those data sets can be reconciled, there needs to be an interface to interpret and align relevant data points across that file format divide. Until now, that interface has been human and manual in nature. To train AI to perform these tasks, we need to supply it with not only the right data, but also the right decision-making capabilities based on that data.

AI has something on us. Compared with humans, machines excel at performing such repetitive and time-consuming tasks as data acquisition. Machines and AI-enabled technology will streamline data acquisition challenges faced by auditors. AI will minimize the burdens of the once time-consuming tasks of seeking out relevant information, pulling it out of documents, and converting it into usable formats. That will leave humans to review, analyze, and audit.

The army of independent auditors needed to audit a typical *Fortune* 500 company can be streamlined, and the auditor can spend more time on the judgmental aspects of the audit. Machines excel at processing vast amounts of data efficiently. They're capable of reviewing massive quantities of data at scale, evaluating what needs to be checked in an audit, and then recognizing anomalies in the data. AI-enabled solutions can quickly and easily identify such things as an unusual spike in orders from a particular geography, an exceptional set of expense items recorded by an individual, or unusually favorable terms contained in equipment leases recorded for a specific supplier.

But we have something on AI. Clients retain auditors for the assurance they provide over the financials. And that can only come through thoughtful examination and the exercise of judgment—human judgment. AI systems can assist the auditors by acquiring, processing, and churning through the mountains of data that a business's financial reporting systems generate. But while the machines may more quickly and completely identify patterns and anomalies in massive data sets, more value comes from investigating and deducing the reasons behind the pattern or the anomaly. Only human beings, such as the auditor, can tell the true story behind the data.

As we introduce new technologies, we also have a responsibility to ensure that they're ready for prime time. AI is going to do what we tell it to do—nothing more, nothing less—and we must remain clear-eyed about the risks. By clearly defining the audit requirements and fostering collaboration between data scientists, developers, and auditors to meet them, we can move the technology beyond the slogans and into practice successfully and responsibly.

Faster does mean better. Faster can indeed mean better when the data processing time is greatly reduced. As AI in auditing makes it possible to move toward auditing 100% of data, rather than samples of it, auditors will be empowered to study the totality of a business in an efficient manner. AI can help auditors move from traditional audit-sampling frameworks to visualizations and evaluations of the full picture.

AI systems can assist auditors by acquiring, processing, and churning through the mountains of data that a business's financial reporting systems generate.

AI can often help. AI can help in most instances where manually intensive activities occur, and that represents a significant transformation in traditional audits. Data extraction, comparison, and validation are great starting points. AI can significantly speed up digitization of data entry and extraction activities being performed manually, reducing the time spent on audit data preparation. Tying internal payment data to third-party support requires a significant amount of audit and client hours. Testing the existence and valuation of payment transactions can be fully automated with AI, as can the extraction of support for any substantive testing required.

Clients have the most to gain. At the most basic level, process efficiency means clients will need to devote less time and resources to responding to queries and requests for documentation, giving them back more time during a critical, deadline-driven time period. More important, when external auditors have more time to spend on higher-level analysis, they can focus on areas that require increased judgment and contain a high level of estimation uncertainty. CFO

Bill Brennan is a managing partner for audit transformation; Michael Baccala is U.S. assurance innovation leader; and Mike Flynn is a principal for advanced risk and compliance analytics solutions, all at PwC.

Will Automation Displace Executives?

Senior finance executives think their jobs could be replaced by technology.

Could the roles of senior finance executives grow obsolete, replaced by a robot or other technology? Some of them apparently think so, according to a poll by the New York chapter of Financial Executives International.

In the poll of 83 finance executives, 10% said they believed that some senior finance positions—at least, as we know them—will be replaced one day in a world of artificial intelligence, repetitive tasking, and increasing automation. A further 25% deemed such replacement "possible."

"Presumably these executives will be working to restructure [senior finance roles] to emphasize functions that cannot be automated and to take advantage of free time that automation affords them," said Matthew Cooley, president of FEI's New York City chapter.

Asked when the replacement will happen, 8% of those polled said it's happening now or will happen in two to five years. The remainder said it would happen more than five years from now (34%) or never (58%).

By a 19% plurality, respondents selected the position of director/vice president of financial planning and analysis as the most likely to be eliminated, followed by corporate controller/chief accounting officer (12%), and tax director (10%). None of the respondents thought the position of CFO would be first to go.

Another way to look at the issue is that whole positions may not be replaced, but rather just some of the tasks currently performed. In fact, the McKinsey Global Institute estimated in 2014 that activities comprising 34% of a financial manager's time could be automated by adapting currently demonstrated technology. For CEOs, the figure was 25%. DAVID MCCANN

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Is Now the Time For Buybacks?

CFOs have to ask if share repurchases are really creating value.

By Jeffrey Greene and Daniel Burkly

U.S. corporations hold more than $2 trillion of cash from historical earnings offshore. They may be encouraged to repatriate much of that cash based on evolving tax proposals from the Trump administration and congressional Republicans. While it is unclear what, if any, restrictions would apply, companies may be tempted to increase—and some investors will call for—share repurchases. According to a 2016 Goldman Sachs research report, S&P 500 share repurchases could rise 30% in 2017, to $780 billion. But are repurchases the optimal use of capital?

Past experience sheds doubt on whether reducing tax rates on repatriated cash would have the intended effects of increasing capital investment and job creation. In 2004, Congress passed the Homeland Investment Act (HIA), which provided a one-time tax break for repatriating foreign cash by U.S. corporations. Certain studies, including "Watch What I Do, Not What I Say: The Unintended Consequences of the Homeland Investment Act," by Dhammika Dharmapala, C. Fritz Foley, and Kristin J. Forbes, have shown that a significant portion of the repatriated cash at that time was used to fuel incremental share repurchases rather than growth investments.

The investor Warren Buffett has said that a company should repurchase shares when (a) the share price is well below intrinsic value and (b) cash held is in excess of operational and liquidity needs. Repurchasing shares at a premium to intrinsic value or when higher return investments are available destroys shareholder value; conversely, repurchasing shares when the price is at a discount to intrinsic value creates shareholder value by generating favorable returns on capital relative to alternative investments.

Companies cite a host of reasons for repurchasing shares, but often fail to verify that their shares are trading at a discount to intrinsic value, and to sufficiently consider investment alternatives given dynamic market conditions. They repurchase shares to manage earnings per share, limit dilution from stock-based compensation, return capital to shareholders tax-efficiently, and alter capital structure. Low interest rates and pressure from activist investors have also been major drivers of repurchases recently.

While improvements in business fundamentals (e.g., revenue and margin growth) drive EPS growth and create shareholder value, the relationship between share repurchases and total shareholder return is weak. Further, leading analysts and investors have raised concerns about whether companies are too focused on short-term EPS performance. Repurchasing shares to boost EPS in the short term can hurt long-term growth prospects and investor returns. The same Goldman Sachs report said that during 2016, S&P 500 companies with the highest capital expenditures and R&D spending returned 18%, while those with the highest shareholder payouts, including share repurchases and dividends, returned only 8%.

Senior management and boards frequently justify share repurchases by suggesting that they can offset the dilutive effects of stock-based compensation. However, not only is stock-based compensation a very real expense to shareholders, but if companies repurchase at a premium to intrinsic value, they exacerbate the negative effects on shareholder value.

Before earmarking what could be substantial repatriated cash for more share repurchases, CFOs should regularly lead a systematic and objective process to, first, assess whether the company's share price is below intrinsic value. Empirical data shows that companies tend to increase repurchases when their share prices are trading at cyclical highs (which is also when cash tends to be most plentiful). While there are practical challenges in doing so, companies should perform a robust, objective valuation analysis using conservative assumptions to determine whether buying their stock will create or destroy shareholder value. Especially with the stock market near all-time highs, CFOs should scrutinize whether repurchasing is a prudent investment.

Second, CFOs should be constantly evaluating repurchases in light of current conditions. Some factors in the market today point to a lower allocation for share repurchases:

• **Operating and liquidity needs.** Heightened geopolitical and economic uncertainty should encourage CFOs to scenario plan and stress-test assumptions, in order to identify what can reasonably be considered excess cash.

• **Fiscal and trade policy.** Lower corporate taxes would mean additional cash for companies to reinvest or return to shareholders. If "border adjustment" taxes were to become policy, companies would need to consider investments that shift their value chain toward the U.S.

• **Technological disruption.** Technological forces threaten to undermine existing products, services, and business models across virtually every sector. Companies should confront potential disruption by evaluating the capital investments, R&D, and acquisitions needed to remain competitive.

There is a role for share repurchases in a balanced capital allocation strategy under the right conditions (shares trading at a discount to intrinsic value, excess cash available, and alternative investment opportunities that are not compelling). If companies determine that the optimal use of capital is to return it to shareholders but the share price exceeds intrinsic value, then a special, one-time dividend may be the appropriate alternative. Regardless of the choice, senior management and the board should be aligned on capital allocation priorities. CFO

Jeffrey Greene is the Ernst & Young global life sciences leader for transaction advisory services. Daniel Burkly is a senior manager in the transaction advisory services practice of EY.

Uses of Cash

6% vs. 19%
2017 increase in cash spending allocated to investing for growth (capex, R&D, M&A) versus cash returned to shareholders (buybacks and dividends), S&P 500

$780 billion
Amount of S&P 500 share buybacks projected in 2017, up 30% from 2016

$150 billion
Amount of S&P 500 share buybacks from repatriated overseas cash in 2017, which is contingent on corporate tax reform

20%
Percentage of total overseas cash that S&P 500 firms will repatriate in 2017, assuming tax reform

Source: Goldman Sachs equity research report

Balance-Sheet Cash Likely to Rise

Strong free cash flow and accessible debt markets will keep reserves high.

Are corporations going to deploy a chunk of their cash reserves this year? The Association for Financial Professionals' (AFP's) Corporate Cash Indicators index seems to show they will.

The quarterly survey of corporate treasury and finance professionals released in late January found that 30% of 227 U.S. company respondents plan to reduce cash and short-term investment balances over the next three months, while 23% plan to expand those balances. That's a significant change from the October 2016 reading of the survey, in which the proportion of finance executives answering "expand" exceeded those responding "deploy" by four percentage points.

However, there are plenty of reasons to expect cash balances to actually increase this year.

Large multinationals reported strong free cash flow for the fourth quarter and expect the trend to continue, so their reserves will rise unless they increase capital expenditures and share buybacks, start to pay down debt, or make large acquisitions. Boeing forecast that operating cash flow would increase to $10.75 billion in 2017 from a record $10.5 billion in 2016.

With U.S. interest rates still relatively low, some companies are amassing more cash through debt issuance and lowering their ongoing interest expenses. Honeywell, for example, refinanced debt in the fourth quarter, cutting interest expenses by 8% but increasing the company's aggregate borrowing by $4 billion, according to CFO Thomas A. Szlosek.

Companies are certainly planning to put some of their free cash flow to work this year, but they are also cautious, judging by fourth-quarter earnings calls.

On plans for acquisitions, EBay's CEO Devin Wenig said, "We'll be disciplined, but you can certainly expect M&A to be part of our story." But Mark Costa, CEO of Eastman Chemical, indicated valuations are too high. "The multiple[s] being paid right now are way outside of the range to provide attractive return on capital to our shareholders," he said. ▸ **VINCENT RYAN**

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Gauging M&A Supply Chain Uncertainties

Many acquirers are paying more attention to the supply chain uncertainty created when companies combine. By Kai Trepte

Corporate deal making is an important route to new growth and efficiency. The due diligence process is well defined and most deals meet established financial criteria. There is, however, a gap that many acquirers are beginning to focus on: the supply chain uncertainty created when two companies come together. ¶ Evidence shows that because of time constraints, deal complexity, regulatory issues, and investor pressure, scrutiny of supply chain uncertainty can be short-changed in the due diligence phase of M&A deals. The reason? Supply chain and finance functions operate in different universes. The gap becomes visible when one reads descriptions of pending transactions.

