this year's CIO 100 honorees are serious about winning customers and driving revenue.

by beth stackpole
cover story | CIO 100

We Mean Business
This year’s CIO 100 honorees are serious about winning customers and driving revenue. 5

BY BETH STACKPOLE

cover story | CIO Hall of Fame

Thriving by Evolving
The 2016 inductees to the CIO Hall of Fame achieve longevity and success by continually adapting as the CIO role evolves. 21

BY MARY K. PRATT
Today’s CIOs mean business

Sometimes a story’s headline is just a headline, and a magazine cover is just a cover.

Wrong. It’s never just a cover, and never just a headline. We always put a lot of thought into headlines and cover art, trying out a series of ideas until we find the right combination. And it almost always involves a lot of brainstorming.

Almost. In the case of this issue, which honors our 2016 CIO 100 winners and welcomes seven new inductees into the CIO Hall of Fame, we didn’t need much back and forth on the cover story’s headline. Three simple words said it all: We Mean Business. On the art side, I think the cover is more than just a cover. Our talented art director, Terri Haas, worked with illustrator Stephanie Dalton Cowan to capture the spirit of the evolution of the CIO and this year’s winning CIO 100 projects.

Realizing that CIOs are integral to business is hardly an epiphany. CIOs have always been serious about understanding, enabling and even driving business. Those verbs, however, imply that CIOs still aren’t really part of the business. They’re only there to help . . . to guide . . . to consult. That has changed, however, so we steered clear of headlines about CIO-business partnerships and collaboration.

I also love the double meaning of We Mean Business. On the one hand, CIOs have claimed seats on boards and edged closer to CEOs as digital transformations take hold. The IT executives we recognize this month didn’t wait to be invited, and they’re not unsure of where to focus their time, energy and budgets. They mean business, and they’re taking action.

On the other hand, the CIO role itself now connotes — or should connote — business. We briefly entertained headlines such as “CIOs Get Down to Business” or simply “Getting Down to Business” but avoided anything touting digital transformation, innovation or customer-facing this and that. The message we want to send is that the CIO role equals business. It’s not merely aligned or integrated with it.

Inspiring stories of IT success
The CIO 100 program, now in its 29th year, has always drawn a crowd, and this year’s response was exceptional. Nearly 500 nominated companies vied for 100 awards. Our judges painstakingly evaluated the entries to arrive at the 100 honorees listed in this issue. We then asked writer Beth Stackpole to interview a handful of notable winners to represent this year’s class. Picking five innovative projects from a pool of 100 is no easy task, but we believe the examples Stackpole chose are compelling and inspiring (see “We Mean Business,” page 5), and we think you’ll agree.

Congratulations to all of this year’s honorees.

– Dan Muse, editor in chief, CIO.com
An honor and a privilege

It’s that time of the year again. The kids are out of school, the beaches are filling up, baseball season is in full swing, and we have the privilege of announcing our 2016 CIO 100 winners and the latest CIO Hall of Fame inductees.

In the nine years that I’ve been with CIO, I’ve watched IT move from supporting the business, to being aligned with the business, to driving the business and, in some cases these days, to being the business. The exceptional IT leaders you’ll meet in this issue are driving that business technology change and advancement within their organizations. And if there’s one defining trend I’ve seen among them, it’s a relentless focus on and attention to the end customer.

Being recognized as a CIO 100 winner and being inducted into the CIO Hall of Fame are both great honors, and the competition is fierce. But for a special few days this August, at the CIO 100 Symposium and Awards Ceremony in Rancho Palos Verdes, Calif., the best of the best in the IT profession will set aside competition and come together to share what’s working and make connections with their peers.

I’m never surprised by the openness and willingness to share that I see among the honorees who attend this annual event, but I am always gratified by their generosity.

On a personal level, the Symposium is an opportunity to build relationships and learn about the great work the winning IT leaders are doing on behalf of their companies and customers.

At last year’s event, I had the pleasure of dining with CIO 100 winner Stephen Gold of CVS Health while watching the inductions of friends Ina Kamenz and Tom Peck into the CIO Hall of Fame. This year, I will have the honor of watching Stephen Gold accept another CIO 100 award and also be inducted into the CIO Hall of Fame.

“For a special few days in August, the best of the best in IT will come together to share what’s working and make connections with their peers.”

Fame. This year, I will have the honor of watching Stephen Gold accept another CIO 100 award and also be inducted into the CIO Hall of Fame.

Please join me Aug. 14 to 16 at the Terranea Resort in Rancho Palos Verdes as we recognize our 2016 CIO 100 winners and celebrate this year’s class of CIO Hall of Fame inductees. I guarantee that you’ll hear some amazing stories and meet some amazing people. Register online today.

I look forward to seeing you there.

Adam Dennison, SVP and publisher, CIO.com
(adennison@idgenterprise.com)
WE MEAN BUSINESS

This year’s CIO 100 honorees are serious about winning customers and driving revenue.

BY BETH STACKPOLE

Mobile, cloud, big data and social technologies have unleashed a sweeping tide of transformation that has given rise to a keen awareness of the importance of the customer experience and has presented CIOs with an unprecedented opportunity to make their mark by steering their companies toward digital business.

Many have dabbled in ecommerce, digital marketing and social media initiatives, but 2016 will be the year that digital business strategies
take root, according to Forrester Research. Forty-eight percent of companies have tested the digital waters by "bolting on" some kind of augmentation strategy over existing products or services, according to a Forrester study, yet the plays have been mostly tactical and not a disruption to the business model. In fact, just 26 percent of executives surveyed by Forrester reported that they feel their company fully understands the transformative potential of digital.

That’s not the case at forward-thinking companies, including many recipients of this year’s CIO 100 Awards, our annual program that honors 100 organizations demonstrating excellence and achievement in IT. Many of the 2016 CIO 100 winners are pioneers on the digital frontier, using technology to reshape their relationships with customers and open doors to new revenue streams.

