CFO

MAY 2017 | CFO.COM

ARE INVESTORS' DEMANDS FOR DISCLOSURES EXCESSIVE?

PUBLIC CLOUD MIGRATION TIPS

Annual Harvest

As more companies seek to capture the gains of the recurring revenue business model, CFOs grapple with the challenges


04:00:13:17
DISTANCE
298.6
YARDS
ACCURACY
64.22%
114
MPH
SMASH FACTOR
1.50
SPIN 2,154 RPM
14°
SPEED 165 MPH
SHOTLINK
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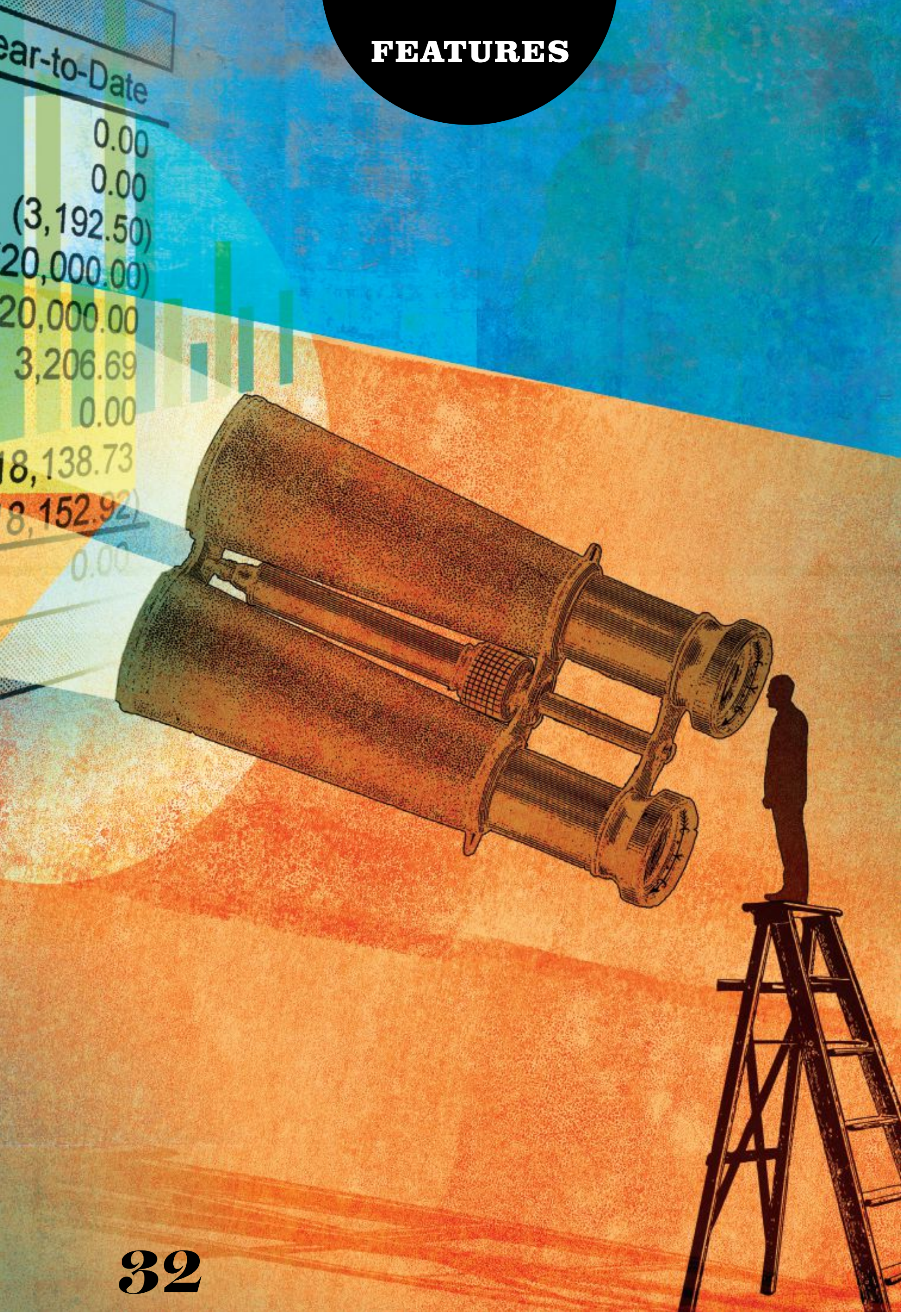
FEATURES

May 2017
Volume 33, No. 4



COVER STORY

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Up Front

By the Numbers

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26,000 lbs. of structural steel lifted weekly.
27 ironworkers operating at heights.
3 thirty-ton tower cranes.
1 active construction site.
CRANE SERVICE
BETTER UNDERSTOOD

FROM THE EDITOR

Recurring Dreams

››Recurring revenue—who wouldn't want to tap into this predictable, stable stream of sales that, presumably, flows into a company month after month and year after year? ¶ Subscriptions are increasingly becoming the way consumers buy. I have given seven companies permission to debit my credit card monthly, and another five or six to do it yearly. Subscriptions offer flexibility and convenience. And in some cases they are disrupting monopolies (think streaming video's encroachment on the cable industry), another reason for their attraction.

Selling via a subscription is even better than buying via one, as we detail in Deputy Editor David McCann's cover story, "Annual Harvest," on page 26. In his book, "The Automatic Customer," John Warrillow describes why recurring revenue is irresistible: "Because a high percentage of the revenue of a subscription-based business is recurring, its value will be up to eight times that of a comparable business with very little recurring revenue."

The beauty of the subscription model also lies in its wide applicability. Warrillow details no less than nine subscription-based business models, including the all-you-can-eat library (Spotify), the front-of-the-line model (priority access to a product or service, like medical care), the consumables model (diapers, razors), the simplifier model (housecleaning), and the peace-of-mind model (The American Automobile Association).

Of course, there are downsides to recurring revenue businesses. Customer churn is a big one. While subscribers tend to be sticky, they're not as locked in as when you sell them a big, expensive product that they need to amortize over several years. So subscription vendors have to deliver world-class products and excellent customer service continuously.

That's not a bad thing, for customers or companies. In fact, for the subscription model to thrive, grow, and last, competition is key. No one wants the public cloud to go the way of electric utilities, for example. Customer choice and lack of government meddling are market virtues that every business adopting the recurring revenue model should fight to preserve.

Vincent Ryan
Editor-in-Chief

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EDITOR'S PICKS

CAREERS

In "How Functional Leaders Become CEOs," three McKinsey & Co. partners say CFOs "have some natural strengths that can facilitate effective transitions to the CEO role." Among them is a deep understanding of the drivers of business value. Read more at http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-functional-leaders-become-ceos.

FINANCE

Argyle's 2017 Chief Financial Officer Leadership Forum in Los Angeles on May 9 features the finance chiefs of Farmers Insurance Group, Dollar Shave Club, and FloQast, as well as the treasurers of Mattel and Warner Bros. Read more at https://www.argyleforum.com/Events/2017-chief-financial-officer-leadership-forum-los-angeles.

Mark Bennington

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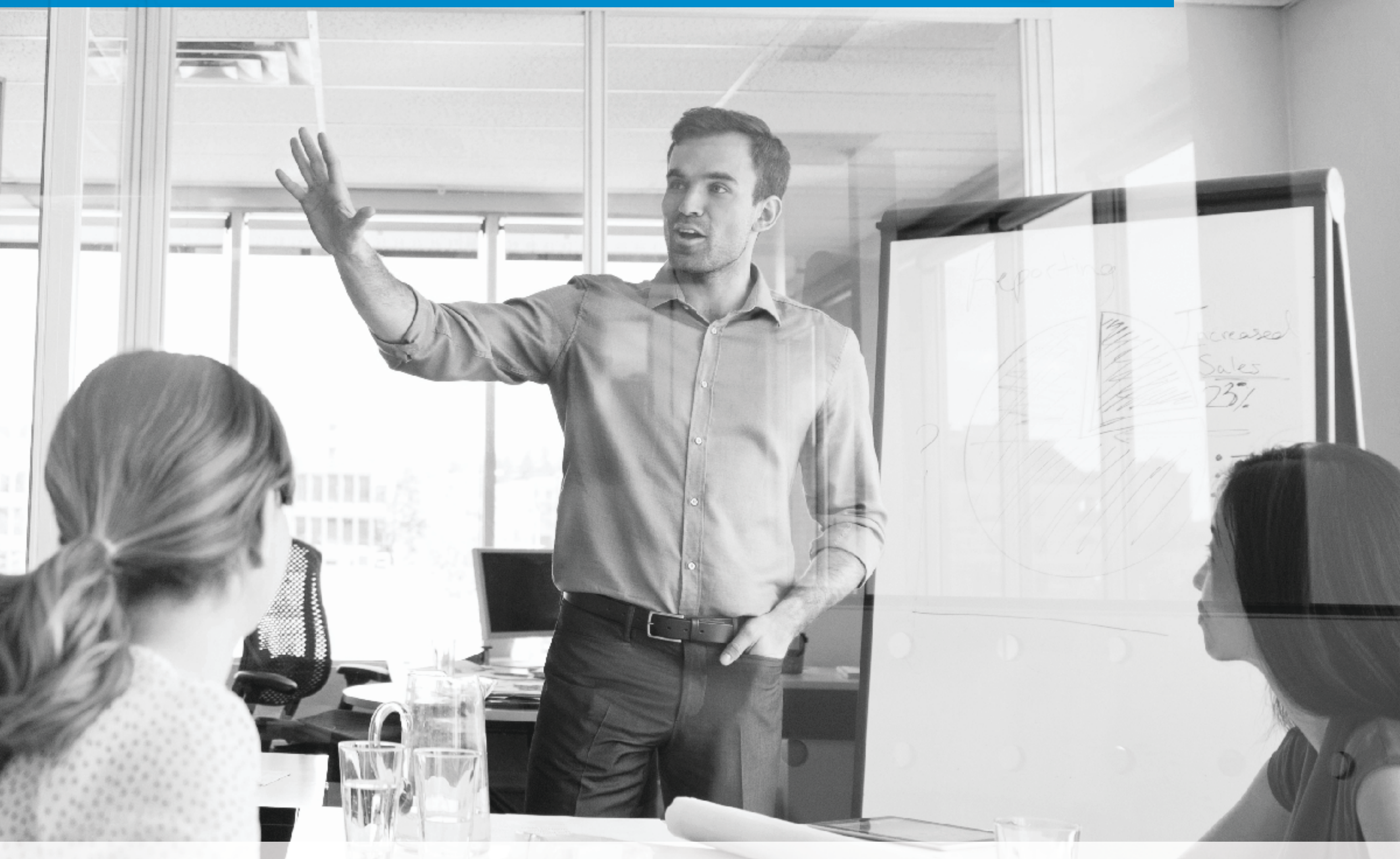

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LETTERS

THE BUZZ ON CFO.COM

In **"Will Financial Services Regulations Ease Up?"** (March 21), contributor Christopher Whalen waxed optimistic that regulations on financial institutions will be relaxed with Donald Trump in the White House.

"In the aftermath of the 2008 financial crisis, politicians in both parties focused on punishing banks and other financial services companies for a variety of offenses, real and imagined," Whalen wrote. "In many respects, Dodd-Frank was designed to chastise banks and other companies for perceived wrongdoing."

Tsk-tsked a member of *CFO*'s audience: "Many of the compliance, internal control, and audit issues that bank managements are complaining about being too onerous and expensive to install were in effect in the mid-1970s when I was a junior banker. I used many of these in loan origination and processing. It was called due diligence. Banks in later years went away from these and subsequently got themselves in trouble."

As related in **"Bitcoin Users May Be Cheating on Their Taxes"** (March 28), an IRS investigation determined that only a tiny percentage of virtual currency owners are declaring earnings on Bitcoin transactions in their annual returns.

"It all depends on how you set up the game," one reader pointed out. "If you declare a currency a commodity and then devise a set of requirements that are incredibly onerous and complex to abide by, sure, not a lot of people are going to bother to figure it out."

"Internal Audit Losing Prestige, Survey Finds" (March 22) detailed the findings of a recent PricewaterhouseCoopers survey. Disturbingly, the proportion of participating internal auditors, senior executives, and board members who said internal audit "adds significant value" plunged to 44%, compared to 54% in a similar study a year ago.

"Good wake-up call," offered one *CFO* reader, who nonetheless opined that internal audit has the chops to rise to the occasion.

In **"Pressed by Investors, CFOs Awake to Sustainability"** (March 30), McKinsey's Tim Stollar provided advice for finance chiefs on how to evaluate the effects of sustainability practices on a company's cash flow, among other wisdom.

The discussion perplexed one reader: "Why are we discussing sustainability now? This is something that many former CFOs, including myself, used for years."

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PRESIDENT & CEO Danny Phillips

CFO Scott Kenerly

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)

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) 973-5111; fax: (646) 219-7860
- Brian Kleve, (646) 973-5114; fax: (646) 219-7860

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- Brian Kleve, (646) 973-5114; fax: (646) 219-7860

WEST COAST
- Judy Hayes, (925) 785-9665
- Brian Kleve, (646) 973-5114; fax: (646) 219-7860

Editorial Offices

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

50 Broad St., 1st Floor
New York, NY 10004
(646) 839-0012

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STATS OF THE MONTH

PUBLIC EYE

$116 million
Median base deal value of a U.S. IPO in 2016*

221 days
Average time it took issuers from first SEC filing to pricing

45%
Proportion of IPOs with insider purchasing, up from 21% in 2013

38
Number of new issuers disclosing a net loss in their most recently audited fiscal year (out of 67 total IPOs)

*Base deal value excludes exercise of any over-allotment option
Source: Proskauer's Global Capital Markets Group 2017 study of U.S. IPOs with deal size greater than $50 million (67 IPOs)

Topline

AUDITING

PCAOB Leak Leads To Axing of KPMG Audit Chair

An employee at the accounting oversight board leaked news of upcoming audit inspections to a KPMG employee.

Faced with the revelation that six of its auditors had improperly received advance information from an employee of the Public Company Accounting Oversight Board about upcoming inspections of the firm, KPMG said on April 11 that it was replacing its top auditor, Scott Marcello, with Frank Casal, a 38-year veteran of the firm.

Marcello, four other audit partners, and one employee were fired when the firm learned through an internal investigation that the six "either had improper advance warnings of engagements to be inspected by the PCAOB, or were aware that others had received such advance warnings and had failed to properly report the situation in a timely manner," according to KPMG, which refused to provide names of the other five individuals.

"This ... does not impact any of the firm's audit opinions or any client's financial statements," KPMG said.

Contending that some of the initial press reports on the ouster "have been inaccurate," Manuel Goncalves, KPMG's executive director of media relations and corporate communications, attempted to clarify matters in an email to *CFO*.

"Just to be clear with you, first, KPMG discovered the issue and our regulators—the PCAOB and the [Securities and Exchange Commission]—were immediately informed. From that moment we have been and will continue to cooperate with them in addressing this situation," Goncalves wrote.

