

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**SCHEDULE 14A**

**PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

- Filed by the Registrant                       Filed by a Party other than the Registrant

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- Preliminary Proxy Statement  
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# ARCHITECT THE FUTURE

IMPACT REPORT 2019

Selvi Clark  
Program manager



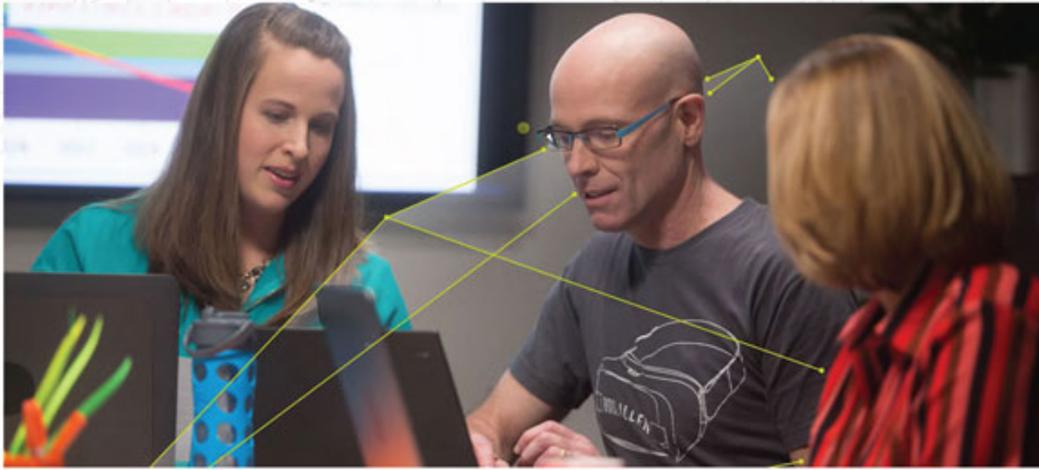


# DISCLAIMER

## *Forward Looking Safe Harbor Statement*

Certain statements contained in this document include “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Examples of forward-looking statements include information concerning Booz Allen’s preliminary financial results, financial outlook and guidance, including forecasted revenue, Diluted EPS, Adjusted Diluted EPS, free cash flow, future quarterly dividends, and future improvements in operating margins, as well as any other statement that does not directly relate to any historical or current fact. In some cases, you can identify forward-looking statements by terminology such as “may,” “will,” “could,” “should,” “forecasts,” “expects,” “intends,” “plans,” “anticipates,” “projects,” “outlook,” “believes,” “estimates,” “predicts,” “potential,” “continue,” “preliminary,” or the negative of these terms or other comparable terminology. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we can give you no assurance these expectations will prove to have been correct.

These forward-looking statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. A number of important factors could cause actual results to differ materially from those contained in or implied by these forward-looking statements, including those factors discussed in our filings with the Securities and Exchange Commission (SEC), including our wAnnual Report on Form 10-K for the fiscal year ended March 31, 2019, which can be found at the SEC’s website at [www.sec.gov](http://www.sec.gov). All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the foregoing cautionary statements. All such statements speak only as of the date made and, except as required by law, we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.



## DEAR COLLEAGUES AND FELLOW STOCKHOLDERS,

Last year, we announced for the first time a 3-year outlook for continued growth and strong financial performance. Our confidence about the future was grounded in an understanding that the government's technology needs would change and increase rapidly. We anticipated this shift toward technology nearly a decade ago and undertook the latest reinvention of our 105-year-old institution, becoming more innovative, mission centric, and technically skilled.

In essence, we designed the future of our firm. Today, we are in the pay-off period. Technology adoption is accelerating exponentially across government, fueling growth for a transformed Booz Allen. (See financial and other FY19 highlights, pp. iv–v)

### THE RETURN OF GREAT POWER COMPETITION

Many things are spurring technology adoption in our core federal market, where 96 percent of our revenue is generated: The transformation of our economy and society by the digital revolution. The reality that government lags behind the private sector in gaining value from it. The availability of resources due to stable and expanded budgets during the past two government fiscal years. The constant need for modernization and efficiencies. The most important driver, though, is a new strategic reality—namely, the reemergence of great power competition between the United States and its nation-state rivals.

As described in the 2018 National Defense Strategy, our nation's military leaders are focused on building a “lethal, resilient, and rapidly adapting” fighting force in a world where every domain—air, land, sea, cyber, and space—is contested. What that force looks like and the capabilities it takes to battle will be fundamentally different in the 21st century, because new technologies and their democratization are changing the very nature of global competition and national security.

Across defense and intelligence agencies, senior leaders are focused on the need for innovation, speed, and agility, just as private companies are, as we've seen in our growing commercial business. They are looking for ways to apply cutting-edge technologies to operational missions, and, importantly, demanding that the timeline from lab to field be dramatically shortened. Cyber resilience and defense, machine learning, artificial intelligence, autonomy, virtual and augmented reality, data integration and visualization—these, among others, are the technologies that our leaders say are central to advancing national security missions today. And increasingly, they are talking about both the convergence and integration of these technologies as the best ways to maximize value and maintain our nation's edge in an era of great power competition.

### **RISE OF THE DIGITAL CITIZEN**

In civil agencies, the urgency to apply new technologies is similarly compelling. Leaders are looking to modernize their systems, protect them, and gain efficiencies. They want to harness insight from massive amounts of data that could improve fraud detection, planning, infrastructure, environmental stewardship, public health, and more. Without a doubt, the digital revolution has transformed our economy and society, elevating what people expect in terms of service, privacy protection, and mission effectiveness from their government.

Because technology is easier to access and more interconnected than ever before, it presents both tremendous opportunities to improve government effectiveness and significant risks to critical systems and infrastructure. The attack surface is expanding, and civil agencies have growing responsibility for our nation's security and resilience. Today's challenges cannot be met with people alone. They will require combinations of brilliant people and smart technologies.

### **READY FOR THE FUTURE**

This is the world, full of opportunity and challenge, that the people of Booz Allen are eager and equipped to change for the better. We are investing in the technologies of today and of the future, constantly searching for solutions and applying the best of our ideas to serve clients and society as a whole. This approach—supported by our values, our collaborative culture, and a unique operating model that allows us to go to market as one—has created sustainable, quality growth for our firm, abundant opportunity for our people, and significant value for clients and investors.

We are proud of our outstanding performance in fiscal year 2019. It reflects our success in applying technology to advance missions and transform organizations. All credit is due to the exceptional skill of our diverse talent and management team. Because of them, we can rightly claim the mantle of industry leader. We are grateful for the continued support of our shareholders, and we look toward the future with confidence that we can achieve more great things together.

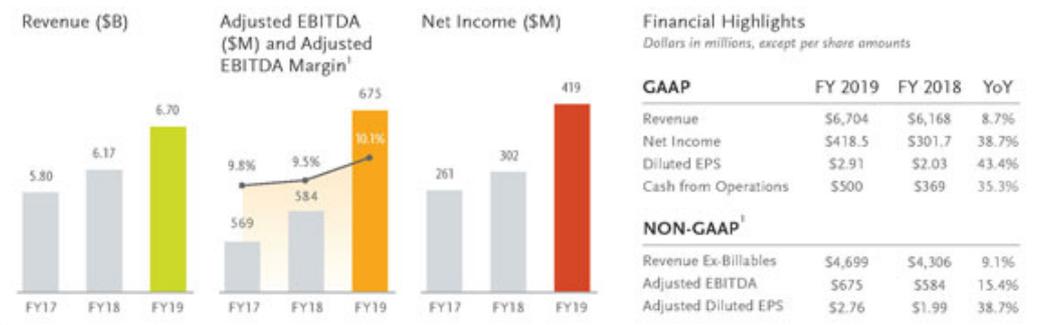
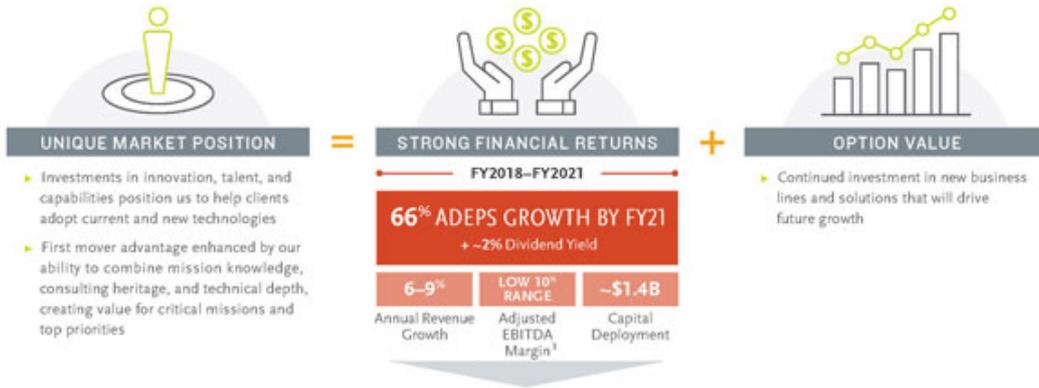


**RALPH W. SHRADER, PH.D.**  
*Chairman of the Board*



**HORACIO ROZANSKI**  
*President and Chief Executive Officer*

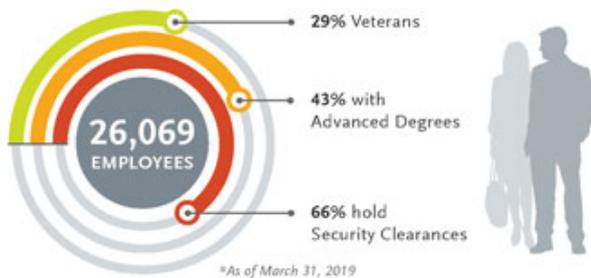
• FINANCIAL PERFORMANCE



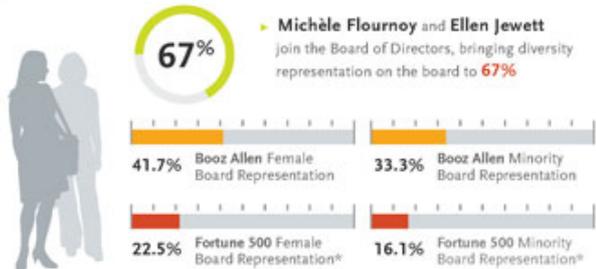
Note: Total shareholder return assumes dividends are reinvested.

<sup>1</sup> These measures are non-GAAP financial measures. For a reconciliation of these measures to GAAP, please see the section titled "Non-GAAP Measures" on page 66.

• DIVERSE LEADERS AND TALENT



- ▶ **Forbes:** Best Employers for Diversity, Best Employers for Women, Best Employers for New Graduates
- ▶ **4th straight year: 100% score** on Disability Quality Index
- ▶ **9th straight year: 100% score** on Human Rights Campaign Corporate Equality Index
- ▶ Named by Working Mother Magazine as one of the **100 best companies for 20 consecutive years**
- ▶ **Elevated 250+ women in more than 9+ years** for external award recognition via Women of Color in STEM, National Association of Female Executives (NAFE) and Society of Women Engineers (SWE)
- ▶ **USBE:** Executive Vice President Tony Mitchell named Black Engineer of the Year



*\*Source: 2018 Missing Pieces Report, Alliance for Board Diversity*

*"I've had a multitude of advocates at Booz Allen who have expected nothing but the best from me, but more importantly, gave me the tools and support to be my best self."*



▶ **TONY MITCHELL,**  
Executive Vice President,  
Black Engineer of the Year

• COMMUNITY COMMITMENT



Booz Allen | Foundation

- We supported Booz Allen Foundation in its mission areas:
- ▶ Military veterans & families
  - ▶ Youth & education
  - ▶ Global health
  - ▶ Disaster assistance

• MILITARY AND VETERANS INITIATIVES



- ▶ Partner to: U.S. Chamber of Commerce Hiring Our Heroes, Elizabeth Dole Foundation, and USO of Metropolitan Washington-Baltimore
- ▶ **Military Times:** Best Employers for Veterans (#8)

• INNOVATION AND TECHNOLOGY



- ▶ Strategic Partner to **FIRST®** a global youth-serving nonprofit
- ▶ Presented with **Kaggle**, the 4th **Data Science Bowl®**
- ▶ Partner to **SEED SPOT**, social impact incubator



# IMPACT REPORT 2019

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# WELCOME TO THE FUTURE

*History is in the making right now.*

Operating at the center of our clients' missions every day, we're dramatically increasing our strategic and technical work to solve the world's most pressing challenges.

We're creating a differentiated position in federal and global commercial markets by combining consulting, technology, and mission expertise. Our employees and partners are piloting new capabilities and building operating models that scale toward the future.

We answer the call of our clients and our people with steady and strategic investment in innovation for a better today—and tomorrow.

## CREATING CHANGE

When we launched our Vision 2020 growth initiative in 2013, we envisioned becoming the most effective technology integrator to the Federal Government and began building a solutions-based business. Six years later, our aspirations are our reality. We are creating future option value over and above our goals by building new lines of business and business models that will continue to transform our firm and position us for greater demand. We anticipate

client needs critical to their missions and work to meet them with ingenuity and imagination.

We are pushing further to cultivate our technical capabilities to address the challenges of breaking into untapped areas across markets, anticipating new client needs, and attracting talent. By uniting our talent and experience with strategic partners including Microsoft, Amazon Web Services, and NVIDIA, we are expanding the boundaries of what is possible in directed energy, artificial intelligence, cybersecurity, and agile transformation.



#### DEVELOPING NEW PRODUCTS AND BUSINESS MODELS

Focusing on opportunities and partnerships for government-to-citizen, disruptive technology projects will help advance business models for the future.

- ▶ **District Defend®**, launched in September 2018, is a mobile, location-based security solution to automatically enforce organizational policies and safeguard proprietary and sensitive information. Our new product empowers clients and their employees with the information they need, where and when they need it, without sacrificing security.
- ▶ **Recreation.gov**, released in October 2018, has an improved user design that makes it easy for consumers to plan trips and vacations to national destinations and historic landmarks with a streamlined digital experience. By improving personalization and mobility, Recreation.gov is becoming the model for how the Federal Government incorporates a consumer-friendly design with agile development, cognitive/cloud technologies, and secure DevOps to transform user experiences.

#### INTEGRATING TECHNOLOGY INTO CORE MISSIONS

- ▶ **Microsoft**: Working across government and commercial accounts, we are transforming our clients' mission-critical platforms by using Microsoft technologies like Surface devices. Together we are focused on integrated solutions that combine the reliability and value of commercial off-the-shelf products with the benefits of custom applications and systems implementations.
- ▶ **Amazon Web Services**: We are a Premier Consulting Partner and Well Architected Partner for Amazon Web Services (AWS) with more than 200 professional-level certified architects, developers, and administrators providing AWS cloud solutions and customer service across federal and commercial organizations.
- ▶ **NVIDIA**: Uniting our cybersecurity and artificial intelligence expertise with NVIDIA's computing hardware, and machine learning models, we're bringing deep learning to the Federal Government. We're helping enterprises integrate their current systems seamlessly with existing cyber defense and monitoring products and tools to keep up with advancing adversaries.

#### SHAPING INNOVATION

Facing increasing political, geopolitical, and economic volatility, we are setting clear requirements to drive performance and investing in transformative opportunities for lasting returns and impact.

We are fundamentally strengthening how our clients deliver on mission and get their jobs done, from using artificial intelligence to virtually train soldiers for the battlefield, to transforming how citizens access federal benefits and services, to hardening critical public and private sector infrastructure from cyber attacks.

To create new solutions that improve the quality of life for our world, our families, and ourselves, here's what we need to do—and how we'll make it happen:

- ▶ **Transform citizen services**: Modernize federal legacy information technology systems to keep up with the digital age—granting citizens efficient, secure, and sustained access to government services while keeping the mission top of mind.

- ▶ **Protect our interconnected world**: Apply intelligence-grade tradecraft, artificial intelligence, and technical breakthroughs to stay ahead of sophisticated adversaries seeking to exploit the expanding threat landscape.
- ▶ **Secure our resilient future**: Expedite public assistance and recovery for communities that have experienced natural or manmade disasters through predictive modeling, cyber monitoring, and proactive change management.
- ▶ **Reimagine infrastructure**: Streamline the Government through organizational remodeling and regulatory reform, infusing leading technologies like 3-D visualization and deep learning to increase the efficiency and effectiveness of infrastructure.
- ▶ **Unlock the power of data in health**: Modernize and strengthen health infrastructure, reform the healthcare experience, and harness the power of big data and new technologies in life science research.
- ▶ **Ready warriors for the battlefield**: Use data science, machine intelligence, and progressive ideas to help warfighters train and plan in a safe environment, ensuring cognitive, social, and physical wellness.

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*“We expect more from government, both in online experiences and also in understanding what our tax dollars provide. Booz Allen is uniquely positioned to support our clients in their journey to become more data driven and digital. I’m excited to be part of that mission.”*

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— CAROLYN MCGOURTY —  
TECHNOLOGY SCOUTING LEAD, SAN FRANCISCO

- ▶ **Build a more effective workforce:** Empower and engage a diverse talent pool and foster an inclusive environment where employees can share diverse perspectives to tackle the big challenges.
- ▶ **Drive technology toward social impact:** Connect motivated employees, local communities, government, and commercial enterprises with visionary social innovation and wellness initiatives, in commitment to ethical business operations and equitable opportunities for future innovators.