“Digital has brought significant changes to consumer perceptions, and that’s transferring over to healthcare,” says Kristin Darby, CIO at Cancer Treatment Centers of America, a CIO 100 award winner for a hospital expansion that revamps the patient experience through creative use of technology. “As we make investments in expanding our facilities and services, we want to make sure that our technology solution architecture is thought out from the beginning of construction to transform the way we provide care.”

Being able to respond quickly is what digital is all about, and for AT&T DirecTV, another 2016 CIO 100 honoree, improving response time required a total rethinking of internal operations and processes, including adoption of agile methodologies. “In order to respond that quickly to what’s going on, you have to alter traditional processes and transform the organization’s way of thinking,” says Luz Gonzalez, DirecTV’s senior vice president of program and software delivery.

While CEOs push their visions for digital transformation, it’s up to the CIO to champion a strategy that enables the business to pull it off. Being able to think strategically about the business, having a strong customer focus, and having the chops to influence people across the organization are all key to ensuring a CIO’s digital business success.

“Information technology needs to be an accelerator to the business, not a drag,” says Stephen Gold, CIO and executive vice president of business and technology operations at CVS Health. “The CIO is no longer just a chief information officer — you need to
be a chief innovation officer and a chief integration officer as well."

Given what’s at stake and the technical complexities of digital business, CIOs also need to be translators who can help business people understand technology and, specifically, what can and can’t be done. “This stuff isn’t easy, and sometimes there’s risk,” says Kevin Vasconi, executive vice president and CIO at Domino’s. “Most of the business doesn’t understand the machinations of technology and how the gears turn. My biggest role is helping them understand the trade-offs — that role is invaluable in terms of driving digital transformation."

**AT&T DirecTV goes agile**

Few industries are as under the gun for digital transformation as the pay-TV sector. Heightened competition, the constant tick of consumer demand for the latest and greatest mobile and streaming capabilities, and the rapid-fire pace of technology change present huge challenges for companies that are unequipped to turn on a dime.

For DirecTV, the fact that something had to give was readily apparent a year into an initiative to completely transform its digital entertainment experience with a responsive website, according to Gonzalez. The

“We were doing sprints, we were doing scrums, we were doing stories, but we weren’t having our internal business customers with us along the way.”

- LUZ GONZALEZ, SENIOR VP OF PROGRAM AND SOFTWARE DELIVERY, AT&T DirecTV

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**CVS Health™ congratulates CIO Magazine’s 2016 CIO Hall of Fame inductees and CIO Top 100 Award Recipients, including our own Steve Gold and Business Technology & Operations team.**

A highly trained and savvy team is essential to transforming the country’s technology-driven landscape. Steve and his team push the boundaries of digital leadership and value creation, and are one of the reasons we are recognized as a leading pharmacy innovation company.
undertaking, whose goal was to eliminate the heavy maintenance and high costs associated with supporting multiple code bases for myriad mobile devices, was well underway when the team ran into problems, having to consistently redo functionality because of bugs or because it didn’t quite map to the demands of the business. Given the velocity of change in the TV market, the group had taken an agile approach to the development effort but it soon realized a key ingredient was missing. “We weren’t doing agile agile,” says Gonzalez. “We were doing sprints, we were doing scrums, we were doing stories, but we weren’t having our internal business customers with us along the way. We had to take a step back and think about things differently, including how to work differently.”

The changes they subsequently made to the website redesign project included embedding the various stakeholders — the development organization, the quality team, the customer care unit and offshore development partners — into the process to create a global agile delivery system, says Doug Wells, senior director of product development, noting that the company also set up a unit called the Agile Center of Excellence.

The team also made sure there was a universal understanding of the roles and responsibilities connected to agile and scrum while ramping up its investment in agile training, Gonzalez says. The other key piece was embracing a DevOps approach, incorporating automation toolkits and techniques geared toward greater efficiency to create an ecosystem and culture of continuous improvement and continuous deployment, says Matt Smith, AT&T DirecTV’s IT director for program management and the Agile Center of Excellence.

“You can sit in scrum meetings and you don’t know who’s in IT or in the business,” Smith says. “We’ve created one team out of a cross section of the entire organization to deliver on our value base.”

With the changes in place, DirecTV was better positioned to
launch the responsive website and deliver ongoing improvements in a timely fashion. Key to the design is a single code base for all devices, support for open-source principles and tools like NGINX, Node.js and Play, along with a new decoupled architecture that allows improvements to be made via UI/UX changes and without impact on back-end processes, Smith says.

Armed with an agile delivery ecosystem, DirecTV is now better situated to deliver web apps and new functionality in an iterative fashion, in two-to-three-week sprints as opposed to four-month cycles, Gonzalez says. The launch of the responsive website also increased reach and engagement with customers — within the first month, customers lined up for 38,000 additional digital video streams, 49,000 recordings and 3,400 pay-per-view purchases.

The hardest part of the project wasn’t the technical work, but rather the cultural and organizational challenges of getting everyone to embrace transformational change. “After a couple of failures, people were kind of burnt out and pointing fingers, but once we got through that hump and we embedded a sense of ownership, we saw a spark in them,” Gonzalez says. “We’ve increased revenue, improved speed to market, made quality improvements and are delivering more flexibility for customers.”

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Your pizza, your way

When the bulk of your customer base belongs to the millennial generation, what’s the best way to make your pizza stand out in the crowd? Create an experience that lets digital-savvy consumers order from whichever device and whatever medium they like best. That’s the strategy behind the $2.1 billion Domino’s AnyWare

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Congratulations on being named a 2016 CIO 100 Awards honoree.

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ordering technology, part of the fast-food company’s ongoing digital transformation. For some customers, voice ordering via text is the most satisfying while others queue up their orders with pizza emojis via Twitter. “We embrace the fact that the next generation of customers grew up as digital natives, and we want to be the easiest company in the world to have a relationship with,” says Kevin Vasoni, executive vice president and CIO at Domino’s. “We never want to lose an order because we don’t have the right platform or the best experience or because the system doesn’t perform.”