"Second, outside counsel was engaged to perform an investigation, and based on information obtained through the investigation, the firm took quick and decisive personnel action—separating six individuals from the firm. They did not resign," he added.

In late February, KPMG learned from an "internal source" that a person who had joined the firm from the PCAOB later received confidential information from an employee of the PCAOB and shared that information with other people at KPMG. That information "potentially undermined the integrity of the regulatory process," KPMG said.

When the audit oversight board learned that KPMG "had come into possession of confidential PCAOB inspection selection information, the PCAOB immediately commenced an internal investigation," according to a PCAOB spokesperson.

"The investigation identified inappropriate disclosures by an employee, and the employee is no longer with the PCAOB. Separately, the PCAOB has taken steps to maintain and reinforce the integrity of its inspection process," according to the spokesperson, who refused to comment further.

The PCAOB inspects registered public accounting firms to gauge their compliance with the Sarbanes-Oxley Act, the rules of the board and the SEC, and professional standards. In general, the PCAOB annually inspects firms that audit more than 100 issuers.

In KPMG's inspection report released in November 2016, the PCAOB found problems with 20 of the 49 company audits it inspected. Deficiencies in 17 of the audits related to testing controls for purposes of the opinion on internal controls over financial reporting, or ICFR, while deficiencies in 14 of the audits pertained to the substantive testing done for purposes of the opinion on the financial statements. However, that is not an unusual deficiency rate for a Big Four audit firm.


Scott Marcello

It's been a rough 12 months for the Big Four. PwC settled high-profile lawsuits with Taylor, Bean & Whitaker Mortgage and MF Global, for billions of dollars. And in October 2016, KPMG was criticized by Sen. Elizabeth Warren for failing to unearth information about illegal sales practices at Wells Fargo, an audit client of the firm.

Casal, KPMG's new audit head, is a former member of the firm's board who "has served previously as the lead audit engagement partner on some of KPMG's largest, publicly held financial services and industrial manufacturing clients," said Lynne Doughtie, the firm's chair and CEO. KPMG also named Jackie Daylor national managing partner for audit quality and professional practice. **DAVID M. KATZ**

OPERATIONS

Finance Faces Budget Cuts

Despite executives' projections of healthy revenue growth in 2017, finance organizations' budgets will be cut by an average of 3.8% this year, according to Hackett Group's Key Issues Study for 2017. And headcount in finance will be slashed by an average of 4.4%, according to Hackett's survey of executives at 180 large U.S. companies.

Cost-cutting initiatives are higher on the agenda in 2017 than even "redeploying capacity to more value-creating activities" and "improving finance's analytical, modeling, and reporting capabilities," according to Hackett.

While finance teams at large organizations have continually faced budget and staff reductions for more than a decade, the latest cost-cutting plans are part of the movement toward automating routine and manual-intensive tasks.

Robotic process automation is enabling finance to automate repeatable, standardized, or logical tasks historically handled by people. In finance and accounting, RPA is being tested or used to automate procure-to-pay, order-to-cash, and record-to-report processes. Of course, enterprises are taking advantage of many other technologies as part of the move to digital innovation in products, services, and customer relationships.

Ninety-one percent of executives say digital transformation will alter the way finance delivers its services. The transformation is already underway. In 15% of organizations, finance teams are revising job profiles or competency models, according to Hackett, and on average executives say they are dedicating 16% of their finance organizations' staffs to digital transformation.

"The low percentage reflects the early-adoption stage of digital transformation," said the Hackett Group's report accompanying the survey results. "To push digital transformation to the next level, it is essential that organizations assign and dedicate a larger share of their resources to digital projects."

Dedicating more resources to digital efforts while shrinking budgets may require some fancy footwork from CFOs. "Cost cuts alone will not help finance deliver on enterprise goals," Hackett cautions. "Nor will they foster innovation, attract new customers, or help deliver fresh insights." **VINCENT RYAN**

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RISK MANAGEMENT

Disaster Losses Hit Five-Year High

Total economic losses from natural catastrophes and man-made disasters nearly doubled in 2016, with Asia being hit worst, while insurance payouts increased 42% from a year earlier, according to a report by Swiss Re.

Globally, there were 327 disaster events in 2016, the reinsurer said, resulting in total economic losses of $175 billion, up 86% from 2015. Global insured losses from disasters rose to $54 billion in 2016 from $38 billion the previous year.

Both the economic and insured losses were the highest since 2012 and reversed the downward trend of the previous four years.

The increase in economic losses last year reflected a high number of sizable disaster events, including earthquakes, storms, floods, and wildfires, across all regions. Of the 327 events, 191 were natural catastrophes and 136 were man-made, according to Swiss Re.

The earthquakes on Kyushu Island in Japan in April, which killed around 50 people, inflicted the heaviest economic losses, racking up a bill of between $25 billion and $30 billion.

Some events struck areas with high insurance penetration, accounting for the 42% increase in insured losses. Natural catastrophes resulted in payouts of $46 billion, the same as the 10-year annual average, while insured losses from man-made disasters were $8 billion, down from $10 billion in 2015.

"Insured losses made up about 30% of total losses, with some areas faring much better because of higher insurance penetration," Kurt Karl, chief economist at Swiss Re, said.

North America accounted for more than half the global insured losses in 2016, largely due to a record number of severe convective storm events in the U.S. and the high level of insurance penetration for such storm risks. The costliest event was a hailstorm that struck Texas in April. **MATT HELLER**

GOVERNANCE

It's Who Directors Know That Counts

Researchers have found that director compensation can be explained by factors like director qualifications and experience. Now, however, comes evidence of another determinant of what a corporation pays its directors: how impressive the directors' list of contacts is.

In a paper produced by a trio of academic researchers, the authors report that they find "strong evidence" that corporations place a high monetary value on how well-connected their directors are. On average, they claim, a "one standard deviation increase in boardroom connectedness increases overall board pay by about 57%."

Further, in dollar terms, a "one standard deviation increase in boardroom social capital is associated with a more than $380,000 increase in total compensation," say the authors: Stephen Ferris, University of Missouri; David Javakhadze, Florida Atlantic University; and Yun Liu of the Keck Graduate Institute.

Companies most likely to benefit from well-connected boards might also pay more for them. Such companies can be ones with strong growth potential, a need for financing, big conflict-of-interest agency costs, or the need to recover from adverse events, according to the paper.

"Specifically, companies facing adverse events and other negative situations hire directors with better networks to help restore firm reputation and overcome adversity," the authors explain. "In addition, firms might value specific board connectedness (such as connections with large firms or within an industry) more," write the authors of the paper, "The Price of Boardroom Social Capital: The Effects of Corporate Demand for External Connectivity."

The researchers' metric of the monetary value of board connectedness is "social capital," which they define as "network benefits derived from directors' personal associations with corporate executives or directors of other firms, on board total compensation." While all directors at a given company tend to get the same basic pay, "those with more networks enjoy more leadership positions and sit on more committees, and are therefore paid more." **D.M.K.**

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CREDIT

EMs Drive Record Debt Levels

Global debt grew to a record $215 trillion—or 325% of global GDP—in 2016, driven by a "spectacular rise" in the debt levels of emerging market (EM) countries, according to an Institute for International Finance (IIF) report.

While mature market countries have experienced a "relatively modest" increase in debt over the past decade, the debt of EM countries increased to $56 trillion (215% of GDP) from $16 trillion (146% of GDP).

The IIF said nonfinancial corporates had driven "this sharp and rapid increase, most of which is in local currency (185% of GDP), with foreign currency accounting for about 30% of GDP."

"While risks associated with currency mismatches may not be as acute as during past EM debt crises, the overall EM debt burden—particularly as global interest rates head higher—is a growing source of concern," the institute warned.

Emerging market countries added only $9 trillion in debt between 1996 and 2006.

Global debt as a whole was up by $7.6 trillion in 2016 compared with the prior year and has grown more than $70 trillion over the past decade. Mature market countries still account for the lion's share of debt—$160 trillion in 2016, or 390% of GDP—but their debt level has increased only 25% since 2006.

"The relatively moderate increase of $32 trillion over the past decade has been driven by the public sector, while the household and financial sectors have deleveraged markedly in the aftermath of the 2008 global crisis," the IIF noted.

The IIF warned of a growing refinancing risk as $1.1 trillion of EM bonds mature. Countries that face a relatively heavy burden of upcoming U.S. dollar-denominated redemptions include China and Russia. M.H.

GLOBAL BUSINESS

WTO Forecasts 2.4% Growth in Trade

After another year of weak growth in 2016, trade should rebound this year. But protectionist policies could undermine the recovery, according to the World Trade Organization. It forecast in April that the volume of world merchandise trade will expand by 2.4% in 2017, up from just 1.3% last year. But citing "deep uncertainty" about economic and policy developments, particularly in the United States, it said growth could range between 1.8% and 3.6%.

"The unpredictable direction of the global economy in the near term and the lack of clarity about government action on monetary, fiscal, and trade policies raises the risk that trade activity will be stifled," the organization said. "A spike in inflation leading to higher interest rates, tighter fiscal policies, and the imposition of measures to curtail trade could all undermine higher trade growth over the next two years."

Restrictive trade policies, the WTO said, "could affect demand and investment flows, and cut economic growth over the medium-to-long term" and, as a result, "there is a significant risk that trade expansion in 2017 will fall into the lower end of the range."

The release did not specifically mention President Trump, who has made reducing U.S. trade deficits a key focus of his economic agenda and criticized trade pacts with China and Mexico.

But WTO director-general Roberto Azevedo told a news conference that if "policymakers attempt to address job losses at home with severe restrictions on imports, trade cannot help boost growth and may even constitute a drag on the recovery."

"We are waiting to see the new [U.S.] trade team really in place, waiting for the new [U.S. Trade Representative] to be confirmed so that we can have a more meaningful dialogue," he added. "We are still waiting to see how the trade policy itself is going to shape up in the United States."

For 2018, the WTO is forecasting trade growth between 2.1% and 4%. "We should see trade as part of the solution to economic difficulties, not part of the problem," Azevedo said. M.H.

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PAYMENTS

Fraudsters Targeting Checks, Wires

The percentage of organizations that experienced attempted or actual payments fraud declined in the years from 2009 to 2013, but the numbers started to climb again in 2014. In 2016 they reached their highest level in more than a decade.

In the 13th Annual Payments Fraud and Control Survey by the Association for Financial Professionals, 74% of the respondents said their companies were victims of payments fraud attempts and attacks. That was up from 73% in 2015 and 62% in 2014.

As to the means of fraud, 75% of organizations experienced check fraud last year and 46% were targets of wire transfer fraud. Other payment methods commonly targeted were corporate and commercial credit card accounts (32%), Automated Clearing House debits (30%), and ACH credits (11%).

One possible reason for the overall increase in fraud is that many attacks are originated via business-email compromise (BEC), which the Federal Bureau of Investigation describes as "a scam carried out by compromising legitimate business email accounts through social engineering or computer intrusion techniques to conduct unauthorized transfers of funds."

Of the 547 corporate practitioners responding to the AFP survey, 52% said payments fraud at their companies originated via BEC attacks. BEC was more prevalent among larger organizations that had more than 100 payment accounts and annual revenue of at least $1 billion.

The AFP pointed out that it is "fairly simple" for companies to guard against BEC scams: "The finance team and senior management need to explain what to look for, and encourage staff to check before taking any action regarding a payment." V.R.

Revenue Recognition: An Early Adopter's Story

Unlike all but a few others, software company Workday opted to be an early adopter of the new revenue recognition standard. By David McCann

All public companies are required to adopt the new revenue recognition standard as of their first reporting period that begins after Dec. 15, 2017. Companies were also given an option to begin doing so exactly one year before the required date. But given the complexity inherent in the new standard, it's not surprising that only five S&P 500 companies have done that.

Three of the five—Alphabet, Raytheon, and UnitedHealth Group—all said in their 10-K filings for 2016 that they did not expect the transition to the new standard to have a material affect on their financial results. General Dynamics, on the other hand, reported a wide variety of impacts from the new standard.

But the most interesting case may be Workday, which began accounting for revenue under the new standard on Feb. 1. The software-as-a-service (SaaS) firm said in the 10-K for its 2017 fiscal year, which ended Jan. 31, that it could not at that time estimate the financial impact of adoption. However, in its earnings call for the completed fiscal year, Workday reported a gain in non-GAAP operating profit margin as a result of the transition. That margin was 1.9% when accounting for revenue under the old revenue-recognition standard (ASC 605) but 3.3% under the new one (ASC 606, which will supersede 605).

That's not necessarily a plus for Workday. It's an accounting change, not a business-model change, and it doesn't much impact the company's cash flow, value, or future prospects, said Robynne Sisco, the company's finance chief, in an interview with *CFO*.

Indeed, she says the only thing the margin increase does is raise the bar for the company going forward. "We are still committed to incremental profitability gains year over year, and even though the number is bigger, we still need to improve on it [in the new fiscal year]," Sisco says.

The new standard applies to revenue earned from contracts with customers, and Workday, as a SaaS company, has at least one contract with each of its approximately 1,500 customers. Among "pure-play" SaaS companies—those that don't deliver on-premises software at all—Workday's revenue is the second-highest after that of Salesforce.com.

What caused the change in margin? Under the old standard, with regard to contracts for delivery of service over time, companies could only recognize as revenue amounts actually billed to a customer. Under the new standard, so long as a company believes that a customer is creditworthy, the company is allowed to recognize contract revenue ratably over the entire contract term.

"There are other things that can influence the timing of revenue recognition under the new standard, but all other things being equal, it divorces the invoicing schedule from the revenue schedule," says Sisco.

The new standard also requires a company to capitalize certain customer-acquisition costs—largely sales commissions—and amortize them over the life of the contract. Therefore, not only did Workday recognize more revenue for fiscal-year 2017 under the new accounting rules, it also recorded lower expenses. "You can expect to see something similar with other companies as they adopt the new standard," Sisco notes.

Why Be Early?

Sisco says Workday decided to become an early adopter because the company strives to be transparent. It had been getting an increasing number of questions from investors about how the

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new standard would affect its earnings. "We thought that the sooner we could provide transparency around what [ASC] 606 meant to Workday and the analyst community, the better," she explains.

In fact, to maximize transparency, the company actually did more than it was required to do as an early adopter.

Under the adoption method that Workday chose (from the two choices available), companies are required to restate their financials for the prior two fiscal years, using the new accounting rules, and present the restatements along with an accounting under the old rules.

However, companies are required to do that only as they report going forward. In other words, even as an early adopter, Workday is under no obligation to report any restated financials until filing its 10-Q for its current quarter, which ends on April 30. Even then, it's required only to present a restatement for the corresponding quarter of its previous fiscal year.

Workday, though, chose to update its financials for the two prior years, and each quarter within them, in its reporting for its 2017 fiscal year.

Aside from transparency, there was a larger reason for the early adoption as well, Sisco adds. That is, it's a policy at Workday—a maker of financial management and human resources software—to use any new functionality internally before providing it to customers through its twice-a-year software updates. And since the company developed software functionality designed to help customers transition to the new revenue recognition standard, it had to try it out "live" before delivering it to its customer base.