#### **FORGING CONNECTIONS**

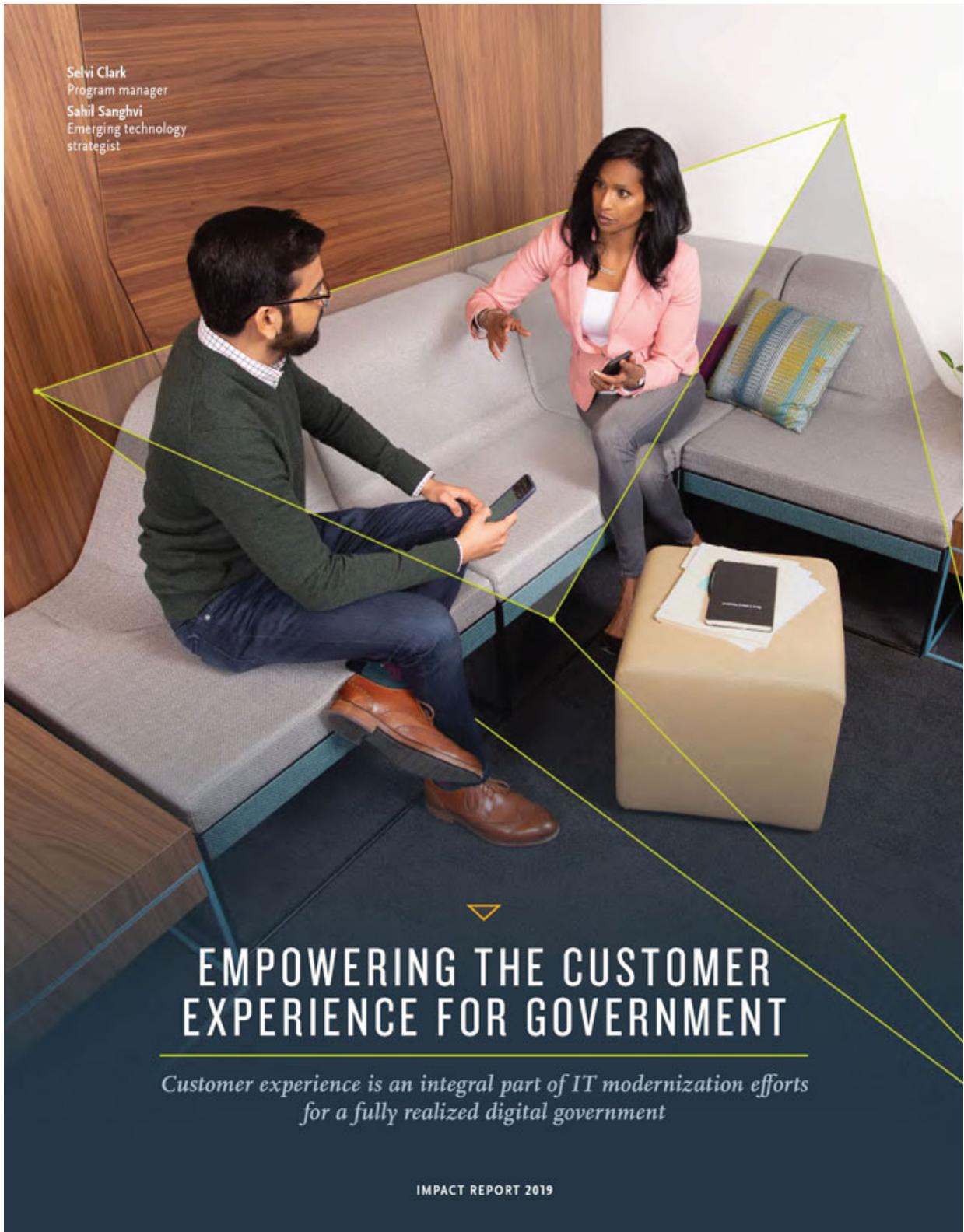
We must keep creating at the core of our clients' missions. To drive success, we integrate our consulting heritage, technical depth, and ability to bring people together to solve the most complex problems confronting our society.

Collaborating with partners worldwide, we'll lead the way forward—bridging passion and perspective, data and decisions, vision and mission.

*We are just getting started.*



Selvi Clark  
Program manager  
Sahil Sanghvi  
Emerging technology  
strategist



## EMPOWERING THE CUSTOMER EXPERIENCE FOR GOVERNMENT

*Customer experience is an integral part of IT modernization efforts for a fully realized digital government*

IMPACT REPORT 2019

# EMPOWERING THE CUSTOMER EXPERIENCE FOR GOVERNMENT

*Customer experience is an integral part of IT modernization efforts for a fully realized digital government*

The mantra of “customer satisfaction guaranteed” sometimes gets lost as the Federal Government delivers services to our nation’s citizens, taxpayers, veterans, seniors, and others. Creating a government for the future means raising the bar on that customer experience. We believe that federal agencies must elevate the quality of their services and be empowered through state-of-the-art information technology. Federal agencies must also explore how to use innovative business models and revenue streams to deliver high-impact, customer-centric public services.

Placing an Amazon order is easy. Getting information—digital or otherwise—from government agencies should be just as simple. Yet customers are often frustrated or confused with inadequate and ineffective federal services. Who hasn’t given up trying to find answers on a hard-to-navigate website or mobile app, or waited on hold with customer support before getting frustrated and hanging up?

## AT THE HEART OF THE MISSION: PEOPLE

These are symptoms of a deeper problem—one that strikes at the heart of federal agencies as they deliver on their critical missions. Facing an inability to keep up with the digital age, there’s a growing realization among federal leaders that the customer experience must be an integral part of their IT modernization journey.

With digital expectations at an all-time high for government, we wanted to better understand how people experience government services compared with commercial platforms. A February 2018 study we conducted with Ipsos, a leading global market and opinion research firm, found that three-quarters of people who recently accessed federal information obtained it online at a federal government website. This marks a change from the late 1990s and early 2000s, when customers overwhelmed federal call centers. With this shift to online engagement, federal agencies need to view their websites as digital front doors.

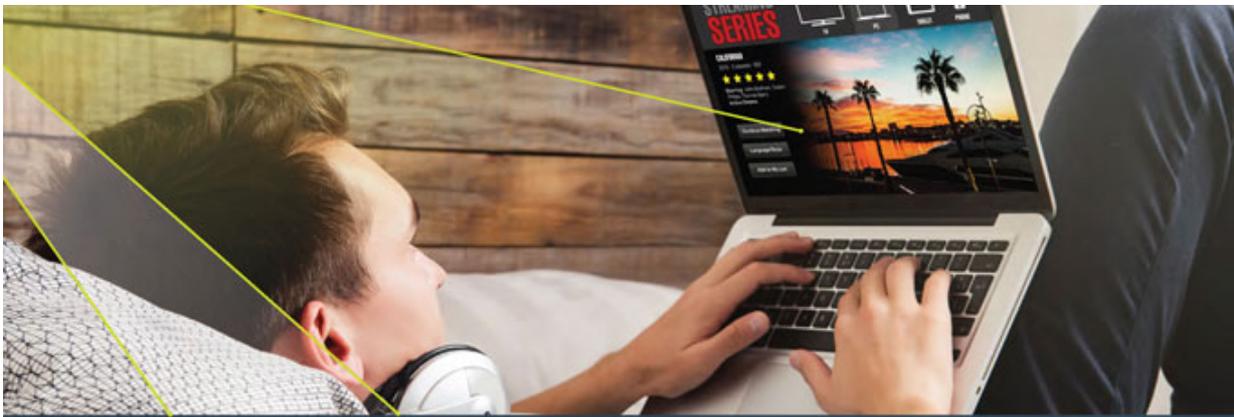
### PUT PEOPLE FIRST: CUSTOMER EXPERIENCE IN DIGITAL GOVERNMENT

What actions could the Federal Government take to improve online customer experiences? To find out, we launched a public survey with research partner Ipsos to 1,000 participants in February 2018.

#### TOP THREE RESPONSES

- ▶ Make it easier to find information (56%)
- ▶ Make support available if needed (46%)
- ▶ Make it easier to complete all needs online (44%)





Commercial companies like Amazon and Netflix raised expectations by setting new standards for the customer experience. Raising the bar on the citizen experience—the customer experience with government—means understanding the moments that matter. People have a right to efficient, secure, and sustained access to government services and expertise. Central to that right is a digital government that embraces the customer experience—and empowers it through federal IT modernization efforts.

*Raising the bar on the citizen experience—the customer experience with government—means understanding the moments that matter.*

#### EMBRACING THE CUSTOMER EXPERIENCE

We stand at an intersection of transformation, technology, and customer experience that will fundamentally change how federal agencies engage with people. To effectively build that future, government agencies must bring the same intimacy that consumers experience in their commercial interactions to their interactions with government services.

To get there requires thinking holistically about how government delivers services across all walks of life. The future of digital government—and more broadly, government as a whole—means understanding people's

#### U.S. DEPARTMENT OF VETERANS AFFAIRS (VA): FULFILLING VA'S PROMISE WITH A NEW STANDARD IN CUSTOMER MEASUREMENT

The Veterans Experience Office was created to enable the VA to be the leading customer experience organization in government so service members, veterans, their families, caregivers, and survivors choose VA. As part of VA's multiyear transformation, we pioneered an innovative new customer experience measurement capability that begins with human-centered design research to understand the moments that matter to veterans trying to access and use VA services. We then developed statistical sampling to survey their experience based on moments that matter and use artificial intelligence techniques to analyze and report veteran sentiment for each service and moments that matter. The result is a whole new capability for VA that is rigorous, disciplined, and places the veteran's voice at every step of program and systems improvement.

- ▶ Beginning with empathy, our team conducted face-to-face research with veterans to identify what matters to them and developed online surveys to gain insights into their experiences. Data science analyses transform veterans' online comments into meaningful performance feedback, while natural language algorithms flag at-risk veterans for emergency and support services. Since 2017, the Veterans Experience Office's program has saved more than 800 veterans at risk for suicide and homelessness.
- ▶ The Office of Management and Budget recognized this program and listed it within the President's Management Agenda as a best practice for customer experience measurement in government. There is also a mandate across 24 agencies in the Federal Government to use the customer experience measurement capability to improve the customer experience.



The IRS website is one of more than 25 digital products we developed and improved.

preferences and needs as they engage with agencies. Agencies can blend human-centered design, statistics, data science, and thought leadership to create a new capability to measure the customer experience.

Conducting face-to-face generative research with people and using their insights gets to the heart of the issue: What are the moments that matter in government interactions, and what can agencies do to improve the experience? Driving innovation enables agencies to test new approaches to customer experience measurement that can be tailored to diverse programs and services.

### STANDING UP A CUSTOMER EXPERIENCE OFFICE

The establishment of a customer experience office on behalf of veterans has been integral to ensuring that the VA's mission focuses closely on the needs of individuals engaging

with the agency. Increasing investment in the customer experience elevates its importance and builds a culture of feedback and improvement so agencies begin to focus on customer interaction.

### EMPOWERED BY IT MODERNIZATION

The focus on customer experience is an essential component of our efforts to modernize IT. As federal organizations embrace major digital transformation, aging legacy systems—some older than the employees tasked with their upkeep—require updated technologies, architecture, and security. From an IT perspective, enhancing the customer experience is not only about making the current set of systems “newer”—it's also about modernization efforts encompassing the entire technology landscape, including infrastructure, platforms, data, services, applications, and interfaces.

*Enhancing the customer experience is also about IT modernization efforts encompassing the entire technology landscape.*

We are collaborating with the Federal Government to help agencies improve and amplify the customer experience as part of its IT modernization strategy. Based on an understanding of the customer's journey and how they want to interact, what do agencies need to achieve that vision? What technology is scalable, will yield the highest return on investment, and fits into an agency's overarching strategy? Digital services representing low-risk, high-yield opportunities include:

- ▶ **Streamlined user experience:** Make it easier to find information online. Check out how we helped the Internal Revenue Service redesign its website with this in mind.
- ▶ **Robust shared services:** Implement a single customer sign-on for government with authentication, authorization, management, and security of personally identifiable information.

- ▶ **Content personalization:** Use machine learning and automation to tag and surface “look-alike” content based on what people are browsing. See how we helped make Benefits.gov easier to use with auto-suggest features, increasing benefits detail page-views by 62 percent monthly, while decreasing site bounce rate by 15 percent.
- ▶ **Chatbots, intelligent assistants, and voice activation:** Reach more customers with these disruptive technologies. Imagine saying, “Hey Siri” or “Hey Google” to check tax refund status.

### EXPLORING ALTERNATIVE BUSINESS MODELS AND REVENUE STREAMS

Advanced technologies using digital transformation can raise the bar on the customer experience. But to realize a fully digital government requires looking beyond traditional procurement methods to new business models and innovative revenue streams. For example, a public-private partnership requires industry to provide substantial upfront investment while offering the potential for substantially higher, long-term profit margins.

By enabling private-sector companies to have more “skin in the game,” forward-thinking agencies can gain valuable technological and marketing industry expertise on large-scale, government-to-consumer technology transformation projects. Moreover, with flexible revenue streams—such as transaction-based pricing—the Federal Government no longer assumes fixed costs prior to product delivery. A transaction-based model provides incentives for industry partners, successfully meeting customer needs through high-quality, continuously improving federal services and solutions.

### BUILDING A FUTURE FOCUSED ON CUSTOMERS

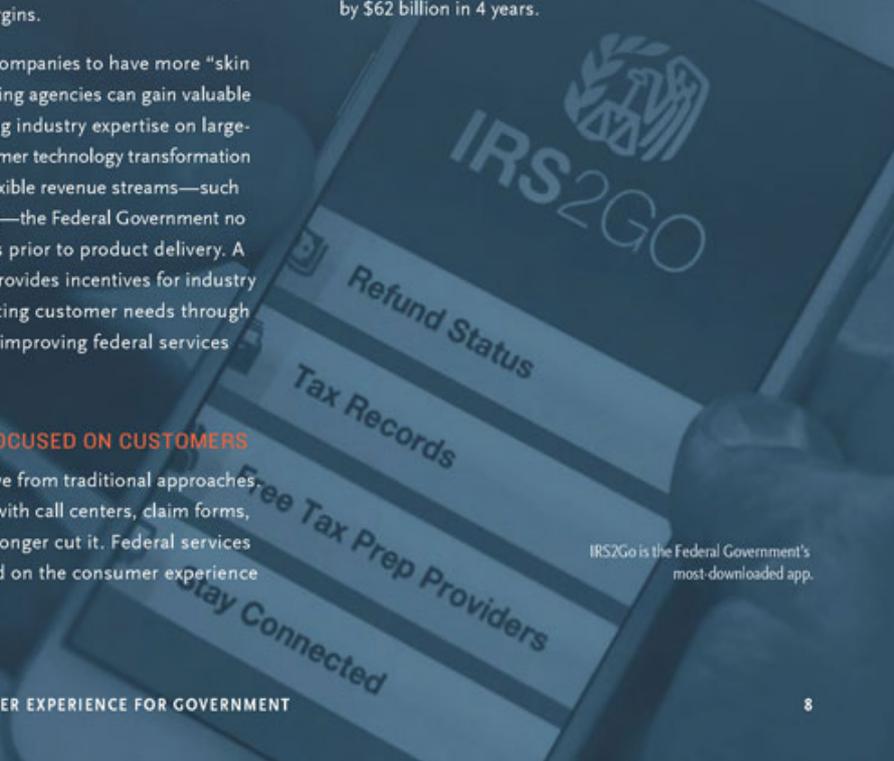
Federal agencies must move from traditional approaches. Internal-facing constructs with call centers, claim forms, and legacy IT systems no longer cut it. Federal services powered by design focused on the consumer experience

and data-driven processes where customers are the center, built on modernized IT infrastructure, and developed through alternative business models are the government’s future. Some prescient agencies are already paving the way.

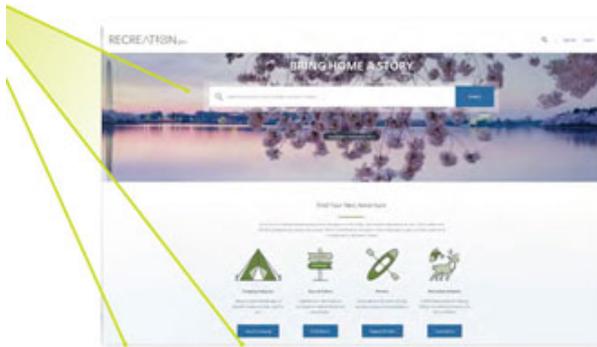
### IRS: GIVING TAXPAYERS A CUSTOMER EXPERIENCE

The IRS embarked on a strategic effort to change its image—with a vision to redefine the taxpayer experience and deliver the high-quality, easy-to-use, low-cost online services customers crave. We are the IRS’ essential partner.

- ▶ Our team of experts developed and improved more than 25 digital products, including IRS.gov and IRS2Go—the Government’s most-downloaded app—totaling 11.5 million downloads.
- ▶ With a digital-first strategy, we helped the IRS create the first-ever online account, allowing people to interact with their taxes in simple, secure, and more personal ways. This reduces customer service costs the IRS incurs from nearly \$60 to less than \$0.60 apiece while boosting annual revenue from electronic tax payments by \$62 billion in 4 years.



