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Women in federal IT

Insiders from a wide
range of roles discuss
what it really takes
to lead **PAGE 14**





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The measure of all things

How do you measure innovation?

At the Commerce Department, 27 entrepreneurs, innovators and technologists are trying to find the answer to that question.

At their first meeting on Dec. 12, members of the National Advisory Council on Innovation and Entrepreneurship identified the task of defining and measuring innovation as one of the first items on their list of goals. The council works under the auspices of Commerce's Office of Innovation and Entrepreneurship.

NACIE member Barbara Bry, chief operating officer at Blackbird Ventures and a serial entrepreneur who teaches at the University of California, San Diego, said measuring innovation has not been done before, least of all in the federal government.

Stephen Tang, president and CEO of the University City Science Center in Philadelphia, said that's largely because innovation is more intuitive than quantitative, which makes it difficult to measure.

"We don't really have a measure for innovation, [but] that's an important concept to understand," Tang said. "What really moves the needle that makes us more innovative as a society?"

Bry said the council also wants to look into how the government can measure the effectiveness of the grants it provides.

Bry and Tang are members of the innovation subcommittee, one of three panels formed within the council. The others focus on entrepreneurship and job-driven skills training.

Another item on the innovation subcommittee's to-do list is thinking about

ence call on a monthly basis and come to Washington, D.C., for quarterly meetings. But Tang's hopes for the council reach far beyond the Beltway.

"My hope is that we have high-impact, compelling ideas that can be implemented in two years and put in a broader agenda for innovation," Tang said. Such an agenda "can transcend current politics and change the narrative and dialogue about economic



It's all about having startup companies exist in a broader ecosystem.

— STEPHEN TANG

the next generation of incubators. Bry said San Diego has about 20, yet no one has ever measured how effective they are.

And with outfits like 18F springing up around the federal government, that line of inquiry could prove particularly valuable.

"It's all about having startup companies exist in a broader ecosystem," Tang said. "That ecosystem is giving them a chance to fail or succeed faster and cheaper."

The group plans to meet via confer-

development across the country," regardless of who is in the White House or Congress.

According to Commerce's website, NACIE "is charged with identifying and recommending solutions to issues critical to driving the innovation economy, including enabling entrepreneurs and firms to successfully access and develop a skilled, globally competitive workforce." The council's role is purely advisory, and it reports to the secretary of Commerce.

— Colby Hochmuth

FCW CALENDAR

1/15 Workforce

Acting U.S. CIO Lisa Schlosser, OPM CIO Donna Seymour and GSA Associate CIO Liz DelNegro discuss the challenge of "Opening Doors to Women in Government IT" at this AFFIRM event. Washington, D.C.
http://is.gd/FCW_womentech

1/22 FedRAMP

At this FCW event, FedRAMP Director Matt Goodrich and cloud security experts from HHS, NIST and NASA discuss streamlining the authorization process. Washington, D.C.
<http://fcw.com/fedRAMP>

2/4 Defense

Army CIO Lt. Gen. Robert Ferrell and Army IT Agency Executive Director Gregory Garcia are among the speakers at AFCEA NOVA's 14th annual Army IT Day. Vienna, Va.
http://is.gd/FCW_armyIT

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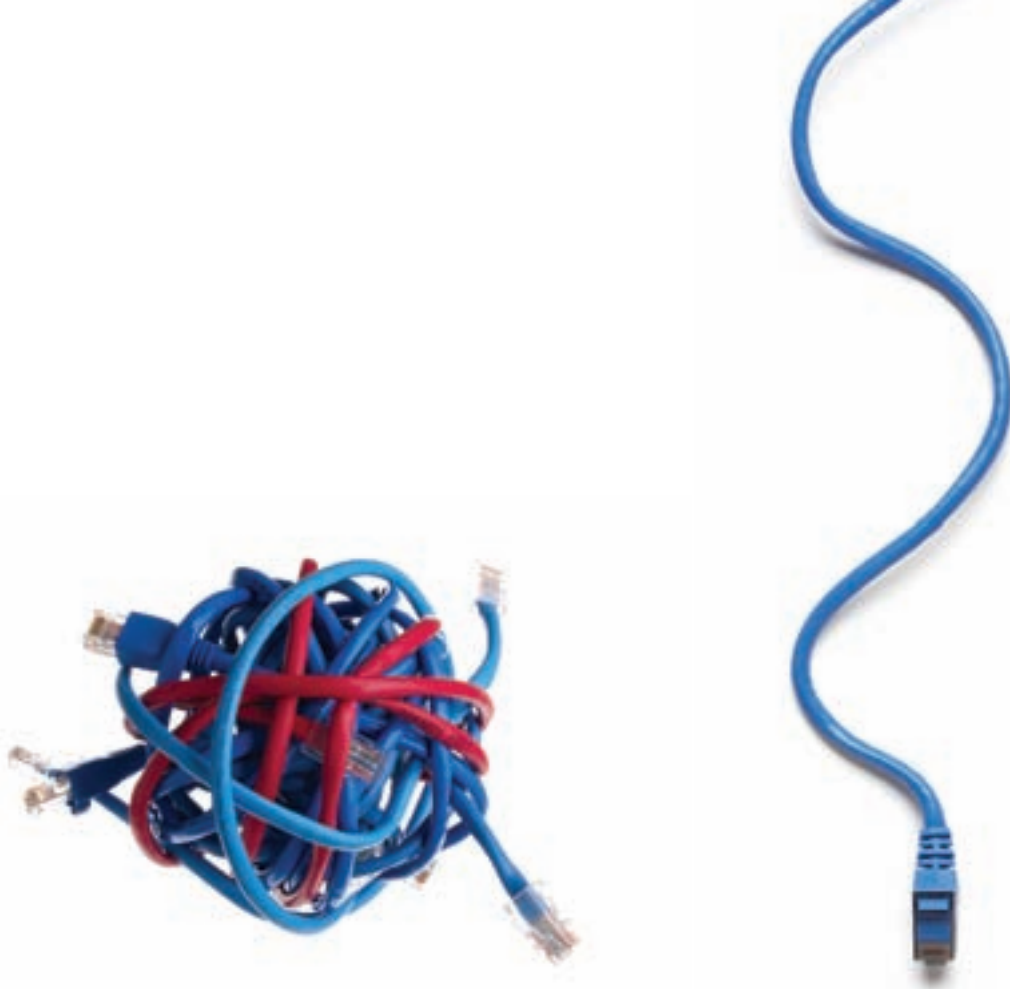
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FBI wants cyber sleuths with some muscle

Applicants heeding the FBI's recent call for cybersecurity experts had better get to the gym soon because the agency isn't changing its physical requirements for the positions.

Candidates for the cybersecurity jobs must pass a physical fitness test (PFT) to earn — and keep — their posts, even though most of their time is likely to be spent at a desk or in a data center.

On Dec. 29, the FBI issued a dragnet of sorts for potential recruits with cybersecurity expertise. The agency said it needed a slew of digitally talented 23- to 37-year-olds to help it keep up with investigations into cybercrimes such as website hacks, intrusions, data theft, botnets and denial-of-service attacks.

The bureau's campaign to bring aboard more technical talent — including computer scientists, IT specialists

and engineers — is open until Jan. 20. According to the FBI, the slots will pay \$59,340 to \$76,568 per year.

"Cyber agents will be integrated into all the different violations that we work," said Robert Anderson Jr., executive assistant director of the FBI's Criminal, Cyber, Response and Services Branch, in a statement that accompanied the job announcement. "So whether it's a counterterrorism or counterintelligence investigation, they could be the lead agent in the case."

The FBI said potential recruits will have to pass the bureau's standard PFT, and the newly minted agents will have to keep up a level of physical fitness "necessary to effectively respond to life-threatening situations on the job."

The agency's PFTs measure physical acumen with a series of potentially

daunting trials, including completion of a maximum number of sit-ups in one minute, a timed 300-meter sprint, an untimed maximum number of push-ups and a timed one-and-a-half-mile run.

According to the FBI's website, applicants must get a minimum cumulative score of 12 points on the four tests, with at least one point in each of the events. They also have to pass a rigorous background check.

Under the FBI's PFT scoring system, for example, to earn six points, men must complete the one-and-a-half-mile run in 9:55 to 10:14. Women must complete it in 11:15 to 11:34.

Anderson said the agency is looking for "highly talented, technically trained individuals who are motivated by the FBI's mission."

— Mark Rockwell

EDITOR'S NOTE

Why we focused on women in IT

Tech faces a serious gender gap, from Silicon Valley to the Beltway offices of federal agencies. The numbers alone are important — and we look at some of the stats on the final page of this magazine — but they barely begin to tell the story. So we decided to take a different approach with the feature that starts on page 14.

What *does* the federal IT space look like for young women seeking to contribute? Are there networks and willing mentors to help chart a career (or, increasingly, to make the most of a short-term stint in government)? How much outright sexism remains in the community? What about the subtler, yet still significant, boys' club dynamic that can make



talented women feel like outsiders? And what do the women leaders in agencies and industry — and there is an impressive cadre of them — think about their roles and the way things have evolved?

Those are the sorts of questions we wanted to explore. And to do so, we gathered a great group of women leaders for a wide-ranging and candid conversation about what it's really like to work in federal IT.