With the AnyWare system, customers can place orders on an array of devices not necessarily known for supporting ecommerce, including smartphones, smartwatches, smart TVs and, more recently, the Sync entertainment and communication system found in Ford vehicles, as well as Amazon’s Echo wireless speaker and voice command platform. The ability to order with a tweet, text, voice command or emoji gives customers the flexibility and convenient digital experience they crave (there are currently 16 options for digital ordering) while at the same time promoting the Domino’s brand in leading social forums.

The first step in the journey was to create a user profile that stored critical identifying information like order history, including a customer’s last or favorite order, preferred method of payment, a go-to Domino’s location, communications preferences and contact information, including Twitter handles and mobile phone numbers. “Once we started to do that, the technology to support everything else started to galvanize,” Vasoni says.

The company made its first foray into digital ordering in 2013 with a system called Easy Order, which let customers save their favorite pizza orders in their profiles on Dominos.com. Then came the AnyWare technology, creating the foundation for customers to order via the newest devices. At first, in 2014, there was voice ordering with Dom, the Domino’s version of
“We embrace the fact that the next generation of customers grew up as digital natives, and we want to be the easiest company in the world to have a relationship with.”

- KEVIN VASCONI, EXECUTIVE VICE PRESIDENT AND CIO, DOMINO’S PIZZA

a digital assistant voice command platform. Then the tweet-to-order system followed in May 2015. For the latter, software continuously monitors public tweets with exact keywords, checking them against the database for registered customers with that Twitter account. If a match is found, the system initiates a direct message to the user for confirmation and, once that happens, the ordering software shoots out a rough delivery estimate via direct message, employing analytics to calculate the number of orders underway at the selected location along with factors like distance to the user’s location.

In addition to the data warehouse, analytics and mobile and social technology pieces, another core building block is a 24/7 fault-tolerant infrastructure, which Domino’s set out to build in parallel to the AnyWare ordering capability. The company went from one and a half data centers when it started to three data centers globally, investing in technologies like failover and the Akamai content delivery network to boost performance and help it stay ahead of the growth curve. “We didn’t have to build everything on day one, but we need it all today,” Vasconi says, explaining that more than half of the company’s business now comes from digital orders, and half of those are from mobile platforms, representing an estimated $4 billion annually in global sales.

While CIOs must play a key role helping corporate leaders navigate what’s possible with technology, Vasconi says a project of this magnitude really needs to be a partnership—in this case, between his office, the CMO and the CEO. “That kind of triad working together to deliver on this vision is what made it all possible,” he says. “Not everything we did was a complete success, and we had to be able to fail fast and move on and make that part of our culture.”
For millions of travelers, the experience of moving through busy airports can be trying, especially if information is scarce. Having direct access to up-to-the-minute flight information, knowing how long it will take get through security and mapping out the best route to make a connecting flight can make the experience a little less painful.

The Metropolitan Washington Airports Authority (MWAA), which oversees Ronald Reagan Washington National Airport and Washington Dulles International Airport, delivered most of that information to its visitors for years, but it was scattered across nine different websites and platforms.

Starting in 2015, the MWAA set out to change all of that with the creation of a system it called the Travel Information & Revenue Enhancement Platform (TIREP), which would serve as a central hub for all relevant information related to the airport travel experience. TIREP is designed to centralize all media content and data coming from multiple sources, including the Transportation Security Administration, baggage handling systems and the airlines, and make it available to travelers on a variety of personal devices and public display systems.

“The information passengers were asking for was not built in one single application or owned by the airport — it’s an ecosystem.
of information that resides and is owned by multiple partners in the travel journey chain,” says Goutam Kundu, CIO of the MWAA. “With TIREP, we set out to bring out data in an API format so it could easily be consumed in whatever device the passenger wants.”

The TIREP digital platform is enabled by three core technology pillars: A data management and open API foundation, a responsive website that’s device-agnostic, and a beefed-up connectivity infrastructure that combines Wi-Fi and LTE, among other technologies, to ensure robust network coverage across the 6 million square feet of combined airport real estate. The latter component is key. As Kundu points out, “You might have the best apps, but without good network connectivity to the internet, they are meaningless.”

As opposed to tackling the problem in a piecemeal approach, the MWAA saw an opportunity to build a digital platform in concert with an information-centric design and a standardized set of processes that could be leveraged to power TIREP and any subsequent enhancements and future systems. For example, a digital signage pilot has the TIREP data structure and taxonomy in place, which allows for more adaptability. Moreover, consistency of customer experience has improved because all of the information pushed out to digital channels now shares a single data foundation.

To make that possible, TIREP calls for data to be federated and shared through a standardized content and media library that can publish to different channels with minimal effort. Stakeholders collaborated to identify data sources, establish a structured format and develop a taxonomy and metadata, Kundu says. As part of the design, the platform supports reusable centralized privacy, security, personalization, data extraction and cleansing, and content management services, which ensures that the MWAA can respond quickly with future apps and capabilities as travel requirements evolve.

“Having standard data processes ensures that it takes less time to extract and bring data in, the time to release new apps through the platform is shorter, and we’re staying consistent across channels,” he says. “Enabling a better user experience is the primary goal here, but we also want to do things quicker.”

Today, travelers can preplan their trips by, among other things, tapping into a tool that helps them map out a route to the next gate or the closest Starbucks. The open API and platform approach gives third-party aggregators and air-
port partners access to TIREP, empowering them to introduce their own services — perhaps the ability to order a latte so it’s ready as soon as the user gets through security, or a system that delivers personalized coupons that travelers can use in airport retail shops, Kundu says. It also gives the MWAA potential new revenue streams, he adds.

“We’re delivering a 360-degree passenger experience no matter where the data resides or who owns the data,” Kundu says. “At the end of the day, we want to make sure passengers have a seamless experience during their travel through our airports.”

**A prescription for health**

For CVS Health, digital transformation includes retooling the company to take an enterprise view while creating a technology foundation to drive future services.

CVS’s Enterprise Patient Hub, a winner in last year’s CIO 100 awards program, is at the heart of the $153.3 billion retailer and pharmacy services provider’s latest endeavor: A digital pharmacy that gives customers a seamless experience within each of the company’s three very distinct lines of business. Through the main CVS.com site, patients can use their preferred devices to manage their prescriptions across the company’s retail, mail order and specialty pharmacy businesses from any location at any time.