IRS2Go is the Federal Government’s most-downloaded app.



Partnering with seven federal agencies, we transformed Recreation.gov

### RECREATION.GOV: ELEVATING THE .GOV EXPERIENCE TO MEET CONSUMER EXPECTATIONS

Partnering with seven federal agencies, we transformed Recreation.gov to help users find and reserve experiences at nearly 4,000 federal parks, forests, lakes, and cultural destinations across the U.S.

- ▶ The reinvented Recreation.gov offers visitors one-stop trip information, planning, and reservations coast to coast. It was built from the ground up in 15 months using modern e-commerce technologies.
- ▶ Recreation.gov is a true public-private partnership. It's an example of how our business is evolving to help our clients elevate the .gov experience to meet .com expectations. Instead of a traditional cost structure, the unique contractual agreement is a transaction-based fee model that lets the Government and Booz Allen share in risk, reward, results, and impact.
- ▶ Our modern system allows field managers to make changes to their content, communications, and business rules instantly versus in days or weeks.



Harness technology modernization in Benefits.gov

### DEPARTMENT OF LABOR: ONE-STOP SHOP FOR BENEFITS

Booz Allen helped the Department of Labor reimagine the customer experience and harness technology modernization in Benefits.gov, a digital initiative supported by 17 partner federal agencies.

- ▶ Developed and launched by Booz Allen in only 96 business days, the website offers easy access to information on more than 1,200 benefits—health, disaster relief, housing, retirement benefits, and more—all in one place.
- ▶ The solution features a flexible, component-based architecture, providing a suite of tools and services ensuring long-term stability and reliability.



Selvi Clark  
Program manager

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*Helping federal agencies deliver streamlined experiences for customers online requires a team of dedicated professionals. Meet one of Booz Allen's architects building the future of our digital government.*

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#### **MEET SELVI**

An analytical orchestra conductor: That's how Selvi Clark describes her role as Booz Allen's program manager at the VA's Veterans Experience Office. She sets the tempo, ensuring that more than 40 people across multiple teams get the support they need to ideate and innovate, as well as amplify the voices of our nation's veterans and improve their VA experience. For more than 16 years, Selvi's helped transform the customer experience for Booz Allen's commercial and federal clients. Now she's also bringing her expertise in-house—to better understand our employees' journeys as they create products for our Solutions business.

#### **Transforming the veteran's experience is a huge challenge.**

##### **Where did you begin?**

We started with empathy. But it was Booz Allen's collective ingenuity that took us beyond that. Passionate folks from across the firm—human-centered designers, statisticians, data scientists, you name it—came together. The firm provided the runway through its capabilities and investments for this powerful customer experience measurement capability to take off.

##### **How do you feel personally connected to this work?**

Growing up, I didn't really understand what it meant to serve your country. But early in my professional career, I deployed for 6 months, living on an aircraft carrier, the USS Abraham Lincoln. As the ship pulled away from port, it hit me like a ton of bricks, seeing all those sailors standing at attention, leaving their families behind. I learned what it means to be a patriot and to serve a cause that's greater than yourself. My husband Casey is a Navy veteran. When I think about all the future Caseys in the world, I know we need to do better by them.

##### **I'm changing the world by...**

Helping our people find their best path forward so they can pioneer innovation.



# SUMMARY

TRANSFORMATION  
THROUGH  
MODERNIZATION

By integrating customer experience with government services within the overall IT modernization journey while innovating business models, the Federal Government will achieve true transformation. It's not just about improving individual services: It's a consumer-focused approach to serving individuals and their needs across all touchpoints. *It begins by putting people first.* As agencies modernize IT operations and systems, they must reimagine their missions through the lens of those they serve. The customer is the mission.

**Related content in this Impact Report:**

Bioinformatics Will Revolutionize Healthcare, Building a Workforce for the Future

**About Booz Allen**

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Booz Allen Hamilton has been at the forefront of strategy, technology, and engineering for more than 100 years. Booz Allen partners with private and public sector clients to solve their most difficult challenges.

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Callie Churchwell  
Cyber defense technologist



# TOMORROW'S CYBERSECURITY TODAY

*Stay ahead of the expanding threat landscape*

IMPACT REPORT 2019

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Cybersecurity is one of the geopolitical issues of our times. From the United States' trade war with China to concerns over global 5G deployment, cyber dominates the headlines. As the world grows increasingly connected, cyber attacks can result not only in data theft but also disruption of critical infrastructure across industry and government. Our work in both spheres uniquely positions us as leading experts in the field. We provide intelligence-grade tradecraft for the Federal Government through automated, intelligent cyber defense solutions such as Continuous Diagnostics and Mitigation. For commercial enterprises, we provide Managed Threat Services augmented by advanced threat hunting and end-to-end scalable services including cloud and mobile security.

Cyber attacks, once considered a costly nuisance, now pose a threat to public safety and national security. Adversaries target our nation, influence our political landscape, and put our infrastructure and people at risk. The expansion of digital technology into the physical world—autonomous vehicles, advanced manufacturing, smart cities, robotics, industrial control systems, and connected medical devices—increases the potential impact and severity of cyber attacks.

Today, cyber threats extend far beyond data loss to disrupt, deny, and degrade critical business and mission operations. For years, U.S. Government organizations across civil, defense, and intelligence agencies have been the target of nation-state actors seeking strategic advantage and hackers trying to make a statement.



In May 2019, for example, Baltimore city government computers were hit with ransomware for the second time in just over a year. A single government breach has affected 191 million individuals while one commercial breach has impacted as many as 500 million people.

Commercial entities are routinely under threat from cybercriminals, hacktivists, and nation-state actors who seek to steal trade secrets, profit from ransomware, and commit other destructive acts. The TrendMicro Cyber Threat Index, a survey of more than 1,000 U.S. information technology security professionals, found 80 percent of IT business leaders anticipate a critical breach or successful cyber attack over the coming year. Industry can be the target or be simply caught in the crossfire. The impact of NotPetya, a nation state-originated malware that spread from its intended target of the Ukrainian government to affect global companies, is estimated to have resulted in a revenue loss of more than \$1.2 billion.

As our world becomes more interconnected and threats increase in sophistication, it is vital for organizations—both industry and government—to establish a dynamic cyber defense program that proactively anticipates and responds to evolving cyber threats. At Booz Allen, we look at cyber through analytical, technical, and mission-focused lenses to anticipate game changers and prepare for the future.



TOMORROW'S CYBERSECURITY TODAY

As one of the world's largest cybersecurity providers, we operate around the clock to protect some of the largest global companies and nearly every U.S. federal, defense, and intelligence agency. Across the missions we support, we find that collective ingenuity and continuous innovation are essential. Here are some ways we're helping our clients navigate the threat landscape.

#### **DETECT AND RESPOND: STRATEGY AND RISK MANAGEMENT**

We provide comprehensive cyber strategy services that define, measure, and reduce cyber risk to improve organizational readiness. For example, we conduct cyber wargaming to identify strengths and vulnerabilities through force-on-force exercises. We also offer automated compliance and risk management approaches that streamline solutions for IT systems at scale.

We were named a cybersecurity leader by ALM Intelligence (ALM Vanguard, "Cybersecurity Consulting," October 2018). We offer more breadth and depth in cybersecurity than any other federal or commercial partner.

#### **AUTOMATE AND DEFEND: MAKE THE MOST OF LIMITED RESOURCES**

Using cyber professionals to monitor networks end-to-end is costly and increases risk as data proliferates and attackers seek new entry points. With more threats that are harder to detect, companies need adaptive, automated strategies to stay ahead of aggressive bad actors.

Through security automation and orchestration, we help organizations maintain human oversight of incident response with fully scalable, open, integrated solutions that free human talent to focus on critical mission and operational requirements. We employ artificial intelligence and machine learning to streamline compliance and enhance our clients' ability to detect and respond to constantly evolving threats.

**BOOZ ALLEN IS RANKED #1** in the North American Professional Security Services Market, and **#2** in the Combined Managed and Professional Security Services Market, according to Frost and Sullivan

*Frost & Sullivan, "Analysis of the North American Managed and Professional Security Services Market, Forecast to 2021," January 2018.*

### PREPARE AND PREVENT: MANAGED THREAT SERVICES

Research firm Frost & Sullivan notes that the top reason companies worldwide seek managed security services is the need to extend coverage against sophisticated attacks ("Analysis of the North America Managed and Professional Security Services Market, Forecast to 2021"). Our Managed Threat Services, or MTS solution, combines threat intelligence with managed detection and response to actively defend enterprises. We provide advanced threat monitoring, detection, and response services to strengthen existing security teams, increase visibility across the expanding attack surface, amplify existing capabilities, and reduce the time necessary to detect security incidents.

Managed Threat Services includes managed detection and response as well as cyber threat intelligence. "Much as you wouldn't get on a trapeze without a net, detection and response enables you to survive when other controls fail," as Forrester research puts it ("The Forrester Tech Tide™: Zero Trust Threat Detection and Response," January 2019). Aggressive threats can be stopped, but only integrated, end-to-end capabilities can get the job done.

#### OUR CYBER SERVICES SUPPORT:

- ▶ 23 of the Fortune 100 companies
- ▶ Global 2000 companies in multiple industries
- ▶ Nearly all U.S. federal, defense, and intelligence agencies
- ▶ Department of Homeland Security and law enforcement agencies
- ▶ All the Department of Defense's Cyber Commands

## CYBER IN ACTION

Here are some examples of how we are protecting clients through services that revolve around three key strategies: detect and respond, automate and defend, and prepare and prevent.

- ▶ **Lowering risk for a Fortune 100 client:** Managing a cyber attack surface including more than 350 operational technology assets, more than 15 cloud environments, more than 45,000 retail locations, and more than 200,000 mobile devices worldwide was a challenge for one of our Fortune 100 clients. They needed cyber defense at scale with the ability to detect and respond to threats in real time. Our diverse team of cyber experts evaluated activities and put in place new processes and procedures. After identifying opportunities to streamline, we transformed a 24/7 operation center—decreasing incident detection time from 50 hours to just 3 hours, including weekends and holidays, and reducing false positives by about 20 percent.
- ▶ **Defending the Government with Continuous Diagnostics and Mitigation:** In 2014, the Department of Homeland Security selected Booz Allen to support Continuous Diagnostics and Mitigation, the first government-wide initiative to fortify the cybersecurity posture of federal agencies and implement a consistent approach to reduce cyber risks. Using an agile process, we rapidly designed and introduced end-to-end advanced cyber services for 13 agencies. Today through the subsequent CDM DEFEND contract, we protect 80 percent of federal .gov networks with more than 4 million devices.
- ▶ **Increasing effectiveness for a Fortune 50 company:** Our client had a skilled cyber team, but processing millions of daily alerts and effectively determining risk was a daunting task, so they asked us for help. Within days, our MTS team implemented a solution that decreased the time it took to sample network traffic for suspicious behavior from a 4-hour cycle to less than 30 minutes. It also increased the frequency of threat queries from every 6 hours to a continuous operations cycle. Today, Booz Allen helps protect nearly 200,000 devices across the globally dispersed company.

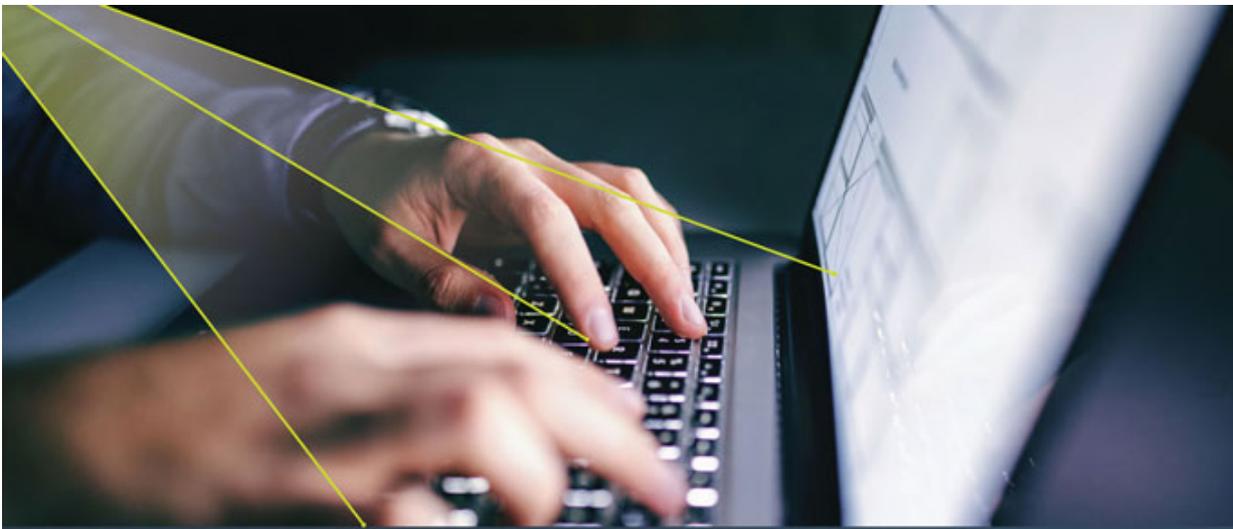
### OUR CONTINUOUS DIAGNOSTICS AND MITIGATION SERVICES FOR THE FEDERAL GOVERNMENT:

- ▶ Protect 80% of .gov networks
- ▶ Secure more than 4 million devices
- ▶ Safeguard 20,000+ geographically dispersed locations
- ▶ Offer clients customized options

### CYBER DEFENSE REQUIRES A PROACTIVE, BLENDED APPROACH. FOR EXAMPLE, OUR MTS SERVICES PROVIDE:

- ▶ 24/7/365 threat monitoring, detection, and response
- ▶ Analysts with the National Security Agency (NSA) Cyber Incident Response Assistance (CIRA) accreditation, operating in our U.S.-based cyber fusion centers
- ▶ Rapid, modular up-level of cyber capabilities seamlessly integrated into existing security operations
- ▶ Tailored threat intelligence capability provided as a service
- ▶ Flexible delivery formats, from full offsite delivery to hybrid arrangements
- ▶ Protections across cyber domains including IT, OT, mobility, and cyber fraud
- ▶ An integrated cyber fusion approach delivered in an as-a-service model





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*Our cybersecurity services extend to safeguarding infrastructure, protecting manufacturing operations, and supporting community resilience.*

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**ADDRESS THE INTERNET OF THINGS:  
SECURITY IN A CONNECTED WORLD**

In today's mobile world, people use new connected devices to increase efficiency, maximize revenue, or improve services. However, each of these connections is a potential door for attackers. Organizations must simultaneously defend all the potential entry points, while an attacker only needs to get through one. For example, connected devices have already been used to mine cryptocurrency and launch distributed denial of service attacks. In our 2019 Cyber Threat Trends Report, we forecast that bad actors will likely attempt to broaden espionage attempts by compromising connected devices.

The ability to manage security in the Internet of Things era is essential, especially for the U.S. Government. Classified environments limit mobile devices to a few users, typically with many of the features disabled. To add productivity to security, we partnered with Dell Technologies to develop District Defend—a solution that pairs the convenience of commercial mobile devices with the confidence of protection at the national security level.

District Defend runs on laptops and tablets, enabling a device to be secure and features to be accessible at various levels depending on its location. The solution gives organizations centrally administered control over mobile devices and their features, tracking devices throughout facilities in real time and providing customizable alerts set to business and policy triggers. Now serving the defense and intelligence communities, the solution is also relevant for organizations in healthcare, law enforcement, and research and development.

**INTEGRATION, INTELLIGENCE, AUTOMATION:  
THE ART AND SCIENCE OF THREAT HUNTING**

Knowing how nation-state adversaries think enables companies to anticipate where they will go next. We offer our clients an elite team of security researchers, penetration testers, reverse engineers, network analysts, and data scientists who deliver intelligence-grade tradecraft to identify and eliminate vulnerabilities. For clients who suspect they have been breached, but are unable to detect an attack, our threat hunters cut through the noise and find threat actors that hide below the alert threshold.

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*“We understand how adversaries act and move—and what frustrates them: what’s hard and easy. We are relentlessly proactive, so our clients can be, too.”*

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– JAY NOVAK –  
BOOZ ALLEN DARK LABS THREAT HUNTING TEAM LEAD

### THREAT HUNTERS

Using the hacker’s mindset to defend critical systems gives our experienced threat hunters an edge. Blending intuition with innovation is the strategy of Dark Labs, our elite cyber team. We provide integrated capabilities that

extend to national-level security measures, from helping intelligence agencies defend our nation’s most critical systems to writing detection logic for attacks that haven’t happened...yet.

Once our threat hunters proactively identify indicators for attack, we update our threat hunt library, which contains more than 600 behavioral analytic use cases. This continuously updated record increases efficiency and effectiveness, which is vital as skilled hackers decrease the attack barrier threshold by subverting the features on commercial devices. For example, we found invasion malware waiting to be activated on a commercial technology—a piece of adware employing advanced techniques previously used only by actors at the nation-state level.





Ashley Moriarty  
Senior threat hunter

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*Staying ahead of cyber threats and sophisticated adversaries is essential for our global well-being. Meet one of Booz Allen's experts protecting our interconnected world.*

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#### MEET ASHLEIGH

As a senior threat hunter, Ashleigh Moriarty is passionate about helping Dark Labs stay ahead of the adversary. She continually sharpens her skills to think like an attacker and strategize like a defender. Her goal: Help each client become a target that's too tough to tackle.