A quick note about that group: The nine women on the cover are not a definitive group — the conference room wasn't big enough to invite every impressive woman in the community, and the realities of December schedules kept several others we did invite from attending.

But the women on our cover are an important and instructive cross-section of federal IT, and they are able to speak to both the environment today and the changes over time.

And speak to it they did. It was a fantastic discussion that went well beyond the two hours we'd scheduled and could have run late into the night. Colby Hochmuth captures the highlights in the pages that follow, but there was so much more than we could possibly include here.

This is a conversation that we intend to continue, and there are other important ones to be had as well. If you'd like to be part of them, please let me know.

— Troy K. Schneider
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IN THE IT PIPELINE

WHAT: The Intelligence Advanced Research Projects Activity's Proposers' Day Conference for cyber defense.

WHY: IARPA said it wants to use its Jan. 21 Proposers' Day for the Cyber-attack Automated Unconventional Sensor Environment (CAUSE) Program to explore options beyond the typical "post-mortem analysis" approaches to cyber defense.

As attacks have evolved and increased over the years, established approaches such as signature-based and anomaly detection have not adequately enabled cybersecurity practitioners to get ahead of the threats. The result is an industry heavily invested in analyzing the effects of cyberattacks instead of analyzing and mitigating the cause of the attacks, IARPA officials said.

They added that they hope the CAUSE Program can develop and validate unconventional sensor technology that can detect activities such as actor behavior models and black market sales to help forecast cyberattacks and complement existing capabilities.

Under CAUSE, IARPA wants to develop innovative technologies that could manage and extract huge amounts of streaming and batch data, apply existing features from other disciplines and introduce new ones to the cyber domain, and develop models to generate probabilistic warnings for future cyber events.

FULL LISTING:

Go to IARPA.gov and click on "Proposers' Days" under the "Working with IARPA" dropdown menu.

Unsecured Web page put 7,000 vets' info at risk for years

The Department of Veterans Affairs has disclosed a security flaw in a patient database that put information on more than 7,000 veterans in public view.

The information — including names, Social Security numbers and birthdates — was contained in a document that could be accessed via a public-facing telehealth website run by a Veterans Health Administration contractor. The name of the contractor was not released. The flaw was first reported to the VA on Nov. 4 and publicly announced in a news release on Dec. 24.

According to a VA incident report, the personal information was exposed for several years. The address was not linked within the site, and a user would have to have the address to access the document, according to the report.

The VA was alerted to the security flaw via an anonymous email message believed to have been sent by an employee of the contractor. The message, which included personal information on five veterans, was sent to senior leaders at VA.

The security flaw was quickly patched with the assistance of the VA's Network and Security Operations Center (NSOC), and monitoring services were offered to the 7,054 veter-

ans whose information was potentially compromised.

A VA spokesperson did not clarify whether the anonymous source was acting as a whistleblower or had some other agenda. The incident report indicates that the vendor fired one employee as the likely culprit, although that employee denied being the source of the email message. An NSOC review of the vendor's user logs could not definitely conclude who had accessed the data or whether the entire contents of the database were compromised.

The VA is a popular target for cyber criminals. Network defenses detected more than 15 million intrusion attempts in November alone and blocked more than 88 million suspicious inbound email messages.

However, the VA flunked the fiscal 2014 audit required under the Federal Information Security Management Act. In a call with reporters last November, VA CIO Stephen Warren said the agency still needs to fix some of the issues identified in the 2013 FISMA report and that the 2014 report, due out in March, will call for improved standardization in system configuration and tighter access controls.

— Adam Mazmanian



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Closing the gender gap in federal IT

Here are several actions federal managers can take to create a more gender-diverse — and successful — workforce

Despite the fact that some of the fastest-growing jobs in the American economy are in the science, technology, engineering and math (STEM) segment, only 31 percent of the 1.7 million middle- and senior-level employees in the U.S. software sector are women.

Unfortunately, the stats for women in federal technology are similar, with women making up about 30 percent of the federal IT workforce and being less represented in senior executive roles.

STEM jobs, however, are expected to grow more than 30 percent in the next decade — three times as fast as non-STEM roles. That creates an opportunity for agencies to make major strides in hiring more women into IT roles.

CEB research shows that there are several benefits to recruiting and retaining a gender-diverse workforce. In such an environment, for example; individuals' willingness to "go above and beyond" increases by 12 percent and the number of people reporting their intent to stay at the organization increases by an average of 20 percent.

To enhance the percentage of women employees, particularly in STEM-related staff and leadership roles, federal managers should consider several actions:

- **Build diverse talent pipelines.** Many organizations go to big recruiting events and post vacancies on USAJobs, Monster and the like to attract talent. That approach results in a high volume of candi-

dates but not necessarily candidates of high quality. The best organizations build pipelines of qualified women candidates by tailoring messages to that group and using current employees to identify qualified women through their networks, and then encouraging them to apply.

- **Use hard data to avoid implicit bias.** The use of metrics and assessments to evaluate candidates can ensure that decisions are not based

Agencies should supplement résumé reviews and manager interviews with objective assessment tools that predict performance.

on bias or "gut feeling." Educating hiring managers about implicit bias, which is an unconscious preference for a group of people, helps support the organization's priorities. People must understand that implicit bias affects most of their everyday decisions, even among those who consider themselves advocates for women.

- **Conduct blind application reviews.** A 2012 Yale study shows that résumés with a woman's name are often deemed less qualified than the same résumé with a man's

name. Blind application reviews eliminate any such bias. Better yet, agencies should supplement résumé reviews and manager interviews with objective assessment tools that predict performance and help overcome innate gender biases.

- **Discuss career paths with women employees.** Hewlett-Packard reviewed its personnel records and found that women applied for promotions only when they believed they met 100 percent of the qualifications for the job. By contrast, men applied when they thought they could meet 60 percent of the job requirements. That gap highlights the importance of having conversations with rising women executives to clarify their qualifications and encourage them to compete for leadership positions.

- **Understand what motivates women.** Our research shows that different motivators drive women and men to rise through the ranks. Men in leadership positions are motivated by fear of failing, making mistakes, and suffering the associated loss of self-esteem and power. They thrive on opportunities to take responsibility, exercise authority and influence others. Women are motivated by a constructive work environment, positive working conditions, and acknowledgment of their contributions and achievements. Understanding what drives women and adapting that insight to the agency's culture are essential to attracting and retaining women. ■



Burning down the legacy SOC

Automation and the orchestration of multiple systems are essential to defending against today's cyber threats, which requires a new approach to security operations centers

In less than a decade, cyberattackers have grown from a collection of talented mischief-makers into an aggregated, hyper-competitive, multibillion-dollar industry. Players range from global crime syndicates to nation states, and they can adopt roles that bend and shift depending on the outcome each player hopes to achieve.

But whatever the endgame, no organization has enough money, people or security intelligence to sift through all the data feeds that security information and event management (SIEM) tools and other enterprisewide systems provide fast enough to keep organizations secure.

To defend against sophisticated security breaches, companies deploy multilayered systems: heuristic-based protection, next-generation firewalls, intrusion-prevention systems, antivirus software and other common tools of the trade. Those systems do the grunt work of detection and protection by identifying easily recognizable inbound attacks.

But when attacks look like legitimate traffic, how can common tools identify patterns? How do they know what to defend against when the code behind the attack can change its approach at will — and at machine speed — to escape detection?

Modern threats can substantially increase the signal-to-noise ratio between what defensive systems see as threats and what actually constitutes an attack. Offensive

scanning slows down as SIEM tools contend with inflated security-event logs flooded with terabytes of complex intersystem chatter. For some organizations, there can be more attacks in one hour than a well-staffed team can address in an entire day.

The old-school security operations center (SOC) was a physical

Destroying security silos and unifying technologies can put an SOC on the fast track to success.

command center built around a SIEM tool. The arrangement had its advantages: Housing security operations in a single physical location promoted convenient security and control measures. Neither flexibility nor scale came into the equation, but then, neither did extended risk parameters.

Today's SOC must contend with social, mobile and cloud-based solutions. It must blend myriad tools from third-party providers at multiple points in the security chain. Everything from antivirus software to data collection and analytics must be integrated into the SOC and into the security protocols the SOC supports. To be successful, the SOC must also automate threat intelligence and attack responses in

real time. Destroying security silos and unifying technologies can put an SOC on the fast track to success.

Today's SOC must also support the ability to act automatically at machine speed — a necessary but elusive requirement that is nearly impossible for a legacy SOC to meet. Automation can be scary for organizations charged with protecting personal and proprietary data, but orchestrating the many technologies and processes already in place allows organizations to act quickly and decisively. Orchestration keeps complex decisions in the hands of the professionals trained to make them, while automating predefined repeatable actions that voraciously consume analyst time.

Importantly, today's SOC isn't even a "center" in the strictest sense of the word. The enterprisewide use of orchestration and automation solutions means security administrators need not be physically present to respond to threats. Smart automation deployment requires fewer hands to accomplish everyday tasks and maximizes the effectiveness of security team members.

Coordinated, automated, human-in-the-loop strategies create speed. Speed to respond to an attack. Speed to remediate the effects of the attack. Speed to return to day-to-day operations.