“As part of the consumerization of healthcare, and to differentiate ourselves in the market, it was important to provide tools and capabilities so consumers not only take care of themselves and progress on a path to better health, but are able to do so in a cost-effective and efficient fashion,” says CVS Health CIO Stephen Gold. “We had a unique opportunity to pull all of those assets together in a unified fashion for customers so they could administer their entire benefits and take care of themselves through a single source.”

— STEPHEN GOLD, CIO AND EVP OF BUSINESS AND TECHNOLOGY OPERATIONS, CVS HEALTH

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**METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**
through a single source.”

In addition to providing a full prescription history and the ability to order refills in all channels, the new experience delivers a combined order status, streamlines the transfer of prescriptions from one channel to another and lets people enroll in automatic refill plans. Prior to the release of the system in May 2015, customers had to visit multiple websites or switch from one app to another in order to manage their prescriptions.

The CVS Enterprise Patient Hub, a web services platform and master data management system, reconciles the unique customer identifiers for each of those lines of business so the retail pharmacy system understands that the Jane Smith filling prescriptions at a particular physical location is the same Jane Smith getting other medications through the CVS Caremark mail-order business. New messaging and tokenization techniques have also been added to maintain continuity across systems and to allow a single code base to support myriad devices and provide a consolidated user experience. Meanwhile, behind the scenes, these technologies are interacting with best-of-breed legacy systems built for the individual lines of business, Gold says. “We didn’t want the hub to sit inside of any application,” he says. “It’s all part of a modernization strategy and deliberate architecture decisions for how we continue to go down the path of thinking enterprise. We are taking systems originally built in the best possible way for lines of business and making them dual-purpose.”

Rather than attempting a rip-and-replace digital transformation, Gold says a more measured approach, which includes crafting a very deliberate services-based enterprise architecture, is key to building a future-proof platform that can evolve to meet customers’ needs. Since piloting the integrated pharmacy experience, CVS Health has started to see increased usage and adoption of its digital offerings. For example, one-third of the company’s pharmacy customers

**The improvement in CVS’s refill conversion rate is expected to deliver an ROI of as much as 165% on an annualized basis.**

The improvement in CVS’s refill conversion rate is expected to deliver an ROI of as much as 165% on an annualized basis.
use one or more digital tools, more than half of digital prescription refills come from mobile channels, and there are now 20 million text enrollments for pharmacy pickups and refills.

Once the system is fully implemented, Gold expects that, on a typical day more than 40,000 patients (or 15 million annually) will visit the integrated site and refill nearly 90,000 prescriptions (or almost 33 million annually) through digital channels. The improvement in the refill conversion rate is expected to deliver an ROI of as much as a 165 percent on an annualized basis, he says.

Beyond its simplicity of experience, the integrated pharmacy is also instrumental in helping CVS Health deliver on its core mission of helping people manage their health. “We’re helping to drive greater medication adherence, which is one of the most effective ways to fight chronic disease,” Gold says. “It’s rewarding when your IT-enabled innovations deliver both business success and healthier outcomes.”

Putting the patient first

When your business is treating cancer patients, no detail is too small — from the quality of the food to the comfort of the bedding to the technology you use to improve the patient experience.

Those were the marching orders when Cancer Treatment Centers
of America (CTCA) began planning an expansion of its Midwestern Regional Medical Center, also known as CTCA at Midwestern, which is part of a national network of five specialized cancer hospitals. The new, six-story inpatient facility, which opened in November 2015, includes 72 private rooms and 48 guest quarters set to open shortly. Beyond such comforts as a large demonstration kitchen and expanded dining and salon services, the unit features cutting-edge IT systems designed to enhance the patient experience with personalized care and, most importantly, help create an environment of healing and hope.

That patient-first perspective comes from CTCA’s Cancer Fighters, a community of former and current CTCA patients and caregivers who provide the organization with extensive feedback. “Our core culture is always about putting the patient first,” says Kristin Darby, CTCA’s CIO. “Before we make any type of investment in technology or equipment, even artwork for the building, we want to understand what will create the most appealing atmosphere to help patients feel at peace.”

Based on input from the Cancer Fighters, Darby’s group looked for ways to use technology to improve communication between patients and clinicians and to enrich the patient experience. One of the team’s most important moves was the decision to deploy LinCor, a patient engagement system that supports a wide variety of functions. Among other things,
scription refills and offers push notification functionality and an e-concierge feature to foster better patient-provider communication. Darby says Lincor is easy to customize and offers a consumer-oriented, app-store-like look and feel that allows CTCA to create a highly personalized patient experience and evolve it over time.

Another key component of the new building’s IT infrastructure is Imprivata’s Cortext, a platform that supports secure, HIPAA-compliant texting among members of the clinical team. “It facilitates rapid communication about patients so clinicians can get to them quicker when there is a need,” Darby says. A third critical component is a call light system with an integrated workflow component that facilitates interdisciplinary and interdepartmental communication among medical staffers without disturbing patients. “We custom-designed the system to the way we work and how we’re organized,” Darby explains. Previously, she adds, “the care teams carried telephones and made hundreds of calls on their shifts to report that a patient was ready for treatment or that a lab was ready. With the call light system and workflow, it’s a smoother, much more streamlined process for the patient.”

Since the new facility opened, CTCA’s patient satisfaction scores have risen and there has been plenty of feedback indicating that the technology-centered improvements should be a model for the other network hospitals. “As all of our facilities consider expansion or different growth opportunities,” Darby says, “CTCA at Midwestern will serve as a reflection of a future-focused hospital.”