"Now when our customers start using our features and functionality to adopt [ASC] 606 in their own companies, we're the proof point that the functionality works," Sisco says. "We can act as an adviser to customers and give them lessons learned as to the best ways to use the product to adopt the standard, and how they might want to structure their adoption project."

Challenging Transition

What's the hardest part of adopting ASC 606? The tasks below are among those rated the most difficult parts of implementing the new revenue recognition standard.*

Contract reviews (current and ongoing)	78%
Developing and implementing new accounting policies	76%
Documentation of conversion process and associated auditability	76%
Quantification of adjustments	72%
Project management	71%
Revisions to systems and associated controls	68%
Identification of accounting differences across the organization	64%

*% responding "somewhat difficult" or "very difficult" when asked to rate the anticipated or determined level of difficulty in implementing the new standard in these areas
Source: PWC/Financial Executives Research Foundation, August 2016 survey of 700 U.S. executives

No Small Feat

Sisco says that, from Workday's experience, a key takeaway for companies as they adopt the new standard is not to underestimate the amount of effort it will take. Those with calendar fiscal years, which will be required to adopt the new standard on Jan. 1, 2018, should start the project soon if they haven't already. Workday started working on the transition "in earnest" in September, according to Sisco.

"It's a significant project," she says. "You have to go back and look at a good portion of your customer contracts under a new lens, even if it's just to draw the conclusion [in any particular case] that there is no impact." The review of customer contracts, as well as customer-acquisition costs, "is one area where technology can't help you that much," she observes.

Companies are allowed to stratify their contracts into populations of similar contracts, and to look at a few to determine whether any changes apply under the new standard. "But then you've got a longer goal, which is figuring out how to redo your financials [for the prior periods] and how to account for your revenue going forward," says Sisco.

Another thing companies have to re-evaluate is the allocation of revenue between "linked contracts." For example, for companies that have subscription contracts with customers, and, as Workday does, separate "professional services" contracts to help the customers implement the software, the new standard has different rules for allocating revenue between the two contracts. "You can have subscription revenue move to professional services revenue, and vice versa, impacting the classification of revenue on your income statement," Sisco notes. But not all of Workday's contracts must be accounted for differently under the new standard. "It depends on the specific terms of contracts," she says. CFO

Crowdsourcing Earnings Estimates

Is there any value to getting the crowd to weigh in on companies' earnings projections? By David M. Katz

Will the growing use of crowdsourced earnings forecasts threaten to eclipse the use of analysts' consensus estimates? With much more earnings information available via the crowd, will calmer investors provide more liquidity to public companies? ¶ Although many have their doubts, Russell Jame, an assistant professor of finance at the University of Kentucky's Gatton College of Business and Economics, answers both questions in the affirmative. Jame has been researching the effect of the thousands of earnings estimates being pumped out by Estimize, a web platform claiming 47,561 contributors and consensus earnings estimates of more than 2,000 stocks each quarter.

Jame has embarked on a project "showing that stocks covered by Estimize seem to experience improvement in liquidity." The notion is that crowdsourced coverage boosts the visibility of a company and broadens retail investors' exposure to information about it.

And the more information available about a company, the more confident potential investors are about putting money behind it, the theory goes. Previously, consensus earnings estimates have been largely limited to those of sell-side analysts by means of the Institutional Brokers' Estimate Systems. IBES has been mainly a vendor to institutional investors, with individual investors having much less access to such predictive information.

By means of crowdsourcing, a company that had 5 sell-side analysts covering it could then add 20 crowdsourced earnings forecasts. And as investors get more information about a stock's future earnings, "there is more information about earnings [incorporated] into the price," the professor says.

The implication is that, spurred by increased investor demand, a company's share price could rise. "If you think about this from an investor relations standpoint, a CFO can basically shape the liquidity of [his] firm by encouraging more crowdsourcing participation," he adds.

In the case of Estimize, the company can sponsor a "league"—similar to a fantasy sports league—in which participants can estimate the company's future earnings. Another way is for a company to include crowdsourced consensus estimates side by side with IBES estimates in the press releases it issues to announce its earnings forecasts.

Away from Experts?

To be sure, in a paper co-authored by Jame and published last year, the authors fall short of saying that crowdsourced data providers will actually replace consensus analyst estimates. Rather, they find that Estimize is a good complement to IBES.

The platform, which provides its consensus estimates free of charge to anyone who registers on the site, provides more accurate and less biased forecasts than IBES when the two are combined, according to the authors.

In their research, the authors suggest that Estimize earnings forecasts "are incrementally useful in forecasting earnings," and more representative of the market's earnings expectations, especially as the size of the crowd of forecasters increases, according to a University of Kentucky press release on the study.

When compared with IBES forecasts made 30 days before an earnings announcement, combined IBES and Estimize forecasts produce a more accurate consensus 60% of the time, the university reported. That measure increases to 64% on the day before an earnings announcement.

While the two sources of forecasts are about equal when the predictions are short term, when the time horizon of a consensus forecasts goes beyond 30 days, IBES forecasts are more accurate than Estimize's predictions, according to the study. "Crowdsourced forecasts are available ... generally at much shorter horizons than sell-side forecasts," they note.

Nevertheless, Jame suggests that crowdsourced estimates are the wave of the future. "I think we're moving away from the expert model, where only sell-side analysts ... provide information, and more toward [the] crowd model," says Jame.

One big reason for the shift may be the inherent bias that analysts bring to the table, he suggests. In a paper released in January, Jame and another batch of co-authors assert that "the sell-side research industry is fraught with conflicts of interest. Dependent on managers for information and subsidized by investment banking revenues, analysts have incentives to bias their research to please managers and facilitate investment banking activities."

The authors particularly like what they see as the potential gadfly role of crowdsourcing in relation to traditional consensus estimates. "Our hypothesis is that crowdsourced research, which is informative,

> **"... a CFO can basically shape the liquidity of [his] firm by encouraging more crowdsourcing participation."**
> **—Russell Jame, University of Kentucky**

prone to fewer conflicts of interest, and readily available, can make it easier for investors to unravel sell-side biases, and therefore exert a disciplining effect on the sell-side."

They are especially bullish on Estimize itself, which they say is "freely providing investors with a clear benchmark forecast." Although Jame has established an ongoing relationship with Estimize, he says that the only money that's changed hands is the standard fee that the platform charges academics for more substantial data usage than its non-paying members get.

Not unexpectedly, Estimize founder Leigh Drogen, a former hedge fund manager at Surfview Capital who started the platform in 2012, says that the best way for CFOs to get a clear grasp of their companies' earnings prospects is to buy one of his products, such as a real-time data feed.

But the crowdsourcing maven also has more objective advice for finance chiefs. "They should be setting up systems within their companies to crowdsource expectations about their own firm's performance from their own people," he says. "Let's find the person within that organization who is really good at forecasting how their business is going." CFO

IPOs Pick Up

Twenty-five companies raised $9.9 billion in the first quarter of 2017, a stronger start than last year.

The first quarter marked a relatively strong start to the year for initial public offerings of U.S. companies, helped in particular by the IPO of social media darling Snap.

Twenty-five companies raised $9.9 billion through IPOs in the first quarter, the most money in a first quarter in three years. The number of companies that went public was the highest in two years, says Renaissance Capital, the global IPO research firm and investment adviser.

Snap was easily the first-quarter's largest public debut. The company's shares priced above their range to raise $3.4 billion, the largest U.S. IPO since Alibaba in 2014. The quarter's second-largest deal was Blackstone's $1.5 billion offering of REIT Invitation Homes. Combined, Snap and Invitation Homes raised about half of first-quarter IPO proceeds.

While this year's opening quarter was far stronger than last year's, Renaissance Capital admits that the IPO count "fell short of our internal projections." The research firm pointed out that "acquisitions took out tech unicorn AppDynamics, industrial packaging company Mauser, and CBS Radio, while the still-cautious tech sector waited until after Snap's IPO gave the greenlight, and a handful of energy companies held back after an end-of-quarter pullback in oil prices."

In addition, two IPOs launched but failed to price: biotech Braeburn Pharmaceuticals and Latin American power producer IC Power.

Sixteen companies also withdrew IPOs in the first quarter, while 33 companies filed for an IPO (9 more than filed for an IPO a year ago). That leaves the IPO pipeline "thinner than average," says Renaissance, with 62 companies looking to raise a total of $17 billion. Even fewer companies, 32, are in the so-called "active pipeline," meaning they have submitted new or updated filings in 2017.

However, Renaissance says it expects "a number" of new filers to come from its "Private Company Watchlist," which includes 50 companies that have filed confidentially with the Securities and Exchange Commission or have selected bookrunners. This group includes enterprise network access control provider Forescout and meal kit delivery company Blue Apron. **VINCENT RYAN**

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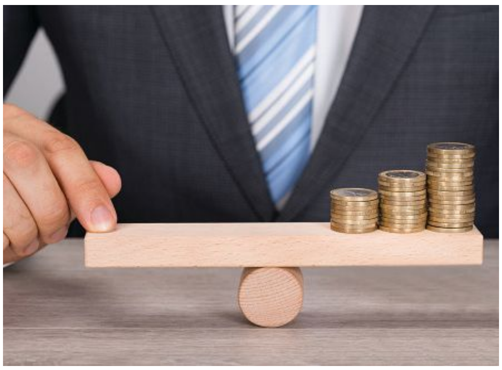
Host Analytics Seeks Growth–Profits Balance

As the enterprise performance management firm plans for an IPO within two years, the only growth it wants is the profitable kind. By David McCann

It's common for startups to be publicly cagey about their exit strategy, even when they envision a very clear path. But not Host Analytics. The company, a vendor of enterprise performance management (EPM) systems, "can say with confidence" that it's "directly on a path to an IPO," says CFO Ian Charles, who puts the likely timeframe for the offering at about two years from now.



What Host Analytics must do to achieve an initial public offering is, though, different from what may have been the case for IPO-minded software companies just a couple of years ago. "In years past you could potentially go public with a $25 million revenue base," Charles notes. "That certainly isn't doable today."

The company doesn't share its revenue numbers, but there are signs of solid growth. It has acquired about $80 million in venture funding and has more than 700 customers, including such familiar names as the Boston Red Sox, FitBit, La-Z-Boy, the Mayo Clinic, NPR, OpenTable, TOMS Shoes, and True Value.

Most important, there is massive opportunity for future growth. According to Host Analytics, less than 5% of the EPM market has been penetrated by cloud-based providers (like Host, Anaplan, and Adaptive Insights) or cloud versions of the on-premises software sold by market leaders SAP, IBM, and Oracle.

But, Charles adds, while growth is important, it's no longer the key to an IPO. "You have to balance growth with profitability," he says. "You can't just go out and spend hundreds of millions of dollars anymore. A few years ago, large premiums were given to enterprise valuations based just on large growth [numbers]. Today you have to grow the business smartly, with a focus on unit economics and customer success."

To be sure, says Charles, profitability doesn't necessarily generate a premium for valuation purposes if it's not backed by growth. But, he asks, "Would you rather grow at 100% year-over-year and lose 60% of operating margin, or grow at 10% and make 60% of operating margin?"

Charles attributes a good portion of the company's success to date to its use of a wide variety of cloud-based systems, including Salesforce, Marketo, NetSuite, Captora, Financial Force, and ExactEquity.

And, of course, Host Analytics uses its own enterprise performance management system. The finance team looks at 114 separate key performance indicators on a weekly basis. Charles claims the team is half the size that would be expected for a company its size, with accounting, forecasting, and reporting completely automated.

"When you eliminate Excel and replace it with purpose-built financial applications, you create a workflow that takes less time, makes fewer errors, and requires fewer people to perform," he says. Because the company uses only cloud systems, the same holds true for its marketing, services, engineering, and sales teams, according to Charles.

He adds that, from an operational standpoint, going public won't require the finance department to do anything differently from what it's doing now. "Finance is not a game of home runs, where one decision or one deal makes or breaks you," he observes. "It's a game of singles, of managing things properly in small increments."

That doesn't mean he's taking the prospect of an IPO lightly. "Going public is not easy or inexpensive," says Charles, who took digital media company RMG Networks public in 2013. "It has long-lasting implications for the business, its systems, its people, and

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the skill sets needed."

Host's EPM product, which includes modules for planning, consolidation, modeling, and reporting, is designed for use by complex organizations and those in fast-growth mode. "A relatively basic business that's not growing rapidly shouldn't be a customer of the product," says Charles. "There's plenty of business that we walk away from, because they're not suited for the product's complexity."

That's important not only because the customer wouldn't be getting its money's worth, but because it would lead to greater customer churn for Host Analytics. Churn is the sworn enemy of all cloud-based software companies. "Churn starts at inception [of a customer deal]," Charles says. "We can find a lot of bad customers that will be set up to fail and will churn at some point, whether in one, two, or three years."

"Today you have to grow the business smartly, with a focus on unit economics and customer success."
—Ian Charles, CFO, Host Analytics

He finds it interesting that, for the first time in his career, he's the CFO of a company that uses its own product. That brings him into frequent contact with finance chiefs of prospective clients. "I find myself in front of customers much more often than I have in prior roles," he says. "For many of the larger deals, they want that CFO-to-CFO connection."

Most often, Charles adds, they want to know how Host Analytics is using the product itself and how it's extracting value from it. "In the [Software-as-a-Service] category, many of those customers operate businesses that look very much like ours," he says. CFO

Emerging Growth Firms: Investors Beware

PCAOB stats suggest that most of the companies are of dubious worth.

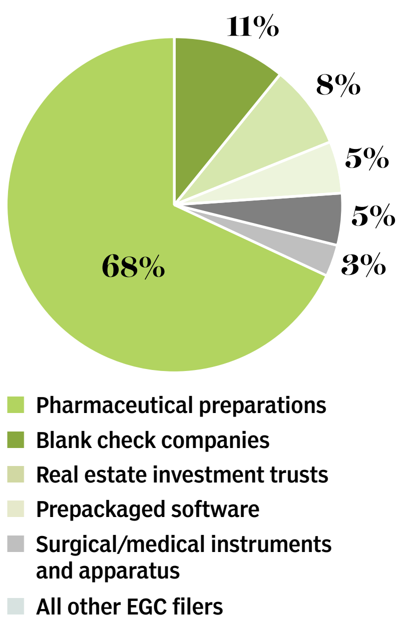
The Public Company Accounting Oversight Board has issued a report including statistics that amount to a clear message of "buyer beware" to potential investors in emerging growth companies, as they're defined under the Jumpstart Our Business Startups Act of 2012.

For example, about 50% of 1,209 firms filing as EGCs that were not listed on a securities exchange reported zero revenue in their most recent filing that contained audited financial statements, according to the white paper. (There were 742 EGCs whose common stock was listed on a U.S. exchange.) Further, almost a quarter (23%) of the non-listed ECGs disclosed that they were shell companies.

The report is based on information derived from the most recent Securities and Exchange Commission filings plus data from third-party vendors through November 15, 2016, the most recent measurement date. All of the studied companies identified themselves as EGCs in at least one SEC filing since 2012 and filed audited financial statements with the SEC in the 18 months preceding the measurement date, according to the report.