Speed effectively creates time. And time, after all, is an agency's most valuable asset in the event of a breach. It's also the one thing neither money nor people can buy. ■



How to launch a successful API initiative

IT professionals can create security and access models that transform APIs from unwieldy legacy apps to self-defending services

Many successful application programming interface initiatives start with the goal of unlocking data that is protected by traditional Web or perimeter-based access controls. Although those back-end applications were designed to address a business problem, over the years they have become monolithic, complex and unmanageable.

The majority were designed in two- or three-tier models for the Web. A typical three-tier application uses a tightly coupled component architecture that involves the database, back-end application, user agent and users, and it relies heavily on business logic to protect the data delivered to end users.

In that pre-API world, any change to the business logic necessitated rigorous and laborious quality and change control. Hence, delivery of applications and services took months or years. Furthermore, data security in the pre-API world was enforced by coarse and siloed access controls that used an application facade to manage identities and permissions, and in some cases, they were isolated by network-level access controls such as virtual private networks.

One of the major shortcomings of tightly coupled architecture is that it doesn't easily support emerging channels such as mobile platforms or the Internet of Things — not to mention the cost of security changes and threat models that must be vetted before being released to customers.

An API-first strategy, in contrast, allows data and application owners to provide consistent, secure access to data, independent of the digital channels through which the users' interactions take place. A successful API strategy for government organizations would allow developers to be more agile within their trust boundaries and collaborate with partners.

A successful API strategy demands that IT professionals understand user interactions across digital channels.

So how can federal IT professionals help their agencies deliver APIs that are secure and flexible? A successful API strategy should:

- Protect data delivered via API from end to end, starting with the user and ending at the application.
- Enforce consistent security policies irrespective of the channel by which the user interacts with the back-end application.
- Not make any assumptions about data protection controls that might or might not be incorporated in the digital supply chain. For example, instead of relying on app developers' security features, API services

must secure the data using appropriate authentication and authorization mechanisms.

- Incorporate a security model that supports fine granular access control and allows apps to create, read, update and delete at the data-cell level with appropriate authorization privileges. That enables developers to innovate based on user experience without being constrained by rigid data access scopes.
- Use version management to oversee the life cycle of security models. For example, a new authentication scheme could be associated with a new version of an API while maintaining compatibility with the existing API.
- Log every API interaction with user identities to facilitate robust auditing and investigations.
- Use industry-standard authentication and authorization protocols such as OpenID, OpenID Connect and OAuth to deliver consistent access control.
- Create consistency and hide complexity of security by embedding policies into every API interaction. An API gateway will provide this capability out of the box.

In short, a successful API strategy demands that IT professionals understand user interactions across digital channels. A secure API strategy will provide seamless protection without adding security controls that might interfere with the user experience and service availability. ■



Supporting Secure Mobile Technology Inside Government Agencies

Q What are government customers looking for from their mobility partners?

A The government's mission is to protect the country. In order to do so efficiently, government agencies must conduct day to day business using commercial technology which means that device security and data protection is paramount. I've found that agencies are focused on making sure they have as many available options as possible when it comes to considering mobile solutions. Having a breadth of options allows agencies to leverage multiple commercial technologies and develop closer partnerships with the companies and organizations that deliver them. Government customers should be treated the same high level as other enterprise customers when it comes to mobility. I've found that companies across industries are seeking products that not only solve business challenges, but also create a positive, secure employee experience.



Sam Phillips, Vice President of Global Enterprise Services (GES), Security Solutions, Samsung

Q How should providers approach selling to agencies or to individual programs?

A Before entering into conversations with government agencies, providers have to show that their products meet the general government common criteria. And before you can think about selling to agencies or individual programs, you have to understand the government sector's baseline requirements in order to develop solutions that meet or exceed their needs. Every agency and program has a different mission and those missions drive other requirements and dependencies that must be taken into consideration. For example, agencies like the FBI manage sensitive and highly classified information, thus have security requirements that are much higher than some other agencies. Providers can't just be sellers of things anymore. They must have people who are subject matter experts that understand the individual agencies and their individual needs - that's critical to being proactive in delivering products and services.

Q Given how fast mobile technology changes and threats occur, how can providers cope with lengthy procurement processes?

A Technology is constantly evolving, which means that you're often adapting to and addressing government requirements with an out-dated product portfolio. The government approval

process can be lengthy for new product availability, so providers must make sure they bring extendable solutions to the table – not only with what they introduced a year ago, but also with new solutions moving forward. For example, products that came out 6 months ago are just making their way into the procurement process. That's where that baseline understanding of agency's needs comes in. Understanding that benchmark in addition to the common core requirements and developing from this core will help prepare agencies with the products they need that much faster.

Q The compliance process is also long and involved. Can providers do anything about that?

A It's important to build products and solutions on top of a solid base. When there are compliance assessments, any changes can be made to the changes in the product itself, rather than the overall platform. Having people deeply engaged in the compliance process allows them to stay abreast of such changes. Maintaining good relationships with the various government organizations allows you to have an idea of where things are going and also allows for providers to be proactive. Having those kinds of resources, I think, has really worked to Samsung's benefit.

Q What does the government's greater use of the cloud and outsourcing mean for mobile device providers?

A As the government moves into the cloud environment, security requirements are becoming more rigorous. Providers must ensure that their government partners understand mobile cloud capabilities and that cloud solutions meet the governmental operation and security requirements. Outsourcing is dependent on what services are available. For Samsung, that means building out Samsung 360 Services for Business with people who have a deep background in providing government services and outsourcing resources to make sure we meet government and particular agencies needs

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‘You just move that rock a little at a time’

Women from a wide range of federal roles discuss what it really takes to lead in IT

When you gather a group of female IT leaders from government and industry to talk about women in tech, interesting patterns emerge. For starters, few of them ever planned to make a career of IT.

Karen Evans, who held the highest technology job in government during President George W. Bush’s administration, started her federal career as a GS-2. Interior Department CIO Sylvia Burns came in as a presidential management intern. Margie Graves, the Department of Homeland Security’s deputy CIO, started in nuclear chemistry then spent years doing mergers and acquisitions before joining government in the wake of the 2001 terrorist attacks. Kathy Conrad, acting associate administrator of the General Services Administration’s Office of Citizen Services and Innovative Technologies, was a policy wonk, while Teresa Carlson, who runs Amazon Web Services’ Worldwide Public Sector, started as a speech pathologist.


And Leah Bannon, now a product manager at 18F, was mainly working in

communications when “a friend of mine offered to teach us Python for free on Saturday morning for fun. It was five women, and it was the best Saturday I’ve had in years.”

“You see these open doors, and you either walk through them or you stay where you are,” Graves said. “A lot of times I [thought], ‘OK, that doesn’t really sound like me,’ or ‘That really wasn’t what I studied, what I did, what I’ve already done.’ But then it becomes obvious to you: ‘OK, I think I can jump in here and see what happens.’”

Not surprisingly, such a diverse range of career paths produces some very different experiences. Yet the leaders who gathered with FCW in late December (see below for a full list of participants) repeatedly found common ground on the challenges that still face women in IT, the importance of creating better on-ramps, the lessons they wish they’d learned sooner and more.

What follows are highlights from that conversation, excerpted by FCW Staff Writer Colby Hochmuth. For additional excerpts — or to add your voice to the discussion — please go to FCW.com/women_in_tech.



**"SOME OF THE
GREATEST THINGS
THAT WE'VE DONE
HAVE TAKEN THE
LONGEST TIME. YOU
JUST MOVE THAT
ROCK A LITTLE AT
A TIME."**

RENEE WYNN, ENVIRONMENTAL
PROTECTION AGENCY

Why IT?

Because it's the means to the mission.

Although the paths were varied, the motivations were nearly universal: Federal IT combined the intrigue of new technology with a passion for the mission.

Graves: The people in our department say, "We don't deliver IT. We deliver homeland security." Because that's what we center on every day.

These are all the myriad of mission spaces that we have in DHS, and they all resonate. When we take that federal survey every year, it doesn't matter what agency you're talking about. That's what people say drives them. It's the mission.

Bannon: As a millennial, that is incredibly important to me. I look forward to work every single day. The ability to improve people's lives is hugely important to anything I would want to do.

Conrad: For [GSA], that's been the biggest draw in recruiting. It's really the combination of mission and scale because there are many places that have an equally compelling mission, but not at the scale [of the government's]. When you combine those things, you have impact that is really unparalleled.

What we hear over and over again is that while there's tremendous reward in building startups and doing really neat, cool things in nonprofits or academic work — the opportunity [in government] to have such a sustainable impact at scale, it just doesn't exist elsewhere.

Wynn: The work in and of itself just drives you. You get into it, it's interesting, and every time you make a small step forward, it just fuels that journey. You just keep going.

Evans: [Mission is] the most



"IT TOOK ME A LONG TIME TO UNDERSTAND THAT IT WASN'T ABOUT ME, THAT IT WAS ABOUT THE CONCEPT OF ME BRINGING THE IDEA TO THE TABLE."

Tarrazzia Martin, Department of Housing and Urban Development

important thing. You're not driven by the dollar. If you were driven by the dollar, you wouldn't be [in the federal government].

Breaking into the boys' club

Nearly every woman in the group spoke of times when she was made to feel like an interloper.

Body language, sports banter and outright sexism sometimes come into play, but so do basic, if unwritten, rules of business.