Beth Stackpole is a regular contributor to CIO.com.
Our 2016 CIO 100 Awards honor 100 organizations that deliver innovation and business value from IT.
THE WINNERS (continued)

KAR Auction Services Inc.
KEPCO - Korea Electric Power Corp.
LPL Financial
Maersk Line AS
Manila Water Co.
MassMutual Financial Group
Merck Manufacturing IT
Merck Sharp & Dohme Corp.
Mercy Technology Services
Metropolitan Washington Airports Authority
Miami-Dade County Information Technology Department
Michigan Department of Technology, Management and Budget
MIT, Information Systems and Technology
Monsanto Co.
Mount Sinai Health System
NASA Glenn Research Center
NASA Jet Propulsion Laboratory
NatureServe
Navistar Inc.
NewYork-Presbyterian Hospital
Nielsen
Northern Trust Corp.
NorthShore University HealthSystem
Nutrisavings
Pacific Gas and Electric Co.
Penn Medicine - University of Pennsylvania Health System
Planned Parenthood of the Great Northwest and the Hawaiian Islands
PPD LLC
Public Service Enterprise Group (PSEG)
Raytheon Co.
Rodale Inc.
Samsung Electronics
San Francisco International Airport
Servpro Industries Inc.
Six Flags Entertainment Corp.
SunTrust
Symantec Corp.
Synchrony Financial
Tam Faktoring AS
The AES Corporation
The Clorox Company
Thomas Jefferson University and Jefferson Health
Toyota Motor North America Inc.
UBL Fund Managers
UBS
UNICEF - United Nations Children's Fund
United Parcel Service Inc.
University of Chicago Medicine
University of Mississippi Medical Center
Upper Canada District School Board
U.S. Venture Inc.
Vail Resorts
Verizon Wireless
Vision Source
Washington Suburban Sanitary Commission
Wells Fargo Bank
Westchester County Government
Wipro Ltd.
The 2016 inductees to the CIO Hall of Fame achieve longevity and success by continually adapting as the CIO role evolves.

By Mary K. Pratt
These leading executives credit their success to a focus on business, not to any one particular skill or degree or résumé-boosting experience.

CIO Hall of Fame inductee Randy Sloan started his career in the mid-1980s — the days of the mainframe — when IT focused on automating processes and keeping computers humming. For many technologists back then, those tasks were enough. Sloan, though, had other ideas. He wanted to contribute more.

“When I started my career, I was a programmer. I loved the technology. But I had an inflection point. I realized that what I really like to do is solve business problems,” he says. Sloan’s insight came as the enterprise IT department’s role was shifting from technology caretaker to business enabler. To be successful, technologists had to shift, too. Sloan moved up from that programming job through a succession of executive positions and into his current role as senior vice president and CIO at Southwest Airlines, where he’s driving not only innovation but also transformation.

Sloan is one of seven IT leaders being inducted into the CIO Hall of Fame this year. Each has spent time in top technology jobs at multiple companies. While their stories may differ, they express similar sentiments: Their success comes from evolving as the CIO position changed from one tasked with automating for efficiency to one focused on transforming organizations.

These leading executives don’t credit their successes to any one particular skill or degree or résumé-boosting experience. Instead, they say a combination of experiences and personal traits gave them the ability to see what the CIO job requires now and will require in the future — and the ability to deliver on it.

“And I have purposefully moved myself through critical experiences so I can do that role.” Sloan, 53, says a few key experiences helped him develop into a leading CIO. He points to an early decision to work at a warehouse when leading an implementation of a warehouse management system, a move that gave him an in-depth understanding of the business and of the value of solving business problems. He also says his work with 20 business unit CFOs helped him understand the need to influence others to gain strategic alignment. And he says his current role as “part of the executive com-
mittee and part of every business discussion” has transformed the perception of the CIO from “just the technology person” to a business executive.

Driving change from day 1

This year’s CIO Hall of Fame inductees all echo those points, saying that early on in their careers they had a desire to solve business problems and drive change, which allowed them to deliver value to their companies at a time when many IT leaders were still deep in the technology weeds.

“I would always look at the business first and the technology second,” says Mike Benson, who until this spring had been the executive vice president and CIO of DirecTV (which was acquired by AT&T Entertainment Group in 2015).

Benson, 60, says that mindset was just the start of what it took to succeed. He says he needed to learn about operations, understand the industries in which he worked and figure out how he could help external customers. He had to forge relationships with his peers and build strong teams.

Those aren’t innate skills, nor are they anything revolutionary, he says. But they are necessary to see what needs to be done and to visualize what needs to be accomplished in the future.

Some gumption is necessary, too, Benson adds.

“CIOs have the view of the whole landscape within a company and can see where they can improve and they should suggest ways to improve. They should have the courage and the willingness to take risks,” he says.

Entrepreneurial spirit

It’s not surprising, then, that this year’s Hall of Fame inductees also speak about needing an entrepreneurial spirit in order to pivot as technologies evolve, markets change and the CIO job shifts.

“If there was anything consistent throughout my career, it was that I always thought of myself as an entrepreneur,” says Suresh Kumar, CIO and senior executive vice president of BNY Mellon and CEO of iNautix (part of BNY Mellon’s Client Technology Solutions unit). “I always thought, ‘If I was CEO of this business, what would I do and why?’ And then the second question I would ask is how technology could make an impact on the business.”

Kumar, 58, says that CIOs are required to understand a host of business and management practices — from how the business makes money to how the customer’s digital experience drives revenue. But even as he mastered those...
All of FAMe concepts, he says he still went back to the entrepreneurial perspective by thinking like a startup CEO.

“You have to have an attitude that you can build it from the ground up, and if you want to lead, you have to be able to do that,” he says, explaining that successful entrepreneurs — and successful CIOs — see how to leverage technologies in new ways to get a competitive advantage and then know how to execute on that vision.

Although Kumar and the other inductees emphasize being business leaders first, they don’t discount the importance of also being technologists.

No substitute for tech chops

Stephen J. Gold, 57, CIO and executive vice president of business and technology operations at CVS Health, says it’s still critical for IT leaders to be technologists.

“I feel very strongly that in order to be a chief information officer you have to be a computer scientist or an engineer. You wouldn’t have a chief medical officer who wasn’t an M.D. or a chief financial officer that wasn’t a CPA or a chief legal officer who wasn’t a J.D.,” says Gold, who has a bachelor’s degree in computer science.