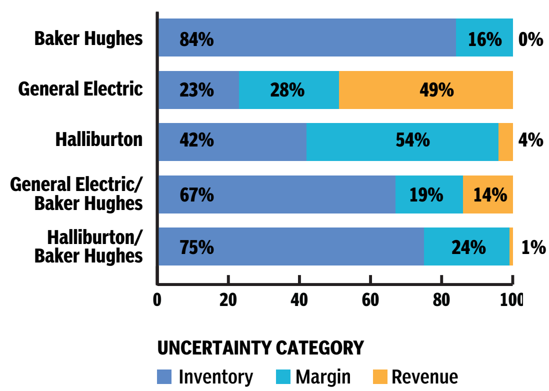
Consider, for example, the merger of the oil and gas businesses of General Electric and Baker Hughes. Most of the commentary on the merger talks is about synergy and capturing future upsides when the oil and gas industry recovers. But there's a perspective which may be even more compelling that hasn't received much attention: the supply chain risk lens.

The supply chain risk lens applies standard supply chain calculations to financial statements to assess the uncertainties surrounding a company's top-line revenue, gross margin, and inventory. The goal is to understand whether combining entities increases uncertainty. The MIT Center for Transportation & Logistics uses historical changes in these values as a proxy for uncertainty.

We quantify the various uncertainties by measuring the year-to-year variation over the past three years and calculating an average variation. Then, we calculate how much added revenue would be required to offset that same amount of variation in revenue, margin, or inventory.

Revenue Uncertainty

The purchase of Baker Hughes appealed to both General Electric and Halliburton—it reduced supply chain revenue uncertainty for GE and margin uncertainty for Halliburton.



Source: MIT Center for Transportation & Logistics

Let's take, for instance, a company with a $2 million variation (or uncertainty) surrounding inventory and a 10% net margin. In order to offset a potential $2 million inventory variation, the company would need to generate an additional $20 million in top-line revenue with respect to net profit.

"Revenue Uncertainty" (below) presents data for Baker Hughes, Halliburton, and General Electric. Applying the supply chain lens assessment sheds significant light on why Baker Hughes was an appealing target for Halliburton (a merger proposal that did not come to fruition), and now appeals to General Electric.

In one instance, the deal offsets revenue uncertainty (General Electric), and in the other it offsets margin uncertainty (Halliburton). We see this when we express the uncertainty areas as percentages. Note that even though the categories add up to 100%, they do not represent all the uncertainty the companies face.

Also, the analysis doesn't show whether total uncertainty increases or decreases—it only shows how the uncertainty mix changes. But the analysis can be used as a starting point for examining whether supply chain risk increases or decreases in mergers.

Baker Hughes, General Electric, and Halliburton have different uncertainty profiles when viewed through the supply chain lens. Baker Hughes's largest uncertainty is inventory (84%); General Electric's is revenue (49%); and Halliburton's is margin (54%).

When thinking about merging with Baker Hughes, Halliburton may have been enticed by the potential ability to reduce its margin uncertainty to 24%. The sales of assets, proposed in the original deal, would likely have reduced the inventory uncertainty as well. In this case, the supply chain lens supports the financial and strategic logic behind the proposed merger.

In contrast, the appeal to General Electric may stem from its ability to reduce its revenue uncertainty to 14%, which may be crucial if oil prices fall again. Once again, the supply chain lens supports the strategic and financial logic behind the merger.

The larger benefit of the supply chain lens from an acquirer or investor perspective is that it provides focus and support for added due diligence efforts.

While not the only method or rationale for assessing the compatibility of merger candidates, the application of a supply chain risk lens can help investors and acquirers understand the likely uncertainty mix when they combine organizations. CFO

Kai Trepte is a research affiliate at the MIT Center for Transportation & Logistics.

Cyber Due Diligence Is Essential

Yahoo's cybersecurity problems are a wake-up call for acquirers.

In what can only be described as a case of poor timing, Yahoo disclosed a headline-grabbing hack in the midst of a $4.8 billion deal to sell its Internet operations to Verizon Communications. It was Yahoo's second strike. Just three months earlier, the company had disclosed that some 500 million user accounts had been breached. As a result of the incidents, in early February Verizon was rumored to be renegotiating a lower deal price.

The Yahoo situation underscores an increasingly complex, specialized, and sophisticated aspect of M&A transactions: cybersecurity due diligence.

Cyber diligence should be a priority from the outset of a potential transaction. Even at an initial stage, basic questions must be asked to even begin the process of developing a cyber diligence strategy:

• What information is most critical to the target's operations and revenues?

• How and where is that information collected and stored?

• How is that data protected from unauthorized disclosure or access?

• Have there been prior instances of hacking? If so, were the vulnerabilities sufficiently remediated?

• Has the target been on the receiving end of an inquiry or enforcement action from a regulator or subject to data security litigation?

• Does the target maintain a comprehensive data security program and corresponding policies, practices, and procedures that are updated on a regular basis?

Once a basic picture of the target's cyber risk profile and current state of affairs is assembled, a much deeper strategic and tactical dive is required to understand the target's cybersecurity program, potential liabilities, and regulatory risks.

Cyber diligence questionnaires are only a starting point. Face-to-face meetings are needed for follow up and to serve as a basis for additional information requests.

Next, the buyer should conduct onsite testing and analysis. That typically includes penetration testing and vulnerability assessments, subject to appropriate safeguards and permissions.

Overall, acquirers should conduct an in-depth review of the target's cybersecurity program and policies. They should also assess the target's internal and external threat monitoring systems and programs. Further, if the deal involves merging IT networks, systems integration risks need to be assessed.

Focusing on third parties with access to the target's network or sensitive information, the acquirer needs to find out what sort of diligence processes and protections are in place at the target. Several of the largest retail breaches have involved data compromises through vulnerabilities accessed by vendors.

Acquirers should also review the target's internal employee cyber-training protocols. In addition, the target's cybersecurity insurance should be vetted, including a close look at policy definitions, sublimits, and coverage terms.

While these steps are far from exhaustive, they provide a solid starting point to understand the complexities and risks inherent in M&A cyber diligence, especially as these risks continue to increase, and threats persist and evolve faster than our ability to detect and eradicate them.

CRAIG A. NEWMAN

Craig A. Newman is chair of the privacy and data security practice at Patterson Belknap Webb & Tyler LLP.

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HIRE EXPECTATIONS

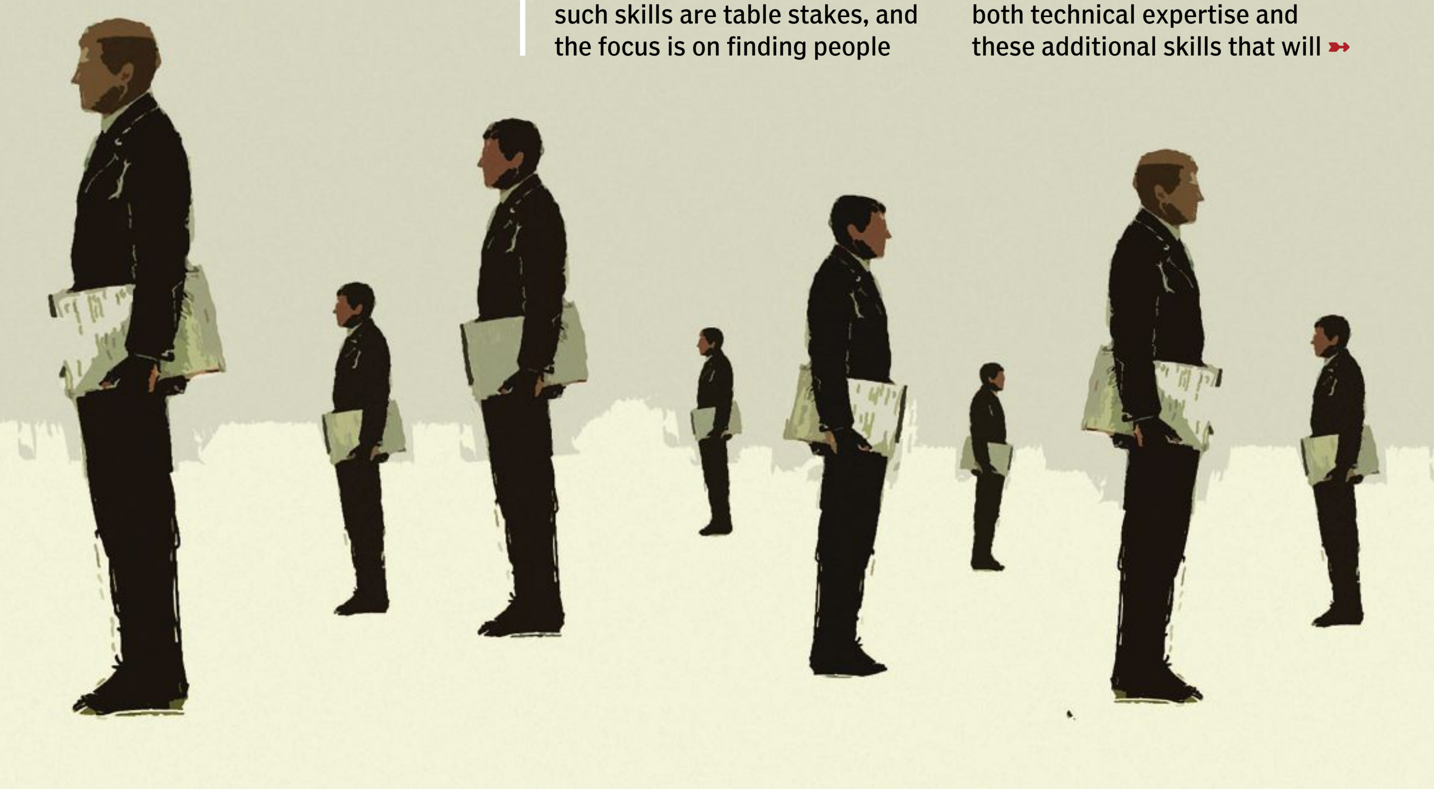
CFOs are seeking nontraditional candidates who have the analytical and 'soft' skills a modern finance organization needs.

BY DAVID McCANN

The shortage of young finance talent is widely discussed among CFOs, but rarely closely examined. The shrinking unemployment rate has drained the talent pool in many corporate functions and industries, and companies continually complain that they can't find qualified staff. For finance departments, the problem is different: If they were looking solely for the technical skills they wanted years ago, they would be overwhelmed with candidates. Today, though, such skills are table stakes, and the focus is on finding people who stand out because they have other desired qualities as well.

For one, given companies' increasing reliance on data in decision-making, demand is soaring for a demonstrated aptitude for analytics. Even more important for the long-term success of new hires, however, are assorted "soft" skills that allow them to communicate and collaborate with others, as well as influence others' attitudes and behaviors.

"There isn't a shortage of finance talent per se, but there is a shortage of people who have both technical expertise and these additional skills that will



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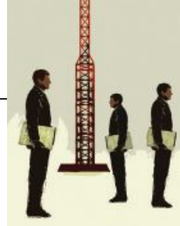


HIRE EXPECTATIONS

enable them to work well inside an organization," says Tom McGuire, a former CFO of Revlon and a longtime Coca-Cola executive who now runs a talent-management firm.

Given this shortage, finance departments are aggressively positioning themselves as employers of choice. And they can't allow themselves the luxury of easing up on that quest, since their competitors are doing the same thing.

Analytical Focus

In a recent Ernst & Young survey of 769 finance leaders, 57% said building predictive and prescriptive analytics capabilities is critical for their companies' futures.

"With talent, my focus is more on improving our analytical and problem-solving skill sets to drive better decision support for the enterprise than it is on finance [per se]," says Jan Siegmund, finance chief at ADP, which provides human resources management software. "Those skills are hard to teach, so there's a strong emphasis on finding people with that type of talent."

In some cases, organizations are just happy to find candidates who can demonstrate an awareness of the role analysis is increasingly playing.

"Companies are telling us they want finance students who know how important analysis will be in any finance function and who show a willingness to embrace and explore analytical tools and methods," says Aron Gottesman, chair of the finance and economics department at Pace University's Lubin School of Business. "Students don't necessarily need to know how to code."

Many companies that are successfully hiring young candidates with prowess in analytics are looking beyond traditional sources like business schools and accounting firms, according to CEB, a talent research and advisory firm.

"The problem is that demand for those candidates far outpaces supply," says Steven Williams, CEB's finance practice leader. "Finance organizations should be looking for people who may not have the desired business background or professional experience but who possess the analytical skills finance employees need now and in the future." Industry analysts, journalism graduates, and university faculty all potentially fit that mold, he says.

Talking the Walk

As important as analytics and technical capabilities are, various soft skills are valued just as much, if not more. In interviews with students on university campuses, "some companies are doing a quick technical test and spending most of their time evaluating the candidate's soft skills and fit with the firm,"says Jeff McNish, career development director with the University of Virginia's Darden School of Business.