#### What is your typical day like?

No two days are the same, and that's one of the things I enjoy the most. Some days, I'm hunting through data—artificial intelligence and data science help us find anomalies faster. Other days, I help clients train their own threat hunting teams or expand our tech stack of more than 600 analytics showing potential adversaries behavior.

#### How are you making a difference?

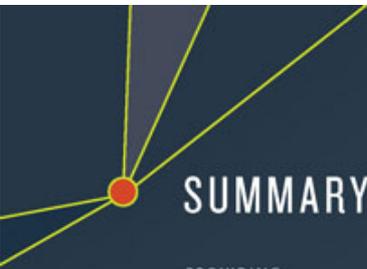
Adversaries are good at hiding in the noise. We constantly discover new threats, updating our clients' systems in real time; that makes the adversary work harder. If they find it's too difficult to enter a network or stay there undetected, they're more likely to go elsewhere.

#### How are you creating the future?

We're doing things no one else is. We're pushing the boundaries—not just providing a tool but helping clients find any malicious activity in their environment. Adversaries are always maturing; so are we.

#### As an architect of the future, what do you see happening next?

I'm excited that companies are finally understanding how critical cybersecurity is. We're expanding globally, and I see us continuing to change the playing field everywhere we go.



# SUMMARY

PROVIDING  
SOLUTIONS TO  
CYBER THREATS

The interconnected world raises the stakes for cybersecurity teams, as adversaries can now launch major attacks from low-cost commercial devices. We provide strategic solutions to identify threats, coupled with top cyber talent who merge human intuition with technical mastery to outmaneuver bad actors. Our end-to-end services help the world's leading organizations continually evolve their cybersecurity strategy to stay ahead of ever-changing threats.

**Related content in this Impact Report:**

Building a Workforce for the Future, Building Community Resilience, Our Future Infrastructure

**About Booz Allen**

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Booz Allen Hamilton has been at the forefront of strategy, technology, and engineering for more than 100 years. Booz Allen partners with private and public sector clients to solve their most difficult challenges.

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Katrina Tavanlar  
Senior communications director



# BUILDING COMMUNITY RESILIENCE

*Protecting our economy, security, and way of life*

IMPACT REPORT 2019

# BUILDING COMMUNITY RESILIENCE

*Protecting our economy, security, and way of life*

The Federal Government's mission requires a constant focus on building capabilities to predict, prevent, mitigate, and respond to changing threats and vulnerabilities. Today the U.S. faces challenges from information warfare to overcrowded infrastructure vulnerable to natural and manmade disasters. We help agencies use technology to predict and identify problems faster and provide more effective solutions. We use data sharing and artificial intelligence to locate disaster survivors, search for contraband, and protect infrastructure. We also partner with philanthropic organizations to help resilient communities grow stronger.

"Anyone near this address with a boat? Coworker needs rescuing. #coastguard #houstonflooding." This tweet and other online messages were posted during Hurricane Harvey. Thankfully this coworker was rescued, but what about other disaster survivors needing assistance? Inspired by the possibility of delivering critical information to speed emergency services, we used the data from the hurricane to train a social media tool through machine learning, giving it the ability to sense critical communications within a sea of postings. When Hurricane Florence began its rampage through the Carolinas, the tool was ready for the Federal Emergency Management Agency (FEMA) to access.

The tool is one example of how combining technologies such as artificial intelligence and data visualization with behavioral science equips communities to overcome the next challenge—whether local, national, or global. We develop flexible technologies to help government agencies prevent problems, mitigate those that occur, and fulfill their missions faster, safer, and more effectively.

While we accelerate new technologies, we remember that empowering people is at the heart of our mission. To strengthen that human connection, we supplement our technical expertise with philanthropic partnerships providing community services, employee volunteerism, and financial support. Continuing with natural disasters as an example: Joel Fix, who supports Booz Allen information operations for the U.S. military, provided emergency help for victims in the aftermath of Hurricanes Florence and Michael.



## USING TECH TO CONNECT: SOCIAL REACH

Digital awareness uses the popularity of smart phones and social media to increase critical information during emergencies. It can also assess program effectiveness and public opinion of government services. Built with open source apps and tools, our customizable social platform identifies, gathers, aggregates, monitors, and understands trending topics to deliver actionable insights.

Our civic responsibilities leave program enabled Joel to spend 2 weeks as a volunteer deployed by Team Rubicon, a nonprofit connecting military veterans with first responders to speed disaster assistance.

Whether the project at hand focuses on technology, strategy, or helping humanity, we apply a key principle we've learned over the last 100 years: New ideas, smart preparation, flexible strategies, commitment and passion, and fast action yield the best chance to control an otherwise uncertain outcome. Here are three areas where we are helping the Federal Government and citizens prevent problems, recover from those that occur, and use lessons learned to shape what's next.

### MITIGATING LOCAL CATASTROPHES

We're developing and deploying new techniques that enable federal agencies to address the following areas with bold, integrated mission solutions:

- ▶ **Disaster preparedness:** We provide predictive modeling of disaster zones and future conditions for FEMA, the U.S. Army Corps of Engineers, and other agencies working in response and recovery. We also provide help at the neighborhood level. For FEMA, we combine machine learning, data visualization, and behavioral science to analyze neighborhood characteristics such as likely hazards, potential severity of a calamity, and

residents' gap in insurance to create a predictive model and visual map helping us pinpoint the areas where we have the best chance of persuading residents to buy insurance coverage. We then design targeted campaigns to motivate local residents to purchase relevant insurance.

- ▶ **Crisis prevention:** We assist the U.S. Coast Guard in identifying threats and assessing countermeasures to support infrastructure resilience and protection. For example, we provide timely risk assessments of damaged rivers and bodies of water important to security and commerce. The National Insider Threat Task Force recognized our support to the Coast Guard's Insider Threat program as the first within the Executive Branch to receive full operating capacity, commending our program as the gold standard for small organizations. The program equips the agency to detect, deter, and respond to threats from within the organization, whether malicious or unintentional.

#### USING TECH TO PROTECT: COMPUTER VISION AND BIOMETRICS

Knowing our success identifying terrorists to promote safety, the Department of Homeland Security asked us to help identify war criminals and human rights violators. Our 24/7 defense operations center, staffed by experts in fields from forensics to analytics, quickly refined processes and algorithms for the new mission. The result: a measurable improvement in identification rates.

*"After Hurricane Florence in the Carolinas, homes were filled with water. After Hurricane Michael in Florida, trees were down everywhere, and people couldn't get in or out. I went house to house carrying three things: a chainsaw, a cell phone, and water. I'm glad our company culture empowers me to be an engaged citizen."*

— JOEL FIX —  
BOOZ ALLEN INFORMATION OPERATIONS MANAGER

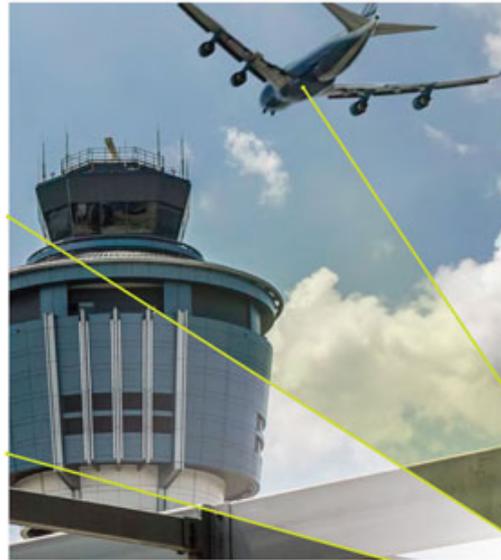


- ▶ **Community awareness:** We create public service campaigns to prepare people for natural disasters and disruption of community services. To hear how people currently prepare for the unexpected, we partnered with Ipsos research for a national survey. The results show that many don't know basic information such as shelter locations and evacuation routes. Respondents said they would turn to official channels such as short message service (text messaging) or television in a crisis. We're using the information to help inform the Government's technology decisions for national disaster networks.

### TECHNOLOGY FOR NATIONAL SECURITY

Our way of life, economy, and security depend on the health of our critical infrastructure, including finance, power, water, transportation, information, and emergency services. Using industry-leading cyber tools and talent, together with expertise in analytics and advanced detection modes, we work in areas including:

- ▶ **Promoting industrial security:** A multinational commercial pharmaceutical manufacturer wanted to safeguard its processes against cyber threats. We established cybersecurity threat monitoring for its local area network which runs at sites around the world. Our team implemented analytics to detect suspicious activity ranging from network policy violations and risky web browsing to high-priority antivirus alerts.
- ▶ **Spotting suspect cargo:** The Department of Homeland Security wanted to increase security measures on cargo entering the U.S., so we designed web-based tools and analytics to aggregate and analyze travel patterns and other intelligence data. The resulting analysis gives agents leads on which cargo containers to search for contraband, providing a higher level of security and efficiency for border transactions.



- ▶ **Protecting the nation's airspace:** The Air Force wanted to refurbish a key security system, so they asked Booz Allen to update it and make recommendations for redesign. The client knew we could complete the job rapidly, yet thoroughly, returning the system to operation in minimal time. Our integrated consulting, engineering, and science team took a 360° look—and found the original design was rushed, with fiber and filler packed unevenly, hampering maintenance. We refurbished the system with commercially available components, making the system easier to return to operation. We also found

#### USING TECH TO DETECT: PREDICTIVE MODELING

Working with the U.S. Army Corps of Engineers, our data scientists have developed methods and tools to visualize and characterize the dynamic nature of changing sea levels. Decision makers use the information to align various sea level risk scenarios with engineering efforts, estimating how future sea levels may impact critical infrastructure and planned development.

## IMPROVING THE VOLUNTEER EXPERIENCE AT THE RED CROSS



**VOLUNTEER ENGAGEMENT**  
Mindfully guide all through the  
volunteer experience



**SCREENING PROCESS**  
Humanize the  
screening process



**LEARNING DEVELOPMENT**  
Plan and provide training & mentoring  
tailored to volunteer needs

### PARTNERSHIPS TO STRENGTHEN COMMUNITIES

To create social impact that cascades from the national, state, and regional levels to local citizens' well-being, we work with varied partners in strategic ways. The American Red Cross is an example of how we work to support areas from leadership activities to grassroots help:

In summer 2018, we helped the American Red Cross of the National Capital Region develop a plan to transform volunteer engagement, activation, and retention. We delivered practical recommendations such as giving their diverse volunteers more leadership opportunities, engaging seasoned volunteers to train new ones, and using mentoring programs to tap into volunteers' broad skill sets.

- ▶ In fall 2018, the American Red Cross was one of four charitable nonprofit organizations that benefitted from an employee giving campaign and \$100,000 corporate match that raised more than \$200,000 for disaster response and recovery.
- ▶ In January 2019, we were the lead sponsor of the first American Red Cross—National Capital Region Disaster Summit, addressing threats and risks to the greater Washington, D.C. region. As urban areas become more crowded, new strategies are needed to address basics such as safety, shelter, and exit routes.



BUILDING COMMUNITY RESILIENCE

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**Cedric Sims**  
Senior vice president, Justice, Homeland Security,  
Transportation Business

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*Preventing disasters and bolstering community resilience requires a team of dedicated professionals. Meet one of Booz Allen's architects creating a better tomorrow.*

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#### **MEET CEDRIC**

Cedric Sims is a senior vice president in our Justice, Homeland Security, and Transportation business. As a former leader in both the Secret Service and the Department of Homeland Security, he combines a strategic perspective with a passion for keeping citizens safe.

#### **What are your primary leadership responsibilities?**

I develop strategies to help the Department of Homeland Security work in a more integrated way, and I provide expertise in areas like cyber and analytics to support complex and vital missions.

#### **How do you feel connected to your work?**

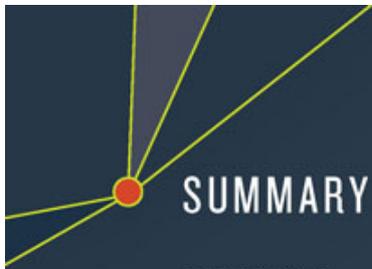
I've helped guide organizations from government agencies to a technical consulting company, and I'm always excited about connecting people with technology in ways that build a more stable, secure future. Technology has such potential to help people thrive.

#### **For whom are you creating the future?**

I'm especially passionate about our young people. They *are* our future, and we need them to succeed. I mentor a team of students participating in the *FIRST* robotics competition and enjoy seeing them having fun as they get experience in engineering, strategy, planning, and analytics. I have four children, and I want to give them the best chance for a great tomorrow.

#### **The future is ...**

Full of opportunity, and we will deliver it.



# SUMMARY

STRENGTHENING  
RESILIENCE THROUGH  
TECHNOLOGY

Our health, economy, and security depend on the proper functioning of our critical infrastructure, including finance, power, water, transportation, information, and emergency services. Citizens trust the Federal Government to keep our way of life secure, and government agencies trust us to help. In addition to providing strategy and new technologies in areas from disaster recovery to crisis prevention, we maintain community partnerships with organizations that help citizens create a better tomorrow.

**Related content in this Impact Report:**

Building a Workforce for the Future, Innovation for Humanity, Our Future Infrastructure, Tomorrow's Cybersecurity Today

**About Booz Allen**

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Booz Allen Hamilton has been at the forefront of strategy, technology, and engineering for more than 100 years. Booz Allen partners with private and public sector clients to solve their most difficult challenges.

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Christian Manalo  
Civil engineer



## OUR FUTURE INFRASTRUCTURE

*Keeping pace with growing natural and anthropogenic threats*

IMPACT REPORT 2019

# OUR FUTURE INFRASTRUCTURE

*Keeping pace with growing natural and anthropogenic threats*

As extreme weather, growing populations, and natural and anthropogenic threats place increasing stress on our transportation, water, energy, and social infrastructure, we will need to do more to ensure their resilience. In addition, as new and aging systems become increasingly online and connected, we'll have to be thorough in securing them against a growing cyber threat. To address these issues and maintain infrastructure that's strong enough to handle whatever the future holds, we should focus our efforts on three priority areas that contain opportunities for rapid, far-reaching progress: Targeted technology infusion, enhanced cybersecurity for operational technology, and streamlined regulatory processes.

We live in an era defined by exponentially rapid change. Technology is advancing at an accelerating rate and transforming society with it. At the same time, some of our most foundational technologies—the infrastructure systems that bring us necessities like clean water, convenient travel, and electricity to power our computers and appliances—are struggling to keep up.

In its 2017 Infrastructure Report Card, the American Society of Civil Engineers states that most of the U.S. electrical grid was built in the 1950s and 1960s with a 50-year life expectancy, and that the hundreds of thousands of miles of high-voltage transmission lines that crisscross the lower 48 states are at full capacity. Our nation's transit systems, the Society says, aren't faring any better—they've been chronically underfunded despite increasing demand, leading to a \$90 billion rehabilitation backlog. According to *The New York Times*, water in at least 600 U.S. towns and counties



America's infrastructure grade on the 2017 Infrastructure Report Card

*These systems are so integral to our existence that it's easy to forget how involved they are, but when they break down, the disruption is immediate and severe.*

flows through cast-iron pipes that are more than a century old, and "By 2020, the average age of the 1.6 million miles of water and sewer pipes in the United States will hit 45 years."

These systems are so integral to our existence that it's easy to forget how involved they are, but when they break down, the disruption is immediate and severe. We can't get home from work. The water from our taps becomes unsafe to drink. Our gadgets power down and we lose access to our digital lives.

As extreme weather, growing populations, and natural and anthropogenic threats place increasing stress on our transportation, water, energy, and social infrastructure, we'll need to do more to ensure their resilience. In addition, as new and aging systems become increasingly online and hyperconnected, we'll have to be consistent and thorough in securing them against a growing cyber threat.



To address these issues and maintain infrastructure that's strong enough to smoothly handle whatever the future holds, we must focus our efforts. Targeted technology infusion, enhanced cybersecurity for operational technology, and streamlined regulatory processes are three priority areas that contain opportunities for rapid, far-reaching progress toward getting the nation's underlying systems where they need to be, and Booz Allen is driving progress in each area.

#### TARGETED TECHNOLOGY INFUSION

Sustaining and strengthening America's infrastructure as it ages and grows will require taking full advantage of cutting-edge technologies that will enable us to monitor its condition more effectively, and make faster, better informed, more impactful decisions around repairs, maintenance, upgrades, and new construction. By pairing sensor technologies like hyperspectral imagers and ground-penetrating radar with various delivery methods including unmanned aerial vehicles, we can monitor infrastructure integrity remotely, quickly and frequently gathering enormous amounts of useful data and checking for problems like leaky roofs and cracked foundations.

Combining that sensor data with immersive technology and artificial intelligence, we can digitally simulate infrastructure systems to improve understanding of their condition and behavior across the lifecycle. Using analytics, we can consider sensor-supplied data at the enterprise, facility, and component

levels to assess condition, optimize maintenance spend through predictive modeling, and automate workflows.