Graves: There were a couple of men along the way who took a great interest to make sure that they broke down the barriers that were usually put in the way of women.



THE PEOPLE IN OUR DEPARTMENT SAY, “WE DON’T DELIVER IT. WE DELIVER HOMELAND SECURITY,” BECAUSE THAT’S WHAT WE CENTER ON EVERY DAY.

Margie Graves, Department of Homeland Security

I was working with the French [Alternative Energies and] Atomic Energy Commission. We were trying to sell nuclear technology to [the Department of Energy] for solidification of nuclear waste. And this gentleman came in and was talking to my boss, and said, “Hey, why don’t you have your girl go Xerox this for me?”

To his credit, [my boss] turned and he said, “First of all, she’s not my girl. And secondarily, she’s the person who’s going to decide today whether I buy your technology or not.”

Martin: I found it very, very difficult. My biggest challenge was at Homeland Security when I was CIO for immigration. I would go home crying on a regular basis. Just sitting

in the CIO Council and we were so new then...I was discounted. It was the most challenging thing.

It took me a long time to understand that it wasn’t about me, that it was about the concept of me bringing the idea to the table. I started actually using other members of the CIO Council to make the case for [my ideas].

Carlson: Young women [often say to me], “When I’m at the table nobody listens to me. I had an idea and no one was interested.”

My first question is, “What did you do to prepare for your meeting?”

It takes time to learn that the meeting doesn’t start at the table. To be really effective, you have to identify the key stakeholders and sell your idea before the meeting starts.

Along the way, you’ve got to make sure that you listen to their feedback and keep building on your idea.

Once you’ve done that, you may have a meeting to present your idea, but that’s not the end. You need to continue to build your idea over time, keeping an open dialog with the stakeholders. Developing an idea is a process that takes time, energy and ambition, not just one meeting.

Ho: It’s rooted in a lot of these culture influences. For example, women in general are not comfortable with self-promotion. That’s because we were taught as little girls, “Oh, don’t brag,” or things like that. But I think if you’re not good at promoting yourself, you’re not going to be good at promoting your organization.

Wynn: I played sports, and that was back when women weren’t permitted to play sports. But to all the guys in my neighborhood, I was just somebody else to pick.

That is part of what shapes you. I think every time you face a time when you’re alone, you’re the only female in the room, the

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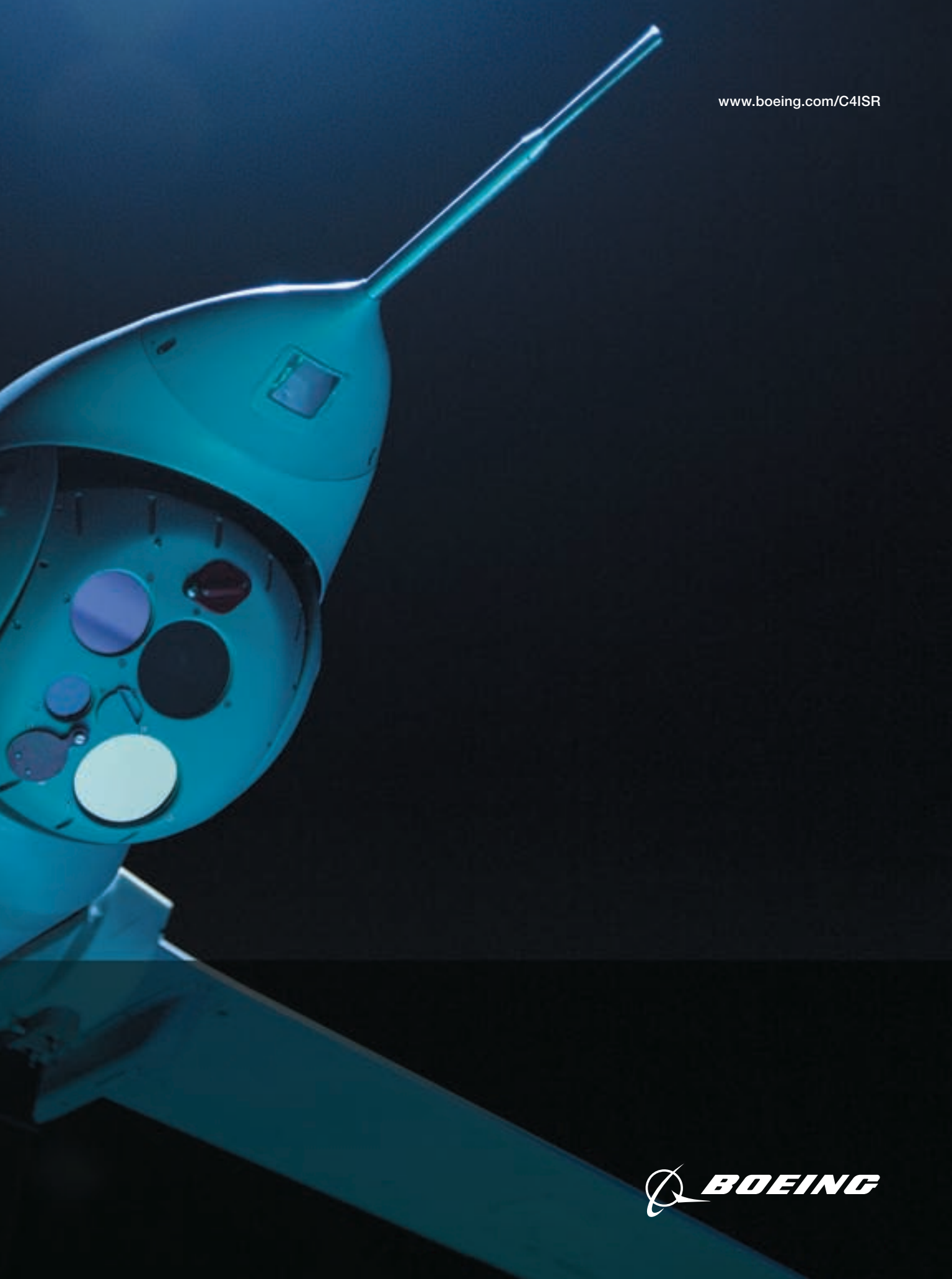
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"THAT MYTH THAT YOU HAVE TO CHOOSE BETWEEN HAVING A HARD-CORE CAREER OR BEING A REALLY GREAT MOM, I THINK THOSE BOUNDARIES HAVE REALLY BLURRED IN TECH."

Kathy Conrad, General Services Administration

only black person in the room, the only Hispanic in the room, the only [whatever] in the room, there's always these ways to make you alone. But those are also the places it can help define you and help you be successful.

So you come up with strategies. You can be defeated by it, or you can learn from it.

Carlson: Don't be afraid in your style, authentically, to take on challenges. It may be a little Pollyannaish, a little too optimistic, but I think if you do all that, and you're vocal, and you have a little bit of sharp elbows, and you politically figure out how you are in the game, then women can do it all.

Mentors, networks and examples to avoid

The women praised their mentors for teaching them how to lead and said feelings of defeat don't always come from the men in the room.

Wynn: I think some of the worst scars or the slights I've had have been from other females.

Evans: I agree, and I think it depends on your age and where you are. When I came into the workforce, there was a certain type

of woman [who] made it on her own. She had to fight her way in. That was a different type of woman. When I looked at them as I was coming up, I thought, that's exactly how I don't want to be.

So they were really good lessons to learn.... You learn a lot watching them, but they did it on their own, and the whole idea of working together in a team, that was a different concept for them.

[My generation] learned at a younger age that one person's performance is not going to get the team across the finish line and win. You have to work together as a group. A lot of us played sports, which made a difference when you entered the workplace because prior to that, everything that a female did was about her own performance, and it was very individual.

Conrad: That myth that you have to choose between having a hard-core career or being a really great mom, I think those boundaries have really blurred in tech.

I started with the attitude that I am a woman, I have children, and I'm really good at my job.... I'm a whole person and I'm going to remain really dedicated and

committed to both of those parts of my life.... I think today that's more possible than it was then.

Bannon: Being the only woman at a lot of tech events, I started reaching out to a lot of tech women's groups. Tech LadyMafia is my favorite one. That's what really taught me that women are not the competition. They are people who can help you.

Graves: We have a group within DHS that's called WE — Women Executives. And we do mentoring formally.... But it's really individual commitment that makes that happen.

Ho: I would challenge that. I came from a consulting background, where networking is everything. [In government], the networking, the mentoring, I still think it's lacking. I know we have these executive women in government kind of groups that you can go to, some mentoring breakfast or whatever. But there isn't a mentoring culture, where people feel like they take an interest in someone and help them be successful.

Wynn: It must be an agency thing, because EPA has that. I'm part of a bunch of different informal

networks as well as formal ones because it's mentors or people who gave me the gift of feedback.... Then, obviously, that's what you do for others.

Bannon: I started going to a volunteer group called Code for DC about two years ago. I was trying to learn more about tech, and...it [offered] incredibly valuable networking and learning opportunities for me, but I was the only woman a lot of times.

That inspired me to organize the Tech Lady Hackathon. We had over a hundred women at the first one. The idea was that it was a hackathon plus training day. It also sent the message that this isn't a competitive, tough environment. This is meant to be a learning environment, whether you're in the hackathon or in the training phase.... Then I organized it again at 18F [in November] because we were trying to build a more diverse team and...encourage more networking among tech women at the younger group.