Gold says companies that hire CIOs who don’t have technology backgrounds do so because they have a business knowledge gap in the role. But, he adds, hiring non-tech people as CIOs “closes one gap but opens another that’s more risky — which is not understanding technology.”

Gold says he was exposed early in his career to CIOs who demonstrated both business and IT competencies and came to understand that both were necessary.

“I’ve always been focused on understanding how technology can be used to solve business problems. It’s a mindset and framework throughout my career,” he says. “You keep adjusting it as the needs change in the business, but the fundamental premise is to be commercially focused.”

Business-first mindset

Donagh Herlihy, CIO and executive vice president of digital at Bloomin’ Brands, started his career as an industrial engineer and moved into IT when he took charge of a failing ERP system implementation in the early 1990s at one of his former employers.

Herlihy, 52, says he moved up the IT ranks at several companies as the focus of the department and its leadership shifted, thanks in part to the rise of the internet and mobile systems and the consumerization of IT.

“We had this incredible decade of change, and it needs a very different IT function and a very different CIO. And the only advantage that I had in adapt-

“I wasn’t deep enough to argue bits and bytes, and that allowed me to stay close to and embrace sales and marketing.”

—DONAGH HERLIHY, CIO AND EXECUTIVE VP OF DIGITAL, BLOOMIN’ BRANDS
“My peers and my boss are driven, creative, innovative people, and they expect me to be a partner on that journey.”

—ROBERT URWILER, EXECUTIVE VICE PRESIDENT AND CIO, VAIL RESORTS

ing is because I came into IT as a business leader. I always led IT from the perspective of business and the customer. I wasn’t deep enough to argue bits and bytes, and that allowed me to stay close to and embrace sales and marketing,” Herlihy says, adding that he also learned key insights into IT leaders’ shifting responsibilities by networking with other CIOs.

Herlihy says he believes a CIO needs an MBA, broad executive education and/or work experience outside of IT because “you can’t just contribute the technology.” The responsibilities continue to expand, and he says he and others need to be ready for those changes.

“If you lead with the business first and spend a lot of time with your customers — the internal and external ones — I don’t think you’ll miss the pivot points. But if you try to lead from emerging technology, you will — you’ll chase the wrong ideas,” he says.

Robert Urwiler recalls his time as CIO at Macromedia as “a period of my career that was very influential in how I think about the technology and business. I wasn’t developing products, but I was in a creative company full of creative people. Being immersed in that environment changed my way of thinking about what technology could do. It made me realize that we could create new experiences using technology; we weren’t just implementers.”

Urwiler, now executive vice president and CIO at Vail Resorts, says he continues to be inspired to expand.

“I work for a creative CEO who has high expectations about what technology can do, and I have a peer group that has high expectations. They don’t think of IT as strictly back office. They expect us to be partners in innovation,” he says. “My peers and my boss are driven, creative, innovative people, and they expect me to be a partner on that journey. The culture has a lot to do with how successful an IT organization can be in truly being part of and on the forefront of business transformation.”

An ever-expanding role

The amount of technology-driven transformation happening today certainly means the CIO’s responsibilities will continue to expand.

Indeed, Hall of Fame inductee Albert Hitchcock is experiencing that now.

Hitchcock, 51, joined Pearson PLC as CIO in February 2014 but had his
title changed to chief technology and operations officer in January 2016 to reflect his role’s growing responsibilities, which now include digital product development.

“Today the technology strategy is part of the business strategy. It’s not separate. In the past, CIOs might have been asked their opinions on business strategy; now they help create strategy. And at Pearson my role is front and center with the future success of the company,” he says.

As for what it takes to get to that point, Hitchcock, like the other inductees, credits his skills, mindset and willingness to seek out the right experiences.

“It’s about building on existing experiences and taking those to the next level. I gained credibility as we delivered more change,” he says. “And it’s putting the customer at the center of everything we do. I’ve learned to look at it from a customer standpoint. That’s a theme that has come through my successive roles. And the second thing I’ve learned is the value of talent. You need a great team. Everything I’ve done up to this point was learning the importance of those things.”

Mary K. Pratt is a freelance writer based in Massachusetts.
Stephen J. Gold
CIO and executive vice president
CVS Health

CAREER  Gold led the restructuring of the IT organization at this Fortune 10 enterprise and aligned product offerings with CVS Health’s mission as a healthcare company. This included creating a 360-degree view of the customer and delivering a seamless service experience across the company’s many lines of business. As executive vice president, CIO and corporate CTO at GSI Commerce (now eBay Enterprise), Gold scaled the technology organization to enable hypergrowth. And as senior vice president and CIO at Medco Health Services, he led the creation of the world’s largest internet pharmacy.

JUDGE’S VIEW  “Stephen has an excellent background and accomplishments. He has successfully led major business transformation initiatives for Fortune 100 companies that facilitated growth, modernization and innovation. He is viewed as both a business and IT leader and has successfully transformed overall business models. He has adopted and successfully implemented leading practices and transformed IT organizations.”

Donagh Herlihy
CIO and executive vice president of digital
Bloomin’ Brands

CAREER  Herlihy joined Bloomin’ Brands in September 2014 as both CIO and head of digital operations, with a focus on four areas: delighting customers with digitally enabled convenience, driving productivity in food and labor utilization, enabling supply chain effectiveness, and minimizing operational risk. While serving as Avon’s senior vice president of ecommerce and CIO, Herlihy built out a single suite of digital capabilities, creating a single global website for Avon representatives to manage their business. At one point, that site was the world’s third-largest ecommerce platform by revenue. As CIO and vice president of supply chain strategy and planning at Wrigley, he helped develop the strategic rollout of a global ERP system.

JUDGE’S VIEW  “Donagh clearly demonstrates leadership of major business transformations that are extremely challenging, and he articulates with great clarity the value accrued to the business.”

Albert Hitchcock
Chief technology and operations officer
Pearson PLC

CAREER  Since joining Pearson in March 2014, Hitchcock has created and led the publishing and education company’s digital transformation strategy. He also took responsibility for technology product development, adding that to traditional IT responsibilities to create a single technology function. He created a new architecture that seamlessly combined this digital experience with the enterprise systems road map to create a single Pearson customer and learner identity. In his prior job as group CIO at Vodafone, he was responsible for the global IT function, encompassing strategy, innovation, development and operations.