We have worked with clients on some innovative work in this realm. In one instance, supporting the Department of Veterans Affairs on an environmental impact study of their West Los Angeles campus, we teamed with Concourse Federal Group and PrecisionHawk to use artificial intelligence, Google Maps, and light imaging, detection, and ranging (LIDAR)-equipped unmanned aerial vehicles to assess the conditions of paved surfaces and identify the species of every single tree within the 388-acre grounds—all 4,000 of them. By using drones, we reduced assessment time by a third and brought down costs by 40 percent through automating data entry and obviating the need for a 4-week on-the-ground survey that would have been conducted by a four-person biologist team. Our approach also provided increased data accuracy and a more comprehensive assessment than traditional on-the-ground methods could have produced.

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*Combining that sensor data with immersive technology and artificial intelligence, we can digitally simulate infrastructure systems to improve understanding of their condition and behavior across the lifecycle.*

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Sand filtration tank at water treatment plant

### ENHANCED CYBERSECURITY FOR OPERATIONAL TECHNOLOGY

As the industrial control systems that help run critical facilities like manufacturing, water treatment, and nuclear power plants become increasingly networked, it is crucial that we take all necessary steps to secure them. To understand why, just imagine the potentially devastating economic and human toll if a malicious hacker gained control of the filtration systems at a water treatment facility of a major metropolitan area.

Using technologies like model-based systems engineering and simulation-enabled automated vulnerability assessment, we can gain a better view of the attack surfaces that huge, complex, hyperconnected industrial control systems represent. We can then employ virtual, automated, system-wide tests to find and secure vulnerabilities before they are exploited.

Beyond adopting and applying state-of-the-art technological solutions, we should also engage the cybersecurity community in a concerted effort to grow a workforce with the specialized skills and knowledge to monitor and secure operational technology. We're working at the forefront, both in developing the required technical solutions and in growing the necessary workforce. One technical example is ControlWatch, a solution we developed to provide enhanced visibility and anomaly detection for industrial control systems. ControlWatch acts as a centralized, visual dashboard for collecting and displaying activity throughout an environment, from the controller level up through the enterprise. By correlating data at all levels, ControlWatch helps our clients identify and defend against attacks before they reach critical areas of operation.

On the people side, our cyber practitioners not only protect operational technology systems for critical industry and infrastructure clients, they also regularly win industrial control systems-themed capture-the-flag competitions. By requiring competitors to prove their skills by infiltrating simulated industrial control systems, such events not only confer bragging rights, they're also great practice for identifying the real-life system vulnerabilities that malicious actors might exploit.

#### STREAMLINED REGULATORY PROCESSES

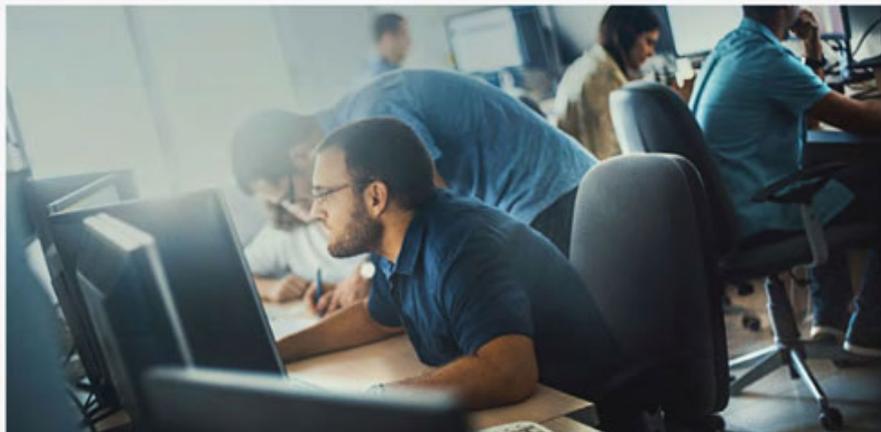
A major reason that America is lagging on infrastructure maintenance and modernization is that infrastructure projects typically take many years to plan, permit, design, and execute. Thus, it has become increasingly important to develop streamlined regulatory and environmental permitting processes to accelerate project approvals and implementations.

Combining IT platform modernization and analytics with management tools and performance improvement techniques like business process reengineering and management methods like Lean Six Sigma, we can transform and strengthen the organizations and processes by which infrastructure projects are evaluated and approved.

We collaborate with clients at the Environmental Protection Agency on numerous large-scale, programmatic Lean Six Sigma initiatives, including Resource Conservation and Recovery Act corrective action transformation, Clean Air Act State Implementation Plan refinement, and the Brownfields Program to safely and sustainably clean up and reuse contaminated properties. Through the implementation of a comprehensive lean management system for these and other initiatives—and with the establishment of a new strategic plan, goals, and priorities—we've helped the agency set the foundation for an organizational transformation that will lead to stronger and faster mission advancement and boosted employee engagement.

CULTURE

## LEADING THE PACK IN SCADA & ICS CYBERSECURITY



Booz Allen's capture-the-flag competition landing page



Christian Manalo  
Civil engineer

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*The work of improving our nation's infrastructure requires a team of dedicated professionals. Meet one of Booz Allen's experts increasing the efficiency and effectiveness of infrastructure.*

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#### **MEET CHRISTIAN**

Christian Manalo is a civil engineer with extensive expertise and dedication to the systems and processes that address our vast civil infrastructure needs—everything from energy and water resources to transportation systems. He supports the U.S. Army Corps of Engineers, leading the agency's resilience initiative. Christian has worked with a wide variety of clients including the Environmental Protection Agency, United Arab Emirates, Siemens, and U.S. Agency for International Development.

#### **How is your work pushing boundaries?**

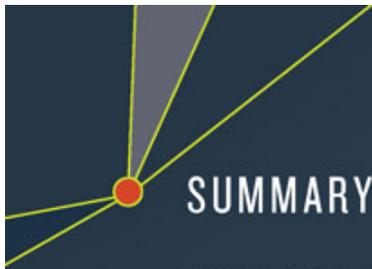
As an engineer, I'm continuously helping clients use technology to come up with better ways to do things. Water is of particular interest to me, and issues around climate preparedness, terrorism, and cybersecurity make it an exciting area. It's been particularly rewarding helping improve the delivery of safe drinking water post-disaster and in the battlespace. We have much work to do still, but I'm glad to be at the forefront, developing solutions for these issues.

#### **For whom are you building the future?**

To engineer is to build, and civil engineers build civilizations. This has been true for centuries. My primary ethical duty is to the safety, health, and welfare of the public.

#### **As an architect of the future, what's your take on what's next?**

Civil infrastructure is particularly difficult. Systems built today are expected to last 50 to 100 years. Planning for future threats and conditions is a constant challenge, especially now considering climate change. Uncertainty is certain. The key is to be creative, innovative, and adaptable, and keep finding ways to contribute.



# SUMMARY

## STRENGTHENING OUR FUTURE INFRASTRUCTURE

As the demands and stresses on U.S. infrastructure continue to grow, we must find ways to outpace them with faster, more efficient maintenance, modernization, improvement, security, and expansion. Targeted technology infusion, operational technology cybersecurity, and regulatory process streamlining are three areas with the potential for immediate, far-reaching impact. Given our experience helping clients innovate and progress in these realms, we are well positioned to help strengthen our nation's infrastructure.

**Related content in this Impact Report:**

Building Community Resilience, Tomorrow's Cybersecurity Today

**About Booz Allen**

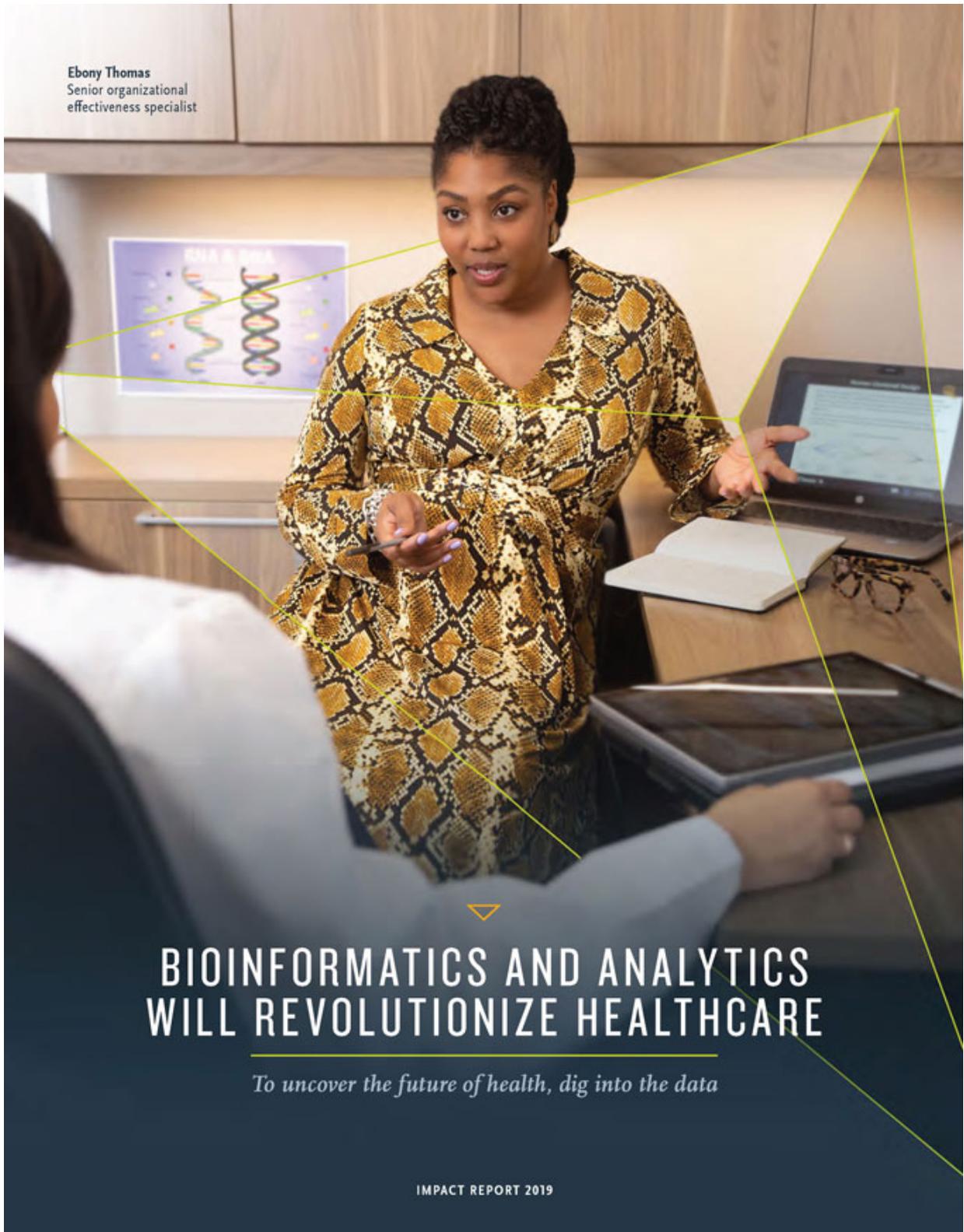
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**Ebony Thomas**  
Senior organizational  
effectiveness specialist



# BIOINFORMATICS AND ANALYTICS WILL REVOLUTIONIZE HEALTHCARE

*To uncover the future of health, dig into the data*

IMPACT REPORT 2019

# BIOINFORMATICS AND ANALYTICS WILL REVOLUTIONIZE HEALTHCARE

*To uncover the future of health, dig into the data*

Ongoing advances in data capture, storage, and analysis have the potential to exponentially accelerate life science research and revolutionize medical treatments and care. Standing between us and this bright future is a cluster of overlapping challenges in information technology modernization, organizational design and culture, and information security and patient privacy. Overcoming these challenges will improve American healthcare in a variety of ways, enabling the health sector to unlock the power of big data to transform and reform the healthcare experience and expedite advances in life science research, medical product development, and patient care.

Imagine a loved one is rushed to the emergency room, unable to communicate and experiencing severe symptoms with any number of possible causes. The hundreds of pages of unstructured clinical notes that make up this patient's electronic health record likely contain helpful information, but without a quick means of sifting through all that data to find the facts that matter most, doctors will have to proceed without that material.

Electronic health records are radically increasing the amount of patient information available to physicians, but in emergency situations, it often takes too long to separate the signal from the noise.

Seeking a practical solution to this problem, MedStar Institute for Innovation worked with us to develop a tool called Dictation Lens. Capable of combing through a patient's unstructured clinical notes in seconds, Dictation Lens uses an artificial intelligence technique called natural language processing to help focus doctors' attention on



the most relevant parts of a patient's medical record—enabling more informed treatment while helping prevent critical information from going undiscovered.

MedStar's success with Dictation Lens provides a glimpse of what the future of health looks like and how it will emerge. Advances in data capture, storage, and analysis could revolutionize medicine and exponentially accelerate life science research through such mechanisms as combining detailed genetic information with longitudinal clinical data. Adopted widely and effectively, these advances will enable

A man with a short beard and hair, wearing a white lab coat, is looking intently at a tablet device he is holding. He is holding a white pen in his left hand. The background is dark and out of focus.

patients, doctors, and biomedical researchers to benefit from securely shared data and seamless, personalized treatments and care. The result? Improved public health that's enabled in part by expedited progress in highly promising avenues like precision medicine and genomics.

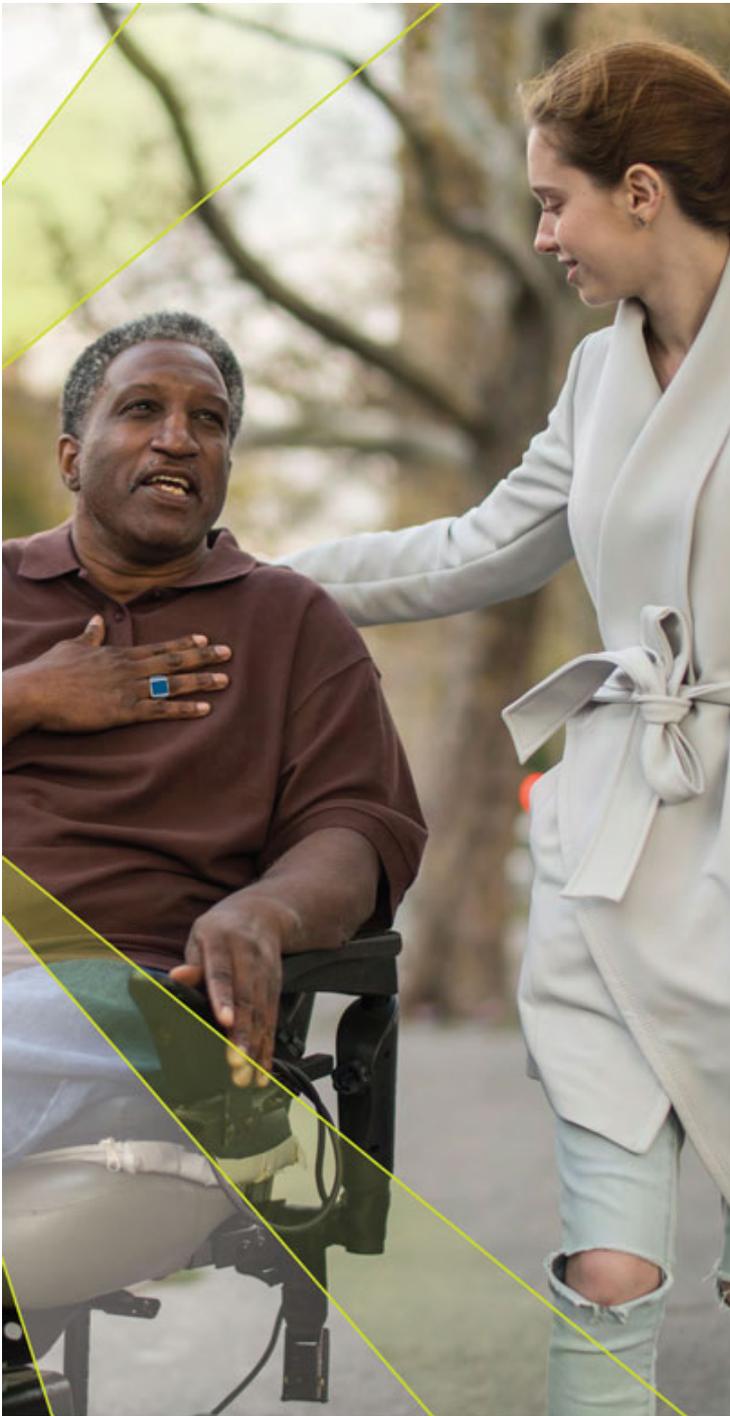
Standing between us and this bright future is a cluster of overlapping challenges in IT modernization, organizational design and culture, and information security and patient privacy. Overcoming these challenges with modern IT and tailored, integrated solutions will enable the health sector to unlock the power of big data, bioinformatics, and analytics to transform the healthcare experience and make huge strides in biomedical science and clinical practice.

#### **MODERNIZE AND STRENGTHEN HEALTH INFRASTRUCTURE**

To meet the demands of a growing consumer base, America's healthcare organizations must modernize their IT infrastructures in ways that enable them to embrace and consistently benefit from relevant new technologies as they emerge and evolve. Bioinformatics and analytics platforms can often be tailored for integration into existing IT environments, but modern IT is the strongest foundation for the storage, management, and fruitful analysis of the various types of data that will inform decisions on how to optimize care delivery and patient experience.