In general, a company qualifies as an EGC if it had less than $1 billion in annual revenues in its most recently completed fiscal year and hadn't sold common stock on or before December 8, 2011. "Title I of the JOBS Act focuses on reducing regulatory burdens on EGCs in order to facilitate capital raising through public markets," the PCAOB noted.

Top Five Emerging Growth Company Industries



Source: Audit Analytics

The board culled the data in the report to "inform the analysis" of recommendations it makes to the SEC on whether new auditing rules should apply to EGCs. The data points cited above and other highlights of the PCAOB findings appear to provide ample fodder for arguments in favor of keeping a close eye on the small companies.

About 51% of the EGCs studied, and 74% of those that weren't exchange-listed, were slapped with an explanatory paragraph in their most recent auditor's report that expressed "substantial doubt about the company's ability to continue as a going concern." And, among the 1,262 EGC filers that provided a management report on internal controls over financial reporting in their most recent annual report, about 47% reported material weaknesses.

DAVID M. KATZ

Think Like a Start-Up CFO

Adopting the mindset required to run finance successfully at a start-up can benefit CFOs of large organizations. By Brian Faust

CFOs across companies of all sizes, industries, and maturity levels continue to stretch beyond traditional finance roles. Furthermore, the changes that have taken place in the workplace over the past decade—from advances in technology to an increasingly mobile workforce to prioritizing work/life balance—have challenged CFOs as well.

Where can finance chiefs look for inspiration on how to be better at their jobs in these trying times? Here's a surprising thought: Even those running finance at big, established companies can draw some lessons from the way CFOs at start-up companies work.

Start-up CFOs naturally work across silos (the C-suite, HR, product teams, marketing, etc.), wearing many hats to create processes and procedures that will quickly result in measurable success.

I've seen this issue from both sides, as a merger and acquisition executive for *Fortune* 500 companies and now as the CFO of a quickly growing and ever-changing technology start-up based in Dayton, Ohio. I've seen firsthand how the nimble and entrepreneurial thinking required at a start-up can greatly benefit any finance executive.

Here are five ways that the start-up mentality can benefit CFOs:

1. Be flexible. At a start-up, change happens quickly, and often there is no established business model to fall back on. This type of ambiguity is challenging and disruptive to the traditional role of the CFO.

However, being able to quickly assess a situation and make a fast change when things aren't working is invaluable. For example, at Krush Technologies we use a cycle of "Plan, Do, Measure, Act" to help guide decision-making in our programmatic monetization group.

We decide what monetization adjustment to make and what we think the outcome will be based on our best analysis; we make the adjustment; we measure the impact of the adjustment; and we act to either leave the adjustment in place or to remove it depending on whether we achieved the desired outcome.

We typically run this cycle two or more times a week, providing maximum speed and flexibility in decision-making.

Successful CFOs must embrace and enable change that will lead to business success and growth—even when it challenges the status quo. In other words, be more flexible or be left behind.

2. Focus on results, not process. Start-up founders often conceive of their business by first thinking of the end result. The process that will get them to their desired goal is, comparatively speaking, an afterthought. For example, Uber started out of a desire to crack the cab problem in San Francisco by having a car simply show up at the exact time and location where it was needed.

CFOs are often married to process, but the fast pace of modern business means they need to consider the bigger picture first—forecasting desired outcomes and making recommendations on how to get to return on investment quickly.

They need to be unafraid of speaking up and shedding procedures that are weighing down their business, while actively optimizing toward creating a results-driven culture.

3. Take smart risks. CFOs are notoriously risk-averse, which is a stark contrast to the stereotypical start-up mentality. A CFO's mind is often in the data and financials, leading to conclusions based on the safest path to the most predictable outcome.

However, there's a happy medium here—and it's pushing CFOs into the role of change agent—based on taking measured, calculated risks using expert assessment of any given situation.

A start-up company is extremely risky by nature. After all, we are trying to build new products with new business models to address unproven market demands. We know that not every project that is green-lighted at Krush will be successful. But the success or failure of a single project does not determine long-term success.

We tend to view projects as a portfolio of activity. Some projects will fail, some will result in ho-hum performance, and some will really move the needle. As long as we have more good outcomes than bad over time within the constraints of our resources, value will be created.

4. Be a diplomat. Successful start-ups are generally home to some very passionate people who have strong opinions about various things. Sometimes these positions approach a fanatical level.

Start-up CFOs need to be capable of brokering compromises between entrenched stakeholders that move the company toward its strategic objectives. This ability to understand both sides and identify processes and solutions for all parties based on established business goals is an important skill set for CFOs.

To be most effective at diplomacy, CFOs must build strong personal relationships with key organizational stakeholders, the foundation of which is trust and loyalty.


Brian Faust

5. Push toward the data. Big data has been a game changer for enterprises, allowing executives to make informed, intelligent decisions and better analyze risk. Start-ups have been early adopters, relying on big data for business intelligence on everything from audience segments to sales strategy to market adoption. CFOs should be company champions for big-data projects and work toward creating a corporate culture that harnesses the value of data of all types.

In today's fast-changing global marketplace, CFOs and other managers should develop their styles from both the large-company and start-up models: process but with purpose; risk minimization but with smart risk-taking; goals but flexibility in approach; and deep belief in ideas but with pragmatic diplomacy. By blending the best from both worlds, CFOs will be effective, no matter which environment they find themselves in. CFO

Brian Faust is CFO of Krush Technologies, the mobile technology startup behind ooVoo and Moveo.

Use of an Incentive Pay Metric Flattens

Companies may be moving away from basing pay on total shareholder return.

In response to regulations that took effect following the passage of the Dodd-Frank Act, as well as pressure from proxy advisers and investors, it became common practice for executive compensation to be based on company performance.

Relative total shareholder return (rTSR)—a measure of TSR compared with that of other companies, usually a peer group of some kind—emerged as the leading metric for determining long-term incentive payouts for named executive officers.

That remains true. But after several years of rising influence for rTSR, usage of the metric in setting executive pay is flattening out, according to Equilar, an executive compensation research firm.

Equilar and E-Trade Financial Corporate Services examined the pay practices among S&P 500 companies from 2011—the year after Dodd-Frank passed—through 2015, the most recent year for which complete data was available.

In the case of CEOs, the number of companies using rTSR as a factor in determining executive pay packages rose five to six percentage points each year from 2012 to 2014, reaching 57.4%. But in 2015 there was no gain at all, with the prevalence remaining at 57.4%.

At the same time, return on capital, which in 2014 surpassed earnings per share as the second-most-used performance metric for CEOs, inched forward for a fourth consecutive year, to 30.6%. EPS, which had declined from 34.6% to 27.3% between 2011 and 2014, reversed the trend the following year, climbing to 29.2%.

With regard to CFO compensation, rTSR did continue to rise in 2015, but only by 1.2 percentage points (to 56.6%), significantly trailing the gains seen in the prior three years. Usage percentages for the other leading metrics closely mirrored the CEO patterns.

Why the slowdown in the usage of TSR? According to Equilar, while incentive-plan designers recognize that it represents shareholder value over time, some have begun to question its ability to incentivize CEO behavior and performance. "Executives can engage in activities they believe will influence TSR, but they cannot control all the factors that influence the outcome," the firm said in its report.

Selecting a peer group of companies for purposes of calculating rTSR may also be problematic. "Many companies are challenged with defining how to measure their success and who they will measure themselves against, as peer groups are not always easily defined," said Craig Rubino, a director at E-Trade Financial Corporate Services.

DAVID McCANN

Thinkstock, courtesy the company

Why Big Companies Don't Get Bigger

Large companies tend to be laden with bureaucracy and overstretch their teams, among other reasons, CEB says. By David McCann

Large companies are continuing to recover from the last recession, an economic tsunami that remains relevant even though it happened almost a decade ago. At the same time, "recovery" doesn't necessarily equate to robust growth. ¶ The fact is, sustained growth has proven elusive for a majority of such companies in recent years (see chart, facing page)—so much so that they've lately been looking into whether they can learn anything from smaller, younger, high-growth outfits.

"In about the last 18 months, there's been a lot of interest from giant-sized companies in reaching executives at organizations like those in Silicon Valley, and in giving their teams exposure to entrepreneurial experience," says Tim Raiswell, finance research leader at CEB, a provider of research, advisory, and networking services that was recently acquired by Gartner.

"It seems that a lot of the opportunity out there is [supported by] funding models like those used by venture capitalists and involves project and business areas that [large companies aren't] experienced in," Raiswell adds. "They want to think and behave more like start-up organizations."

Since the recession, functions like finance, risk management, and procurement have been "in ascendancy," says Raiswell. One effect of that: People generally don't get fired for being too careful, for cutting back on spending, or for not spending in new areas. Those are "default behaviors" now at a lot of companies, he notes.

So, what prevents larger companies from taking the actions necessary for growth? CEB, which has been looking at this for years, has identified four major categories of what it calls "growth anchors," in the sense that an anchor weighs down a ship and prevents it from moving.

In a CEB research effort with both quantitative and qualitative elements, 93% of 103 participating senior finance leaders reported a strong presence at their companies of at least one of the following growth anchors.

• **Bureaucracy** How easy is it, at your company, for somebody with a good idea to get it funded? How many hoops do they have to jump through?

Some ideas require action fairly quickly, a need that is compromised where there's a lot of bureaucracy in the system. At such companies, some of the problem can be traced to the finance organization, according to Raiswell.

Sometimes the concept of hurdle rates is a big problem, he says. A project has to promise a certain level of return before finance will even start talking about it—and even then, a few percentage points likely will be added to the targeted return because the project meets a certain risk profile.

Requiring that kind of "false precision" slows things down tremendously, Raiswell says, because calculating a hurdle rate for a new project is "incredibly difficult to do."

"If the idea is in a completely green-field, you probably should relax the hard math you use to evaluate some investments and use softer, more strategic vetting processes that recognize there is often a data gap that can't be closed," says Raiswell. "Insufficient data doesn't mean you should completely abandon thinking about the project."

• **Short-Termism** This is an age-old problem for publicly held companies, of course. Panic sets in near the end of each quarter and year, and everyone stops looking at the big picture and the longer term. "Finance is responsible for a lot of the calendaring that goes on inside organizations," says Raiswell. "As such, finance is also responsible for the timeline of management's focus."

Short-termism is an inevitable

mindset when, for example, business-unit managers are incentivized on a quarter-to-quarter basis, and the CEO and CFO continually want updated quarterly forecasts. "Anybody who tells you short-termism is an avoidable component of public-company existence doesn't know," Raiswell says. "It dominates management bandwidth."

One way companies can partially mitigate the effects of short-termism is the use of rolling forecasts. It can get managers out of the quarter-to-quarter mindset. Every month, the forecast is updated, looking forward 12 months.

Even a very simple adjustment, such as flipping the order of agenda items in forecasting meetings so that nonquantitative assessments of results come first, and then wrapping up with a financial discussion, can help. "It's amazing how de-emphasizing the financial diagnosis with something simple like that can influence the next steps and actions coming out of the meeting," says Raiswell.

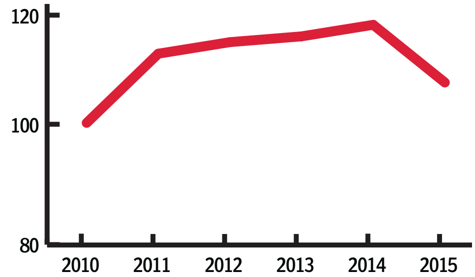
• **"Dangerous-to-Fail" Thinking** It's not easy to counter human nature. So, is it reasonable to expect managers to take risks that could stimulate growth if the penalty for failure is harsh? "Executives feel they have to hold people accountable, but there should be a way to do that without sending a cultural message that it's one or two strikes and then you're done in the organization," Raiswell says. "Some organizations get into very difficult conversations that feel like public trials."

In some cases, a CFO or CEO may pay a price themselves for a project that goes awry. But Raiswell says accountability typically is swifter and more material further down in the organization, "where it's easier to draw lines between a project failure and human agency."

Struggling to Grow

Large companies' combined revenue in 2015 dropped nearly to 2010's level.

Combined Fortune 1000 and S&P Euro 350 total revenue*



*Indexed to 2010 revenue; companies with complete financial data from 2010–2015
Source: Compustat, CEB analysis

If a project or growth investment isn't performing as desired, consider whether the causes are controllable. That type of evaluation requires infrastructure processes that help track progress over time and assess whether the original assumptions about why a project would win were accurate.

"That takes discipline to do, and maybe some additional financial resources," says Raiswell. "Once the leadership team has that information, they can do a post-audit to talk about what was learned and what to [change] in the future. And the idea is then to reward people for putting their best foot forward on the project that failed. That's how you start to build the right muscle."

• **Capacity Concerns** If you've never felt you and your team were overstretched, you're in a small minority. You may have the ability to plan and execute large, transformative growth projects but insufficient time and resources to do so.

Finance people sometimes don't "get" the human element of investment and growth success, Raiswell observes. "As a CFO, you're concerned that a growth project will succeed," he says. "You want your managers to be asking all the right questions. But what you might do is set margin or cost targets with one hand and fund with the other."

On the whole, finance executives need greater understanding of the business environment in which a project is being executed, Raiswell says. Budgets are merely cost-accounting tools that don't enable an understanding of "what can often be fairly complex human capital dynamics in the business."

Further, budgets don't reflect the reality that a lot of work gets done by cross-functional and virtual teams, he says. Therefore, "you're often understaffing in key project areas, when what you should be thinking about is a team's ability to execute: Do they have all the technology they need? Do they have all the people with the right qualifications?

"The guidance here," he adds, "is not that you just need to spend more. It's about focus. If you're going to fund a project, how will you make sure it gets the running room to succeed?"

Self-Deception?

While CFOs are the sources of all the insights Raiswell mentions about growth anchors, he's not convinced that they fully understand where the responsibility lies. "It is interesting hearing them discuss it among themselves in meetings with us," he says. "They try to keep it at arm's length, like, 'Yeah, I see this in my line finance people and business partners all the time,' but not 'Yeah, I see how finance is directly responsible for some of it.' And finance may not, in fact, be directly responsible, but it's within the range of things finance can influence, control, or change."