JUDGE’S VIEW  “Albert has worked across multiple industry segments successfully. He has applied information technology not just to support the business strategy, but also to shape the business strategy.”
Robert Urwiler  
Executive vice president and CIO  
Vail Resorts

**CAREER**  By pioneering the use of UHF RFID in the ski industry, Urwiler led the delivery of a patented customer-facing web and mobile application called EpicMix. This acts as an on-mountain companion to skiers and riders while also providing data to feed the company’s advanced CRM and analytics programs created by Urwiler in partnership with the chief marketing officer. As senior vice president and CIO at Macromedia, Urwiler replaced aging systems with an ERP system and a Salesforce.com deployment that could scale to meet the company’s growing needs.

**JUDGE’S VIEW**  “Robert provided real value to the organizations he led. He also brought innovation that has made a big impact on the company’s value proposition.”

Suresh Kumar  
CIO and senior executive vice president  
BNY Mellon

**CAREER**  Kumar has reduced risk and increased resiliency at this financial institution by identifying technology areas to consolidate, streamline and reduce fragmentation. He is leading the multiyear effort to digitize BNY Mellon to allow the company and its customers to capitalize on technology disruption and new capabilities. His team also built its own platform to capture, store and analyze data and provide actionable insights. In a previous role, Kumar led the team that built the largest wealth management platform, NetX360, used by more than 100,000 financial professionals.

**JUDGE’S VIEW**  “Suresh has had great impact not only with multiple companies, but also in his industry by delivering multiple new products that have furthered the financial brokerage market.”

Randy Sloan  
Senior vice president and CIO  
Southwest Airlines

**CAREER**  Sloan led a three-year transformation of the Southwest Airlines technology organization that included the integration of AirTran and Southwest into a single operating entity. He created and led corporate governance processes that aligned limited resources to strategic priorities, and he established new enterprise-level delivery processes that yielded business process transformation, business solutions and business value. He also restructured and reskilled the technology team to fulfill substantially increased demands for IT expertise. As a CIO at PepsiCo, Sloan leveraged technology to standardize global business processes, built a shared-service technology organization and enhanced operational reliability.

**JUDGE’S VIEW**  “Randy has succeeded across a number of critical dimensions — leading business integrations where millions of dollars are at stake, executing IT transformation, working internationally and transcending pure IT by playing a business leadership role in the supply chain. He has done the big hard stuff multiple times with world-renowned companies and has managed to have successful tenures at each. Very difficult.”
Just as technology is touching every aspect of business, CIOs are showing an aptitude for handling other C-suite roles. That’s certainly true of our CIO 100 honorees, many of whom are much more than “just” CIOs: In addition to being strong technical leaders, they also exhibit deep business acumen and understand the importance of focusing on the customer.

Valuing versatility
“I always believed if I earned the seat I had every day by knowing what the company needs and getting results, doors would be open to me,” says Perry Cozzone, who became president of North American operations at Colorcon in 2013, after serving as CIO for many years. In a previous consulting role, Cozzone had profit-and-loss responsibility, and that experience proved invaluable to his transition. “You can’t just talk tech,” he says. “Leaders get results through influence — not just hierarchical, but across the entire network — so you need to relate to all functions in their terms.”

Jennifer Frost, a former CIO who
changed companies to become senior vice president and director of operations and administration at Customers Bank, conurs. “I had moved between IT and operations throughout my career and became ‘bilingual,’ ” she recalls. But moving from one sphere to another requires more than exchanging tech lingo for business lingo. “You have to contribute business intelligence and business innovation to the strategy discussions — not tech innovation but industry best practices — in order to demonstrate a deeper grasp of the strategic needs and direction of the business,” she explains.

Versatility across business and technology lines and an ability to get results fueled Sue Haindl’s career moves. Now chief administrative officer at Aqua America, Haindl has been a CIO three times and has also held numerous business leadership roles. “I’m not an IT purist,” she says, “I’m a businessperson who knows IT.” Early in her career, Haindl was working as a customer service executive at Sara Lee when the company’s chairman asked her to take the CIO role. Upon moving into IT, she says, “I redirected my team and got the results we needed after nine months.” She then asked to get her customer service duties back. “It was my first dual role, and it was great because I had line of sight to both internal and external customers,” she says.

Risk? What risk?
Changing roles may involve risk, but versatile IT leaders say they don’t let risk stop them. “Yes, you give risk a thought, but it’s risk versus resilience,” Haindl says. “Focus on people and you’ll be successful.”

Cozzone agrees. “Good leaders surround themselves with strong team members — not yes people, but people who will challenge them,” he says. “A leader needs to know how to listen, guide and then decide.”

Culture club
Whether you’re looking to become a CIO-plus, a CAO, a COO, a CDO, a CMO or a CEO, make sure your company’s culture isn’t an obstacle. If your company doesn’t promote from within or cross-functionally develop its leaders, you may face an uphill battle.

Cozzone and Haindl both faced challenges and crafted solutions that led to opportunities to move into other C-suite roles. For her part, Frost went after what she wanted by changing companies. “I think it’s innate in some leaders to reach for a different job, to have the inner fortitude and attitude knowing you can do it,” she says.

If you want to expand your horizons, make sure you’re visible inside and outside your organization. And take deliberate steps toward moving beyond IT. And beware of the competition: Your company’s marketing, finance and operations leaders may be trying to incorporate IT functions into their job descriptions.

Kristen Lamoreaux is president and CEO of Lamoreaux Search.
How DevOps changes vendor selection

Transformation through DevOps practices should transcend product features. **By Stephen Elliot**

**IT’s ability** to successfully deliver business outcomes is intrinsically tied to product selection and vendor partnerships. This is amplified with DevOps projects, because DevOps success often requires reinvention of the IT culture, the organizational structure and automated processes. New software development cycles and/or improved team collaboration may also be necessary. DevOps is more complex than traditional technology projects.