There is also dramatically increasing demand for people with effective communication skills because the role of some finance staffers is changing. For example, like Siegmund, Joel Bernstein, CFO of global customer operations for SAP, is pushing his finance team to provide more decision-making support to business units and functions. He says he is challenging team members to "get out from behind their desks" and speak directly to internal customers, and, for example, convince them that a decision they made is inferior to one recommended by finance.

"This is very relevant for the people we hire," says Bernstein. A candidate who puts together spreadsheets and exports data for charts is very different from someone "who can stand in front of the sales leadership team and challenge their decisions."

Such skills are especially prized given SAP's ongoing

TALENT GAPS

Finance executives weigh in on employee skills

47%
Percentage who say current finance function is not equipped to meet future demands

57%
Percentage who say building skills in predictive and prescriptive analytics is critical for the future

Source: Ernst & Young, 2016 survey of 769 finance leaders

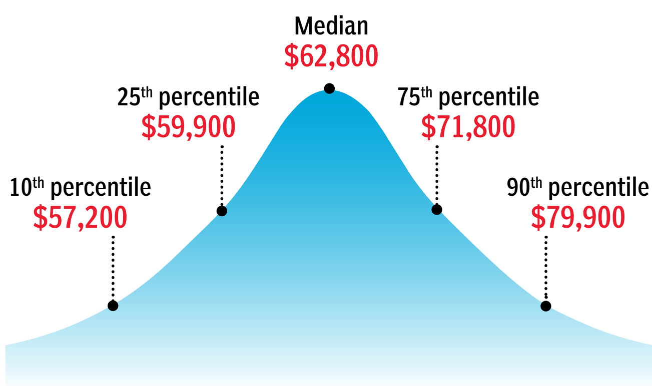
66%
Percentage who say industry-skilled talent will be difficult to acquire

67%
Percentage who say wage increases will be necessary to secure/retain highly skilled workers

Source: Deloitte, Q4 2016 CFO Signals survey of 137 CFOs

ENTRY-LEVEL PAY

Salary, corporate finance associates (level 1)



Numbers are rounded. Source: Salary.com

transition from a seller of on-premises software to a provider of cloud-based systems, which requires significant rethinking by almost all of the company's business units and functions. Bernstein refers to people SAP brings onto the finance team with the proper mix of analytical and persuasion skills as "transformation agents."

"Companies are telling us they want finance students who know how important analysis will be in any finance function and who show a willingness to embrace and explore analytical tools and methods."

— Aron Gottesman, chair of the finance and economics department at Pace University's Lubin School of Business

For example, say an SAP cloud business overachieves on its new-bookings targets but struggles to reach its cloud revenue targets. The business leader may challenge the financial modeling around how the backlog of bookings turns into revenue, and therefore request budget relief.

In such a case, a transformation agent might identify the root cause of the revenue shortfall as delayed provisioning or another operational challenge that negatively impacted time to revenue. The recommendation from finance might be to focus on operational improvements that drive a holistic business solution. The business leader may or may not be a receptive audience for such a recommendation, underscoring the value of communication skills.

"There are very few companies I've talked to that aren't in [some kind of] transformation."

— Joel Bernstein, CFO of global customer operations, SAP

Some staffers hired out of university degree programs have the skills to begin acting as transformation agents right away, Bernstein says. Others are provided with training on how to transition to the role.

The need for finance staffers who can communicate well with internal customers is hardly unique to SAP, he adds. Bernstein has regular contact with CFOs at companies that are current or potential clients of SAP. "There are very few companies I've talked to that aren't in [some kind of] transformation."

To find good communicators, Alicia Davis, director of learning and development for global finance at Dell, uses open-ended questions during interviews at universities.

"Candidates can show communication skill by answering a question thoroughly but not taking 20 minutes to do so," she says. "At the same time, if I come back with a second and third question, I want to see if they can go deeper."

Being a good communicator is based in part on persuasion skills, and, especially for young finance professionals, on understanding the language of finance. Pace University's Gottesman goes as far as identifying an understanding of the language of finance as the number-one requirement for a student aiming to land a job coming out of school.

"Some people don't go into finance because they don't like math, but that's not the real challenge of finance," Gottesman says. "What companies are looking for are language skills. No matter what quantitative or other skills candidates have, no matter how smart they are, if they don't know the language they don't know the field. And of course, the language of finance is often quite opaque or cryptic."

All Together Now

Collaboration skills are closely tied to communication skills, and are also hot in today's business environment.

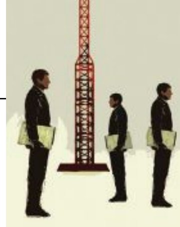
Some older business leaders still think in terms of silos, where finance, sales, marketing, HR, and other functions largely operate separately, notes McGuire, now a managing partner at Talent Growth Advisors. But today, in most sizable companies, work is organized in cross-functional teams. New hires will be placed on these teams, "so they must have skills that will make that team stick together," says McGuire.

It's important, he says, for companies to ask finance candidates to give examples of how they've contributed to a team and to pay close attention to the responses. "Look for examples of how they anticipate needs by building value-based relationships, " he says. "When do they seek feedback? When do they change how they do things?"

Unfortunately, the curricula of business and finance programs at colleges and universities still tend to be quite silo-oriented, says Tom Conine, a finance professor at Fairfield University. That's an impediment to the development of collaboration skills.

"Regardless of how progressive some universities, including Fairfield, think they are, when you look at them closely they're still teaching pure finance, pure marketing,

Courtesy SAP



HIRE EXPECTATIONS

pure management, pure operations research," says Conine, who's also president of TRI, a firm that conducts educational programs for finance staffers and executives of large corporations.

"Because of that," he adds, "people graduate with a silo mentality. It's one of the first things companies have to break kids of in entry-level programs."

Soft and Strong

Conine is a staunch advocate for the value of soft skills. "When people come out of college they tend to have very strong hard skills, but in business the need for those very rapidly begins to wane," he says. "As they progress in their careers, they will find that the importance of soft skills will eventually surpass that of technical ones."

In both his classes at Fairfield and in the corporate training he runs, Conine takes students through various simulations of business scenarios that are designed to make them better communicators, negotiators, trust-builders, and influence-makers.

In those programs, he also stresses the need to work under conditions of uncertainty. "That is extremely important for any entry-level person," Conine says. "There is tremendous time pressure. Resources are scarce. There is divergent opinion all around them. And most of all, there is limited information."

Most business decisions must be made with no more than 60% to 70% of the information that ideally would be available, he notes. "That drives technical people nuts at the entry level," says Conine. "They think there should be an equation that factors in all information. But that doesn't exist."

Other soft skills that Conine says will help entry-level finance professionals succeed—and that corporate recruiters should look for—include the following:

- An understanding of the difference between management and leadership. In other words, an awareness of the necessary balance between delivering on short-term tactical needs and committing to deliver on a simply articulated vision.
- Flexibility, which Conine calls an "options mentality."

GOING GREEN

Why hire people with work experience if you think training them yourself is a better idea?

COMPANIES HAVE DIFFERENT takes on the optimal mix of young finance talent. Some prefer to hire people with a few years of experience at an accounting firm or other company and hire relatively few people straight from degree programs. Others go the opposite way.

Dell, for its part, doesn't want anyone it hires into a finance role to have work experience at all. That's right: experience is a bad thing.

And the company doesn't particularly want people who have graduate degrees in place of work experience. It will, though, take those who have master's degrees based on three years of study in one discipline and two in another, or graduates of five-year accounting programs. But except in rare cases, the rule is: no work experience.

Why? Simply because Dell thinks it can do training better. "Over the years we've found we can train and develop our people internally," says Alicia Davis, director of learning and development for global finance. That's actually not a unique stance; a handful of other large companies, such as American Express, Dow Chemical, Ford, and General Electric, generally have the same policy.

Dell looks for people who display an inquisitive mind, are eager yet humble, and have demonstrated some sort of leadership, like having an online business, serving as an officer in a fraternity or sorority or a resident assistant in a dorm, or being active in community service.

The company also wants good students, "although we're not one to say everyone has to have a GPA of 3.8 or higher," Davis says. Why not? "Someone could have been in the wrong major and changed, or had a significant personal issue going on," she says.

The finance department takes on at least 200 interns every summer, of which 120 to 150 end up getting hired for full-time positions.

Dell puts all entry-level finance staff into a program with either four six-month rotations or three one-year rotations. That experience is coupled with face-to-face training that includes classes four or five days per semester, a week-long conference every six months, and two self-study research projects per semester. The training takes up about 10% of a staffer's time.

Only about 5% of those chosen for the program self-select out. "Maybe the program is not for them, maybe finance isn't for them, or maybe Dell is not for them," Davis says. "I've seen people go to sales and marketing. I've seen people say they needed a little more time to work at a level but yet we still saw a lot of potential in them. And some people say high-tech was not the right fit for them." D.M.

Business conditions are always in flux, so employers want people who aren't rigid in their thinking.

• The ability to draw inferences from data. There's so much of it available today that sensing what's reasonable to infer is becoming a critical skill, he says.

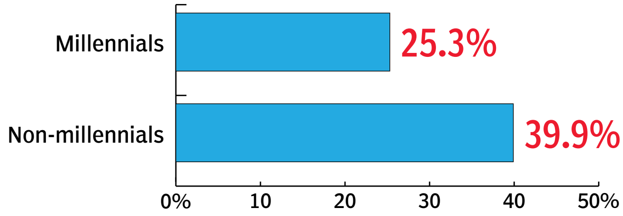
• An understanding of ethics as it applies to all aspects of work.

• The ability to engage with others both face-to-face and virtually. "Those involve entirely different team dynamics," Conine says.

EYEING THE DOOR

With only a quarter of millennials expecting to stay in their finance jobs for the long term, finance departments will be continually pressed to fill junior positions.

Percentage who have a high intent to stay with their employer, or no plans to leave soon*



*Responses of 6 or 7 on a 7-point scale

Source: CEB, Q4 2016 survey of 1,634 finance employees (596 millennials, 1,038 other generations)

Reaching Out

Recruiting is a two-way street. Just as finance organizations are evaluating potential hires, candidates are evaluating potential employers.

Perhaps the most commonly used strategy to attract talented young people to a company is to develop and communicate a strong brand. That's essential for any corporate function, but particularly so for finance, where exceptional talent at junior levels is relatively scarce.

"It's very important for CFOs to think about the brand of their finance organization," says Ajit Kambil, global research director for Deloitte's CFO program. "How is it perceived externally?"

An excellent method of finding talent, Kambil and others note, is to enlist young hires as brand ambassadors to help recruit their contacts. But in order to do that, companies have to treat their junior staffers well and make them proud to be part of the organization.

For ADP's Siegmund, getting senior executives involved in the hiring process, even for junior positions, is a key element of branding. Siegmund himself does that. "If you care about talent and show it, it permeates the organization" and sets an example, the CFO says. "My direct reports see almost every person we hire. That kind of focus has made a difference for us."

Williams at CEB notes three traits of finance organizations that excel at recruiting the current generation of young workers:

• Strong social media presence and mobile-friendly websites and application portals

• Millennial-friendly corporate culture, including benefits such as sign-on bonuses, formal peer mentorship programs, and flexible work hours

• Diverse career-path opportunities and formal, finance-specific rotational programs (especially with an international component)

"The market is so competitive right now that organizations that can paint a picture and provide a sense of purpose around what a career in finance means will get their pick of the better candidates," says Myles Corson, financial accounting advisory services markets leader for Ernst & Young.