He concludes, "Finance has a hammer, so everything going up before it is going to look pretty much like a nail. And lo and behold, as CFOs are thinking about growth investments, they're interested in things like cash flow. But those aren't always the things that will tell you if a project will win or lose." CFO

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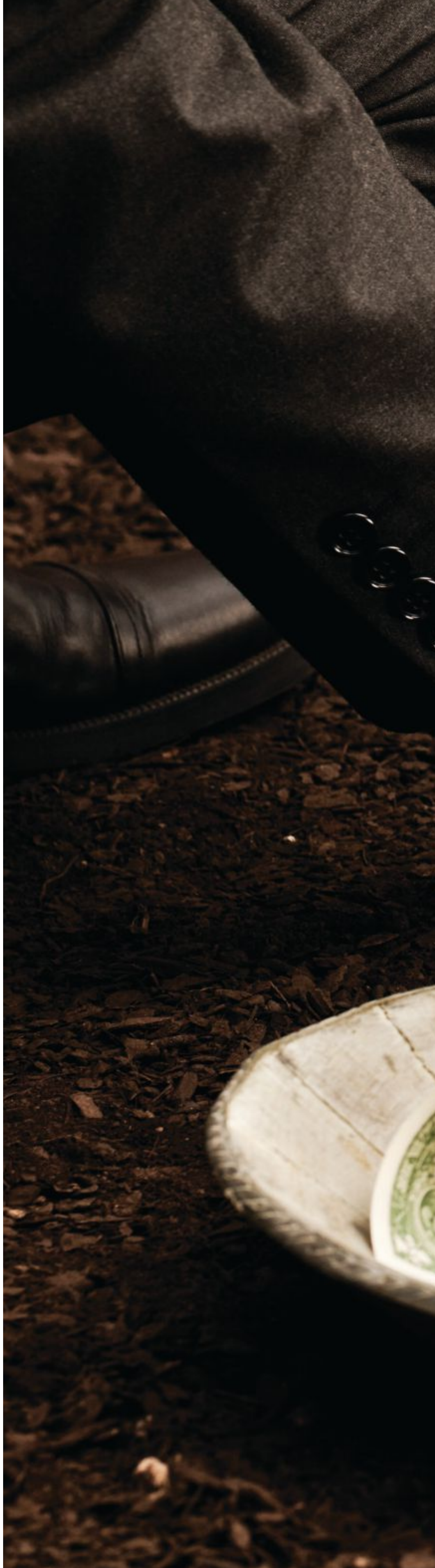
Annual Harvest

More companies are using a subscription-based business model, attracted by the promise of recurring revenue. But for many, realizing the gains won't be easy.

NOT VERY LONG AGO, WHEN PEOPLE TALKED about software companies adopting or transitioning to the subscription business model, the discussion often focused on its relative merits. Was it better business to follow the traditional model, where vendors sold a perpetual license to a "box" of software—which the customer would then run on its own on-premises server—for a single up-front price? Or was it better to sell a subscription, where the customer periodically paid smaller amounts over time, under contracts granting them the right to use software that was typically cloud-based? The debate is over now; the subscription model won.

Few, if any, new software companies—and there is a virtually incalculable number of startups every year—are coming to market with the packaged software model and installing functionality on customers' servers. At the same time, today's software industry is the scene of an exodus, with hundreds of vendors that have used the old model for years or decades transitioning to the new one.

By David McCann



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But the movement is even wider than that. Businesses of all kinds are starting to sell products via subscriptions, everything from men's shavers to kid's toys to gourmet foods. Cisco Systems is looking to sell a cloud-based management service with its switches. For the 2017 Major League Baseball season, the St. Louis Cardinals are selling a ticket subscription service that lets fans attend as many Cardinals home games as they want for a monthly fee of $29.99.

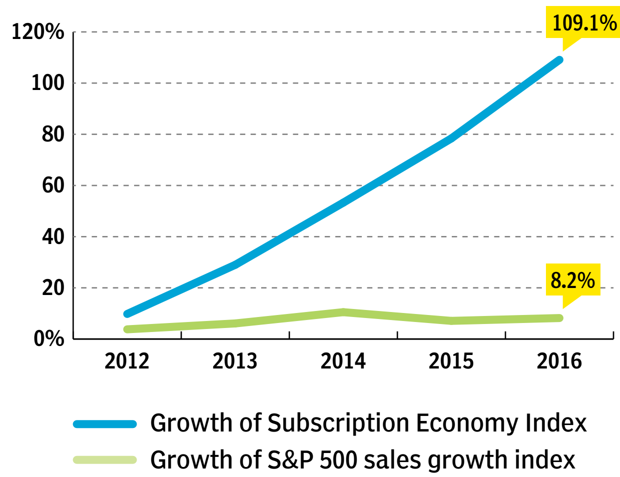
The subscription-based business model isn't new, of course. It's old, in fact, having been a primary model for newspaper and magazine publishers, for example, far into the past. But it's the software businesses that are leading the way in this new revolution to capture recurring, predictable revenue from customers.

Software-as-a-service (SaaS) providers have been around since the 1990s. But the massive, relatively recent shift in the software industry has been driven by enabling technologies. Most prominent among them is the emergence of robust and inexpensive platforms—Amazon Web Services (AWS), the market leader, followed by Microsoft Azure and Google Cloud—for developing web applications and creating data centers that can scalably deploy those applications to customers. (See "Moving Up," page 38.)

"These capabilities continue to improve exponentially," says Tyler Sloat, CFO of Zuora, which offers a comprehensive billing and finance platform for subscription businesses. "When we moved our data centers five years ago, those services weren't an option for us because they were in their infancy." The move required a six-month planning process and buying a lot of equipment. "Today, we can spin up a new data center [within AWS] overnight," says Sloat.

Soaring Subscriptions

Sales growth among subscription-based companies has been soaring far past that of S&P 500 companies for the past five years.



Source: Zuora

Teaching Opportunity

The subscription model's success is showing up in revenue growth across industries. Zuora has created a "Subscription Economy Index," populated with sales data from 350 companies that, as of November 2016, had used Zuora's software for at least two years. According to the index, sales for subscription companies grew 900% faster over a 5-year period than did sales for S&P 500 companies. Subscription-based sales also grew 420% faster than U.S. retail sales and 500% faster than the U.S. economy.

Those are eye-popping statistics, to be sure. Still, finance chiefs at subscription-based businesses face challenges, as the software companies that have led the way know all too well. Among the nagging issues are teaching investors and resellers about cash flow and revenue timing; managing the sales mix as a company moves from the one-time sale to the subscription-selling model; and dealing with complex new accounting rules dictating how to recognize sales revenue.

"Many analysts and investors agree [calculated billings] is not the best metric, but it's a habit and it's hard to move them away from it."

—Tyler Sloat, CFO, Zuora

Educating key audiences, like sell-side analysts and institutional investors, about the economics of the subscription business ranks high among the difficulties finance chiefs encounter. "We've been publicly held for more than five years, and I still have to spend a lot of time helping investors and analysts understand the difference between a subscription model and a perpetual model," says Paul Auvil, CFO at Proofpoint, which offers cloud-based email security and compliance services.

The company's current guidance for 2017 projects about $100 million of free cash flow, Auvil notes. "But, if you compare that $100 million to $100 million of free cash flow generated by a company selling [boxed software] for a living, there's a vast difference in value," he says. "Because unless I have a problem with customer churn, I'm going to get that

BY THE NUMBERS

11,702
Number of SaaS companies in the database of AngelList
(Source: AngelList)

28%
Average annual percentage growth in subscription revenue for subscription companies with annual revenue greater than $100 million
(Source: Zuora)

$420 billion
Amount spent on subscriptions in the United States in 2015, up from $215 billion in 2000
(Source: Credit Suisse)

78%
Percentage of the adult population in Britain that subscribed to at least one product or service
(Source: YouGov)

29%
Average annual customer-churn percentage for subscription companies
(Source: Zuora)

"I still have to spend a lot of time helping investors and analysts understand the difference between a subscription model and a perpetual model."
—Paul Auvil, CFO, Proofpoint

$100 million again next year. And I might get new customers. Whereas if you're a box company, your boxes may go out of vogue next year and your free cash flow may drop to $50 million."Auvil adds that, when he does non-deal road shows, he typically meets with about 20 to 25 investors each day, and "half of them still don't understand this."

Another finance chief concerned about analysts and investors is Thomas Tuchscherer of Talend, which offers an open-source data-integration platform. The company went public in July 2016, and the CFO has been dismayed over analysts' use of a metric called "calculated billings."

The widely used metric is generally defined as revenue for a particular period, plus the sequential change in total deferred revenue as presented on the balance sheet. It's seen as a way to back into an estimate of the value of new bookings made during the period, or "new annual contract value (ACV) bookings." Tuchscherer calls ACV "the leading indicator of future revenue performance." Hence it's the metric analysts most want—but it's a non-GAAP metric that few subscription companies divulge.

Why don't they? "If you disclose it one quarter, there will be an expectation that you're going to keep disclosing it, and it becomes just one more thing you're going to be held accountable for," says Zuora's Sloat. "It's OK if you have a great quarter, but then later when you don't have a great quarter, you'd rather not disclose it. In the subscription business there's a lag between bookings and revenue, so if you miss one quarter, you might still make it up in the next one."

Sloat says calculated billings, which many see as a proxy for new ACV bookings, is a misleading metric. That puts him squarely in Tuchscherer's camp. "Many analysts and investors agree that it's not the best metric, but it's a habit and it's hard to move them away from it," he says.

Tuchscherer recently wrote a blog post decrying the use of calculated billings. The metric, he wrote, does not adequately take into account discounts that customers may be granted in exchange for signing a multiple-year contract.

Also, he says, if a vendor intends to do repeat up-sells or cross-sells to existing customers, it's good practice to align the end-dates of new subscription agreements to those of existing agreements. However, that may result in "stub-period agreements" that are shorter than one year, which could impact billings and short-term deferred revenue.

Tuchscherer rattled off several other deficiencies of the metric before concluding that "calculated billings could only be a good indicator of future performance if all other factors remain constant, which is rarely the case in the technology industry."

Switching the Channel

Other software companies may have additional constituencies to educate. For example, in the cybersecurity field, where Proofpoint plays, value-added resellers are most familiar with perpetual licenses. "When they close a deal, [traditionally] they get a 20% to 30% cut" for a one-time purchase, says Auvil. But when Proofpoint lands a subscription deal, it's for a year. "We don't have a big tidal wave of cash coming in, and I can't give them 30 points of margin," says Auvil. "Maybe I can give them 10 or 15 points."

In other niches, big subscription companies, such as Salesforce.com and Workday, don't have this problem because they sell directly to customers.

Auvil says Proofpoint has done a lot of work to help resellers understand that subscription revenue "is a gift that

Courtesy the companies

Annual Harvest

keeps on giving. You're not going to make a lot of money up front, but you can get that 10 to 15 points of margin year after year." The effort has been ongoing for 4 or 5 years, he notes, and "some of the bigger channel partners are realizing that the age of big-ticket perpetual licenses and boxes is slowly ending."

Perhaps an even bigger challenge for Proofpoint, Auvil notes, is the ceaseless need to re-earn customers' business, year after year. The subscription model, in other words, is a double-edged sword. "Every year, a customer has to make a decision about who to buy," Auvil says. "And in our world, cybersecurity, it's pretty easy to move from Proofpoint to someone else." Such a switch might only take three or four weeks, he says.

That benefits customers, because the only way for a vendor to keep them is by delivering both world-class product efficacy and excellent customer service. "That's true in many cloud-based services businesses," says Auvil.

Model-Shifting

Companies that transition from the perpetual license to the subscription model face a special challenge: convincing investors that it's a good idea. The main emphasis when going through the transition is to "come out on the other side as quickly as possible," says Andrew Miller, CFO of PTC, a maker of software for product manufacturers. That's because, for almost any company making the move, financial results will inevitably plunge in the short term, as smaller

The main emphasis when going through the transition to a subscription model is to "come out on the other side as quickly as possible."

—Andrew Miller, CFO, PTC

Subscriptions: A True Win-Win?

Most software buyers like the subscription model because it provides so many advantages. Generally, a buyer:

- Avoids a large initial outlay of capital
- Enjoys a much shorter implementation phase
- Gets more frequent product updates than are available with on-premises software
- Doesn't need to maintain servers and buy new ones
- Has the at-will flexibility to add or subtract users/seats, or ramp usage volume up or down, depending on the vendor's pricing model
- Depending on the contract length, has the flexibility to change direction and move to a different vendor more easily than if it had an expensive, installed solution

Additionally, concerns that data is less safe in a cloud than in servers controlled by the buying company have faded over the past several years.

One company that doesn't need to be convinced is PTC, a maker of software for product manufacturers. It has traditionally sold software via the perpetual-license model but is currently in the midst of a transition.

"One thing we learned in our market testing," says CFO Andrew Miller, "was that, in every segment and geography we're in (with the exception of small segments in a few small countries), regardless of customer or deal size, subscription was far preferred over perpetual, as long as you get the pricing right."

From a purely financial standpoint, the vendor benefits from a recurring revenue stream from each customer, provided the quality of its products and services is good enough that customer churn remains low.

The vendor then doesn't have to "kill what it eats," in the words of Steve Love, CFO of Dialpad, a provider of cloud-based telecommunications services—that is, it doesn't have to reach periodic revenue targets solely by attracting new customers. For successful subscription companies, revenue therefore becomes much easier to predict.

The only significant downside is for startup subscription companies, which at the outset will likely be taking in only small chunks of revenue from a modest customer base. That means they need a lot of up-front investment in the business before the cash really starts to roll in. D.M.

sales replace big-ticket ones. It can also put a dent in market capitalization, as investors struggle to understand the company's changeover.

When Miller arrived at PTC in 2015, the company was already planning its transition. He brought to the table the experience of having conducted two business-model changes in the past.

With the help of management consulting firm McKinsey, PTC conducted market and price-elasticity studies. "The main thing we learned was that 75% to 80% of our customers definitely preferred subscriptions," Miller says. "We also learned the [optimal] ratio of pricing between the two models and what features of the subscription model mattered to customers."

The transition also required a realignment of sales compensation plans to favor subscription sales, including different incentives for the 25% of PTC's business that went through channels.

As it turned out, the pace of the transition exceeded expectations. The first-year goal for the new sales regime, launched at the beginning of the company's 2016 fiscal year on October 1, 2015, was for 25% of new bookings to be subscriptions. But subscriptions ended the year at 56% of new bookings, which was actually ahead of the company's second-year target of 45%. In the fourth fiscal period, the figure hit 70%.

PTC now expects to reach a final goal—85% of new bookings sold as subscriptions—in fiscal 2018, which starts this coming October. That level is based on the company's analysis of the overall market; it does business in about 90 countries, including a number of markets in Asia, "where there are different cultural buying behaviors and business rules in terms of capex versus opex budgets," says Miller.

The company also is offering a conversion program enabling customers that previously bought a perpetual license to switch to the subscription model. Such customers have paid an average of 25% more for subscription services than they had been paying for maintenance under their perpetual licenses, according to Miller.

Unrecognizable Rules?

For some subscription-based companies, another obstacle will be accounting. Accounting Standards Codification 606, the new revenue recognition standard slated to take effect December 15, 2017, presents the potential for a pounding headache.

The new rules won't much affect pure-play SaaS subscription companies, other than probably requiring them to amortize sales commissions over longer periods. Things are likely to prove dicier, though, for companies like PTC and Talend that have hybrid models (i.e., they offer both subscriptions and perpetual licenses).

Under the new standard, companies will be required, for accounting purposes, to allocate the overall transaction price of each perpetual-license agreement among the vendor's individual contractual performance obligations. In addition to the software, those obligations could include maintenance, product upgrades, call-center support, and implementation services. The proportion of the transaction price allocated to each obligation is to be based on the price at which the company would sell that good or service on its own.