Bringing in the next generation

When it came to drawing more women into the federal IT workforce, the participants agreed: Understanding millennials might be the most important part.

Burns: I think there's an impatience because [millennials] want more faster. Somehow the bureaucracy...can't see their way to get stuff done fast.

Graves: It's not the technology, because they're pretty antiquated. But trying to get them to understand it's OK to be a public servant, but we have no intention of you staying here for 30 years. Talking to them, opening up the venue and letting them know they have a voice — that sometimes gets lost because of those curmudgeons. There are a lot of them.

Bannon: I would love if we could get away from this notion that it's a failure if your government service [is not a career-long commitment].

Evans: I don't think anybody views service in the federal government for two to three years, especially in the IT world, as failure....

When I was recruiting IT staff, that's how we recruited. I always thought I'd be lucky if a person came in and stayed three years in any of the IT jobs.

We specifically targeted people with the intention that they were only going to be there two to three years so that we could then build that into the structure...because the opportunities are so vast for people to be able to go out and do different things.

Ho: I think the federal government does, in the hiring phase, have to have some reform in order to retain the talent that we want to retain.

Martin: We do the best at our senior level to take care of those [new employees], so that when people come in, they come in with a purpose and with a window of opportunity to see where they can make that impact and make it in a shorter period of time.

Conrad: I think we're fortunate in federal IT because there are so many opportunities for mentoring and collaboration that aren't centered necessarily around being women but that provide that sort of cross-sector forum for sharing ideas and learning from each other. ■

About this discussion

The following women sat down with FCW on Dec. 17 in Washington D.C.

Leah Bannon
Product Manager
18F

Sylvia Burns
CIO
Interior Department

Teresa Carlson
Vice President
Worldwide Public
Sector,

Amazon Web
Services

Kathy Conrad
Acting Associate
Administrator
Office of Citizen
Services and
Innovative
Technologies,
General Services
Administration

Karen Evans
National Director
U.S. Cyber
Challenge

Margie Graves
Deputy CIO
Department of
Homeland Security

Christina Ho
Deputy Assistant

Secretary for
Accounting Policy
and Financial
Transparency
Treasury
Department

Tarrazzia Martin
Senior Adviser for
Enterprise Planning
and Change
Management
Department of
Housing and Urban
Development

Renee Wynn
Acting CIO and
Acting Assistant
Administrator
Office of
Environmental
Information,
Environmental
Protection Agency



Marina Martin: Building a new digital service at VA

The Department of Veterans Affairs' chief technology officer talks about overhauling the digital experience for VA customers

As chief technology officer at the Department of Veterans Affairs for the past year and a half, Marina Martin has been streamlining VA's disparate online customer relationships into a service that is focused on veterans.

The effort will kick into high gear in 2015 for a couple of reasons. First, VA Secretary Bob McDonald is in the midst of a reorganization designed to make the department more responsive and its online services easier to navigate.

Second, Martin is leading the charge to bring in a new digital services team at VA. She's taking applications for founding members who will be hired for two-year appointments (with the possibility of a four-year extension) at GS-15 pay levels.

The approach mirrors that of the General Services Administration's 18F and the Office of Management and Budget's U.S. Digital Service. The idea is to bring in a group of outside technologists with experience in the latest tools, agile work styles and design principles, and disseminate that expertise throughout large government organizations.

Martin won't say how many people she plans to hire but said the

founding group will be in the "high double digits" — enough people to break into subteams to work on high-impact mission areas such as modernizing the delivery of health care and benefits and improving the digital experience.

Martin spoke with FCW's Adam Mazmanian by phone on Dec. 17. The interview has been edited for clarity.

What are your priorities as CTO of VA?

My priority has been on digital service delivery to veterans and how we can collaborate more internally and place new technology to [provide] better and better services to veterans.

There's a long-term goal of giving veterans a single point of access where they can sign on and access the entire suite of VA services.

We definitely want a veteran-centric digital experience, so we look at their needs holistically with how they interact with the agency. Instead of them having to know how to navigate VA and how we're structured, we should be where they're looking for us.

Digitally, we can do things like follow their search term paths, make sure that they're being addressed, make sure the infor-

mation is conveyed in a human-readable form and make sure their needs are being met in one place across different business lines.

What products or projects have you been working on to achieve that?

The GI Bill Comparison Tool allows veterans to understand the benefits they can receive from the GI Bill at different schools for different purposes and across different chapters [or sections of the legislation].

It takes data that was previously available from multiple different agencies in multiple different formats with multiple different unique identifiers and makes a simple tool where the veteran can just indicate their number of years of service and the school they want to attend and see a very detailed breakdown of the benefits available, which is particularly important for many veterans who may qualify for benefits under more than one chapter.

That is one example of collaboration across agencies that gave veterans a very simple tool that met their needs in a way that we weren't meeting before.

The Veterans Employment Center [is] a cross-agency collaboration involving Labor, Defense and parts of VA to provide veterans one place in the federal government that they

can go for employment information and help transitioning service members in particular get jobs outside the military.

Something that I didn't appreciate prior to coming to VA is that military advancement culture does not tend to incorporate résumés and interviews, so it's very possible that you could leave a very long military career and still need rather introductory help getting your résumé together and understanding how to find jobs.

Previously, the federal government was offering a very fractured experience: one place to go to

work for the federal government, one place to go to work for VA, one place to go to look for private-sector jobs, one place to go to post your résumé, a different place to go for career advice, a different place to go to translate your skills into civilian careers.

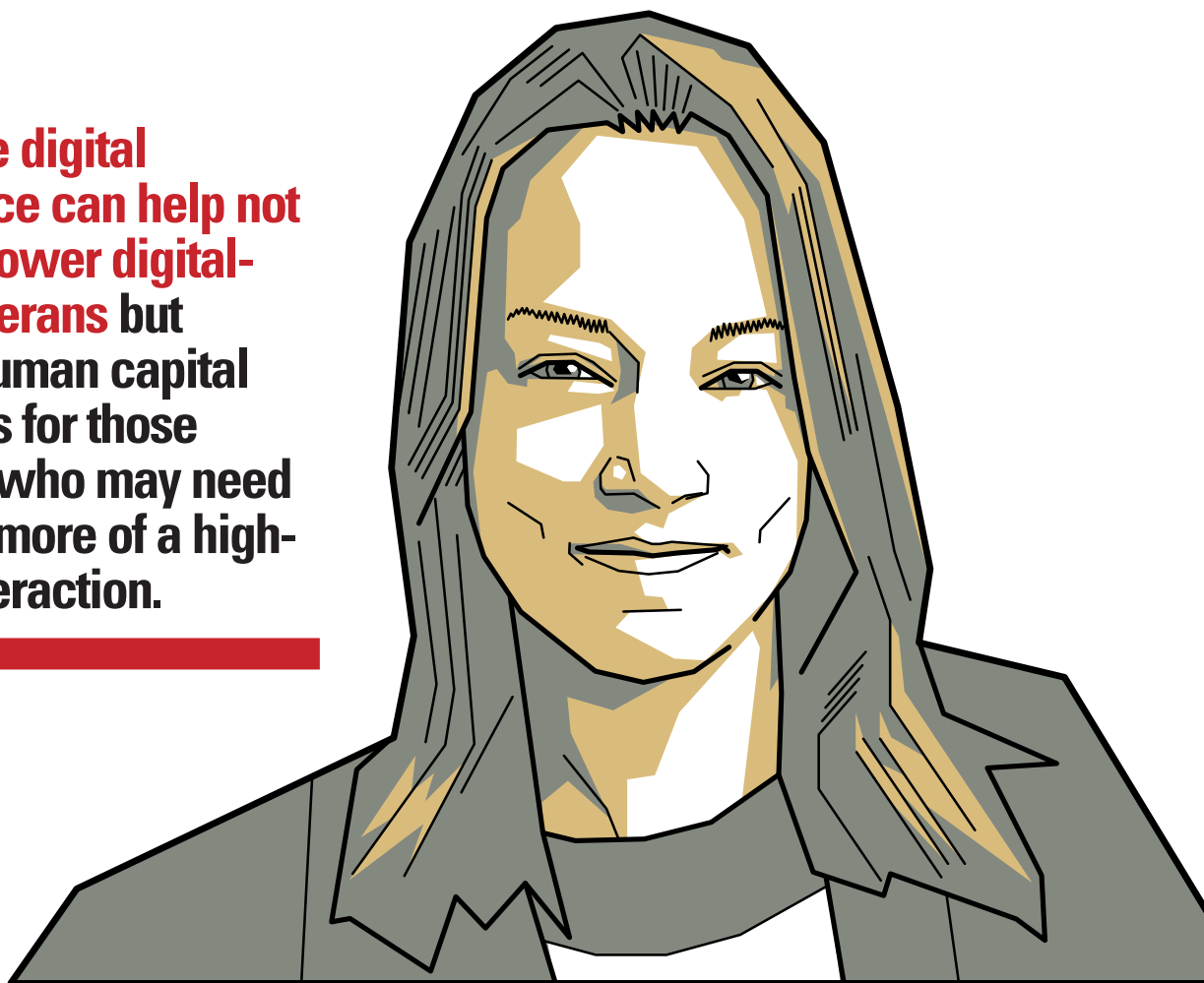
We had a joint agency effort to combine and consolidate all those digital experiences into one — the Veterans Employment Center — so that a transitioning service member can go to one place and meet all their needs.