To reap the benefits of DevOps, IT executives and their teams must extend product analysis to include potential value beyond a product’s capabilities. Here are best practices for mitigating vendor risks and increasing the rate of DevOps success.

**1. DevOps forces a continuous improvement cycle.** Therefore, you should analyze product capabilities from that point of view.

Here are key questions to ask:
- **How will the tool integrate with legacy and new tool architectures?**
- **Will it support the measurement and attainment of technology and business metrics?**
- **What are the planned feature enhancements?**
- **How does it work with security, operations, and development tools?**
- **Can it create a new integrated DevOps process?**

Rather than considering product capabilities from a single functional domain, DevOps requires cross-functional thinking. A product should be able to show multiple data sources and streams to multiple IT roles, and it should integrate with various other functions. It’s critical to examine areas such dashboards and interfaces and security and IT operations integrations, as well as the product’s ability to accommodate changes in the development or deployment cycles.

Recognize that DevOps processes often align with multiple functions across a development or...
operational domain and can bring tremendous synergies when collaborative planning occurs. Having a deep understanding of the customer persona can help shape how the improvement cycle might look over the short and long terms.

2. DevOps helps accelerate IT cultural change. Therefore, you should determine how a product can assist in changing the culture. Key questions to ask include the following:
   - What business and technology processes will the product impact?
   - Does the product require team collaboration across functions?
   - How does the product assist in driving sharing and reporting across teams and time zones?
   - Does the integration drive deeper analysis and team-building?
   - Is there a single source of truth that the product can deliver — one that can be used to help identify or solve problems?
   - Can both IT executives and staffers view dashboards?

   Cultural change requires a sense of urgency, strong leadership and an understanding of both why people should change and what’s in it for them. A strong set of cultural traits across areas such as teamwork, collaboration, performance-based metrics, trust and empathy are critical to any successful DevOps project.

   What’s often left out is the link between the desired cultural traits and the products chosen to help drive the change. There should be a cultural undercurrent that supports the notion of delivering organizational impact through meaningful work, assisted by new DevOps tools.

3. DevOps requires a focus on the customer and business outcomes. For that reason, you should define the customer persona and gain assurances that the product can deliver on clearly defined and measurable business metrics.

   Here are key questions to ask:
   - Who are the customers and what do they expect?
   - How will the product improve the customer experience?
   - What are the processes that impact the customer experience?
   - How will the product deliver on business metrics?

   A deep understanding of what impact DevOps projects will have on customers is critical. That starts with defining the right metrics — both business- and technology-related — and assessing how each metric will impact the customer experience. Products must be able to deliver such metrics.

   While there are many other criteria to consider when selecting a DevOps product, these best practices enforce some of the foundational principles DevOps espouses: continuous improvement, IT cultural change and a focus on the customer. Smart teams will reinvent what they expect from their vendor partners and the DevOps products they choose.

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Stephen Elliot is vice president of IDC’s IT Infrastructure and Cloud practice.
What it takes to be a technology evangelist

By Sharon Florentine

At one point in his life, Michael Sage was a monk living in a monastery, but he has traded that cloistered existence for evangelism. His brand of evangelism doesn’t involve religion, though — he’s a tech evangelist, specifically chief evangelist at BlazeMeter, a software load and performance-testing company.

A tech evangelist is someone who advocates for the use of a specific technology, with the goal of helping it become an industry standard, says Michael Doonan, a partner at executive search firm SPMB, who notes that the role is becoming increasingly important in an IT-driven economy where systems and applications of all kinds compete for attention.

Explaining the need for tech evangelists, Doonan says, “Imagine if you’re a platform-as-a-service startup, and you come into the market with a platform on which applications can be built, or software or services delivered, that removes the need for companies to develop their own internal, proprietary platform. Small companies, like startups, will take you up on that because it’s cheap, it’s easy and it’s flexible. But part of the problem is growth and..."
scale — how can you move upmarket into larger enterprises? That’s where evangelism comes in.”

**Standout skills**
The role of evangelist involves a mix of IT, sales and marketing skills, and even a bit of psychology and theatries, says Sage. “You not only have to have technical depth and credibility, but also polished sales and marketing skills so that you can handle objections, you can promote messaging in a non-threatening way. And you have to know a lot about the business climate you’re operating in. What’s the market like? What are the circumstances that have brought a company to where it is?” Sage says.

There’s no one right educational path to becoming an evangelist, says Heidi Ellis, a professor and chair of the computer science and information technology department at Western New England University.

“You need enough of a technical background to speak reasonably about the technology, but it’s just as important to speak well and have great communication skills. I’d also say that business-focused people who know a lot about the inner workings and culture of a company that developed that technology could do extremely well in a role like this,” Ellis says.

**Go deep**
Most tech evangelists do specialize in one or two specific areas, whether it’s programming languages, software suites, Web platforms or something else, Sage says. Being a generalist might dilute the message you’re trying to send or hurt your credibility.

“If you don’t know the tech or the market inside, outside and upside down, you’re not going to get the right message across, and you’ll look shady and untrustworthy,” he says.

Evangelists, much like sales and marketing people, tend to have a certain personality type, too. “If you’re considering a role like this, you have to ask yourself honestly, ‘Will I be comfortable?’ If you’re quiet, shy and anxious, it’s going to be so much harder for you to get up in front of an audience or make presentations to groups of engineers,” Sage says.

If you’re considering a role as an evangelist, Sage has one last piece of advice: Practice, practice, practice. “Pick a technology you love, and give everyone you know demos of it,” he says.

“I remember in 2004, when I was working at Hewlett-Packard, I got my first MacBook. I just fell in love with that thing, and I could not stop talking about it. At work, at home, I showed everyone. And then, one day, a guy I worked with made a snide comment about how effectively I was evangelizing this product, and it just clicked. That’s what we do, as evangelists — we embody the passion and the positivity that comes with ‘selling’ a great product.”

—Michael Sage, Chief Evangelist, BlazeMeter

Sharon Florentine is a senior writer at CIO.com.