"Having to carve out different elements of our subscription revenue, which frankly will be a very subjective process, is not very rational or logical."
—Thomas Tuchscherer, CFO, Talend

If a standalone price is not readily available, the company can choose from several estimation methods. But any way you cut it, performing the transaction price allocation will be filled with guesswork for some companies.

Under existing revenue recognition rules, software companies are already required to estimate the fair value of each separate deliverable, which many satisfy using a method known as "vendor-specific objective evidence." That has relatively little impact on companies that sell everything as part of a subscription (except, in many cases, their implementation and training services).

But the new standard may indeed affect the financial reporting of companies like PTC and Talend. The CFOs of both firms say they are still assessing what that impact will be. But to be sure, there's no fun to be had here. "It's painful," says Tuchsherer.

That's particularly so given that he doesn't understand the rationale for the rule, as it applies to Talend. "We sell a subscription to customers, and we don't sell the software license separately from the support and maintenance," he says. "It's one package that includes everything. That's how customers perceive the value of what they're buying, and that's how they actually buy it.

"So," he adds, "having to carve out different elements of our subscription revenue, which frankly will be a very subjective process, is not very rational or logical."

Asked whether it might force Talend to rethink how it packages its products and services, Tuchsherer pauses for a few beats. "Well, we don't want to," he says. "It would be very bizarre if a new accounting standard dictated or influenced the way we sell to customers. Yet, it may have an impact. I don't think so right now, but it could." CFO

DAVID McCANN IS A DEPUTY EDITOR OF *CFO*.

Courtesy the companies

Information Inflation

DESPITE THE SUPERABUNDANCE OF DATA COMPANIES ALREADY DISCLOSE, INSTITUTIONAL INVESTORS ARE LOOKING FOR MORE. BY ED ZWIRN

Responding to both investor demand and Securities and Exchange Commission mandates, the 10-Ks, 10-Qs, and proxy statements issued by companies contain more nonfinancial information than ever before. In its latest 10-K, for example, Alphabet devotes close to 700 words to supply chain risks. Apple's 2016 10-K takes 500 words to describe data breach dangers. Caterpillar's annual filing includes 2,200 words on potential operational perils.

The Dodd–Frank Wall Street Reform and Consumer Protection Act has added to the reporting deluge, controversially requiring information like the ratio of CEO pay to that of the median rank-and-file worker and whether a company uses so-called conflict minerals from war-torn African countries in its supply chain.

The growth of information supplied by companies hasn't, however, deterred investors' calls for additional data from publicly traded U.S. firms. Information on cybersecurity practices, audit committees and auditor relationships, board expertise and diversity, and compensation plans and other workforce metrics are all under discussion.

The extent to which stakeholders are looking for more intelligence became apparent in April 2016. That's when the SEC released a concept paper discussing possible revisions to Regulation S-K, which contains provisions mandating much of the nonfinancial disclosure by registrants. The initial 1977 version of the regulation included only two disclosure requirements—a description of business and a description of properties. The concept paper, mandated under 2012's Jumpstart Our Business Startups (JOBS) Act, solicits opinion on the effectiveness of the current burgeoning disclosure regime and at the same time opens the door for its further augmentation.

Investors claim their demands are reasonable, and they would like to see some rulemaking eventually arise from the concept paper. But finance chiefs and regulators are skeptical; many think the kind of information discussed would not be germane to an investing decision.

NO OVERLOAD WORRIES

The SEC received more than 26,000 comment letters in response to the concept paper. The bulk of them were form letters asking the SEC to require U.S. companies to disclose more details on foreign subsidiaries and the taxes they owe in the United States. Similarly, more than 9,800 of the responses were form letters calling for the requirement that companies

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0.00
Year-to-Date
0.00
0.00
(3,192.50)
(20,000.00)
20,000.00
3,206.69
0.00
18,138.73
(18,152.92)
0.00

disclose "sustainability plans."

Present among what the SEC counts as about 320 original letters, though, are calls for information about political spending; tax payments by country; external auditors; and workforces, or "human capital."

In their own comment letters, finance professionals expressed doubt about the utility of some of the nonfinancial information.

"We are concerned that rulemaking to effect line-item disclosures on sustainability or public-policy issues risks confusing arguably important or even interesting information with material information," Thomas Timko, controller and chief accounting officer of General Motors, wrote to the commission on September 30, 2016. "The materiality of information should be the touchstone of any required disclosures in a company's periodic reports."

Wrote Michael Hardesty, chief accounting officer of Northrop Grumman: "Materiality should be the primary factor used to determine whether disclosures are necessary and if the total mix of information sufficiently informs investors. The Supreme Court has held that information is material if there is a substantial likelihood that a reasonable investor would consider the information important."

Even the SEC under Mary Jo White was concerned about mounting disclosure requirements. In 2015, when White pulled any discussion of issuers having to disclose their political contributions, she said some of the disclosure rules being pushed for "seem more directed at exerting societal pressure on companies to change behavior, rather than to disclose financial information that primarily informs investment decisions."

The response of some large investors to additional disclosures, on the other hand, is "bring it on." They caution against attempts to curtail disclosure or limit its growth, and they have little worry about information overload.

"We just have not heard from our members that there's huge concern about the volume of disclosures, other than that they'd like to see a better organized 10-K and that the proxy statement is too long," says Ken Bertsch, executive director of the Council of Institutional Investors (CII). "But there is concern that a drive to streamline disclosure will cut down on information."

> **"We just have not heard from our members that there's huge concern about the volume of disclosures."**
> **KEN BERTSCH**, Council of Institutional Investors

SETTING DEMANDS

Bertsch, whose group represents a membership with more than $23 trillion under management, was vocal in calling for greater volume of mandated disclosures when he submitted a comment letter in reaction to the concept paper. His letter called for specific disclosures in numerous areas, including:

External auditors. Item 304 of Regulation S-K requires companies to disclose their reasons for changing auditors only when there is a disagreement or in certain other limited circumstances. (A disagreement is defined as "any difference of opinion concerning any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure.") The CII recommends that companies disclose their reason for an auditor change in all cases, and that they do it in a plain English narrative. The current requirement, says Bertsch, "is just not transparent and seems excessively obscure."

Non-GAAP reporting. Bertsch would also put external auditors on the line by making them responsible for reviewing and signing off on all non-GAAP portrayals of company financial performance. "Although the use of non-GAAP financial measures to describe financial performance can be appropriate and useful to investors, it can also obscure a company's financial performance and mislead investors," Bertsch argues. "Non-GAAP has been abused, at least until the SEC put out guidance last May." Berstch said upcoming quarterly reports and proxy statements will demonstrate the extent to which this problem continues.

Human capital. Bertsch acknowledges a divide in CII's membership about the reporting of workforce data. Investors like CALPERS and other pension funds managing benefits for unionized employees care more about human capital disclosures than other institutional investors do, he admits. Employees constitute "one of the primary drivers of value in companies, and companies don't have to disclose much about them," says Bertsch, pointing to the committal of fraud by Wells Fargo employees as demonstrating the need for "more qualitative insight."

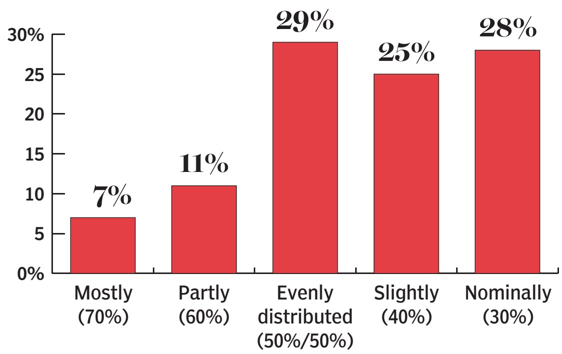
Brandon Rees, deputy director of the AFL-CIO's Office of Investment, represents a key stakeholder group calling for more human capital disclosure. "Most companies would say their employees are their most valuable assets, but many companies have said they just don't know what the median pay of their employees is," he says.

"Some two-thirds of the value of U.S. corporations comes from intangibles, and much of this comes from the employ-

TELLING THE STORY

For many finance executives, at least half of the information in financial reports to stakeholders consists of a narrative.

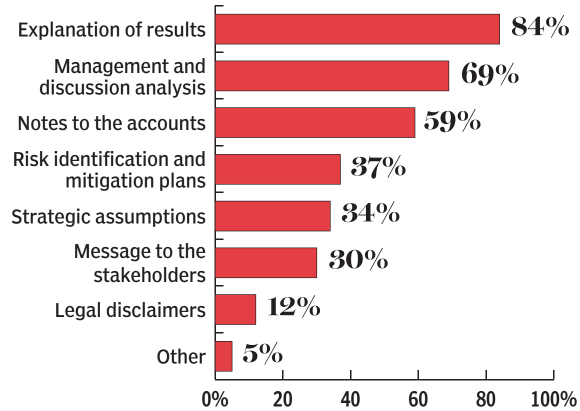
On average, what percentage of the reporting to stakeholders is narrative versus financial information?



Source: "The Challenges of Modern Financial Reporting" survey, March 2017; CCH Tagetik

SPREADING THE WORD

Finance executives use a wide variety of narrative forms in reports to stakeholders.



Note: Multiples responses allowed
Source: "The Challenges of Modern Financial Reporting" survey, March 2017; CCH Tagetik

ees, but if it's not measured it's not managed," argues Rees. He calls for (among other things) a narrative "of how other employees are paid when setting CEO pay targets" and a narrative to "explain why the (CEO) pay ratio is what it is." He also would like to see disclosure of employee safety and health information, race and gender workforce composition, and employee turnover and retention rates.

BOILERPLATE BLUES

Is adding to the bulk of information that a publicly held company has to report really progress, and would it really help investors?

Robyn Bew, director of strategic content development at the National Association of Corporate Directors, contends that promulgating more disclosure mandates may, in fact, obscure the more important stuff. "One of the things that we hear from investors is that an unintended consequence of mandatory disclosure rules is more boilerplate," she says. "It would be more useful if companies and boards could do more of their own thinking.

"Everybody wants disclosures to be more effective, but that can mean different things to different people," she continues. "Larger investors can say 'Give it all to us and we'll figure out what we want,' while smaller investors don't have the resources to do that kind of data mining."

That being said, there are examples of disclosures that corporate directors, pushed by investors, would like to see more of.

For one thing, Bew says, investors are asking for more information on executive pay, particularly how "the company's pay philosophy links to corporate strategy." As a result, some boards of directors are taking a more proactive stance on the Compensation Discussion and Analysis (CD&A) section of filings, "making decisions as to what goes in there and overseeing the quality of management's disclosures."

Bew notes that directors are also aware that investors are increasingly demanding more disclosure about boards themselves. "Why is this group of directors the right group in terms of skills and diversity?" is a question companies face pressure to answer. "Voluntary disclosures of this kind have really exploded as part of this sea change," Bew says.

Directors also feel more obligated to describe the functioning of audit committees. Even before possible promulgation of rules mandating these kinds of disclosures, many companies are already disclosing how "audit committees make decisions and how they oversee the external auditor," says Bew.

Much of this is (or should

"Some two-thirds of the value of U.S. corporations comes from intangibles and much of this comes from the employees, but if it's not measured it's not managed."

BRANDON REES, AFL-CIO Office of Investment

Courtesy the companies

be) investor driven. Boards need to ask themselves whether "they are getting feedback from investors," and make sure that they are getting this feedback in adequate amounts. "Many companies must already be doing this, because what we've seen is that interaction between boards and investors is on the rise," Bew says.

A RESPITE?

The change in presidential administrations and the Republicans' control of Congress may stem the tide of increased transparency, though, and give companies a breather on new disclosure mandates. The new powers that be appear averse to the imposition of any kind of additional regulatory burden.

In February, for example, acting SEC chair Michael Piwowar asked issuers to submit information about any unexpected challenges they face complying with the CEO pay ratio rule. He also asked the SEC staff to reconsider the implementation of the rule and possibly provide relief based on those comments. Then, in early April, the SEC suspended enforcement of part of the conflict minerals rule. As a result, issuers are not required at present to conduct a due diligence review or an audit of the source of conflict minerals in their supply chains.

While the fate of those rules is uncertain as the Senate considers Trump's appointee to be SEC chair, Wall Street attorney Jay Clayton, there is also speculation about the potential rollback of parts of Dodd-Frank. Provisions mandated by the Act that require disclosure of CEO pay versus performance have already gone into effect. And an earlier-implemented Dodd-Frank rule requires companies to conduct nonbinding shareholder votes on executive pay, the so-called "say on pay" provision.

There is a "sense that disclosures on executive pay have improved in quality and the main reason for this is 'say on pay,'" says Bertsch. "Companies are proving more sensitive to the votes than I would have thought," he adds. "For some companies, less than 80% [approval by investors] has them concerned."

> **"One of the things that we hear from investors is that an unintended consequence of mandatory disclosure rules is more boilerplate."**
>
> **ROBYN BEW**, National Association of Corporate Directors

Fortunately for CFOs who would rather see disclosures streamlined, the SEC does have a counterbalance to investor demands: the Disclosure Effectiveness Initiative, a project started by former SEC Chair White. The initiative is designed to examine whether existing disclosure requirements should be modified or eliminated and whether new disclosure requirements are necessary.

While Sen. Elizabeth Warren (D–Mass.) has argued that the initiative is designed to protect investors from a nonexistent problem, "information overload," the initiative may ultimately result in valuable reforms, like revising the Compensation Discussion and Analysis section to make it less dense and jargon-filled.

CFO AS STORY TELLER

Whatever the timing and the extent of future disclosure requirements, there is already a sense that an increase in the volume of nonfinancial disclosures is inevitable. Many issuers are doing it voluntarily, not waiting for recommendations or rules from the SEC.

According to a survey of finance executives and professionals from more than 200 companies worldwide by CCH Tagetik, a software vendor, about half (47%) of respondents say their company reporting already consists of at least half "narrative" or "nonfinancial" information.

Responsibility for complying with any new disclosure rulemaking, says CCH Tagetik marketing director Dave Kasabian, will fall mainly on the CFO.

"Traditionally the CFO was responsible for the accuracy and consistency of the numbers; now he or she is also becoming responsible for the narrative," says Kasabian. "CFOs need to be sure that these narratives," many of which will be written by other departments, "are checked and vetted and consistent."

Kasabian is quick to point out that his company's survey, released in March 2016, notes that most finance executives already dedicate a week out of each year to producing company reports. To get a handle on increased disclosure requirements without significantly extending this report-writing effort requires that CFOs "manage the process and put their own controls around it," he says.

What will the CFO get in return for all this effort? "If CFOs can bring together this array of material, by constructing the narrative they have the opportunity to be the strategic voice of the company," Kasabian says. CFO

ED ZWIRN IS A FREELANCE WRITER BASED IN BETHEL, NEW YORK.

Courtesy the company

Moving Up

Corporate IT is shifting from data centers and company-owned servers to the public cloud. By Keith Button

All signs point to a cloud computing future where nearly all software, data, and resources are accessed over the Internet. But we are far from there yet. While many companies take advantage of some cloud-based software solutions, many still have their own information technology infrastructure for storing data, running operations-critical applications, and connecting far-flung offices, among other tasks. They may also be wary of moving computing resources to the cloud, fearful of the costs of a migration and losing control of what they may see as a competitive advantage.