The U.S. Department of Defense is taking huge strides toward extending that foundation across its entire health system with its enterprise-wide rollout of a modern electronic health records system called MHS GENESIS. The effort, supported by Booz Allen, will bring MHS GENESIS to 9.4 million beneficiaries across 54 military treatment facilities, 373 health clinics, 245 dental clinics, 199 forward-deployed sites, and several theater hospitals. This work will further enable interoperability between the Defense Department's health system and others, including those of the U.S. Department of Veterans Affairs and many commercial healthcare providers, allowing service members to receive seamless continuity of care.

*Adopted widely and effectively, these advances will enable patients, doctors, and biomedical researchers to benefit from securely shared data, and seamless, personalized treatments and care.*



## TRANSFORM AND REFORM THE HEALTHCARE EXPERIENCE

By digitally capturing, organizing, and analyzing more data related to quality and efficiency of care—including clinical notes, customer feedback, incident reports, and patient outcomes—healthcare providers will be able to inform decisions about customer experience with a far better understanding of the needs of patients and workforces.

As part of a multiyear transformation effort to help the Department of Veterans Affairs understand and improve the veteran experience at the VA, we supported the Veteran's Experience Office in designing, developing, and implementing a customer experience measurement capability called Veterans Signals. Veterans Signals blends human-centered design research, statistical survey methodologies, and artificial intelligence to provide real-time, systematic, data-driven feedback to VA leadership and employees to understand and improve VA service delivery from the perspective of the veteran. One function of the capability uses natural language processing and other data science techniques to analyze millions of freeform comments submitted digitally by veterans as part of VA customer experience surveys. This function brings back actionable insights through natural language processing tasks like sentiment analysis and named entity

recognition, putting the expressed needs of the veteran at the center of decisions around improving service. It also elevates messages flagged for signs of homelessness or suicide risk for immediate follow-up with emergency and support services. VA employees have already intervened in more than 800 confirmed suicide and homeless alerts from veterans in the past year as a result of this tool, saving the lives of hundreds of veterans.

The VA and the Military Health System (MHS) are working to better assure patient safety by adopting high reliability organization (HRO) principles across their healthcare enterprises. HROs are organizations that consistently avoid serious error while regularly operating in high-risk, extremely complex circumstances. Booz Allen is helping both organizations use integrated technological solutions to inform decisions with accurate data and deepen the impact of educational outreach within their workforces. To support their implementation of HRO best practices, we've worked with MHS to develop a new MHS HRO operating model to enable frontline clinicians to drive performance improvements in readiness and health, create conditions for high reliability at the point of care, and allow MHS to hold itself accountable to industry standards and clinical outcomes. At the foundation of this HRO operating model, Booz Allen supported MHS in standing up innovative clinical communities that will define, prioritize, and implement initiatives to enable readiness

through decreasing variation, improving outcomes, and positively impacting care delivery. We've also worked with MHS to conduct advanced analytics and develop customized dashboards to support their implementation of HRO best practices and streamline access to an increasing number of safety, quality, and readiness data sources.

#### ACCELERATE ADVANCEMENTS IN THE LIFE SCIENCES AND REVOLUTIONIZE CARE

By storing, organizing, processing, and analyzing an ever-growing tsunami of genetic, clinical, behavioral, and environmental data, researchers will be able to better understand factors that affect health, disease, and treatment outcomes.

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development funds thousands of biomedical research studies each year, all of which generate a substantial amount of data. While some of this data is shared via specialized repositories, much of it ends up inaccessible to outside researchers, often locked away on hard drives and in filing cabinets due to logistical challenges and privacy concerns. Making this data available for secondary research has the potential to generate new discoveries and insights on topics ranging from childhood obesity to women's health to rehabilitation. Booz Allen helped the Institute design and develop the Data and Specimen Hub (DASH), a secure, scalable, cloud-based



BIOINFORMATICS AND ANALYTICS WILL REVOLUTIONIZE HEALTHCARE

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data sharing platform where researchers can deposit and access deidentified data and associated biospecimens for secondary research purposes. In the more than 3 years since DASH launched, data from more than 130 clinical studies has been made available to its users. Research conducted using this data has resulted in 15 scientific publications to date.

Through its Million Veteran Program (MVP), the VA is partnering with its beneficiaries to study how genes impact overall health and diseases ranging from post-traumatic stress disorder to cancer. With more than 750,000 volunteers already enrolled and close to 250 MVP researchers investigating 17 different diseases, MVP has established one of the world's largest genomics databases. Booz Allen's support for the project has included scientific, technical, and analytic

services to expand clinical, genomic, and survey data pipe-lines, and resolve challenges arising from quantities of genomic data that push technical boundaries.

The Air Force Medical Service intends to advance precision medicine by allowing its researchers and clinicians to gain insights from the enormous amounts of genetic information, health and readiness records, exposure information, and other data collected from service members. We're helping the organization by building a secure, scalable, cloud-based platform to integrate the disparate data and enable automated bioinformatics and actionable analytics for genetics-informed precision medicine and human performance optimization.





**Ebony Thomas**  
Senior organizational effectiveness specialist

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*Revolutionizing medicine and accelerating life science research require a team of dedicated professionals. Meet one of Booz Allen's architects using data to transform what's next in healthcare.*

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#### **MEET EBONY**

Ebony Thomas is a senior organizational effectiveness specialist who helps our health clients clearly define their priorities and map out how to achieve them. Her work leading change management for the U.S. Department of Defense's rollout of its electronic health record system helped ensure stakeholders were ready, willing, and able to understand and adopt the new technology.

#### **How is your work making an impact?**

My current project is with the U.S. Department of Veteran's Affairs Transition Assistance Program. It's focused on how to provide the greatest value to service members as they transition from active duty. The impact will include improvements to organizational processes that will better enable service members to have access to the tools and resources needed for a seamless return to civilian life.

#### **How do you feel personally connected to this work?**

My father is a Vietnam veteran. He thought it was so cool when I told him I was working on this program. When he retired from a long corporate career that he began after the war and college, he was surprised to learn of all the VA benefits he hadn't known about and the fact that he could now begin taking advantage of them. We hear the same feedback from veterans today—they aren't always aware of the benefits available to them—so by continually improving communication, support, and awareness, we can really make a huge difference.

#### **As an architect of the future, what's your take on what's next?**

I think that as government agencies work to adopt innovative technologies to help them advance their missions, their effectiveness will depend on underlying implementation strategies. They'll need to think about things like change management, strategic communications, and business process redesign to be successful.



# SUMMARY

REVOLUTIONIZING  
HEALTHCARE THROUGH  
TECHNOLOGICAL  
INNOVATION

American healthcare is at a critical juncture. Advances in data science, bioinformatics, and analytics have the potential to not only help modernize our health system but revolutionize it. The challenges to capitalizing on these advances are great, but we must overcome them to realize increasingly precise, effective, and seamless care with rapidly accelerating advancements in life science. Booz Allen is a uniquely qualified partner for this journey. We're not only technologists and strategists, we're clinicians, scientists, and data analysts who have blended technology, laboratory, clinical, and consulting services to support the nation's public health, life science, and medical organizations for decades.

**Related content in this Impact Report:**

Empowering the Customer Experience for Government, The Future Warrior

**About Booz Allen**

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Ingrid Herrera Yee  
Management consultant



## THE FUTURE WARRIOR

*Focusing on technology, innovative training,  
and holistic health for a stronger military*

IMPACT REPORT 2019

# THE FUTURE WARRIOR

*Focusing on technology, innovative training, and holistic health for a stronger military*

From immersive environments, virtual and augmented reality (VR/AR) scenarios to biometrics and extensive data science research, Booz Allen believes data-driven training and support leads to healthier service members and a stronger, more prepared military.

Science fiction used to be known for conjuring that which was futuristic and imaginative, particularly with tools of war. Now the line between imagination and reality is beginning to blur. “We are transitioning into a new age of analog, where the physical and digital worlds are blending,” says Cameron Kruse, a technical product manager based out of Booz Allen’s San Francisco office. “Service members have high-pressure jobs with little room for error,” says Cameron, whose team works to augment the real world with high-value, immersive experiences—the armed forces included. We’re part of a global innovation ecosystem, driving emerging technology and integrating artificial intelligence and virtual reality to usher the present into the future.



Enter the future warrior: Agile, in top performance shape, empowered by the latest and greatest technology, and supported by a holistic approach that stretches beyond active duty.

We are working hand in hand with the defense and athletic industries, sharing the best practices in tactical training to ensure our warriors get premier support and vital information. It’s part of an emphasis on the full military-service lifecycle, conjuring the most potent elements of mental and physical strength while reducing outside stress.

## TRAINING THE FUTURE WARRIOR

Thinking of service members as professional athletes is the heart of tactical fitness—focusing on specialized training combined with nutrition programs aimed at top performance. While specific fitness programs vary among individual warfighters and service branches, tactical athletes use all aspects of their power, strength, speed, and agility to improve physical and mental well-being. As part of a new initiative, we are mirroring professional sports organizations and helping design technology that gathers detailed information about our warfighters’ physical and mental health. This includes wearables and sensors that track biofeedback and cognitive function, providing insight into hydration status, physical strength, rest hours, heart rate, and stress levels. Additionally, scientific advancements now allow the military to link cognitive function, visual capability, motor skills, and dominant handedness to improve marksmanship. Collectively, these programs supplement synthetic training environments that ultimately save lives.

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*Today's augmented reality and VR training solutions are more efficient, easier to maintain and update, and better serve the needs of a younger workforce.*

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Next comes other technologies to enhance warfighting capabilities. AI and VR are game changers, as the more we can work to reduce threats from afar, the less risk service members face on the battlefield. Some cutting-edge technologies span projects like our Global Threat Mitigation Program (GTMP)—work that extends across 13 Department of Defense, intelligence community, and federal civilian clients aimed at diminishing threats—to simulated environments. Today's augmented reality and VR training solutions are more efficient, easier to maintain and update, and better serve the needs of a younger workforce.

Much like pilots who train in a flight simulator, our warfighters can now easily familiarize themselves with foreign surroundings and remote terrains without leaving U.S. soil. Immersive training through AR and VR integrates multiple data sources—such as the weather or landscape—and applies AI to constantly improve itself, “learning” from each exercise and individual soldier while decreasing investment and mitigating human risk—unifying the digital and physical worlds.

“The heart of Booz Allen beats at the intersection of mission, innovation, and technology,” says Karen Dahut, Navy veteran, a leader in our defense work, and a member of the firm’s Leadership Team. “As a ‘technology translator,’ we bridge the gap between traditional manufacturers that build static or stovepiped platforms and technology companies that have little understanding of mission, security, and operational requirements.” Innovation is key—a strategic imperative for our national security—and we encourage creativity and risk to deliver this. “We have teams working at the tactical edge.





Much like pilots who train in a flight simulator, our warfighters can now easily familiarize themselves with foreign surroundings and remote terrains without leaving U.S. soil. Immersive training through AR and VR integrates multiple data sources—such as the weather or landscape—and uses AI to constantly improve itself, “learning” from each exercise and individual soldier while decreasing monetary investment and mitigating human risk—unifying the digital and physical worlds.

They develop and implement immersive training using virtual and augmented reality, so our warfighters can experience real-world operational conditions, environments, and scenarios to prepare them to face the real threat. Cyber solutions, both offensive and defensive, continue to be critical to the Department of Defense mission, and our teams are working to address the full spectrum of emerging threats,” adds Karen.

Furthermore, open, interoperable warfighting systems are critical to a service member’s ability to adopt rapidly changing technology. Events like the Naval Sea Systems Command-backed HACKtheMACHINE—an annual hackathon that sparks conversations around how data protects and defends our nation and allies—challenge us to identify vulnerabilities, problem solve, and develop better solutions.

Perhaps most important, we know solutions aren’t one size fits all. Outside hackathons and prototyping, our partnership with sports and clinical psychologists is another groundbreaking effort that teaches soldiers to focus on team building, self-awareness, mental fortitude, and remaining in the moment. This holistic psychological approach, which integrates coping mechanisms early in the training process, also helps combat potential struggles with depression or post-traumatic stress disorder (PTSD) and champion further psychological health.

For Military Family Month and to celebrate the Power of Purpose, we will donate \$10 for every visitor at today's event to help Blue Star Families create more opportunities for military families and veterans.

### SUPPORTING THE WARRIOR'S FUTURE

The future does not revolve around technology alone. It hinges on a refreshed business mindset and a shift toward workplace flexibility.

Many active duty service members undergo a change of station about every 3 years—picking up their lives and relocating, sometimes across the country, other times across the globe. The Blue Star Families 2018 Military Family Lifestyle Survey found financial issues were the top lifestyle stressor for the first time among military family respondents. Additionally, 70 percent of millennial military family respondents were significantly more likely to report having two incomes as vital to their family's well-being than older military family respondents (63 percent), regardless of rank. Military family respondents also reported higher rates of difficulty making ends meet than civilian families (13 percent versus 7 percent), suggesting that dual incomes are a necessity for financial security.

We believe military spouses should have the opportunity to work in their area of expertise, providing financial stability

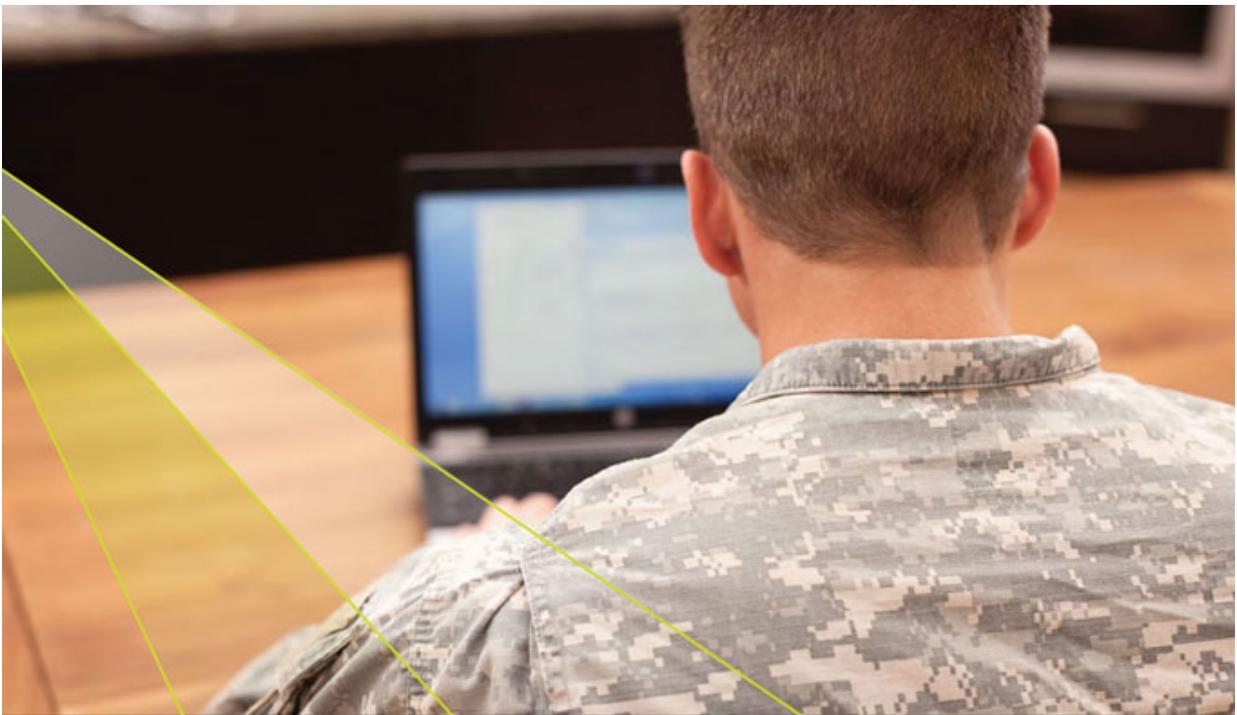
and professional fulfillment. This also helps forge successful transitions. When a military spouse is employed, the active duty to veteran shift is significantly smoother. That's why Booz Allen recently joined the Hiring Our Heroes Pledge to hire 100,000 military spouses by 2020.

We are also easing the transition from active duty to veteran by offering training programs—to include a coveted cybersecurity certificate—and a focus on upskilling and continuing the mission—while offering new opportunities, reservist benefits, and workplace flexibility to include remote work arrangements, flex time, and dedication to work/life balance.

### CREATING THE DIGITAL WARRIOR

Blending cognitive and physical health with progressive ideas helps the military look beyond what's working today and plan for tomorrow.

Ensuring that our military members are in top performance shape is as key to the success of the future warrior as technologies that enhance fighting capabilities. One goal is to



address quality-of-life concerns, from ailments like musculoskeletal or joint disorders to anxiety and depression, before they take root. Precision medicine, an emerging field that seeks to better understand how genetic variations influence a person's response to treatments, exercise training, and injury predisposition, will help us better protect and treat service members.

By exploring how personalized health and performance data guide disease and injury prevention, we're bringing bold thinking to life to imagine a world where every aspect of a person is considered. This also allows the military to seamlessly align individual warfighters to roles they're interested in and best suited for—just like professionals who seek fulfilling careers that amplify their unique skill sets and interests.