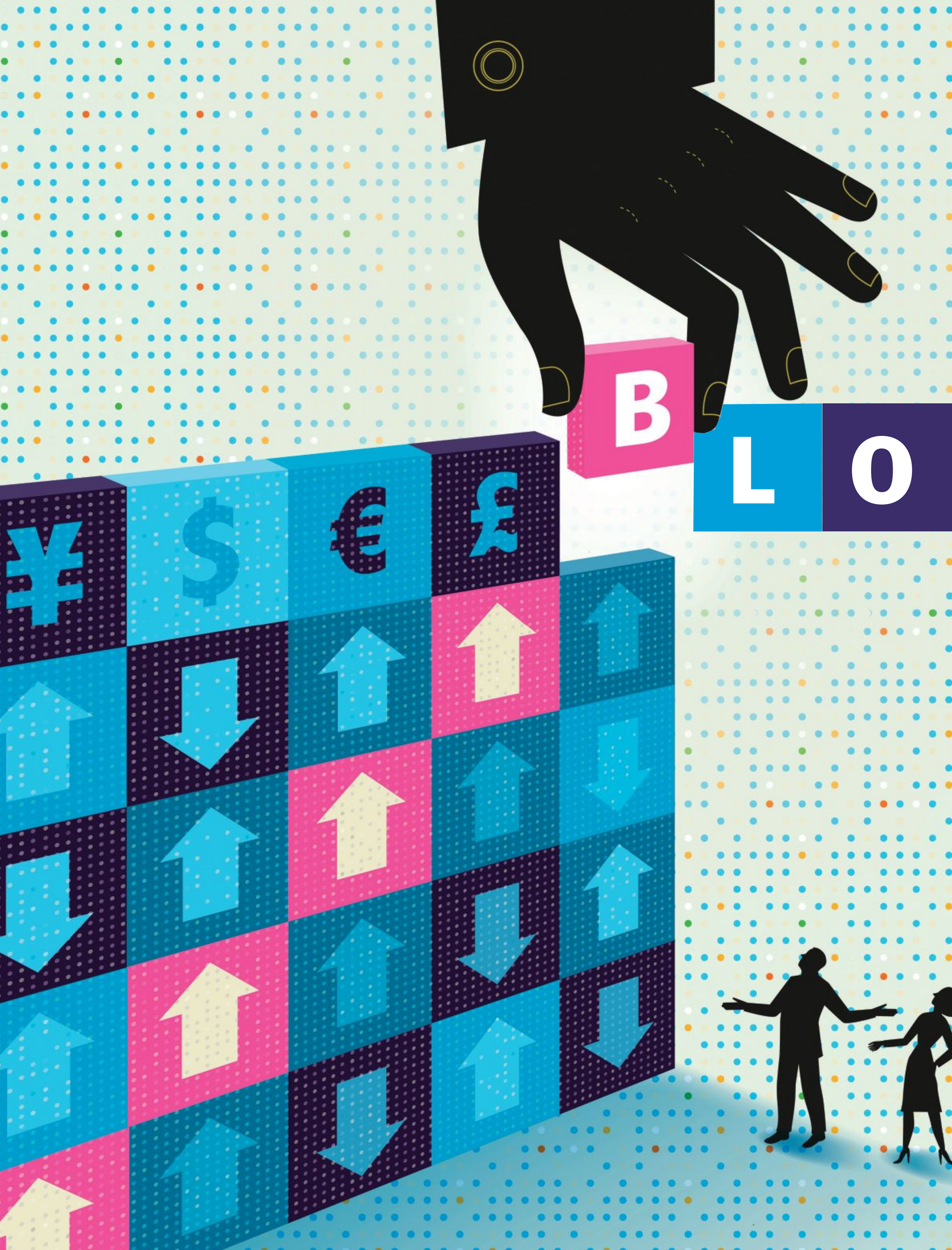
But does putting such a heavy focus on communicating career paths fly in the face of the reality that young professionals today are far less likely to stay with employers for the long term than previous generations did? "They leave faster if you don't," says UVA's McNish. CFO

"With talent, my focus is more on improving our analytical and problem-solving skill sets to drive better decision support for the enterprise."

— Jan Siegmund, CFO, ADP

DAVID McCANN IS A DEPUTY EDITOR OF *CFO*.

Opposite, Wikipedia; above, courtesy ADP



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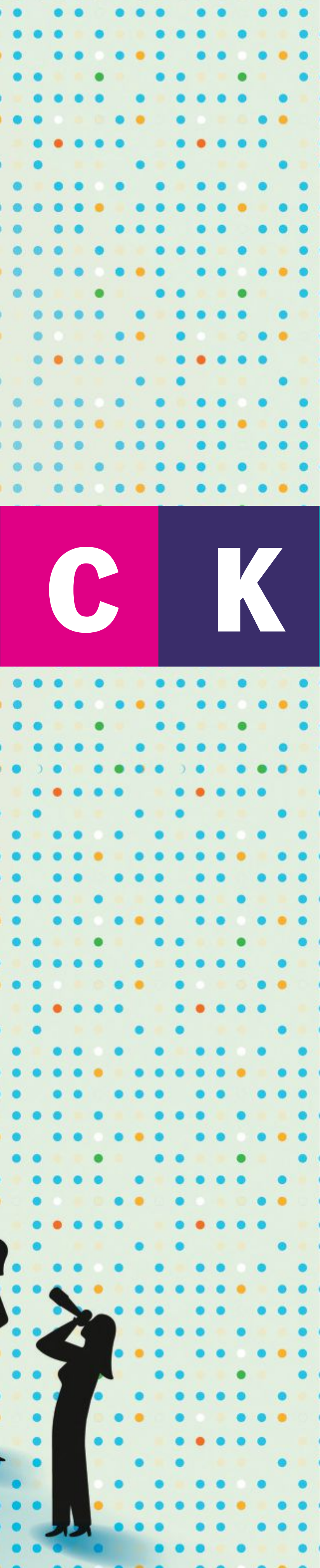

BETTING ON
CKCHAIN

The widely hyped technology continues to attract converts intrigued by its potential to eliminate the frictional costs of executing and reconciling transactions.

BY RANDY MYERS

As a graduate student in international economics at the University of California, Berkeley, in the early 1980s, Chris Ballinger sometimes found himself engaged in speculation about what would happen when money became electronic, and whether anybody other than a central bank could issue it. Twenty-five years later, the digital currency bitcoin answered those questions.

But for Ballinger—by then CFO of Toyota Financial Services, the financing arm of Toyota Motor—the most interesting development was not the new cryptocurrency but the technology behind it. Many others shared his interest. “What drew us was the ability to register

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things of value, whether they were financial things, physical property, intellectual property—and have absolute certainty of ownership and avoidance of double-spend," Ballinger recalls. "That allows you to wring cost and efficiency out of a system. If you know when somebody offers to sell you something that they are the real owner and the exchange will be certain and can't be undone, you can execute that transfer very quickly—without any middleman costs."

Just imagine if a finance department never had to reconcile another set of intercompany accounts. Or resolve a financial dispute with a vendor, wait for a payment to clear, or set aside collateral to cover counterparty risk.

"What drew us was the ability to register things of value ... and have absolute certainty of ownership and avoidance of double-spend."
—Chris Ballinger, CFO, Toyota Research Institute

Too good to be true? For the moment, yes. But it's all possible, theoretically, with the use of distributed ledger technology, or, as it is more commonly known, blockchain—the particular type of distributed ledger technology that enabled the creation of bitcoin in 2009.

A lot must happen to get from where we are today to the paradise blockchain proponents promise. Many smart people remain skeptical that blockchain, or any other variation of distributed ledger technology, will deliver all that its most fervent acolytes envision. But judging by the accelerating pace at which blockchain initiatives are making headlines, it's hard to imagine that blockchain won't have an impact on the world of finance. Will companies that ignore the technology today find themselves at a competitive disadvantage tomorrow?

"Clearly there are risks of going too early—of spending money building things nobody wants or is ready for, that are not yet of a scale to make them pay off," says Ballinger, now CFO and director of mobility services at Toyota Research Institute, part of automaker Toyota Motor. But Ballinger's opinion is that companies that don't adopt distributed ledger technology in some form will hasten their obsolescence.

Plenty of companies, especially in financial services, are trying to make sure that doesn't happen. In a survey of 200 financial institutions in 16 countries conducted for the IBM Institute for Business Value, 14% of the respondents said they plan to go into blockchain production at scale in 2017. A companion survey of 200 commercial and retail banks found that by 2018, nine out of 10 will have invested in blockchain solutions for deposit-taking, while 15% expect to have some type of commercial blockchain application up and running this year. The report concluded that the banking industry "is hurtling toward blockchain adoption far faster than many expected."

Venture capitalists also bet on the technology's future by funneling anywhere from $1 billion to $1.5 billion of capital into blockchain and bitcoin companies in 2016.

"I cannot recall another technology that has generated this much interest from as wide a segment of the business world," adds Todd McDonald, chief operating officer of R3, which is leading a 70-organization consortium exploring commercial applications for distributed ledgers.

What It Is

For anyone who has puzzled over the significance of bitcoin but has largely sidestepped any rigorous investigation of the technology behind it, a quick primer. A blockchain is a type of distributed ledger, meaning it is shared by many users over a peer-to-peer computer network. The ledger itself is made up of "blocks" of data, each of which has been assigned a unique digital identifier, or "hash." Each block of hashed data is built on the block that came before it, ensuring a complete, highly transparent, auditable trail of information on an ever-growing "blockchain" that cannot be changed or altered.

The blockchain is shared by all users, with new transactions requiring validation by more than one user—a consensus—before being accepted and shared universally. The result is that all users can be confident of the blockchain's reliability; it represents a literal "single view of the truth" for everyone.

The immutability is what allows participants in a blockchain to conduct business without having to wait for, or worry about, transactions being reconciled. It is expected that corporations will make use of a so-called "permissioned" blockchain, which, in part to speed its operation, allows users to restrict who participates in the consensus mechanism and how. A public blockchain open to anyone—like the bitcoin blockchain—doesn't offer that level of control.

The corporate finance function, Ballinger notes, is all about financial transactions, contracts, and the trading of financial instruments, often with chains of people facilitating payments. For large transactions, the frictional costs may be modest, but for small ones they can be material, if not prohibitive. Distributed ledger systems could eliminate those burdens for finance organizations once all the various parties they work with have agreed to participate in a blockchain.

While groups like R3 work toward that ideal, Ballinger is leading Toyota's efforts to apply distributed ledger technology to a wide variety of ends, from streamlining the vehicle registration process to making the company's supply chain faster, easier, and less expensive to manage. He's also investigating whether other auto companies might be interested in a consortium that would explore blockchain applications specific to their industry. "I'm a believer in this," Ballinger says. "I'm excited about it."

Experimentation

Ballinger is hardly alone. As noted, virtually every major financial institution is trying to leverage distributed ledger technology's ability to streamline vast facets of their operations and eliminate the costly reconciliation activities that accompany financial transactions—before someone beats them to the punch. And other industries aren't far behind. The following are just a small sampling of projects in the works at banks and other companies:

- Stock exchange operator Nasdaq is testing a blockchain-based trading platform called Linq, which, among other things, allows a company to issue securities to private investors.
- Depository Trust and Clearing Corporation is partnering with IBM, R3, and others to build a new blockchain-based trade information warehouse to settle payments of credit default swaps.
- Health-care companies are studying blockchain as a way to enable more efficient and secure sharing of medical records.
- U.K. freight forwarder Marine Transport International is creating real-time digital ledgers of shipping data for port officials and cargo owners, recognizing that visibility into the provenance and value of cargo could shrink shipping costs.
- IBM is testing a new application of blockchain technology in its global financing business. Its goal is to speed resolution of transaction disputes with its suppliers, financing customers, and partners. By doing so, it hopes to free some of the $100 million in IBM capital that can be tied up in those disputes at a given time.

While blockchain technology is unfledged, Keith Bear, a vice president and global leader for financial markets at IBM, says it's "mature enough to commit quite sizable and sophisticated applications to it." In addition to reducing the cost of existing business models, he says, blockchain has the potential to help companies develop new ways of serving clients that might not presently be easy or affordable.