Early next year you're going to see a lot of movement toward

enhancing our digital experience for veterans. We are starting a VA digital service team where we're going to be bringing in top technologists from the private sector, and one of their three main focus areas is going to be on unifying, streamlining and improving digital access for veterans. That includes Web-based, mobile, kiosks in VA facilities. Wherever a veteran is they'll be able to access VA services in a new, streamlined and improved way.

What is your involvement in technology projects? Do you refine requirements before a project is

I think the digital experience can help not only empower digital-savvy veterans but free up human capital resources for those veterans who may need or prefer more of a high-touch interaction.



released to industry for bidding?

I do on projects in which I'm involved. Some of them tend to be areas of particular interest to me, Secretary McDonald and the VA leadership. On those projects, I'll be deeply involved in the process and partnering with other leadership, including our CIO.

A lot of VA stakeholders — service organizations and others — are watching what you do. How do they have input into the digital services the VA offers?

I think we could continually improve our process there. I believe strongly in user-centered and human-centered design, and that doesn't just mean running a prototype by a small group of veterans. That means having stakeholders and end users and customers involved every step of the way.

It can mean shadowing customers for weeks if you're working on an application for a medical provider. It can mean using digital services like Mixpanel or Google Analytics to find out when people are hovering over the help button or stuck at a particular point, so you can dive into that and fix it. You have real-time data to show you user paths. And [you're] constantly iterating, understanding that whatever you design upfront is not going to be the right thing.

You've got a mix of older and younger customers. How does that affect your approach?

It's critical to focus on customer segmentation. Our research has shown that it's not necessarily the case that age is the divide. We have

We need to look a lot more at that contractor relationship and understand what is stopping some of those best companies from approaching government.

some incredibly digitally savvy older veterans and some 20-year-old veterans who prefer a high-touch environment.

Being a veteran-centric VA means having a consistent experience across mediums. A digital experience is available for the tech-savvy [veteran] who wants self-service, a similar experience when you call on the phone and also a consistent experience when you interact one-on-one.

I think the digital experience can help not only empower digital-savvy veterans but free up human capital resources for those veterans who may need or prefer more of a high-touch interaction.

When he ran Procter and Gamble, VA Secretary Bob McDonald kept his technology staff very close, and I read that he had daily contact with his CIO. Has he taken the same approach at the VA?

I would say his experience being customer-centric and user-centered definitely has a big play with technology. In addition to being CTO, I'm one of his five senior advisers, so he has a very close relationship with technology rollout and ideation.

The VA has a relatively small IT staff when considered as a function of its overall IT budget. Do you have the resources you need to put this digital transformation into place?

We are very excited to welcome a digital services team at VA that can partner with our internal IT resources, collaborate on new ways to deploy or select modern technology, and do training.

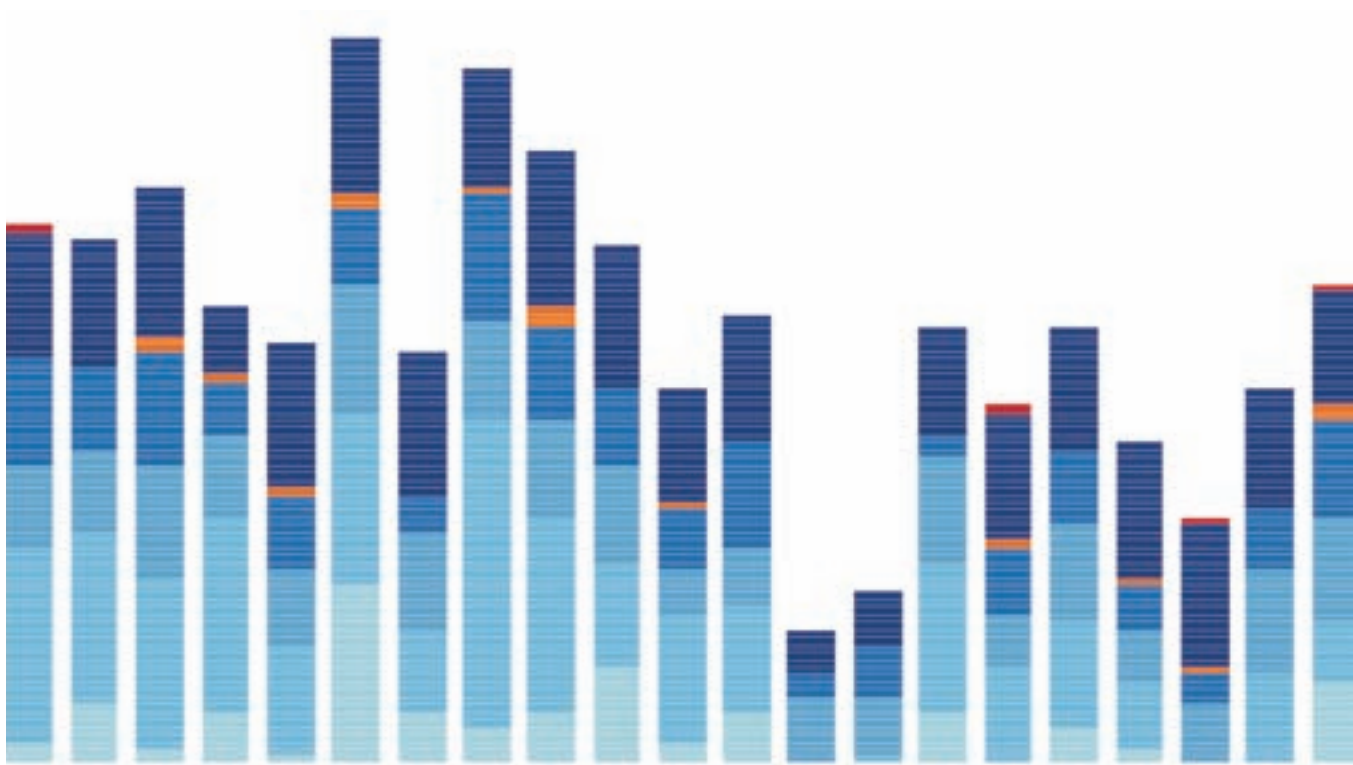
Many of our employees are amazing and mission-driven and very talented, but they've been working within a legacy system. They haven't had an opportunity to work hands-on with a more modern infrastructure.

We're looking forward to partnering with them to help them learn new skillsets that can continue to benefit VA for decades to come.

What are you doing to bring more innovative companies into the contracting mix?

VA is the lead agency on the Smarter IT Delivery performance goal, part of the Cross-Agency Priority Goals. We need to look a lot more at that contractor relationship and understand what is stopping some of those best companies from approaching government. What are the complications in that space? How can we help them understand the process? How can we simplify the process, or if it needs changing, how do we change the process to help them work with government and provide new and better services to our customers?

I think the process could be clearer, and I think that there are things that could be done on both sides to help improve it. ■



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A new model for program management

Creating governmentwide Program Management Centers of Excellence could save countless programs that are otherwise doomed to fail — and do so on the cheap

BY RICHARD A. SPIRES AND THOMAS R. RAGLAND

Previous “CIO Perspective” columns have focused on the importance of IT program management to support successful mission and business delivery. Five key elements were defined that must be in place for programs to have a good probability for success, and if even one of those key elements is not properly addressed, the risk of failure increases dramatically.

One of the elements is having *a set of skilled and experienced employees leading the program*, while another is ensuring that a *set of mature management processes* is defined and executed to run the program. There must be an appropriate system development life cycle, which lays out the approaches to designing, developing, testing and deploying the system. But there must also be a robust set of project management disciplines, which include scheduling, estimation, requirements, configuration and risk management processes.

Based on our experiences working for the government and now in the private sector serving federal customers, agencies face a shortage of seasoned, skilled employees in all the program management disciplines. That shortage extends beyond program managers to other key positions, including requirements and system engineering leads,

development and test managers, and operations managers.

As a result, government employees are often thrust into program management roles without formal training and without the experience to understand what to do and how to do it. We compound the issue by thinking training will solve everything. Though beneficial, training cannot make up for experience.

And too often, those in program management leadership roles have nowhere to turn for help. Consequently, they often rely on contractors for support, and although there are excellent firms that can provide expertise, contractor support does not instill the institutionalization of program management approaches necessary to improve agencies’ capabilities over time. We still need a skilled cadre of program managers who can acquire, deliver and manage the solutions.

There is, however, a model that has made a meaningful difference in agencies’ ability to deliver successful IT programs, and it could scale to support the entire federal government. We advocate the establishment of Program Management Centers of Excellence (PM COE) that draw on best practices from the commercial sector, capitalize on pockets of excellence through-

out government, and provide help for programs on initiation and throughout their life cycles.

We must recognize that running a successful, complex IT program requires numerous disciplines, such as requirements management, systems engineering and development management, to name a few. Individuals specialize in those areas, and we want to make sure we are bringing together the right skills and best practices for each of the disciplines in a coordinated manner — hence the plural “centers of excellence” coordinated under the banner of Program Management Centers of Excellence.