Many service members share similar experiences about their time in the military and transitioning from active duty. Take my dad, for example. He didn't choose military life; it chose him. He was drafted in 1972—near the end of the lottery—and after basic training, arrived in Ft. Polk, Louisiana. Dense with jungle-like vegetation, the South mimicked the landscape of Vietnam, where he assumed he was headed. Like everyone else, he trained in combat strategy and had little knowledge of what came next.

But my dad never set foot in Vietnam. Instead, he arrived in South Korea along the demilitarized zone (DMZ) and served as a member of the military police within the United Nations Command—a position he didn't know existed until his final days in Louisiana, a position one-size-fits-all training didn't mentally or physically prepare him for. In fact, when he landed in Korea, he worried he'd boarded the wrong plane.

After he completed his service, the transition from active duty to veteran status was tough. "There was no demand for infantry training. I had an engineering degree but only 4 months of job experience. I had no idea what to do," he recalls. How to support his family kept him up at night.

My dad isn't alone in his experiences, but there's a sea of change in the way we train and empower our military. The tactics used nearly 50 years ago don't work today, and the future is full of endless possibility.

—ANGELA FRANZER, writer/editor,  
Booz Allen Corporate Affairs

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*Developing and deploying data-driven training to prepare military service members for the future requires a team of dedicated professionals. Meet one of Booz Allen's architects supporting the future warrior.*

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#### **MEET CAMERON**

Cameron Kruse is a former *National Geographic* young explorer who now works within Booz Allen's innovation and immersive ecosystem focusing on artificial intelligence and augmented/virtual reality. It was during a trip to the Indian Himalayas—where the world's highest roads are destroyed by tumultuous weather and rebuilt each year—that Cameron started thinking about what connects us as people. Just like a road, technology can link people from all walks of life, but it's useless if we simply observe without participating.

#### **How is your work pushing boundaries?**

I'm redefining the relationship between the digital and physical worlds.

#### **How do you feel personally connected to your work?**

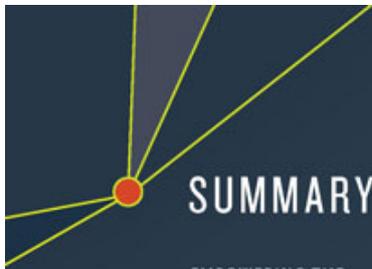
I really enjoy exploring the world around me and discovering ways to connect us all. The work I do at Booz Allen is a platform that allows me to explore as a future-focused technologist.

#### **Why are you building the future?**

The people I really want to reach are those who are consumed and overwhelmed by the distraction of digital technology. I want to help shape the digital paradigm for this community and the next generation, so they can use technology to find meaning in the physical world surrounding them. I want to show people you don't have to be distracted to be entertained.

#### **I'm changing the world by...**

Using technology to inspire others to look more closely at the world around them and explore their environment in new and different ways.



# SUMMARY

EMPOWERING THE  
FUTURE WARRIOR

Booz Allen is leading the charge to empower a more focused, prepared, and mentally healthy future warrior. But we also recognize and value the challenges and nuances of the service member journey—from enlistee to veteran. No one stage is more important than another, and we're proud to do our part to support our heroes. This takes creativity, ambition, and bold investment in new and emerging trends. We're excited for what tomorrow holds.

**Related content in this Impact Report:**

Building a Workforce for the Future, Our Future Infrastructure, Innovation for Humanity, Bioinformatics Will Revolutionize Healthcare

**About Booz Allen**

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Katie D'Hondt  
Cyber expert



**BUILDING A WORKFORCE  
FOR THE FUTURE**

*Booz Allen created a culture of empowerment that's  
transforming the nature of work*

IMPACT REPORT 2019

# BUILDING A WORKFORCE FOR THE FUTURE

*Booz Allen created a culture of empowerment that's transforming the nature of work*

Solving tomorrow's biggest challenges will require cutting-edge thinking. To get there, organizations need to recruit diverse talent and foster an inclusive, engaging environment where employees can contribute their unique perspectives. What's more, they'll need a compelling purpose that drives employees to be their best selves—coupled with opportunities for employees to grow their careers and build the right skills to meet the obstacles ahead.

To recruit, retain, and develop a workforce for the future, organizations should reimagine the culture of work. Booz Allen has already done it.

"Across the industry, cyber talent is in incredibly high demand," says Katie D'Hondt, a cyber expert and senior lead technologist at Booz Allen. She explains, "The threat landscape changes minute to minute, not even day to day. Organizations must retain and grow top talent to combat these dynamic challenges."

When Katie joined us as an intern, she was a graduate student in public policy with a background in nonprofit

management. Four years later, she's a cyber expert supporting the Continuous Diagnostics and Mitigation program, one of the firm's biggest projects for scaling and refining cyber capabilities in the Federal Government.

Her story illustrates a broader trend within our firm and across the workforce. By 2030, 210 million individuals will have changed occupations, according to the World Economic Forum. As the rapid pace of technological change opens up new career paths, stories like Katie's will only become more common. Employees will seek opportunities to upskill and reskill—and in a highly competitive marketplace for human capital, organizations will need to work harder to keep up.

These challenges are especially salient in professional services organizations, where success is predicated on the expertise of their people. At Booz Allen, we increased our workforce by more than 1,400 people in fiscal year 2019, and to grow further we must prioritize human capital management tactics to attract—and retain—the best. How can organizations recruit, retain, and develop a highly skilled and engaged workforce that's prepared to tackle tomorrow's challenges?



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*At Booz Allen, we're committed to sustaining an inclusive workplace where employees with diverse backgrounds and life experiences are empowered to have meaningful and successful careers. From mentors and sponsors in the C-Suite, to allies who celebrate our peers' successes, empowerment involves us all.*

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— MARLENE AQUINO —  
CHIEF DIVERSITY OFFICER

**THE SOLUTION:  
AN EMPLOYEE VALUE PROPOSITION**

To build a professional services workforce for the future, we foster a culture of empowerment rooted in our employee value proposition. If our employees choose to take advantage of the breadth and depth of opportunities the firm provides, we promise to deliver an experience that matches our people's ambition for their careers and for their lives. We promote an environment where our employees can be themselves, be Booz Allen, and be empowered—and this promise not only stands to transform our workforce, but also empowers our employees to create meaningful and fulfilling careers.

**BRING YOUR BEST SELF TO WORK**

To create an environment that embraces cutting-edge thinking, it's crucial to first establish the psychological safety for employees to be themselves. When employees can be their whole, best selves at work, they're free to be creative and take risks, traits the future will demand of our workforce. Empowering employees to be their best selves means first supporting their physical, emotional, and financial wellness. That's why we host annual PowerUP wellness challenges through which employees can earn money for their health savings account or paycheck by



Marlene Aquino, Chief diversity officer

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*For 25 years, Mike Wikan designed best-selling videogames for Nintendo, Microsoft, Sega, and Sony. Now, he's a senior lead technologist at Booz Allen designing immersive virtual reality and augmented reality training for the military—and saving lives in the process. "Booz Allen affords you a limitless horizon to drive your career where you want it to go," Mike says. "You're only limited by your willingness to engage in furthering your knowledge and career."*

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completing activities ranging from meeting with a financial advisor to taking 150,000 steps.

Creating a workforce for the future also means attracting and developing talent from all backgrounds. Inclusion isn't just a moral imperative—it's good for business, as research has shown diverse teams are more effective. At Booz Allen, women comprise 42 percent of our board members and 55 percent of our Leadership Team, while our board is the most diverse in the Washington, DC, area. Our next-gen diversity and inclusion strategy focuses on continuing to increase diversity representation and foster inclusive behaviors.

A key component of inclusion is strengthening the leadership pipeline through mentorship, advocacy, and sponsorship. With this in mind, in March we hosted Unstoppable 2019, our inaugural summit for women and

allies, to pave the way for women at all levels of the firm. More than 350 participants attended sessions on topics ranging from identifying a potential sponsor to being an effective ally. To continue the conversation, similar events will be hosted at our locations around the world, along with a series of webinars and in-person sessions. Holding honest conversations such as these creates pathways for a more diverse and inclusive universe of doers, drivers, and dreamers—and when employees feel free to be themselves, there is no limit to what they can achieve.

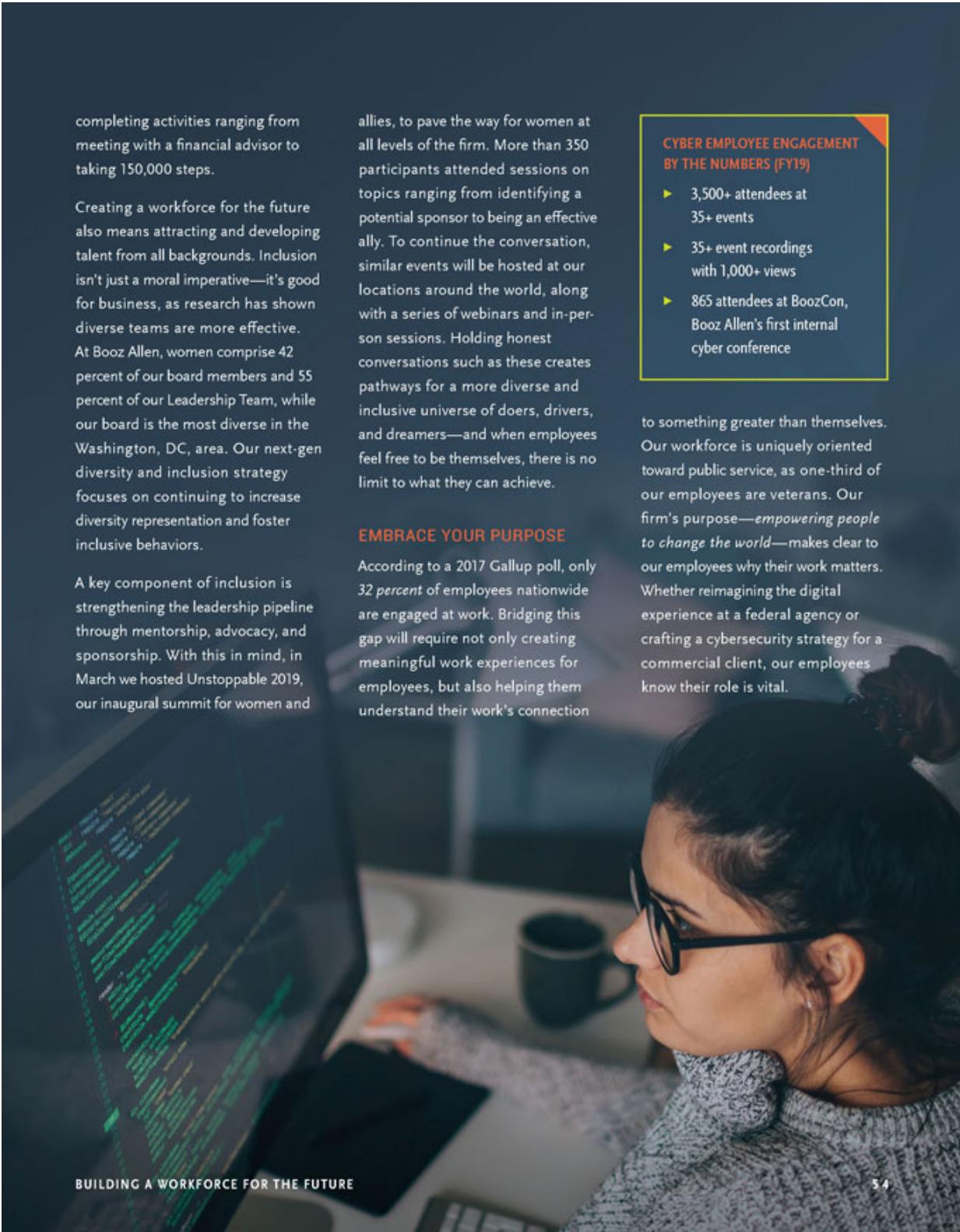
### EMBRACE YOUR PURPOSE

According to a 2017 Gallup poll, only 32 percent of employees nationwide are engaged at work. Bridging this gap will require not only creating meaningful work experiences for employees, but also helping them understand their work's connection

### CYBER EMPLOYEE ENGAGEMENT BY THE NUMBERS (FY19)

- ▶ 3,500+ attendees at 35+ events
- ▶ 35+ event recordings with 1,000+ views
- ▶ 865 attendees at BoozCon, Booz Allen's first internal cyber conference

to something greater than themselves. Our workforce is uniquely oriented toward public service, as one-third of our employees are veterans. Our firm's purpose—*empowering people to change the world*—makes clear to our employees why their work matters. Whether reimagining the digital experience at a federal agency or crafting a cybersecurity strategy for a commercial client, our employees know their role is vital.





The Booz Allen Data Science 5K Challenge is a clear example of purpose in action. According to *Forbes*, 90 percent of the world's data has been generated within the past 2 years, and this overwhelming amount of data has created a vast array of challenges for our clients. With this increased demand, we set a goal of employing 5,000 trained data scientists by 2020. More than 1,000 employees have participated in our 60-hour Fundamentals course thus far, applying their knowledge in capstone projects with real impact. By linking day-to-day work with a big-picture vision, organizations can encourage employees to stay with a company and find purpose in what they do.

#### OWN YOUR EXPERIENCE

Employees are seeking opportunities to upskill, reskill, and apply what they learn in meaningful ways. In a competitive talent marketplace, it's vital to create opportunities for employees to stay within the organization *and* advance their careers. Employees need the freedom to transition between clients and focus areas, take on new roles in employee-led organizations, and explore what interests them—with the understanding that no two career paths will be the same.

We provide a portfolio of programs to support employees through each phase of their career. For example, we host frequent cyber employee engagement events to connect employees with each other and with the firm. These events create new learning opportunities, break people out of their day-to-day client work, and put a spotlight on the firm's wide-ranging cyber capabilities—while boosting retention of our cybersecurity professionals. We also encourage movement between clients and projects through the Accelerator, our internal talent mobility program, through which employees can discover new work opportunities and build connections to achieve their goals. By coupling the right programs with a pioneering mindset, employees can have unparalleled opportunities to grow and evolve—without switching to another organization.



Katie D'Hondt  
Cyber expert

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*Recruiting, retaining, and developing a workforce for the future requires a team of dedicated professionals. Meet one of Booz Allen's architects building a workforce for the future.*

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#### **MEET KATIE**

Katie D'Hondt is a cybersecurity expert supporting the Continuous Diagnostics and Mitigation program. She first joined the firm as an intern via our Summer Games program while studying for her graduate degree in public policy at Harvard.

#### **How is your work making an impact?**

My work allows our clients unprecedented visibility into their networks and provides actionable data about their cyber risk preparedness. I'm building the future for American citizens who expect the appropriate confidentiality, availability, and integrity of their personal data and national security data stored by federal agencies.

#### **How do you feel personally connected to this work?**

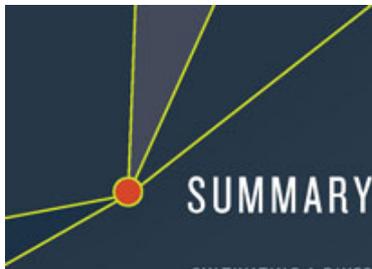
Our work is pushing boundaries by defending critical data assets across the Government. I learn so much from my project team, leadership, and clients every day. Booz Allen provides the necessary support to train people into the jobs they want—and the mentorship and advocacy to succeed once there.

#### **I won't stop until...**

Federal networks are secure.

#### **I'm changing the world by...**

Opening the door for others who may have never considered the cybersecurity industry to join me.



# SUMMARY

CULTIVATING A DIVERSE  
AND EMPOWERED  
WORKFORCE

Solving the world's most pressing problems requires leveraging the skills, talents, and unique perspectives of people who can think critically and imagine new possibilities. When employees feel free to be themselves, have a clear sense of purpose at work, and are empowered to own their experience, the sky is the limit.

**Related content in this Impact Report:**

Building Community Resilience, Tomorrow's Cybersecurity Today, The Future Warrior

**About Booz Allen**

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Booz Allen Hamilton has been at the forefront of strategy, technology, and engineering for more than 100 years. Booz Allen partners with private and public sector clients to solve their most difficult challenges.

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**Email us:** CorporateAffairs@bah.com

Sian Lewis  
Data scientist



# INNOVATION FOR HUMANITY

*When we use the power of innovation for social impact, everyone wins*

IMPACT REPORT 2019

# INNOVATION FOR HUMANITY

*When we use the power of innovation for social impact, everyone wins*

The rate of innovation is accelerating and creating unparalleled technological capabilities. Alongside these advancements lives our belief that being a good corporate citizen means operating ethically while harnessing technology and social innovation solutions to power human potential. We're ensuring this begins today by using technology to combat some of humanity's biggest problems, while looking toward tomorrow by creating avenues and equity for the leaders to come.

## WHAT KIND OF A WORLD DO WE WANT TO MAKE?

Gender inequality, the opioid epidemic, climate change, natural disaster relief—the list of today's societal challenges could stretch across the length of this report. As industry leaders call on their peers to shepherd technology toward social good, studies show that 70 percent of Americans believe companies have an obligation to act on improving issues that may be outside their usual scope of business.

While it would be easier to acknowledge these challenges with surface-level solutions or by merely showing face, confronting them with a holistic strategy could have more equitable and enduring effects.