But as cloud solutions and their ecosystems mature, it becomes harder for organizations to cling to the old IT model. Why are companies adopting public cloud solutions, essentially buying a "slice" of a server in a cloud-computing environment that is shared with other clients?

Part of the equation is cost. For many companies, public cloud providers can supply IT infrastructure and applications services at a much lower cost than providers of on-premises solutions. That's not just because of lower hardware costs, but also because of lower management costs, says Timothy Chou, a lecturer in cloud computing at Stanford University.

"The cost of the server is not really the cost of the box itself, but the management of the server—managing availability, managing security, and managing performance," Chou says. "The cost to manage the box is probably four times the cost of the box per year."

Public cloud providers also improve reliability by replacing much of the human labor with automated management. There is no clear dividing line designating when public cloud services are a better choice than company-owned data centers or on-premises IT, Chou says: For companies with fewer than 1,000 servers, the obvious choice is the public cloud, but companies with more than 100,000 servers (for perspective, Google has about 1 million servers) will obviously want to handle their own hardware.

The growth of applications in the public cloud comes from two sources, says Deepak Mohan, a research director at International Data Corp.: 1) new applications that are born in the cloud and 2) applications that are moved, typically when their on-premises hardware nears the end of its life or when it's time to scale up.

The motivation for moving an application to the cloud isn't always cost, Mohan says. For enterprises that want to pilot applications, or for startups or small companies launching new applications, the risks are lower in the cloud, and organizations can avoid the upfront costs of leasing a data center, hiring people, and buying equipment.

But even mature companies that aren't looking to avoid upfront costs are finding benefits from the "cloud ecosystem"—the value-added services at the infrastructure layer. A cloud platform does not just virtualize computing resources, storage, and networking; it also allocates those resources as necessary. Value-added services can include monitoring and auditing reports that can help a company decide whether to offload other, similar tasks to the cloud.

"Increasingly we see, especially with more-mature companies, that while price is important, the ecosystem and the other benefits that cloud services provide are growing in terms of importance," Mohan says.

Business advantage, such as increased agility or faster delivery of products and services, is the primary reason that many companies move to the cloud, says Lydia Leong, a vice president at Gartner who covers cloud migration. When companies are planning a move to the cloud, they should also be planning business transformations to take advantage of automation.

"[Migrations] have to be carefully planned, and there is upmarket expense for that migration," she says. "You're making an investment to save money over the long term."

But just putting existing IT systems in the cloud is really inefficient, Leong says. "The cloud enables you to drive a great deal more automation, but if you are just effectively shifting from buying to renting, that's not necessarily to anyone's advantage."

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The Players

The top two public cloud providers are Amazon Web Services (AWS) and Microsoft's Azure, with a substantial drop-off to the next tier, Leong says. Rackspace is essentially out of the public cloud provider business, although it manages other companies' cloud implementations and migrations. Google has been very interested in serving innovative companies, but less interested in providing a "your mess for less" public-cloud service broadly for customers. Oracle and IBM seem to be aiming for some niche markets, but "at least at this stage [are] not really poised to be broad competitors," Leong says.

A majority of organizations migrating to the cloud are migrating to AWS because its ecosystem is more mature than Azure's, Leong says. "It's a lot easier to get help and find people who are experienced in doing that migration; it's easier to license software and get support for commercial software that enterprises use on AWS."

However, Azure has been improving in these areas. In posts on the G2 Crowd software review platform, Azure users say they like the ability to build and deploy servers at multiple locations across the U.S. at the click of a mouse and the ease of linking virtual networks. One user also notes that Azure allowed setup of Linux servers in its cloud last year, "which has made most arguments against Azure moot."

Public-cloud pricing can be complicated, with variations based on what types of servers are offered, the size of the offering, performance, and geographic location. But the prices are publicly available, thanks to Amazon's retail philosophy: It's easier for customers to make the purchase if they know the price, and public pricing means no expensive sales force, says Stanford's Chou. Microsoft has pledged to be price-competitive against public AWS prices.

Making the Journey

How do organizations migrate to the public cloud? Companies that are migrating should enlist assistance from vendors that have experience in moving corporate IT to the cloud, says Leong.

"Most companies starting on this journey don't know what they don't know, and having experts from the very beginning tends to make projects more cost-efficient over the long run," Leong says.

Most companies aren't facing an all-or-nothing shift to the cloud. Some want to take advantage of infrastructure-as-a-service (IaaS) from cloud providers while balancing compliance and control requirements. Therefore, they may move just a fraction of their applications to the cloud, says Edward Wustenhoff, chief technology officer at Burstorm, which makes an app that models cloud deployment and infrastructure scenarios.

If a company opts for a cloud model, it also needs to decide whether it wants a public cloud model—shared, multi-tenant, with very little control—or variations of more control offered through managed service providers like CenturyLink and Rackspace, Wustenhoff says. (See "What's Available in the Cloud?" below.)

For certain highly specialized applications, companies can improve availability, security, performance, change management, and bottom-line economics by optimizing their computing infrastructure (instead of deploying it in the cloud). But "if I don't need control, don't care as long as it runs any flavor of Linux, and can run it online, then for $20 a month I can get a very high-performance ma-

WHAT'S AVAILABLE IN THE CLOUD?

Infrastructure as a Service (IaaS)
Contains the basic building blocks for cloud IT and typically provides access to networking features, computers (virtual or on dedicated hardware), and data storage space. Provides the highest level of flexibility and management control over IT resources.

Platform as a Service (PaaS)
Removes the need for organizations to manage the underlying infrastructure (usually hardware and operating systems) and allows them to focus on the deployment and management of applications. Resource procurement, capacity planning, software maintenance, and patching are all taken care of.

Software as a Service (SaaS)
Provides a completed product that is run and managed by the service provider. A common example of a SaaS application is web-based email, where the organization does not have to manage feature additions to the email product or maintain the servers and operating systems.

Source: Amazon Web Services

chine," Wustenhoff says.

The decision-making doesn't stop once an application is migrated. Having deployed an application successfully, a company will have to continually re-evaluate whether it should fine-tune its level of cloud services to fit the business model. "Somebody told me once it's very cheap to fail in Amazon, but it's very expensive to succeed in Amazon," he says. "If you fail it's okay; you turn it off and you don't pay anything. But if you're successful in that model, then you find yourself paying a premium for a lot of services because once you are successful, you start consuming more and more and more [resources]."

Before embarking on a migration project, of course, CFOs should have a clear understanding of the motives and capabilities of their IT departments, Wustenhoff says. "We see a lot of situations where the internal IT department ... doesn't understand or is not familiar with the capabilities that exist in the cloud."

CFOs also need to have an open mind about potential cloud solutions, and periodically take the pulse of what's happening in the market. Cloud technologies and business models based on those technologies are changing so rapidly that companies should be checking up on a quarterly basis, Wustenhoff says.

"We have examples where companies could cut their costs in half if they would move to a different [computing] model," he says. "They don't realize that and they say: 'Well, there's still a lot of work; there's a lot of effort to move.' I totally agree with that; it's not trivial. But if it is truly a 50% cost reduction, then it might be worth it to go down that path," he says.

As migration to cloud platforms increases in the next few years, CFOs may find the process getting more complex. That's because the easy-to-move workloads are already in the cloud for many companies—in essence, the low-hanging fruit has been picked. In the coming years, in contrast, if and when they get comfortable with the public cloud, CFOs will be weighing in on migration decisions for mission-critical processes and new business ventures, says Allan Krans, the cloud, software, and data center practice manager for Technology Business Research Inc. (TBRI).

Security and Performance

However, transferring mission-critical applications to the cloud will focus a lot more attention on cloud platforms' security and performance.

In February, Amazon suffered an interruption to its S3 cloud data storage services, and a cascading effect knocked out several AWS services and a large chunk of the Internet. The outage took several large websites offline and affected other websites—including Netflix, Reddit, Adobe, and the Associated Press—over an 11-hour period. The cause of the outage: human error. An S3 team member entered an improper command, removing a larger number of servers from service than was intended.

Following the S3 outage, a survey of decision-making executives by TBRI found that, since moving to the public cloud, only 6% of the respondents had experienced more outages than they had expected, causing them to consider alternatives to the cloud. About 18% of respondents had experienced no public cloud outages, and 48% experienced fewer outages than they had expected.

CLOUDS IN THE FORECAST

Analysts project rapid growth for cloud computing offerings.

While the arrow for cloud adoption is pointing up, estimates for current public cloud use vary. Gartner pegs the figure at about 20% of all virtualized workloads, while Technology Business Research estimates that less than 10% of corporate IT spending is in the cloud. Oracle co-CEO Mark Hurd predicts that 80% of corporate data centers will disappear by 2025 as more and more companies shift to the cloud, freeing up their IT budgets for innovation.

International Data Corp. predicts that revenue for public cloud services worldwide will grow about 20% annually, reaching more than $195 billion in 2020. Of total public cloud revenue, 84% now comes from cloud software, including the components of software-as-a-service and platform-as-a-service, and 16% from infrastructure-as-a-service. According to IDC, manufacturing, banking, and professional services are the leading industries in cloud spending, at nearly one third of the total.

The top two providers of public cloud services, Amazon and Microsoft, recorded $12.2 billion and $14.4 billion in cloud revenue, respectively, in 2016. Morgan Stanley analysts predict those revenue figures will rise to $34.6 billion for Amazon and $46.6 billion for Microsoft by 2020, for compound annual growth rates of 30% and 34%, respectively. Morgan Stanley predicts similarly steep cloud revenue annual growth to 2020 for Google, 44%; Oracle and IBM, 33% each; SAP, 25%; and Alibaba, 80%. But none of those second-tier cloud companies are predicted to break $12 billion in cloud revenue by 2020. **K.B.**

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The survey results indicated that many companies seem to have built-in expectations of public cloud outages that are in line with reality, Krans says.

When weighing the security risks of public cloud solutions versus company-owned IT, companies should consider country residency requirements for storing data, Health Insurance Portability and Accountability Act requirements, and payment card data requirements, Mohan says. Public cloud providers have built tools and constructs addressing these requirements, and companies that use the public cloud need to familiarize themselves with the tools so they can build the same level of security into their application layer.

Cloud providers can spend more on security measures than most of their customers can for their own IT, and most enterprises find that cloud security protocols are on par or better than their own, which lessens security concerns, TBRI's Krans says.

To help decide whether a cloud provider is secure enough, customers may want to define their requirements and ask if the service meets them, Chou says. For example: "Within 24 hours of the release of any security patch, it goes through 1,000 tests and then is put into production within 39 minutes." Or, "from the time an employee is terminated, his or her access to the building and the servers is revoked within 42 minutes."

"The cost of the server is not really the cost of the box itself, but the management of the server—managing availability, managing security, and managing performance."
—Timothy Chou, Stanford University

Those are two made-up examples, Chou says—no one is currently asking for those specific requirements—but they could help define just what "secure" means for the cloud customer.

"It's the same as saying: 'I have a fast car,' and you say: 'Well, that's cool,' or I say: 'My car goes 0 to 60 mph in 2.5 seconds and it has 953 horsepower,' and you say: 'Wow, you do have a fast car,'" Chou says. "Today, people say: 'Well, I have a secure system.'"

One reason some companies resist cloud adoption is the social factor, Chou says. Companies are wondering, "Who are these people, and if something happens, whom do I call?" he says.

Chou sees company-owned data centers eventually going the way of corporate remote networks that companies once built and managed themselves. "Today, there is no network engineer's throat to choke when something goes wrong," Chou says. "The flip side is that companies get new features and far better pricing than they would if they tried to do everything on their own."

As more companies move to the public cloud in some form, social obstacles will matter less and less. The cloud is not just an IT cost-savings tool, but a better computing platform for organizations that want the ability to grow, to diversify, and to adapt rapidly to competitive threats and opportunities. CFO

KEITH BUTTON IS A FREELANCE WRITER BASED IN VALLEY COTTAGE, NEW YORK.

5 TIPS FOR MIGRATING TO THE CLOUD

Are you moving all or most of your company's IT systems to the cloud? James Eliason, CFO of Datawatch, a data analytics firm, has some advice about making the transition:

1 Ensure there is tolerance for cloud computing in the corporate culture. Skepticism and uncertainty among the C-suite is inevitable. We encountered some pushback with our proposed cloud initiative. But once the critics were able to see how the cloud would drive growth and value—and recognized that the initiative was being driven by the guy whose job it is to manage risk in the company—we were able to forge a consensus.

2 Make sure the user base is technologically capable. Cloud computing is supposed to make IT simpler. But any technological change requires some degree of retraining. A complete cloud transition may not be a good fit if employees are not technologically sophisticated.

3 Vet the cloud provider. It is critical to perform due diligence: check the vendor's references; assess its financial health; evaluate its IT infrastructure for redundancy, uptime, and recovery; understand its onboarding processes; and clearly establish enforceable service-level agreements.

4 Make sure you have a reliable, robust "pipe" into your organization. Your cloud vendor's uptime and reliability will be all for naught if your Internet connection goes down. Apply the same due diligence to your service provider as your cloud vendor, and make sure you have redundant, automatic failover connections.

5 Think globally. If your company competes globally, select a cloud vendor with international reach. Having to deal with multiple vendors serving different regions can introduce unnecessary complexities and uncertainties when problems do arise. You want one neck to choke, not several.

Trade Gap

In the first-quarter Duke/*CFO* Business Outlook Survey, global CFOs caution President Trump about trade policy.

By Josh Hyatt

55%

Percentage of CFOs who say that a border tax would be bad for business.

A few months into his tenure as the leader of the free world, President Trump seems to be getting the message that the issues that populated his hard-fought campaign are not the stuff of sterling presidential legacies.

Before taking office, for instance, Trump made pronouncements about the troublesome strength of the U.S. dollar. But in mid-April, when he told the *Wall Street Journal* that he thought the dollar was getting "too strong," he toppled several related indicators. The U.S. dollar index quickly took a U-turn, halting its upward momentum and dropping about 0.6%. Yields on 10-year U.S. government bonds, absorbing Trump's stated preference for low interest rates, dipped to their lowest level since November 2016.

It wasn't just the contents of the president's remarks that rattled global exchanges. Presidents have traditionally resisted encroaching on policy turf that is typically trod by the Federal Reserve. And the Secretary of the Treasury is usually given a free hand, so to speak, to elucidate on the dollar's comparative value.

Then again, Trump's penchant for convention-crushing comments is well documented. In the economic realm, he previously vowed to label China a "currency manipulator" for pushing its yuan to artificial lows. He also promised to replace Janet Yellen as chair of the board of governors of the Federal Reserve. But as complex political realities have come into sharper focus—with the recognition, for example, that America needs China's cooperation to apply pressure on North Korea—such statements have softened into milder assessments, if not sharp reversals.

THE REVENGERS

Still, some CFOs, both inside and outside of the United States, are taking Trump's comments about a protectionist trade policy seriously. They are suggesting they would enlist in a trade war if necessary, with others vowing retribution if the president stands by some of his controversial economic pronouncements.