The PM COE would have three primary functions:

1. It would gather best practices into a single resource center. Primarily, COEs identify and codify methods, processes, sample work products and tools that represent best practices in a particular discipline housed in an accessible, centralized library.

For example, a Requirements Management COE would help define the appropriate methods and tools to use in defining and then managing requirements for different types of IT programs — such as application development and the integration of commercial software. The library would hold

sample artifacts and reports to share good examples of what a functional requirements document consists of and the appropriate level of requirements definition for a series of agile development sprints, for example.

The resource center would also provide a basis to update training programs across the federal government.

2. It would create a network of experts. The PM COE would seek out and identify expertise in order to share it across the federal government. It would help develop communities of interest in which practitioners from across government convene (both virtually and physically) to discuss the state of the art for their discipline, review artifacts in the resource center, discuss current issues and collaborate on approaches to resolve those issues.

The goal is to develop an online learning community that crosses agency barriers while assisting program managers and program executive leaders.

3. It would offer independent consultants for program management development and support. COE members would be available to help programs in need, whether they are just starting out or long established but struggling to succeed. With a mature PM COE model in place, the leaders of all major new programs should be required to use the PM COE as a way to ensure that they are adequately addressing all critical aspects of running a successful program. Much as GSA's 18F leads digital service development, the PM COE would lead program management practices.

Too many programs fail right out of the starting blocks, and the PM COE could be instrumental by helping programs at the beginning. In addition, leaders could avail themselves of a COE if they are struggling with a particular aspect of program execution.

Much as GSA's 18F leads digital service development, the PM COE would lead program management practices.

And representatives of the PM COE could participate in TechStat sessions to help review programs.

There are a few keys to success for this approach to work at the scale of the federal government. First, the model must rely on the expertise that lives in agencies and support it with a small, centralized governance and coordination function. There are world-class capabilities in all these disciplines in government; the key is to find them and use them for the benefit of all.

Second, the PM COE culture would be about helping programs, not enforcing compliance. Senior leaders must come together as a "coalition of the willing" to foster a strong commitment to helping programs succeed so that program managers will be comfortable seeking the help of the COEs.

Finally, success depends on senior leaders prioritizing this movement in the same manner that they have with the other leading initiatives, such as OMB's USDS. By making program management a priority, senior leaders will free experts from across government to spend a small portion of their time to help create and sustain the COEs.

This is not impossible. At the Internal Revenue Service, we established 14 COE discipline areas under a unified governance structure that made a significant difference in the execution of the agency's modernization program. Other agencies have had similar

results, and we can use those programs as part of a governmentwide initiative.

The good news is that such a model is inexpensive to establish, given the potential improvement to program delivery. A COE in a particular discipline could be effectively run with two full-time people if it is possible to tap experts across government on a part-time basis for support. Together with a small team to handle the central governance and management of the PM COE, a dedicated team of 30 to 40 individuals could provide a robust PM COE.

Given the billions of dollars wasted because of program management problems and failures, such an investment in staff with the right senior-level support could provide an excellent return for our government in terms of dollar savings on programs — and, much more important, better mission and business outcomes from federal agencies. ■

Richard A. Spires has been in the IT field for more than 30 years, with eight years in federal government service. Most recently, he served as CIO at the Department of Homeland Security. He is now CEO of Resilient Network Systems. Retired Army Gen. Thomas R. Ragland is corporate development officer at the Ambit Group. His background spans more than 30 years of extensive strategic planning in both military and civilian federal contracting circles.

The key to successfully sharing IT services

Take a lesson from payroll systems consolidation, the only large-scale success so far, and focus on people, not systems

BY KYMM McCABE AND ANNE LAURENT

In these days of discord and dissension, there is at least one thing the right and left sides of the political spectrum can agree on: Federal agencies should share services.

The push to do so, which first took form as the Lines of Business initiative under President George W. Bush, has reignited under President Barack Obama's "shared first" policy. And the government's struggles to cut costs have generated new energy for the approach.

The Obama administration has particularly focused on sharing technology-centric services. His shared-first policy and the 2012 Federal IT Shared Services Strategy expressly targeted opportunities to thin the federal IT portfolio.

As a result, the CIO Council has been home to much of the intellectual firepower and research into best practices, including the 2013 implementation guide on how to move to shared services.

The 2012 strategy directed agencies to begin migrating their tech systems by targeting so-called commodity services used by many or most agencies. They include components commonly thought of as commodities — such as data centers, networks, desktop computers, mobile devices, email and the

like. But those services also include business systems for finance, human resources, and asset and customer relationship management.

In March 2013, the Office of Management and Budget directed agencies to move financial management to shared-services providers rather than modernize their own systems. The goal was to consolidate 46 IT systems under four federal shared-services providers named in May: the Administrative Resource Center at the Treasury Department's Bureau of the Fiscal Service, the Agriculture Department's National Finance Center (NFC), the Interior Department's Interior Business Center (IBC) and the Enterprise Services Center at the Federal Aviation Administration.

The financial management initiative, run by Treasury's Office of Financial Innovation and Transformation (FIT), offers a catalog of providers, a transition process flow and other support.

In many ways, FIT is following the playbook of the only successful large-scale shared-services initiative so far: the consolidation of payroll processing from 26 systems governmentwide in 2002 to four in 2009 — at NFC, IBC, the Defense Finance and Accounting Service, and the General

Services Administration's National Payroll Branch.

An exercise in change management

CIOs and their teams can learn from the payroll consolidation as they focus on transferring other IT systems to shared-services providers.

Not surprisingly but very importantly, the payroll initiative's chief lesson is that moving to shared services is an exercise in change management. Its success hinges on engaging employees at every level — from executives to those who deliver the service to be shared.

A former leader of the payroll effort said it succeeded — and saved an estimated \$1.6 billion to date — by making performance transparent, holding leaders personally accountable, having active governance and a healthy debate, and taking special care to reassign employees and elevate the work they do.

Tim Young, who ran the payroll initiative as deputy administrator for e-government and IT at OMB under then-President George W. Bush, said the president made management improvement a priority and held Cabinet secretaries personally responsible for it.

That accountability crystallized

during a quarterly meeting to discuss the President's Management Agenda in a crowded conference room that featured a huge management score card in front, with Bush and his Cabinet seated in a semi-circle surrounded by briefers, Young recalled.

"About 20 minutes in, we realized there was a seating chart," he said. The president was in the middle with the heads of agencies that had achieved green scores next to him. The yellows were farther from him and the reds farthest of all.

During a lessons-learned session about payroll shared services in October, Young said Bush told the agency leaders: "Those of you who are green, congratulations. That's why I hired you. Those who are yellow, I expect more from you. Those who are red, when we come back in one quarter, if you are still red, you won't be here."

Young's phone was ringing off the hook when he returned to his office after that meeting. CIOs and chief financial and human capital officers were calling to ask how to achieve yellow or green ratings lest they lose their jobs. That accountability helped galvanize the payroll-sharing initiative.

Another key factor in its success was good governance by the Office of Personnel Management. The monthly meetings of OPM's payroll advisory council created a space where providers and customers could address problems and resolve disagreements before agencies began moving to the services.

OPM also made a strong business case for shared services by using data to show that federal agencies were

The people who use the systems slated for transfer are essential to a successful transition. They know all the pitfalls and tricks to using the current system, and they must be involved to ensure a smooth transfer to the provider's equipment and processes.

paying more than industry for payroll functions — \$200 to \$300 per W-2 processed, for example. After the move to shared services, costs fell to \$110 to \$125 per W-2.

Finally, payroll shared services succeeded because agencies avoided laying off in-house payroll employees after the consolidation, although there were some buyouts. Instead, agencies elevated the strategic nature of what employees did and moved them out of purely transactional work into jobs that more directly supported agencies' missions.

Striking a deal

The technology was a challenge, but again, the solution centered on people. In many cases, agencies had to convert decades-old data in legacy systems to modern software and hard-

ware. And in a few cases, payroll systems couldn't be moved without experts who could convert modern code to Cobol and Fortran when customers' systems were newer than those of providers.

The people who use the systems slated for transfer are essential to a successful transition. They know all the pitfalls and tricks to using the current system, and they must be involved to ensure a smooth transfer to the provider's equipment and processes.

It's also vital to redesign business processes to eliminate agency-unique practices and shed noncritical requirements before moving to an outside provider. Benefits such as reduced costs, faster upgrades, consistent and efficient adoption of policy changes, and better analytics for decision support all depend on standardized data, processes and technology.

In other words, moving to shared services means accepting what's offered by the provider and abandoning your list of special requirements.

In the end, striking a deal with a shared-services provider might be the easiest part of the transition. Federal providers generally operate under working capital or franchise funds, and their services can be acquired using an interagency agreement, which most providers have tailored for their customers.

The 2013 Federal Shared Services Implementation Guide offers pointers on how agencies can make the most of those agreements:

- Include a formal process and structure for regular, emergency and priority communications and escalation of problems.

- Define expected business outcomes and then set a service-level agreement.
- State a frequency of service-level reporting.
- Insist that the provider perform due diligence according to industry IT standards and state that failing to follow them could open the provider to liability.
- Negotiate performance incentives and penalties.
- Incorporate an exit strategy.
- Include an incentive to make the deal work by limiting the amount of any termination fee to be paid to the provider if the agency needs to end the arrangement.