Finance Usage

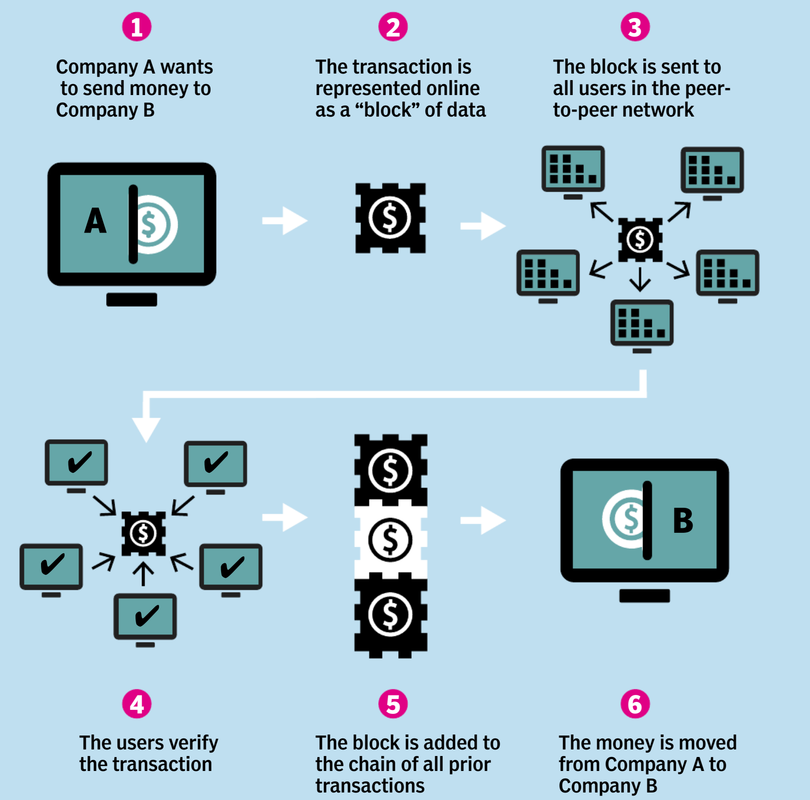
How will finance departments use distributed ledger technology? Experts identify four ways that early blockchain applications could benefit the finance function:

Elimination of reconciliation. "The majority of corporate finance transactions—transfer of shares, transfer of funds, signing of contracts—have several tracks managed by various stakeholders," says Alex Zinder, senior director, software engineering, for Nasdaq. He notes that those tracks are generally interdependent but unconsolidated. "We want to move to a shared ledger model in areas where currently there are redundant and replicated ledgers," Zinder says. "The immutable and verifiable properties of a blockchain solution enable this capability and create a full audit trail and extended assurance capabilities."

Streamlining settlement activities. Software company SAP demonstrated the potential for this application last summer when

How a Blockchain Works

Sending money using distributed ledger technology creates a highly transparent, immutable record.



Source: CFO

Opposite, courtesy Toyota

ATB Financial, a Canadian financial institution, transferred 1,000 Canadian dollars to a bank in Germany using technology from SAP and blockchain startup Ripple. Instead of needing several days for settlement with the counterparty bank and for account reconciliation, the payment was completed in about 20 seconds. Blockchain experts say companies could achieve similar efficiencies when providing collateral to a counterparty. Instead of requiring an agent to hold the collateral and handle mark-to-market calculations, a blockchain would allow the parties to have the collateral marked to market according to a pre-agreed formula—spelled out in a "smart contract"—that would also trigger exchanges of collateral automatically and directly between them. (See "How Smart Are Smart Contracts?" below.) "The next wave of blockchain adoption and experimentation is going to be around a lot of back-office processes similar to settlement—just taking days out of settlement time," predicts Kris Hansen, SAP's senior principal for financial services.

Facilitating supply chain financing. "Supply chain finance is incredibly inefficient," says Ballinger, noting that it can stretch across many tiers to fairly remote parts of the world where accessing capital is expensive. "Companies have tried to create visibility into those lower tiers and push cheaper capital down into the supply chain. But it's hard to protect your interests at those levels." With a blockchain, companies could register just about every aspect of the supply chain—bills of lading, purchase orders, certificates of origin, parts and components themselves—and protect their ownership in the things they're buying. In addition to helping to reduce financing costs, Ballinger says, putting supply chains on blockchains would help companies know more

HOW SMART ARE 'SMART CONTRACTS'?

Automating commercial relationships with blockchain sounds great, but it has its limits.

"Smart contracts" could be one of the most practical, successful implementations of blockchain technology. Resource website Blockchain Technologies describes a smart contract as "computer program code that is capable of facilitating, executing, and enforcing the negotiation or performance of an agreement using blockchain technology."

The code defines the rules and consequences in the same way that a traditional legal document would, stating the obligations, benefits, and penalties that may be due to either party in various different circumstances, the company says.

In theory, blockchain-based smart contracts could streamline processes that are spread across multiple databases and ERP systems, according to a June paper by Deloitte University Press, "Upgrading Blockchains." Securities trade clearing and settlement, and trade finance document handling, are two notable use cases. Others include bond coupon payments, electronic medical records, and insurance claims processing.

Music is the industry in which blockchain smart contract technology could prove most beneficial, says Blockchain Technologies. A public blockchain could, in theory, keep track of who owns the music rights to a song and ensure royalties are distributed to the correct performers, songwriters, and producers.

"The money would be automatically split according to the set terms, and each party's account would instantly reflect the additional revenue," the company explains.

A piece of software code can represent a business arrangement, and execute provisions automatically, but what happens when there's a problem?

Last June, a crowdsourced venture capital fund built on Ethereum, a smart contract development platform, was the victim of a hack because of flaws in the contract's code. The hacker made off with about $50 million in digital currency. Under the "smart contract," the funds transfer wasn't a violation of the agreement. After much hand-wringing, the organizations running the fund voted to restore the money to investors.

According to a paper by Larry Wall, an executive director at the Federal Reserve Bank of Atlanta, a contract based on "immutable, unstoppable, and irrefutable computer code" presents some difficulties.

"To reach their potential fully, smart contracts are going to have to find a smart way of interfacing with the often complicated and messy real world of business where the initial contract is often not the final word," Wall writes. VINCENT RYAN quickly and precisely where parts are—a benefit when their supply chain is disrupted by a natural disaster or some other unusual event. It also would largely eliminate counterfeiting by assuring the provenance of parts.

Optimizing and unlocking liquidity. R3's McDonald says CFOs may find that once they have digitized assets on a blockchain they may open up new sources of liquidity. Consider open account financing, in which companies ship and deliver goods internationally before payment is due. Registering foreign accounts receivable on a distributed ledger would make their place of origin known, trusted, and auditable. Banks and other lenders presumably would be more willing to provide financing against those accounts receivable, and on better terms. "That's something we're working on with banks right now," McDonald says.

Stumbling Blocks

Blockchain evangelists say the biggest challenges to widespread adoption of blockchain technology aren't technical. But that's not entirely true. Transaction speeds, the verification process, and the amounts of storage a blockchain needs are all potential stumbling blocks, according to a Deloitte whitepaper. In addition, blockchain technology represents a complete shift to a decentralized network. But it is also true that blockchain's success hinges on an understanding of the technology and people's willingness to embrace it. If expectations get too high too fast and aren't realized, or if promised timelines prove too aggressive—as some were in 2016, McDonald concedes—potential users could be put off.

Meanwhile, there's a critical mass needed before blockchain technology can work to its full potential. To be sure, large companies may realize some value on their own by figuring out a better way to reconcile data across far-flung business units, which interact in complex ways on transfer pricing and other issues, says attorney Lewis Cohen, a partner with Hogan Lovells. But even large companies won't realize blockchain's full value until their vendors, suppliers, customers, and other partners join their networks.

Says Ballinger: "Early on, nobody is interested except the developers. What you're likely to find are little pockets of opportunity—illiquid security settlements, for example—where people will start using the tools. Then, at some point, like the Internet, it will suddenly take off."

"The biggest challenge will be around collaboration and integration," agrees Nasdaq's Zinder. "A blockchain solution implies a network of participants. Breaking down the infrastructure and information silos between those participants is challenging and has to be justified as a competitive advantage. We have seen a lot of this integration evolution in the digital media, advertising, and retail segments, but it is difficult to replicate in finance, and for good reasons."

"In the new world we do it fast; we do as much as we can with the cloud; we do it in small, bite-size pieces; and we fix and innovate as we go."
—Kris Hansen, senior principal for financial services, SAP

Costs can always be an issue when a new technology is introduced. For blockchain, "high initial capital costs could be a deterrent," says Deloitte. But SAPs Hansen says companies can proceed prudently and piggyback on the work being done by industry consortiums. He adds: "The appetite for large, stop-everything transformations is behind us. In the new world we do it fast; we do as much as we can with the cloud; we do it in small, bite-size pieces; and we fix and innovate as we go." When SAP worked on ATB's cash-transfer proof of concept, Hansen says, the project was started and completed within nine days.

First Steps

For CFOs who haven't yet investigated blockchain technology, the obvious first step is to familiarize themselves with it at a conceptual level and understand why it's important and what it can do. An early objective should be to develop a short list of drivers for embracing the technology. "While any large organization would have reasons to care," he says, CFOs and their colleagues should look for the two or three reasons that are most pertinent. Then, they should begin figuring out who they need partner with to bring a blockchain strategy to life.

While business and IT leaders should be involved in this effort, so should legal counsel, Cohen says, noting that a raft of issues will require attorney input. "Once you have commercial arrangements on a common platform like a blockchain, there are potential antitrust and other compliance considerations that become relevant," he notes. "You also may have issues like reliance on third parties that you haven't appreciated before."

Fail to do all of this—to understand how blockchain could impact an industry and its way of doing business—and some CFOs could jeopardize their employer's long-term sustainability.

"It's quite possible that people are working now to disrupt your business model using blockchain technology," Cohen says. "If you don't understand what it is, or how it works, you risk being left behind." CFO

RANDY MYERS IS A FREELANCE WRITER BASED IN DOVER, PENNSYLVANIA.

Opposite, Thinkstock; above, courtesy SAP

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Planning For Tax Policy Turmoil

How to navigate a potential sea change in the U.S. corporate tax system. By David M. Katz

After Donald Trump unexpectedly won the U.S. presidential election last November, it would have been hard for most CFOs not to be hugely optimistic about their companies' tax positions, if not about the entire U.S. economy. ¶ Not only had the pro-business Republicans taken the executive branch, they'd held the House and flipped the Senate. Suddenly, the proposal candidate Trump had made to lower the corporate tax rate from 35% to 15% seemed to go from being a pipe dream to a near lead-pipe cinch.

Further, in the blink of a bleary post-election-day eye, the finance chiefs of U.S.-based corporations holding big profits offshore now could reasonably expect to be able to repatriate that cash at a one-time tax rate of 10%. In addition, U.S. manufacturers could expect to be able to declare their capital expenditures as an expense for tax purposes, a boon for them even though they would lose the deductibility of interest expenses.

On top of the then-President-elect's proposed tax breaks was the prospect of more-permanent and deeply rooted reforms contained in "A Better Way," the tax-reform "blueprint" issued by House Republicans in June 2016. The reforms, which would likely have languished in Congress under a Hillary Clinton presidency, included elimination of the alternative minimum tax and a territorial tax system under which companies would be taxed only in the country where their income was earned—rather than taxed again when they repatriated it.

Inconceivable until last November, this wholesale revision of the corporate income tax system has become a real possibility. "It would be the most substantial sea-level change in the way we tax corporations in memory," says Matthew Gardner, a senior fellow at the Institute on Taxation and Economic Policy, a research organization.

Borderland

Yet, not all companies are celebrating a key element of the House Republicans' plan: a "border-adjusted" tax system that appears to draw a sharp dividing line between winners and losers.

In an attempt to follow a "made in America" agenda, the plan would penalize U.S. importers and provide a tax break to the nation's exporters. Under the border-adjusted system, U.S. companies would get rebates on income taxes paid on the goods and services they produce here if they export them. At the same time, "products, services, and intangibles that are imported into the United States will be subject to U.S. tax regardless of where they are produced," according to the blueprint.

In a reversal of the current state of affairs, tax would no longer be charged where goods are made, but where they're consumed or used. That would put U.S. companies on a more level playing field with competitors located in countries that already have border-adjusted systems, according to "A Better Way."

Today, such countries tend to tax U.S. imports while subsidizing their own exports to the United States. "In the absence of border adjustments, exports from the United States implicitly bear the cost of the U.S. income tax while imports into the United States do not bear any U.S. income tax cost," according to the blueprint.

A whole lot is riding on the House leadership's supposition that the border-adjustment system will become law. Overall, the Republican tax reform plan would slash federal tax revenue by a total of $2.4 trillion (including individual and corporate taxes) over the first decade, excluding the gains the cuts could theoretically spur by stimulating the economy, according to an analysis by The Tax Foundation, a tax-policy nonprofit. The blueprint counts on border adjustments to make up for $1.1 trillion of the revenue lost to tax cuts.

Thinkstock

Despite the Republican majority in Congress, it's far from certain that border adjustment will be enacted. For one thing, it's received a mixed response from President Trump, who sometimes seems to favor punitive tariffs as a means of tax collection at the border. Retailers, energy businesses, and other large importers are up in arms about the idea of the border tax. World Trade Organization rules may forbid it. And pro-growth advocates close to the administration have questioned the need to fund the cuts at all.