Those are among the findings of the most recent Duke University/*CFO* Global Business Outlook Survey, which ended March 10. The quarterly report, based on the responses of nearly 900 global CFOs, identified regional pockets where finance executives are ready to oppose certain administration policies regarding trade.

The U.S. optimism index, as measured on a 100-point scale, rose to 68.5, its highest level in 14 years, according to the survey. Yet among CFOs whose companies are headquartered in the U.S., more than half are not in favor of some of the president's proposed reforms.

Just over half, 55%, say that a proposed 20% border tax—a value-added tax levied on imported goods—would be bad for business. Nearly 60% of respondents say that a substantial tariff on Chinese and Mexican goods would be bad for the economy, with almost the same number voicing opinions against the elimination of the tax deduction for corporate debt (see "Push-

Pushing Back

While many U.S. CFOs backed Donald Trump in the election, they're not very keen on some of his tax and economic policy positions.

68% Favor retaining current leadership at the Federal Reserve Bank

58% Say eliminating the debt interest deduction would be bad for the U.S. economy

57% Say that a substantial tariff on Chinese and Mexican goods would be bad for the U.S economy

55% Say a border tax would be bad for business

Source: Duke University/*CFO* Magazine Global Business Outlook Survey, Q1 2017

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ing Back," facing page).

As part of a broader overhaul of corporate taxes, the president has proposed tearing up current trade accords (namely, the North American Free Trade Agreement, which dates to 1994) and taxing imports at the border—imposing especially steep tariffs on goods from China and Mexico. Economists have warned that the move—aside from strengthening the already muscle-bound U.S. dollar—could ignite a trade war, leading other nations to strike back by imposing tariffs of their own.

Among Latin America countries, the survey finds increased levels of economic enthusiasm in every measured dimension, including respondents' optimism about their country (which jumped to 55.0 in Q1 from the prior quarter's 37.2) and about their own companies, which jumped to 66.6 from 58.0 on the index. Across the region, only about 7% of survey-takers back the idea of retaliating against the U.S. if the president acts to restrict trade with their region (see "Ready to Resist," above).

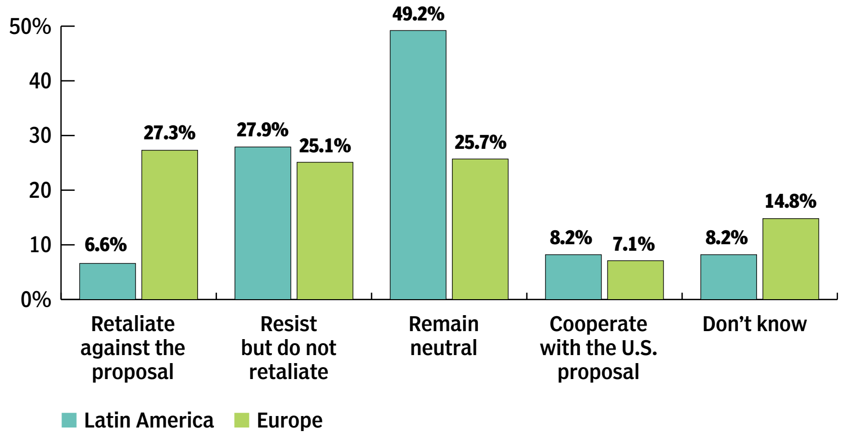
But CFOs of companies from Mexico are more adamant. Three-quarters of those respondents express discontent with the U.S. president's proposed actions. One-quarter of CFOs based in Mexico say their government should retaliate in kind against any trade penalties imposed by the U.S. This could mean slapping taxes on, say, popular American-made luxury goods or on agricultural fare ranging from soybeans to corn. Legislators from agricultural-producing U.S. states would almost certainly convey their disapproval of the administration's action.

Among Mexico-based survey-takers, 50% say the country should resist the U.S. policy but not retaliate against it. The range of Mexico's retaliation options could include threatening to end its cooperation in nabbing drug traffickers or even loosening security on its southern border so that migrants from Central America can pass through, unimpeded, on their way to the U.S. In terms of how their companies should respond, 65% of CFOs of Mexican companies believe their own firms should remain neutral.

Ready to Resist

Region-wide, European finance chiefs appear more likely than those in Latin America to support retaliation by their country against a potentially punitive U.S. trade policy.

"In response to recent trade proposals put forth by the US government, should your government...



Source: Duke University/*CFO* Magazine Global Business Outlook Survey, Q1 2017

THE BIG CHILL

Even among respondents based within the U.S.'s top trade and investment partner, the European Union, the administration's talk of protectionist trade policies has clearly elicited unease. No doubt that edginess has only increased since mid-March, when the president and German Chancellor Angela Merkel met for a chilly meeting that featured the conspicuous absence of a handshake for the cameras.

In the Duke/*CFO* Global Business Outlook survey for 2017's first quarter, European CFOs express a level of optimism about the economy that registers a slight dip in comparison with last year's fourth quarter. Respondents' optimism about their country's prospects slipped from 56.6 to 55.7 on the index, the lowest it has been since June 2016—the same month the Brexit referendum was held. Optimism on a company level inched up to 62.3, from 60.6 in the preceding quarter.

Slightly more than half of European CFOs say their countries should retaliate or resist U.S. trade proposals, with 65% of French companies favoring such action. (France is among the countries that the Department of Commerce recently accused of dumping—selling some imports below a fair price.) EU-member countries, which mostly trade among themselves, have been aiming to boost exports to outside countries. That being the case, their objections may be understandable.

Not every country that could end up on the losing end of a new trade policy is simmering with anger. The CFOs of Canada, a country that has been part of the tariff-busting NAFTA for 23 years, seem to reflect the patience of their youthful Prime Minister, Justin Trudeau. Trudeau has said that he'd renegotiate NAFTA if that were what the U.S. decided. True, 42% of Canadian CFOs say their government should resist U.S. trade proposals, but a mere 8% want their country to retaliate. True to form, it seems, the Canadians are managing to keep their cool. CFO

Cyber Insecurity

As the digital ecosystem grows, so do threats to the security of an organization's data stores. By Chris Schmidt

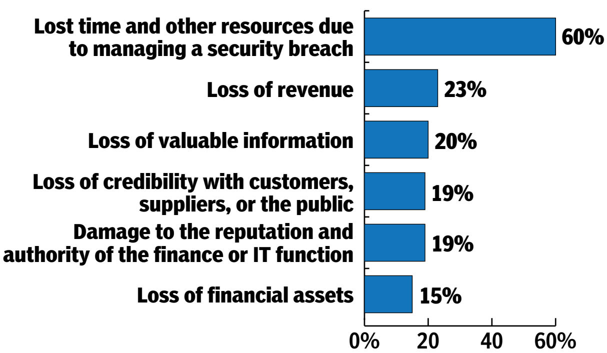
Check the news. The consequences of a data breach can be devastating to a company's finances and its brand reputation. And there's no single way to block virtual intruders, whose schemes are constantly evolving.

A recent CFO Research study, *Cyber and Data Security in the Middle Market*, confirms that the need to thwart cyber-hackers unites U.S. finance leaders across industries. The study, conducted in collaboration with U.S. Bank and Visa, is based on 316 online survey responses and 5 in-depth interviews. The U.S. senior finance executives polled work at companies with annual revenues between $25 million and $500 million.

The survey finds that 21% of respondents have had business activities disrupted by hackers in the past two years—compared with 37% who report having had physical property swiped during that same period. Still, 6 in 10 (60%) report having lost time and resources as a result of managing a security breach (see Figure 1).

FIGURE 1

Has a cybersecurity breach caused any of the following types of damage to your company in the last two years?



Multiple responses allowed

SERIOUS BUSINESS

A clear majority (82%) of respondents "agree strongly" or "agree somewhat" that their company's top executives treat cybersecurity with the appropriate gravity. Asked to identify the most important step a CFO can take to make the finance function less vulnerable to cyber-threats, one respondent writes, "Due diligence from the top and upper management." What matters most, offers another finance executive, is setting a "tone at the top."

However, just under one-quarter (24%) of respondents say they "agree strongly" that their rank-and-file employees treat cybersecurity with the seriousness that it warrants. By comparison, 45% of finance executives "agree strongly" that their top executives approach the issue with the attention it requires. Given that cyber attacks are targeted at all levels of an organization, it appears that top executives need to communicate some of that gravity and seriousness to the rest of the company.

Asked if they agree that their employees have access to training and education about recognizing and acting on cyber-threats, only one-quarter (25%) of respondents say they "agree strongly," with almost half (46%) choosing to "agree somewhat." Finance executives clearly see room for improvement, and additional training is a prudent path.

21%

Percentage of finance executives who say they frequently evaluate the security efforts of their suppliers and customers.

WHO'S ON POINT?

When it comes to managing cybersecurity, middle-market companies tend not to rely on separate departments, or even specially assembled teams, to quarterback the effort. For the most part, the survey found, middle-market businesses look to the IT function. In describing their companies' organizational strategies for managing cybersecurity, more than three-quarters (76%) report "cybersecurity is governed and managed by the information technology function." "Having a strong IT department is paramount," as one survey-taker states. By contrast, only 12% of respondents say that cybersecurity at their companies is centered in the finance function.

But in their responses to open-ended questions, finance executives stress the need for those departments to col-

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laborate, agreeing on strict guidance and carefully orchestrated steps that the rest of the company can follow.

Aside from advising attentiveness, finance executives also encourage their peers to help IT in a more concrete way, i.e., by giving the function the resources it needs for cyber-related initiatives. "Support the IT function with their security policies and requests," writes one respondent. "Make cybersecurity a big portion of the IT spending budget," writes another.

DON'T TRUST; VERIFY!

Explaining another effective step a CFO can take to reduce the finance function's vulnerability to cyber-hacks, one respondent writes: "Ensure regular audits are performed on IT security and hold proper insurance in case of a loss." Another advises fellow finance leaders to "perform an independent audit of the area." Adds another survey-taker: "Periodic audits."

Many respondents aren't just paying lip service to the idea. In the survey, nearly half (48%) say they have conducted formal assessments of their cybersecurity efforts for *all* systems, locations, and business units in the last two years. An additional 22% report that they have done the same for *some* systems, locations, and business units; only 15% say they have conducted *no* formal evaluation of their company's preparedness (see Figure 2).

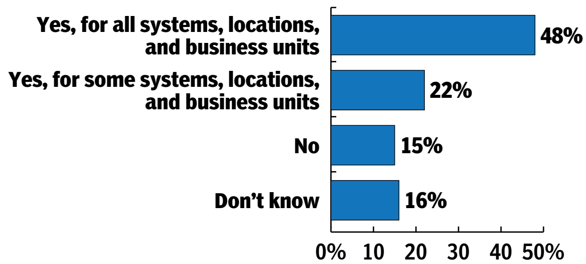
THIRD-PARTY RISK

With businesses seeking to replace, or complement, in-house capabilities with third-party capabilities, they may be overlooking the cyber-risks they are acquiring in the process.

Whether as a result of cost-consciousness or lack of urgency, only about 1 in 5 finance executives (21%) who participated in the survey say they *frequently* evaluate the security efforts of their suppliers and customers. Combined with those who say that their companies *occasionally* review suppliers and customers (35%), the proportion reaches a simple majority (56%). But that total is a far cry from the 70% that have done at least *some* review of their own security situation. Meanwhile 3 in 10 (31%) conduct no formal evaluation of their external partners.

FIGURE 2

Has your company conducted a formal assessment of its cybersecurity policies and systems in the last two years?



Numbers may not add to 100%, due to rounding

What about when the roles are reversed? Only 18% of survey respondents report that customers and vendors have *frequently* formally evaluated their company's security policies and procedures. And just 28% say they have been reviewed *occasionally*. Given the value of data in the digital economy—where competitive advantage can be built on credit card numbers and social security information—the risk of increased vulnerability through third parties is only going to rise.

PAYMENT PROTECTION

For business-to-business payments, paper checks remain king—and an open invitation to fraud. In the survey, 72% of finance executives say their companies use paper hard-copy checks either "very frequently" or "frequently." Direct payment services such as automated clearing house (ACH) and electronic funds transfer (EFT) weren't far behind, attracting 64% of "frequent" or "very frequent" users. Corporate and purchasing cards were next at 52%.

The 13th Annual Payments Fraud and Control Survey by the Association for Financial Professionals found that 75% of organizations experienced check fraud in 2016 and 46% were targets of wire transfer fraud (based on the responses of 547 finance professionals). Automated clearinghouse payments fraud was experienced by less than one-third of respondents.

In the CFO Research survey, finance executives hinted at a need to tighten their payment processing systems. One respondent writes that the most important step a CFO can take to make the finance function less vulnerable to cyber-hackers is "moving to a paperless environment."

As the number of transactions grows—along with confidence in the technology—finance executives are clearly being drawn to use ACH or purchasing cards to pay vendors and suppliers, primarily because they are faster and less costly. In addition, purchasing cards offer the advantage of rebates and rewards, cash float, and ubiquity of acceptance.

For receiving payments, finance executives say they consider cards roughly on par with electronic payments services (ACH and EFT) when it comes to promptness of payment and convenience. While 95% of respondents rank ACH/EFT performance as "excellent" in terms of security and protection from fraud, 83% grade cards on that level. However, respondents note that, with the introduction of EMV chip card technology, that gap appears to be closing. CFO

The Price of Risk

Organizations managed to pay 5% less in 2016 to cover their risks, according to RIMS' 2017 benchmark survey. The survey is based on a total cost of risk metric (TCOR), which calculates the cost of insurance, retained losses, and risk management department overhead for every $1,000 of revenue. How good is your sense of what risks cost? Take our quiz.

1. What was the average TCOR for the 553 North American organizations (across all industries) studied by RIMS in 2016?

   A. $100.70
   B. $1.70
   C. $10.07
   D. $17.10

2. Last year's decrease in companies' average TCOR was driven by declines in the cost of risk for eight types of commercial insurance. For which line of coverage did the cost acutally rise?

   A. Property
   B. Fidelity, Surety, and Crime
   C. Workers' Compensation
   D. Cyber

3. What was the average number of risk management staff for the organizations studied?

   A. 6
   B. 3
   C. 10
   D. 15

4. The cost for property insurance and most lines of liability coverage will continue to drop in 2017, according to Wells Fargo. What was the range of decreases in insurance premiums the bank predicted for this year?

   A. Flat to 5%
   B. Flat to 10%
   C. Flat to 15%
   D. Flat to 13%

5. Driven by Hurricane Matthew and other natural disasters, the insurance industry's total insured losses in 2016 were significantly higher than in 2015. What were the total insured losses for 2016?

   A. $55 billion
   B. $37 billion
   C. $75 billion
   D. $49 billion

6. How many insurance carriers offer cyber insurance?

   A. More than 30
   B. More than 60
   C. More than 40
   D. More than 100

Answers: 1–C; 2–B; 3–A; 4–B; 5–D; 6–B

Source: RIMS, 2017 Benchmark Survey

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