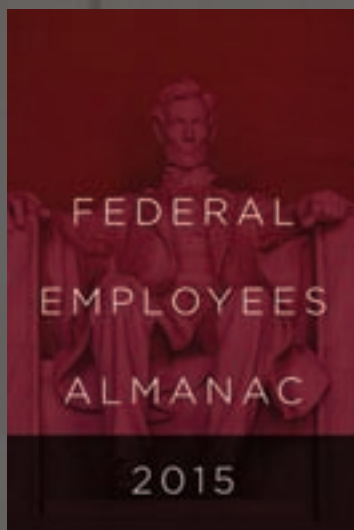
Whether for business systems or commodity IT, there's a wealth of new guidance available to make moving to shared services today easier than when payroll consolidation occurred, though the transition is still not simple.

Whether for business systems or commodity IT, there's a wealth of new guidance available to make moving to shared services today easier than when payroll consolidation occurred, though the transition is still not simple.

However, more and more agencies are realizing that shared services are an appealing way to relieve the headaches and expense of owning, maintaining, upgrading and securing hardware, licenses, networks and support, while freeing resources and people to focus on more mission-centric work.

What's more, because both Republicans and Democrats agree it's the right thing to do, the pressure to share isn't likely to let up. ■

Kymm McCabe is CEO of ASI Government, which provides support, research, education, news and tools to more than 45,000 federal acquisition professionals at 130 organizations through the company's Virtual Acquisition Office and Applied Learning Online. Anne Laurent is director of strategic initiatives at ASI Government.



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Make open data actually work

The public's demand for transparency means agencies must share data in ways that the average person can understand. Here's how.

BY CHRISTINE CARMICHAEL

The Digital Accountability and Transparency Act creates a monumental challenge for federal agencies. Government leaders, watchdog groups and citizens want to make sure tax dollars are being used in productive, efficient ways free from waste and fraud. They also want proof that publicly funded programs are performing well against stated missions and executing within budget.

The only way to know is by seeing the proof: the data itself. Government agencies can't just analyze and manage data. They must also share it in ways that are insightful and useful. The demand for government transparency and accountability is here to stay.

But open data should be viewed as an opportunity as much as a challenge — an opportunity to encourage greater citizen participation and save precious budget dollars in the process. In fact, open data could be a huge money-saver. A McKinsey and Co. study has suggested that open data could allow government agencies to recover a combined \$3 trillion a year or more. But those savings won't happen automatically.

The following suggestions, from Tableau Software's white paper "A New Era of Transparency: 5 Best

Practices for Open Data in Government," can help any agency create data portals for consumers that are easy to use and transparent. Any agency that adopts the following guidelines

will have a leg up in achieving true accountability and transparency.

1. Make everyone a data analyst.

It's important to embrace data analysis beyond the IT department or data



A strong narrative — which can be reinforced with a mix of text and images along with charts and graphics of various sorts — can make data come alive for users. Storytelling is the key to communication. Don't neglect it when dealing with data.

analysis experts. Thanks to increasingly user-friendly software, anyone can use data — from executives on down. Such software is designed with the strengths and weaknesses of the human visual system in mind, unlike hard-to-read spreadsheets and other cumbersome tools. Such software makes data analysis democratic, and it brings increased speed and efficiency.

For example, at the Department of Veterans Affairs, data analysis tools have enabled employees to get a handle on data without waiting for cumbersome reports from the IT department. Tommy Sowers, former assistant secretary of public and inter-governmental affairs at VA, launched a national outreach program in 2013 that included a data analysis project to locate areas with large clusters of veterans.

Thanks to new business intelligence tools, everyone at the agency could access the data. Sowers said such software allows people to “dive into the data and really explore without interruption or the need to wait for another report to be run.”

2. Showcase relevant, actionable information. “Open data” is a broad term, but it doesn’t mean you can just dump all data on consumers willy-nilly. You must make sure your agency is using the most relevant data and, more important, providing ways to access data that any consumer or decision-maker could manage.

One way of gathering data is via a mashup. Mashups are a popular trend in books. Highlights include “Pride and Prejudice and Zombies,” which merges a literary classic with the horror genre, and “Two Gentlemen of Lebowsky,” which retells “The Big Lebowski” film as a Shakespearean play.

Mashups are important to data as well. It is a powerful method that involves bringing more than one data source together. Data analysis soft-

ware allows for many types of mashups, which diversifies the results and content of your data portal. The results aren’t as weird or extreme as in literature, but they are extremely useful for federal agencies.

3. Use data visualization to tell stories. In a similar vein, agencies should make a habit of using dashboards to tell a story. People think in stories. We’re used to hearing them from infancy, and we keep hearing, seeing and telling stories our entire lives. So it makes sense to find the story in your data and present it. A strong narrative — which can be reinforced with a mix of text and images along with charts and graphics of various sorts — can make data come alive for users. Storytelling is the key to communication. Don’t neglect it when dealing with data.

For example, a data visualization of crimes in Hartford, Conn., doesn’t simply tell people about crime, it shows exactly what types of crimes — such as robbery, homicide and aggravated assault — have occurred and where such crimes tend to cluster. People can also see what percentage of those crimes are open cases and which ones have led to arrests of adults or juveniles. The dashboard allows for a high degree of interactivity that could be implemented on the federal level, which leads to the next point.

4. Allow for interaction and collaboration. By suggesting you select the most relevant information and use that information to tell a story, it might sound as though data visualizations are one-way info dumps. They shouldn’t be. Instead, you should incorporate options and choices for users so they can adjust information and follow the data down the path they choose. This allows the narrative to be influenced by the reader, much like a Choose Your Own Adventure story.

For example, if part of your data is

geographical, a person should be able to access the data that most affects his or her location. Depending on the data, similar choices might involve someone’s gender, age, income bracket or profession. If you think ahead to what people want, you can tailor the choices accordingly.

For example, Tantus Technologies works with the Federal Aviation Administration and other agencies to develop dashboards that analyze and visualize financial data. With the help of Tantus, agencies are better able to understand their financial picture, but the understanding isn’t a one-way report. The tools allow for real collaboration rather than the real frustration of trying to manipulate and understand a spreadsheet. Any aspect of the FAA’s finances can be explored by the agency’s employees.

5. Make all of the above accessible. You could create the most useful, user-friendly, narrative, collaborative dashboards in the world, but if they’re hard to find or get into, you have wasted time, money and energy. Make sure the fruits of your labor are easily accessible for consumers. Don’t bury the data in a labyrinth of confusing links. Make it prominent on your homepage and as easy to find as possible.

Also, seek feedback on every aspect of how you’re presenting the data. Is it as easy to access as you had hoped? Is crucial information missing? What could improve the experience for users?

Making great dashboards is rarely a one-and-done process, and feedback is essential. If you encourage — and use — feedback from the people who use your data, you’ll multiply your chances of creating open, transparent and successful data portals. ■

Christine Carmichael is marketing segment manager for the Public Sector Group at Tableau Software.

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Progress, but not yet parity

Women remain sorely underrepresented in the federal IT workforce, much as they are in Silicon Valley and elsewhere. But at least the pay gap picture looks better.

Women are:



51% of the U.S. population

47% of the total U.S. workforce

43% of the federal government workforce

28% of government IT workers

On the federal CIO council, **32%** of the members are women.

Women's share of STEM degrees is steadily increasing:

26.2%

Baby Boomers (1945-64)

34.2%

Generation X (1965-79)

40.4%

Millennials (1980-94)

But for women who leave the STEM workforce:

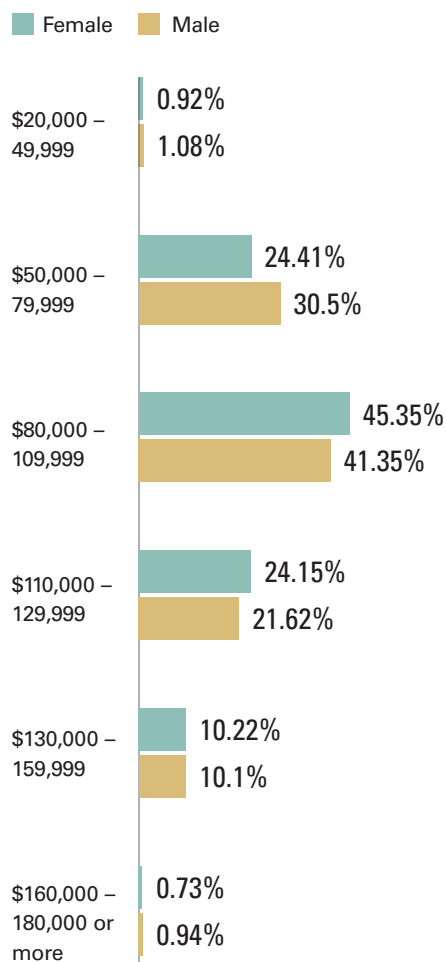
31%

shift to non-STEM jobs

20%

take time away from the workforce entirely

What federal IT workers get paid, by gender:



Nationally, women with “computer and math” jobs earn **88 cents on the dollar** compared to their male peers.

Sources: Office of Personnel Management, Department of Labor, U.S. Census, Department of Commerce, National Center for Women & Information Technology, CIO.gov.

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