No Time to Delay

In such an uncertain environment, tax planning is becoming a big challenge for corporate America, experts say. A big, across-the-board corporate tax cut could very well be the centerpiece of the tax reform legislation House Speaker Paul Ryan and Senate Majority Leader Mitch McConnell reportedly expect to be enacted by August. But beyond that the picture is blurry. CFOs, of course, can't afford to delay decisions on such things as remaining in locales or shifting operations to different ones, investing in capital equipment, and changing the tax status of their companies—all of which can have a big impact on a corporation's tax rates.

Yet to continue formulating their plans, CFOs need a basis for forecasting the laws and rules that will govern them. Experts agree that President Trump's spoken and tweeted pronouncements are too sketchy to be the basis for forecasts. Instead, some advise that the House blueprint is the most solid foundation.

Jeff LeSage, vice chairman, tax services, at KPMG, advises companies to examine their most recent tax returns and financial statements and analyze how those would be "affected by the proposals that are out there, especially the blueprint."

Under Trump, the prospects for the enactment of legislation based on the blueprint are as good as they've ever been, he reasons. But even if such comprehensive reform is signed into law, it's sure to affect industries differently.

"CFOs have to model their own companies according to what tax reform will look like for them," LeSage says. "Just a pure rate reduction wouldn't necessarily be a benefit" if the reforms are revenue neutral.

Among the proposals, for instance, is a plan to eliminate the deduction of interest expenses against net income. Companies that use leverage in a significant way to fund their operations could be hit hard by the loss of the deduction, he notes. The real estate industry and private equity firms are two notable examples.

How much could the removal of the interest-expense deduction cost a company? To answer that question, assumptions have to be made about the terms of the debt, the interest rate, and other factors, he says. For example, assuming the otherwise allowable interest expense on $1 billion of debt was $50 million, the "cost" of the disallowance would be the tax rate (assumed to be 20% under the Blueprint) multiplied by the interest expense ($50 million), or $10 million.

But the big dividing line between winners and losers would be border adjustment. "Energy, automobiles, and any business that has a significant component imported through its supply chain is going to be negatively impacted," says LeSage. "Even if there's a significant tax cut, they're going to get no deduction for a significant piece of their costs."

The Great Divide

Domestic retailers would especially be hurt by an import tax, notes Heléna Klumpp, a former vice president of global taxation at Baxter International who is now deputy editorial director for Bloomberg BNA Tax & Accounting. "If you're Walmart and about to enter into an agreement with an offshore supplier who will sell you T-shirts, you could end up in a bad position if there's a border adjustment that doesn't allow you to deduct the cost of those T-shirts when you earn a profit from selling them in the U.S.," she says.

Klumpp elaborates on her example: "If a retailer is paying $1 for a package of T-shirts from a manufacturer in Bangladesh, and [the retailer sells] those T-shirts for $5 in the U.S., it would have taxable income of $4, ignoring other deductible expenses. But under the border-adjusted system, no portion of the price paid to the foreign manufacturer

Near the Top

The United States has the second-highest top marginal corporate income tax rate in the world, exceeded by only the United Arab Emirates.

Country	Top marginal tax rate
United Arab Emirates	55.0%
United States	38.9%
Argentina	35.0%
India	34.6%
France	34.4%
United Kingdom	20.0%
Ireland	12.5%
Paraguay	10.0%
Worldwide average:	22.5%

* As of August 2016
Source: The Tax Foundation

would be deductible, and the whole $5 earned on the sale would be taxable."

Retailers facing a situation like that would do well to devise contingency plans. "A company may want to enter into a shorter-term agreement and see what happens with this border adjustment," Klumpp says. "Then it would be better positioned for next year, when the adjustment is enacted, to enter into an agreement with a domestic supplier."

The issue may also be more complex than it seems. Less than 5% of the products that Ulta Beauty sells, for example, are private-label finished goods. Since the company, which owns cosmetic and fragrance department stores, may directly import such items, it would have to pay the full tax if the border adjustment plan is adopted, notes Scott Settersten, the firm's CFO.

That probably wouldn't amount to as big a tax bite for Ulta as it would for U.S. toy retailers that import the bulk of their finished goods from China. But more than 90% of Ulta's inventory falls into the category of "indirect imports," products made by large U.S.–based international cosmetics companies like Estee Lauder and Coty, according to Settersten. "Those companies are getting things cross-border," he says.

In such cases, "bits and pieces" of a finished product may be imported from differing locales by U.S.–based multinationals. For example, the plastic case of a beauty compact might be made in one country, while the powder and powder puff in two others.

Complying with a border-adjusted system could involve a snarl of red tape and added cost, in addition to increased taxes for indirect importers like Ulta. "The intention is to make the tax code easier, and this would certainly not do that," Settersten says, referring to candidate Trump's goal of a simpler system. "It would impose administrative burdens on us and many others."

Big exporters like GE, on the other hand, are looking at border adjustments as a potentially bountiful gift. "If a company is a net exporter, you could envision that, under border adjustability, … it would pay a lot lower tax rate," GE CFO Jeff Bornstein told analysts during the company's fourth-quarter earnings call. "There is an incentive for exporters to export more because there is essentially no tax on exports," he added.

"Energy, automobiles, and any business that has a significant component imported through its supply chain is going to be negatively impacted."

›› Jeff LeSage, vice chairman, tax services, at KPMG

➸ Too Complicated?

Nevertheless, any tax planning based on border adjustability could prove a waste of time. Before his inauguration, President Trump criticized the plan as too complicated, according to a January 16 story in *The Wall Street Journal.* "Anytime I hear border adjustment, I don't love it," he said in an interview with the newspaper. "Because usually it means we're going to get adjusted into a bad deal. That's what happens." Ten days later, however, the *WSJ* reported that the Trump administration had shifted its position on adjustability, seeing it as a way to recoup some of the costs of the wall the President has ordered built on the U.S.–Mexico border.

So how do CFOs come up with a solid estimate of their companies' taxes over the next year or two? One thing to consider in planning is that the Trump administration's way of communicating legislative aims is "very different than any other [presidential] administration," says Dean Zerbe, a former senior counsel to the U.S. Senate Finance Committee and now a national managing director of Alliantgroup, a tax services firm.

Previously, presidents tended to make sharply defined legislative pronouncements that had been worked out in advance with fellow party members in Congress. Such pronouncements included items the president considered non-negotiable. Not so for Trump, who makes broad "aspirational" statements without prior congressional negotiations, according to Zerbe, who says he can't recall previous Republican presidents ever having so much "daylight between them and the congressional Republicans."

But such distance can be healthy, because it can enable the president to depart from a prior pronouncement if Congress offers a better proposal, Zerbe says. Similarly, Trump has been able to issue strongly worded statements that move House and Senate Republicans quickly away from legislation he deems ill-advised—as when, in response to a Trump tweet, they decided to shelve a plan to reduce oversight of potential ethics violations.

It's a kind of triangulation, the consultant says, referring to a successful Clinton administration strategy in which the president stakes out a position incorporating the two political sides but remains above the fray. Thus, Zerbe's advice to CFOs is to "not be over- or under-anticipatory when Trump says something."

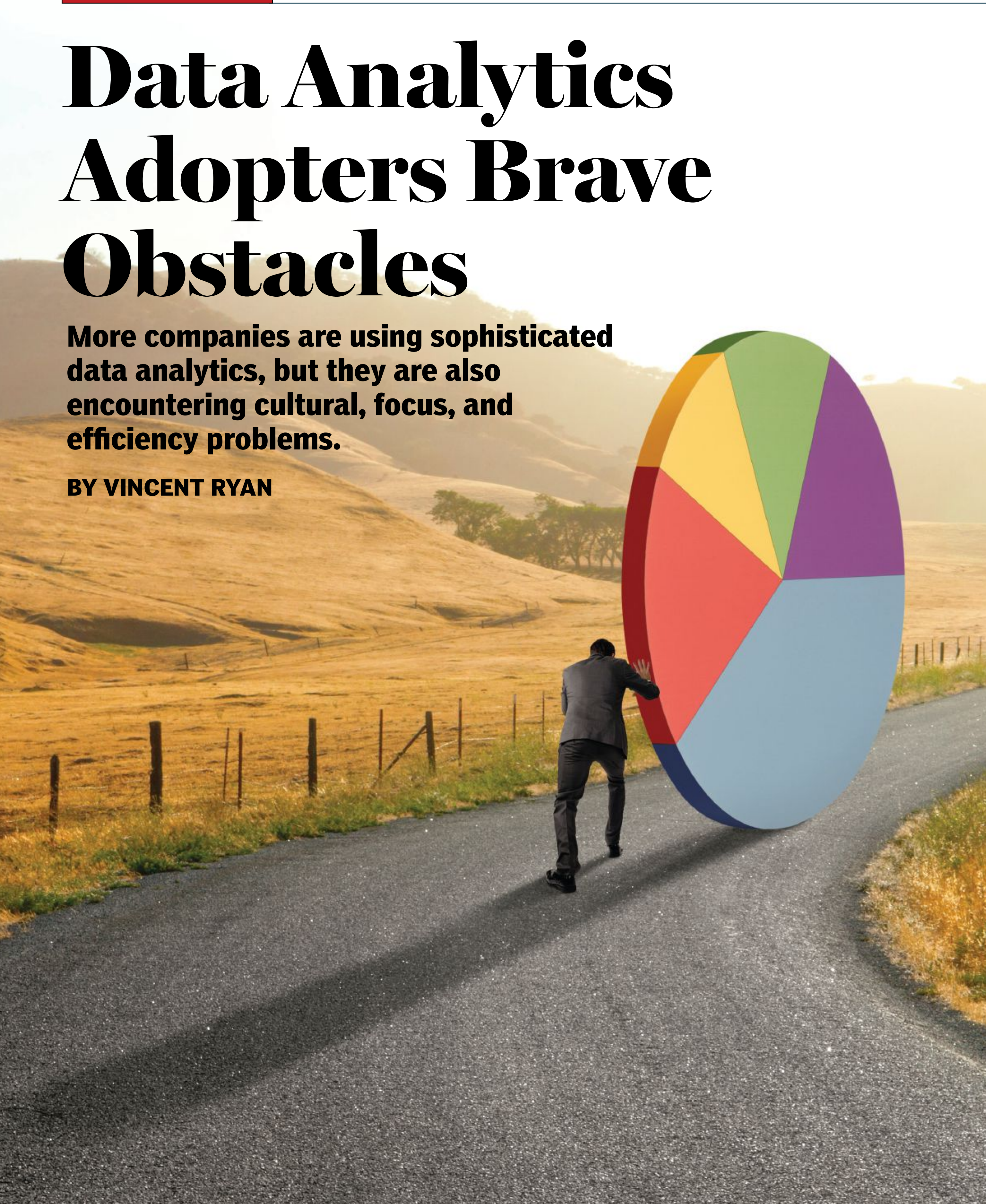
The bottom line? Expect tax cuts—likely significant—and a whole lot of uncertainty, at least until summer. CFO

PRNewsFoto/KPMG

Data Analytics Adopters Brave Obstacles

More companies are using sophisticated data analytics, but they are also encountering cultural, focus, and efficiency problems.

BY VINCENT RYAN



"**Without big data analytics, companies are blind and deaf, wandering out onto the web like deer on a freeway," Geoffrey Moore, author of *Crossing the Chasm*, wrote.**

Certainly, many CFOs, and not just those with web-based businesses, would wholeheartedly agree: data is the sensory information produced by a business that has its eyes and ears on operations and customers. Analytics is the brain that processes the information and provides insight, which ideally leads a company to take meaningful action.

That's the way data analytics is supposed to work. But using data analytics, as when using most information technology tools and systems, is full of trouble spots, stumbling blocks, and blind alleys. In other words, it requires effort and energy on the part of an organization.

The challenges organizations confront in evangelizing, constructing, and deploying data analytics programs stood out in *CFO*'s annual IT survey. Called "Data and Analytics: The CFO's Evolving Role," the survey was conducted in January 2017 and garnered 202 respondents, of which about one-third were CFOs, one-third a different finance title, and one-third CEOs.

As a promising way to drive decisions and corporate actions, data analytics has a bright future. CFOs are clearly building a solid, quantitative foundation for decision-making, instead of relying on gut instinct and whimsy.

Among the survey participants, 83.6% "agreed" or "strongly agreed" that the strategic decision-making in their organization is already highly data-driven. (Less than 10% disagreed with that statement.) A similar number said the same thing about operational decision-making. What's more, 66.7% strongly agreed or agreed with the statement that their strategic and operational decisions are not only based on data, but also "informed by sophisticated data analytics" (see Figure 1).

The organizational entity primarily responsible for setting the data and analytics agenda at the responding businesses varied, but the finance function was cited most often, at 46.8%. (That result echoes a survey conducted by Adaptive Insights in November 2016.) Business units set the analytics agenda at 19.9% of companies, and at 16.9% of responding firms the information technology function handles the responsibility.

But at most companies finance is clearly the function responsible for driving analytics into disparate parts of the organization, such as sales and marketing, operations, and customer service. No wonder 70.7% of the CFOs and other finance executives responding to the survey personally plan to devote substantial time to data analytics in the next two years. (Fifty-one percent have already undergone training related to data analytics.) Separately, 68% said they plan to improve their own data analytics skill set in the coming year.

To adapt, CFOs are also reshaping their staffs' capabilities accordingly: 60% plan to improve the analytics skill set of their existing finance team in the coming year, and 59.6% said they will require strong data analytics skills from new finance team members. (See "Hire Expectations," page 22.)

The need to develop employees' and management's skills is a recognition that the age of analytics is still in its in-

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Figure 1

Strategic and operational decisions in my organization are typically informed by sophisticated data analytics.

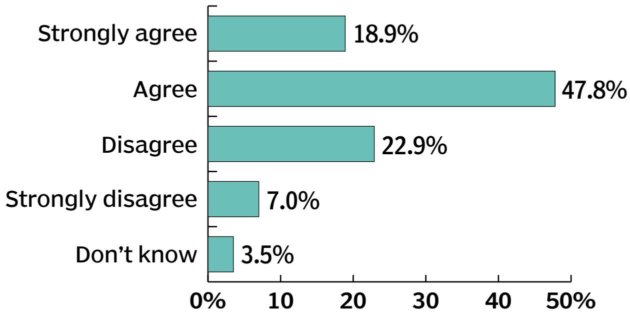
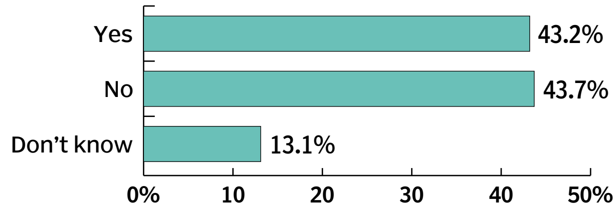


Figure 2

Is your finance function currently seen as having a highly effective data analytics program?



fancy. When asked if their finance function should "substantially increase its use of data analytics to support decision-making," 72.7% of respondents said "yes." A similar number agreed or strongly agreed that finance should do so "to be better partners across the business."

Overcoming Resistance

As *CFO* examined in "Master of All Metrics" (January/February 2017), data analytics capabilities naturally reside within the finance department, and they are also a means of spreading finance's influence. How have things gone thus far? When asked if other parts of the organization see the finance function as having a highly effective data analytics program, 43.7% of respondents said "no" (see Figure 2).

There are many factors that could breed discontent among the ranks. Certainly, many organizations still have execution problems. For example, 28.5% of executives answering the survey said data from across their organizations is not rolled up into a "single version of the truth" (see Figure 3). And 21.9% of respondents said their finance function does not systematically communicate data to business leaders, a failure that could easily weaken the clout of a data analytics program.

Finance also can't ignore that its stewardship of the data analytics function may cause resentment in other departments, especially if finance is viewed as authoritarian. Lamented one respondent: "We are becoming too 'accountant' controlled and are declining in our growth and ability to make quick changes because the accountants are driving a total risk-averse culture where no change is safer than a slightly risky change."

Cultural issues are a key ingredient in the successful application of data analytics. Almost a quarter of respondents cited their "corporate culture" as an obstacle. "Resistance by the operations side of the business" and "resistance from the sales organization" were two written-in responses to the question, "What is the biggest challenge you see in making better use of data analytics in your organization?"

Getting departments on the same page and prioritizing what should be measured are other common challenges. One executive noted his organization's greatest stumbling block is "clearly defining the data analytics that are germane and critical to the overall operation of the business." Another cited "the lack of a common definition of data across multiple, vertical business units." Getting managers to trust the results of an analysis can be a difficult task also. "When the insight from data analytics suggests different findings to the commonly held views, there is a tendency to reject the analytics and use them selectively when it supports the views," one respondent said about her company.

Almost one quarter of respondents cited their "corporate culture" as an obstacle.

Winning the backing of senior management was seen as crucial. "Buy-in from the board and department to embrace time and costs associated with data capture" was the primary hindrance for more than one respondent. For others, as one executive put it, the problem was simply collaboration, "having everyone on board on everything, and working together with the least amount of stress."

Focus and Efficiency

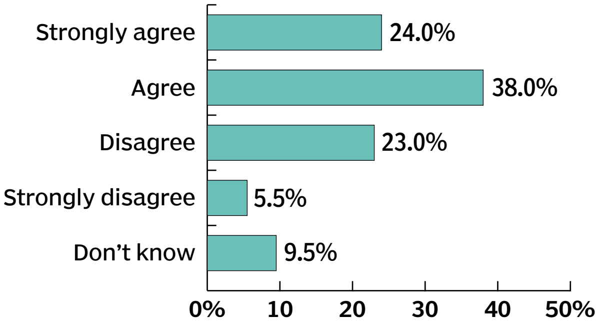
There's little doubt that technology and systems also are prominent barriers to a highly effective data analytics program. They were mentioned by the most respondents, 34.6% (see Figure 4). The challenges include the need for:

- Interoperability between financial and operating data

Source for all charts: CFO Research survey of 202 U.S. executives, January 2017.

Figure 3

Data from across my organization is currently rolled up into a "single version of the truth."



• Structure, organization, and delivery of information in an agile, digestible format

• The capability to roll up multiple ERP systems into a consolidated view

Clearly, the technology and systems supporting data analytics are still falling short of the (possibly unattainable) ideal, which one executive described as "a low-cost system to report out the meaningful metrics and conclusions automatically."

But that doesn't seem to be souring executives on putting the concepts and technologies into practice. One executive said, "[I] cannot think of anything [that is] not valuable with data analytics." Commented another: "Data helps all decision-making."

At the same time, executives say the applications of data analytics have to be sharply focused. Many executives have observed their companies deploying data analytics in less-than-optimal situations. Some organizations are unsuccessful with data analytics because they're applying new technology to old paradigms, for example. When asked what was the least valuable use of data analytics seen in their organization, one executive cited as useless the "'old school' operations reports that analyze and report historical performance and trends." Other examples included annual planning and recreating legacy reports.

Clearly, being efficient about using data analytics is a challenge, with almost 27.7% of respondents selecting "time constraints" as an obstacle to effectiveness, the second-most-cited hurdle after systems and technology.

The least-valuable uses of data analytics can be "time wasted gathering data that wasn't ultimately necessary or relevant," as one respondent indicated, or "getting bogged down in the details of the data and taking too long to make a decision based on data," according to another. One executive pointed to the rollout of systems "without a good understanding of the overall business needs and lack of integration," which leads to analysts "spending too much time aligning and linking data, instead of working on the

Figure 4

What obstacles prevent your finance function from having a highly effective data analytics program?

Notes: Multiple responses allowed.

insights." In another organization, the challenge is "culling through the volume of data 'cuts' to get at the real actionable information," a respondent said.

The good news is that some organizations have mastered the technology, cultural, and efficiency challenges and are applying data analytics in forward-thinking ways. Among the most valuable uses of data analytics that survey respondents listed were the following:

• Setting the pricing policy in advertising and marketing functions

• Understanding key customer and profitability data by factory and location

• Targeting the customers most likely to generate the highest profits

• Making investment and resource allocation decisions

• Exposing gaps in performance compared to benchmarked competitors or related industries, which focuses the organization on where it strategically needs to improve

• Pivoting a product suite after months of testing, learning, and working with clients to determine the highest-potential success metrics

As Carly Fiorina, former CEO of HP, said when discussing data analytics, turning "data into information, and information into insight," can be a long journey for an organization. Finance executives are running into bumps and barriers on the path to effectiveness, but they are also making hard-fought progress. CFO

VINCENT RYAN IS EDITOR-IN-CHIEF OF *CFO*.

The CFOs Who Wouldn't Be King

Only one in five finance chiefs see themselves moving into the top job. Are they having a crisis of confidence—or being realistic? By Josh Hyatt

15%

Percentage of European and Canadian CFOs who believe they will be promoted to CEO within the next five years

Chief financial officers in the United States are feeling wildly optimistic about the country's economic prospects, guardedly optimistic about their company's prospects, and not very optimistic at all—in fact, for the most part, downright pessimistic—about the prospects for their own career advancement.

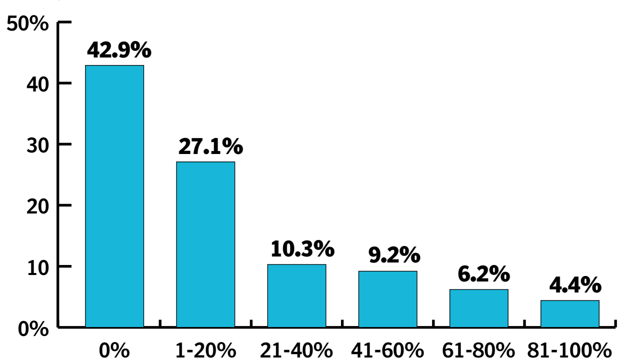
Those are among the findings of the latest Duke University/*CFO* Magazine Global Business Outlook survey, which drew responses from nearly 1,000 senior finance executives worldwide. The quarterly survey, last conducted in December 2016, has been conducted for 83 quarters—making it the longest-running economic survey of its kind.

To put the findings in historical perspective, CFO optimism about the U.S. economy was off the charts. For the previous five quarters, the Duke University/*CFO* Optimism Index hovered around the long-term average of 60, as measured on a 100-point scale. This time, it weighed in at 66.5, up from 60 the preceding quarter and its highest level in more than a decade. As applied to executives' own companies, the optimism index registered a slight uptick to 67.4 from 65.3. Overall, the proportion of CFOs becoming more optimistic outweighed those becoming more pessimistic by 4 to 1.

But the overall mood shifted when respondents assessed their own likelihood of rising to become a CEO in the next five years. Around the globe, only about one in five CFOs believes that he or she will be promoted to chief executive officer in the next handful of years. Among U.S. CFOs, about 20% give themselves a greater than 40% chance of being a CEO within five years (see Figure 1). Among respondents from Africa, the number is slightly higher—27%—while just 15% of European and Canadian CFOs see the keys to a posh CEO washroom in their future.

FIGURE 1

What is the probability you will be a CEO in five years?*



*U.S. executives only.
Numbers may not add to 100% due to rounding.

Of course, the duties of a CFO differ—sometimes markedly—from one country to the next. In some regions, based on job duties at a typical U.S. company, a CFO is more akin to a controller. But in the U.S., the CFO-to-CEO leap is not extraordinary. Such high-profile CEOs as PepsiCo's Indra Nooyi have successfully ascended to the top job; Nooyi's 2006 elevation came on the heels of her five-year stint as CFO. Former CFO Thomas B. Mangas, in another example, rose to become CEO of Starwood Hotels & Resorts.

Dennis Arriola, a former CFO who now serves as CEO of SoCalGas, the nation's largest distributor of natural gas, described the challenge in terms of taking very deliberate skill-gathering steps. "It becomes part of your career journey to collect the different tools you'll need," he told *CFO* in an interview. "I picked up what I needed to know—manufacturing, customers, regulation, international, and employees—here and there. I had broader experience than closing the books."

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But knowing that others have mapped out the journey has not, apparently, given current finance executives overwhelming confidence that they can follow in those footsteps.

STAYING PUT-UPON

It's easy to conjure possible reasons why some CFOs don't consider themselves CEO material: They're risk-averse, not practiced at persuasion, and constrained by logical (rather than abstract) thinking. Simply put, they don't see themselves as enterprise leaders. Some may not even want all the responsibility and stress that comes with the CEO position.

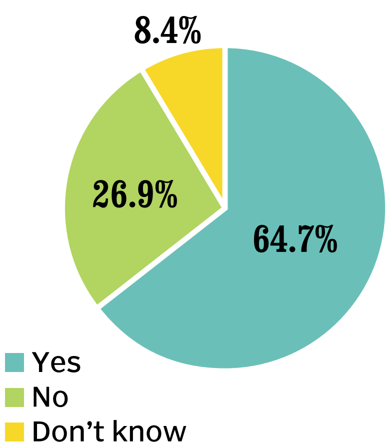
And yet it stands to reason that CFOs have the knowledge base to become strong CEOs. After all, they typically have the most thorough understanding of the financial impact of any decisions, and they're skilled at nurturing relationships with other functions, from IT to HR. In fact, as some companies phase out the COO slot, CFOs' duties are expanding to include overseeing IT and HR, among other functions.

[CFOs are] too busy scouting out growth opportunities and maximizing efficiencies to be moved from their current posts.

Paradoxically, such changes help them become better prepared for the top job even as they grow less expendable in the finance slot. While CFOs may no longer be focused solely on controlling costs and optimizing returns on capital, as they were while the economy was in the doldrums, many are now fully engaged in managing all the cheap debt their companies have issued in recent years. They're too busy scouting out growth opportunities and maximizing efficiencies to be moved from their current posts.

FIGURE 2

Do your current job tasks adequately prepare you to be a CEO at some point in the future?*



*U.S. executives only

Among U.S. respondents to the survey, 39% say that increased indebtedness has put their industry at more financial risk than normal. Moreover, 64% report that high current debt burdens will restrict future investment. Over the past five years, the typical manufacturing firm has increased its debt-to-capital ratio to 25% from 18% and the typical energy firm has increased it to 30% from 18%, making the CFO's job that much harder.

Given the scope of the expanding challenges that CEOs now confront—global risks encompass such unexpected events as Brexit and U.S. trade protectionism—it's reasonable to ask what might be the best route for CFOs to take to reach their ultimate destination. Is there any way to be sufficiently prepared to take the boss's job?

The majority of finance chiefs who participated in the survey claim to know what it takes: Two-thirds of respondents say that their current job adequately prepares them to become CEO (see Figure 2). Given how much the finance function has evolved in recent years, with CFOs routinely contributing to strategic decision-making and demonstrating problem-solving ability, there's little question that finance leaders aren't the introverted number-crunchers they once were. In a turnaround situation, where the strategy depends on cutting costs or disposing of noncore assets, a CEO with a finance background might very well be just what the board of directors ordered.

And yet, when respondents were asked to name areas in which they felt they needed more exposure to become successful CEOs, they named quite a few: additional operational and product experience; leadership training; broad economic vision; and sales, marketing, and strategy experience.

Granted, there are always areas ripe for improvement. But the length and breadth of the list suggests that CFOs may feel discouraged that they can *ever* master enough skills to take on the top spot. Sure, they have expertise in areas ranging from risk management to sustainability reporting, and they've learned to meet the demands of new regulatory requirements and master enhanced information systems. But such activities can seem much less consequential than, say, continuously nurturing innovation, managing change, or leading a mobile and diverse workforce.

In an ever-changing economy that may be on the brink of radical change, who's to say what skills will matter most when it comes to increasing shareholder value over the long-term? Faced with so much uncertainty, perhaps CFOs have every right to feel like they'll never measure up.

Then again, maybe they should try to be more optimistic. After all, isn't that one of the traits of great CEOs? CFO

Building Resiliency

A new survey finds finance executives focused on managing risk by maximizing their ability to bounce back from harm. **By Josh Hyatt**

Ready or not, here it comes. That might as well be the credo of senior finance executives at almost any large U.S. company. "It" refers to any potent threat, ranging from a data breach to a natural disaster, that could affect a company's core operations. The responsibility for mitigating such risks, by identifying and addressing the company's exposures, has grown ever more challenging, in a world where bad news travels fast and bad actors are filling up the "cloud." With the instantaneous spread of information, a company that finds itself confronting the impact of a serious risk needs a proactive plan for managing the consequences and regaining its strategic footing.

For CFOs, the responsibility for anticipating, prioritizing, and fortifying the enterprise against the consequences of such risk impacts isn't merely a theoretical exercise. In a recent survey of CFO-level executives, 86% say that over the next two years, their company needs to be better prepared for disruptions to operations. Fewer than half of respondents, 46%, report having either developed or tested formal loss-recovery plans, putting strategies in place for minimizing downtime or data loss.

The survey, conducted by CFO Research in collaboration with FM Global, drew 101 responses from CFOs (or their equivalents) at companies with more than $500 million in annual revenue.

WHAT TO PERFECT WHEN YOU'RE EXPECTING

Evaluating their company's resilience in recovering from a range of listed hazards, few survey respondents rank their businesses as being very well prepared to rebound from any such perils. Of the six types of high-risk events considered by survey takers, only two—equipment failure and natural disasters—garnered as much as a third of respondents (34% and 33%, respectively) who give their employers the highest grade of being "very well prepared" (see Figure 1).

When it comes to utter lack of readiness, however, 8% of survey takers admit that they are not prepared to endure geopolitical disruption, which includes government intervention and terrorism. That's more than twice the number of respondents who judge their companies as being wholly unprepared for a data breach or an equipment failure.

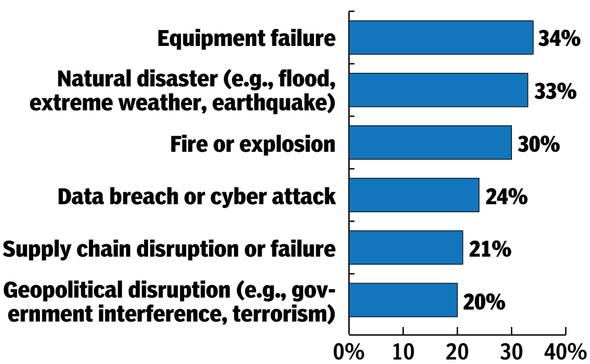
The distinct absence of urgency may be at least somewhat understandable, as 56% of respondents report that geopolitical disruption has not emerged as a problem for their businesses. The same proportion also say they haven't had any problems with supply chain disruption or failure.

In terms of modeling worst-case scenarios for high-risk events, only 31% claim to have done so in anticipation of geopolitical disruption, the lowest number by far for any of the six high-risk events listed. (The second-lowest choice, data breach or cyber attack, has been modeled by about 54% of respondents, the survey found.)

CFOs' experience with such damage-causing dangers is, for the most part, not first-hand. Just 25% of respondents cite having had a natural disaster cause substantial harm to their company. Two-thirds of respondents re-

FIGURE 1

"How well prepared would you say your company is to recover from any of the following events, should they occur?"*



* % responding "very well prepared"

46%

Percentage of senior finance executives who have either developed or tested formal loss-recovery plans.

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port that equipment failure has caused at least some harm to their business, while a slightly smaller proportion, 59%, say a data breach or cyber attack caused at least some harm.

That said, finance executives tend to be keenly aware of the operational impact such adverse events have had on industry counterparts in recent years. More than two-thirds of respondents say they've seen the damage wrought by occurrences ranging from natural disasters (71%) to data breaches and cyber-attacks (69%), while nearly two-thirds have witnessed the effect of equipment failure on their peers.

High-profile catastrophes, such as Hurricane Sandy in 2012, have left their imprint on finance executives. The 2015 hacking of the U.S. government's Office of Personnel Management "was a wake-up call for our organization on managing the risk of exposing information about our employees," writes one CFO. Another says that the data breach at discount-retailer Target in late 2013 "has made our company more aware of the need to increase security in accessing client data."

THE RESILIENCE INVESTOR

An awareness of the need to manage risk isn't sufficient, however. Finance executives need to integrate the practice into the planning process.

That requires identifying key vulnerabilities, ranking threats according to the likelihood of their occurrence and the estimated damages they could cause, and working with relevant stakeholders to make plans for safeguarding key assets. Using data analytics tools, finance executives can collect and evaluate timely metrics, using them as raw material from which to build risk models and forecasts. In many cases, they also have the flexibility to integrate real-time information about changing market conditions. And adjustments can be made based on regular risk audits, enabling CFOs to continually re-prioritize the risks that require managing.

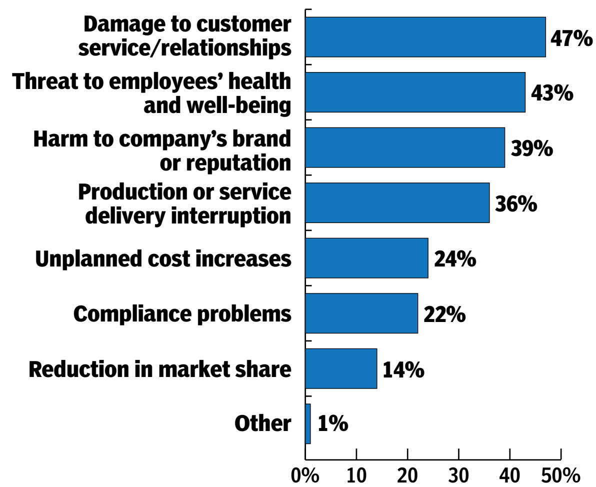
In contrast to their cost-cutting focus of recent years, CFOs now see the need to direct investments toward bolstering resilience, outfitting their companies with tools that can help them prevent or reduce losses. As with any expenses, CFOs must prioritize their resilience-building budgets, embedding disruption-defying strategies into the corporate DNA. In the wake of a crisis, a company's continued ability to accommodate customers and keep employees on the payroll can seem like an incalculably valuable payoff.

When it comes to calculating the effect a loss event would have at one of their company's facilities or locations, nearly half of survey respondents, 47%, say the most serious impact would be damage to customer service and relationships. The second-highest area of concern, "threat to employees' health and well-being," is cited by 43% of respondents (see Figure 2).

Asked to name the most serious threat they face, both now and in the future, respondents frequently point to cyber attacks, perhaps because there have been so many headline-generating hacks. Such attacks can inflict damage on several fronts simultaneously, whether exposing valuable and closely held intellectual property, inflicting deep reputational wounds, or disrupting operations. The loss of digital property, such as third-party data, can also trigger costly lawsuits, as well as require substantial investments in reputation rebuilding.

FIGURE 2

"In the case of a loss event at one of your facilities or locations, which of the following impacts do you believe would be the most serious for your company?"



Note: Up to three responses allowed.

LIKE A COMPLETE UNKNOWN

No matter what scenarios they construct, finance executives can't help but be haunted by a daunting question: How can they possibly prepare for risks that have no precedent? So-called "black swan" events, like the 2011 tsunami that submerged Japan's nuclear power industry, can threaten not just companies but also entire industries.

That prospect, no matter how remote, could be enough to make a level-headed CFO consult an astrologer. But by striving to build a highly adaptive company that excels at risk management and demonstrates resilience, even when taken by surprise, finance executives are shaping organizations that can weather a disruptive economy. In doing so, they are assuming a risk—that is, making a bet—that's bound to pay off. CFO

THE QUIZ

Industrial Strength

The heart of Donald Trump's economic policy and much of his rhetoric focus on keeping factory jobs in the United States. The president has personally courted large companies with tax breaks and incentives, and announced a manufacturing jobs program aimed at getting "Americans back to work again." How much economic value does the manufacturing sector add to the U.S. economy? Take our quiz to find out.

1. What percent of the nation's gross domestic product was generated by the manufacturing sector in 2015?

A. 6.2%
B. 7.5%
C. 11.4%
D. 12.1%

2. Amounting to the highest multiplier effect of any sector, for every $1 spent in the manufacturing sector, how much value is added to the overall economy?

A. $1.25
B. $1.43
C. $1.81
D. $1.93

3. Manufacturing jobs account for 9% of the total U.S. workforce. How many millions of employees worked in manufacturing in 2015?

A. 8.8
B. 12.3
C. 15.3
D. 19.6

4. Considering the entire manufacturing value chain and manufacturing for other industries' supply chains, each employee hired in the manufacturing sector generates how many jobs elsewhere?

A. 1.9
B. 2.5
C. 2.9
D. 3.4

5. How much did the average manufacturing employee earn per hour in 2015?

A. $22
B. $26
C. $29
D. $32

6. U.S.-manufactured goods exports have quadrupled over the past quarter-century. How many trillions of dollars were exported in 2015?

A. $1.134
B. $1.317
C. $1.789
D. $2.139

Answers: 1–D; 2–C; 3–B; 4–D; 5–B; 6–A

Source: National Association of Manufacturers

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