We believe that being a good corporate citizen means operating ethically while connecting people, organizations, and communities with transformational technology and social innovation solutions that power human potential. To ensure this credo endures, we're taking a twofold approach: earnestly applying technology and capabilities to humanity's most pressing problems today, while creating platforms and pipelines for the problem solvers who will continue to change the world tomorrow.

## CORPORATE SOCIAL RESPONSIBILITY AT BOOZ ALLEN

► **Our Mission Statement:**  
Connecting people, organizations, and communities with transformational technology and social innovation solutions to power human potential.

### OUR THREE PILLARS:

- **Powering Security:**  
To ensure resilience for our employees, communities, and planet
- **Powering Well-Being:**  
To promote holistic well-being among our workforce, our communities, and the environment
- **Powering Opportunity:**  
To drive equity and empowerment in our firm and through our community partners

*When technology's development is insular, we exclude its biggest stakeholder: ourselves.*



## CHANNELING TECHNOLOGY TOWARD TODAY'S CHALLENGES

When technology's development is insular, we exclude its biggest stakeholder: ourselves. Today's rate of innovation gives way to endless potential, so how do we want technology to interact with our neighbors, colleagues, and loved ones?

Consider the possibilities.

What if blockchain could speed up delivery of supplies to communities impacted by natural disaster? What if artificial intelligence could accelerate life-saving medical research? And what if supply chain analysis could prevent synthetic opioids from being used as weapons of mass destruction?

Solutions like this are already in progress at Booz Allen.

### ► **Expediting Natural Disaster Relief Through Hackathons**

Hackathons aren't just for tech types anymore. Cultivating a diversity of expertise, hackathons harness crowdsourcing to expedite solutions for today's most pressing challenges—from idea to prototype.

#### **HACKATHON**

*noun*

A hackathon is a form of customizable crowdsourcing, targeted at creatively solving problems in a highly collaborative environment, which often brings multidisciplinary teams to brainstorm ideas, build prototype solutions, and develop designs. It is results-driven, with specific outcomes in mind, driving toward a solution.

Following the hurricane season of 2017, when Harvey, Irma, and Maria ravaged U.S. coastlines, our colleagues stepped up. In addition to firmwide donations toward relief efforts, we called on more than 100 of our experts in data science, computer programming, and

communications for "Hacking Hurricanes: The Road to Recovery."

Hackathon teams devised ways to create more efficient recovery processes that could ultimately save lives. The winning team's work offered improvements to the Federal Emergency Management Agency's supplier contracting and logistics process. By using blockchain technology to create a secure network of trusted trucking companies that deliver relief supplies, the system would not only ensure speed and accuracy of delivery, but it would also save taxpayer dollars and diversify the supply marketplace. Now in the hands of disaster prevention and emergency response practitioners at Booz Allen, this and other hackathon solutions could become a reality. Imagine the benefits for communities who could eat sooner, receive medical supplies faster, and sleep better at night after experiencing the trauma of a natural disaster.

### ► **Accelerating Life-Saving Medical Research at the Data Science Bowl**

While it's important to be agile in reaction to unexpected disasters, proactively innovating for humanity can have incredible outcomes. At the 2018 Data Science Bowl, the world's premier data science for social good competition presented by Booz Allen and Kaggle, global participants submitted more than 68,000 algorithms to solve the Bowl's challenge focused on nuclei detection—a time-consuming yet critical first step in testing the efficacy of medical treatments. As a result of this groundbreaking work,

hundreds of thousands of hours could be saved for medical researchers developing life-saving solutions—all through the power of data science.

► **Mitigating Health Epidemics During Our Summer Games**

What would a future world without innovative life-saving solutions look like? So that we don't have to find out, we challenge all our problem solvers—including junior employees just starting their careers—to think about solutions today.

Using technology to combat one of today's biggest health crises—the opioid epidemic—could also yield impactful results. During the 2018 Booz Allen Summer Games, participants created a variety of solutions to mitigate the nationwide crisis. Winners' solutions included natural language processing to assess public perception of treatment interventions, in addition to supply chain analysis to mitigate use of synthetic opioids as weapons of mass destruction. We can hardly wait to see what transformative solutions next summer yields.

When we consider how technology could improve and even save the lives of our friends, family, and colleagues, we are even more driven to use bold thinking and technical prowess for better solutions.

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*It's never too early to start challenging today's youngest innovators to think about tomorrow.*

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**CREATING PLATFORMS AND PIPELINES FOR TOMORROW'S PROBLEM SOLVERS**

It's never too early to start challenging today's youngest innovators to think about tomorrow. As part of our holistic approach of applying technology for public purpose, we are building a sustainable and equitable pipeline for these problem solvers. As a foundation, we're committed to fundamental diversity, equity, and inclusion practices across our business. Companies that champion diversity at the board and executive level see more impressive results toward their bottom line and also set a precedent for who can be a future leader.

We champion gender parity in the workplace, and our Women in Data Science group is on a mission to ensure equity in the data science field at all levels. Channeling their functional expertise toward this mission, the group hosted a "Hackathon for Hiring." The hackathon challenged participants to build a model that would predict attrition rates among female new hires and to use natural language processing to assess the gender inclusivity of industry job ads. We

are looking at ways to implement these solutions into hiring practices and people services in pursuit of a more equitable workforce.

The Hackathon for Hiring is just one example of how innovation can power human potential and equitable opportunities for the long run.

Nurturing partnerships with community organizations can also create platforms for mission-driven entrepreneurs. Some partner organizations like this include: (1) SEED SPOT, an incubator that powers both school-aged and adult early-stage entrepreneurs focused on social impact, and (2) the Vinetta Project, a platform that connects female founders and small business owners to investors, events, resources, mentoring opportunities, customers, and partners.



Our Make the Impression event focused on instilling confidence in young women



2018 USA Science & Engineering Festival: Girls in STEM panel & luncheon

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*No matter what tomorrow brings,  
we can rest assured that future  
innovators are ready for the challenge.*

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Opening doors to opportunities for success begins at an early age, especially for science, technology, engineering, and math (STEM) careers. Women comprise 47 percent of the U.S. workforce, and they hold 50 percent of jobs in STEM fields. However, their presence varies greatly depending on occupational cluster and educational level. For example, women make up the majority of healthcare practitioners and technicians, but are strongly underrepresented in computer science and engineering. To help bridge STEM talent gaps, Booz Allen has hosted STEM Girls 4 Social Good, an initiative that empowers girls to learn and apply STEM concepts to society's most pressing problems. Last summer, participants worked with Girls Inc. and the Food and Drug Administration to explore a variety of topics, from foodborne outbreaks to biotech medicine manufacturing. After experiencing these

hands-on opportunities, participants reported increased interest in pursuing STEM-related fields.

We're also a strategic partner with *FIRST* (For Inspiration and Recognition of Science and Technology) and collaborate with the Girl Scouts Nation's Capital in Washington, DC, through our Make the Connection program. *FIRST* is a nonprofit organization dedicated to advancing STEM education for young individuals, as well as building their self-confidence, communication, and leadership abilities. Make the Connection links Booz Allen employees with more than 300 Girl Scouts annually to empower young women to change the world. Bringing it full circle, former *FIRST* and Make the Connection mentees even work at Booz Allen full time now—a powerful testament to the impact that programs like this can have in showing people the opportunities available to them, even years later.

Through programs like *FIRST* and efforts like the Hackathon for Hiring, we're committed to ensuring a more equitable pipeline for future innovators who represent all corners of society. No matter what tomorrow brings, we can rest assured that they are ready for the challenge.



Nyla Beth Gawel  
Vice president, Next.gov initiative

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*Using powerful technology for social impact requires a team of dedicated professionals. Meet one of Booz Allen's architects applying holistic problem-solving to enhance the human experience.*

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#### **MEET NYLA BETH**

Nyla Beth Gawel leads our solutions portfolio, where she connects government and commercial clients with the best e-commerce platforms—some of which her team creates from scratch. Nyla Beth assembles multidisciplinary teams to solve client needs faster and more efficiently. Additionally, as co-founder of our “Innovating the Working Mom” initiative, she created a space for new moms to support each other using consulting and tech tactics. Nyla Beth also recently spearheaded pro bono work with the Kennedy Center and works with a variety of social good initiatives inside and outside Booz Allen.

#### **How do you feel personally connected to this work?**

In everything I'm working on—around citizen engagement and improving how the Federal Government interacts with customers—I remember that I'm also a consumer. The same quality, caliber, and timeliness of experience that I expect is what I want to help ensure our Government provides.

#### **How is your work pushing boundaries?**

I put strategies into action. Doing something the firm has never done before doesn't scare me. We have the ability to build the best products and solutions. They can help our government clients leap ahead.

#### **For whom are you building the future?**

For my kids. I want their future to welcome change and diversity, and for them to embrace good ideas—no matter who delivers them and how.

#### **I won't stop until...**

We continuously challenge ourselves to think differently. Faster. Better. And consider *who else I could involve*.



# SUMMARY

USING TECHNOLOGY IN  
SERVICE TO HUMANITY

As our technology continues to evolve, we have an obligation to ensure that it is created in service to humanity—and not the other way around. Through a holistic approach to social and environmental impact that addresses present-day challenges with technology and also paves the way for our future problem solvers, we can start building a better tomorrow today.

**Related content in this Impact Report:**

Building Community Resilience, The Future Warrior

**About Booz Allen**

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Booz Allen Hamilton has been at the forefront of strategy, technology, and engineering for more than 100 years. Booz Allen partners with private and public sector clients to solve their most difficult challenges.

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# IMPACT REPORT 2019

## Conclusion

### **The future is here. The time to create is right now.**

We are architects of the future. We are wired to connect, to collaborate for change, and to create a better world. As such, we must keep asking questions:

- ▶ We now know what virtual reality looks like, but what will a virtuous reality require?
- ▶ If artificial intelligence is changing the future of human interaction, who will change artificial intelligence?
- ▶ How do we ensure the future we create for ourselves ladders up to the future we're creating for the world?

By investing in innovation, you are investing in the future of government services, cybersecurity, and technology for good. You are helping move the future forward.

*Let's create tomorrow together.*

# NON-GAAP MEASURES

## *Non-GAAP Financial Information*

### NON-GAAP MEASURES

We publicly disclose certain non-GAAP financial measurements, including Revenue, Excluding Billable Expenses, Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses, Adjusted Net Income, and Adjusted Diluted Earnings Per Share, or Adjusted Diluted EPS, because management uses these measures for business planning purposes, including to manage our business against internal projected results of operations and measure our performance. We view Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses, Adjusted Net Income, and Adjusted Diluted EPS as measures of our core operating business, which exclude the impact of the items detailed below, as these items are generally not operational in nature. These non-GAAP measures also provide another basis for comparing period to period results by excluding potential differences caused by non-operational and unusual or non-recurring items. In addition, we use Revenue, Excluding Billable Expenses because it provides management useful information about the Company's operating performance by excluding the impact of costs that are not indicative of the level of productivity of our consulting staff headcount and our overall direct labor, which management believes provides useful information to our investors about our core operations. We present these supplemental measures because we believe that these measures provide investors and securities analysts with important supplemental information with which to evaluate our performance, long-term earnings potential, or liquidity, as applicable, and to enable them to assess our performance on the same basis as management. These supplemental performance measurements may vary from and may not be comparable to similarly titled measures by other companies in our industry. Revenue, Excluding Billable Expenses, Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses, Adjusted Net Income, and Adjusted Diluted EPS are not recognized measurements

under accounting principles generally accepted in the United States, or GAAP, and when analyzing our performance or liquidity, as applicable, investors should (i) evaluate each adjustment in our reconciliation of revenue to Revenue, Excluding Billable Expenses, net income to Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses, Adjusted Net Income and Adjusted Diluted Earnings Per Share, (ii) use Revenue, Excluding Billable Expenses, Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses, Adjusted Net Income, and Adjusted Diluted EPS in addition to, and not as an alternative to, revenue, net income or diluted EPS, as measures of operating results, each as defined under GAAP. We have defined the aforementioned non-GAAP measures as follows:

- ▶ "Revenue, Excluding Billable Expenses" represents revenue less billable expenses. We use Revenue, Excluding Billable Expenses because it provides management useful information about the Company's operating performance by excluding the impact of costs that are not indicative of the level of productivity of our consulting staff headcount and our overall direct labor, which management believes provides useful information to our investors about our core operations.
- ▶ "Adjusted EBITDA" represents net income before income taxes, net interest and other expense and depreciation and amortization and before certain other items, including transaction costs, fees, losses, and expenses, including fees associated with debt prepayments. "Adjusted EBITDA Margin on Revenue" is calculated as Adjusted EBITDA divided by revenue. "Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses" is calculated as Adjusted EBITDA divided by Revenue, Excluding Billable Expenses. The Company prepares Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, and Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses to eliminate the impact of items it does not consider indicative of ongoing operating performance due to their inherent unusual,

extraordinary or non-recurring nature or because they result from an event of a similar nature.

- ▶ "Adjusted Net Income" represents net income before: (i) adjustments related to the amortization of intangible assets resulting from the Carlyle Acquisition, (ii) transaction costs, fees, losses, and expenses, including fees associated with debt prepayments, (iii) amortization or write-off of debt issuance costs and write-off of original issue discount, (iv) release of income tax reserves, and (v) re-measurement of deferred tax assets and liabilities as a result of the Tax Cuts and Jobs Act (the "2017 Tax Act") in each case net of the tax effect where appropriate calculated using an assumed effective tax rate. We prepare Adjusted Net Income to eliminate the impact of items, net of tax, we do not consider indicative of ongoing operating performance due to their inherent unusual, extraordinary, or non-recurring nature or because they

result from an event of a similar nature. We view net income excluding the impact of the re-measurement of the Company's deferred tax assets and liabilities as a result of the 2017 Tax Act as an important indicator of performance consistent with the manner in which management measures and forecasts the Company's performance and the way in which management is incentivized to perform.

- ▶ "Adjusted Diluted EPS" represents diluted EPS calculated using Adjusted Net Income as opposed to net income. Additionally, Adjusted Diluted EPS does not contemplate any adjustments to net income as required under the two-class method as disclosed in the footnotes to the consolidated financial statements.

Below is a reconciliation of Revenue, Excluding Billable Expenses, Adjusted Operating Income, Adjusted EBITDA, Adjusted EBITDA Margin on Revenue, Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses, Adjusted Net Income, Adjusted Diluted EPS, and Free Cash Flow to the most directly comparable financial measure calculated and presented in accordance with GAAP.

(AMOUNTS IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)	FISCAL YEAR ENDED MARCH 31,		
REVENUE, EXCLUDING BILLABLE EXPENSES	2019 (UNAUDITED)	2018 (UNAUDITED)	2017 (UNAUDITED)
Revenue	\$6,704,037	\$6,167,600	\$5,809,491
Billable Expenses	2,004,664	1,861,312	1,751,077
Revenue, Excluding Billable Expenses	<b>\$4,699,373</b>	<b>\$4,306,288</b>	<b>\$4,058,414</b>
<b>EBITDA, ADJUSTED EBITDA, ADJUSTED EBITDA MARGIN ON REVENUE &amp; ADJUSTED EBITDA MARGIN ON REVENUE, EXCLUDING BILLABLE EXPENSES</b>			
Net income	\$418,529	\$301,692	\$260,825
Income tax expense	96,874	128,344	164,832
Interest and other, net (c)	86,991	89,687	80,357
Depreciation and amortization	68,575	64,756	59,544
EBITDA	670,969	584,479	565,558
Transaction expenses (b)	3,660	—	3,354
Adjusted EBITDA	<b>\$674,629</b>	<b>\$584,479</b>	<b>\$568,912</b>
Adjusted EBITDA Margin on Revenue	10.1%	9.5%	9.8%
Adjusted EBITDA Margin on Revenue, Excluding Billable Expenses	14.4%	13.6%	14.0%
<b>ADJUSTED NET INCOME</b>			
Net income	\$418,529	\$301,692	\$260,825
Amortization of intangible assets (a)	—	—	4,225
Transaction expenses (b)	3,660	—	3,354
Release of income tax reserves (d)	(462)	—	—
Re-measurement of deferred tax assets/liabilities (e)	(27,908)	(9,107)	—
Amortization or write-off of debt issuance costs and write-off of original issue discount	2,920	2,655	8,866
Adjustments for tax effect (f)	(1,711)	(969)	(6,578)
Adjusted Net Income	395,028	294,271	270,692
<b>ADJUSTED DILUTED EARNINGS PER SHARE</b>			
Weighted-average number of diluted shares outstanding	143,156,176	147,750,022	150,274,640
Adjusted Net Income Per Diluted Share (g)	<b>\$2.76</b>	<b>\$1.99</b>	<b>\$1.80</b>

- a. Reflects amortization of intangible assets resulting from the Carlyle Acquisition.
- b. Fiscal 2019 reflects debt refinancing costs incurred in connection with the refinancing transaction consummated on July 23, 2018. Fiscal 2017 reflects the debt refinancing costs incurred in connection with the refinancing transaction consummated on July 13, 2016.
- c. Reflects the combination of Interest expense and Other income (expense), net from the consolidated statement of operations.
- d. Release of pre-acquisition income tax reserves assumed by the Company in connection with the Carlyle Acquisition.
- e. Reflects primarily the adjustments made to the provisional income tax benefit associated with the re-measurement of the Company's deferred tax assets and liabilities as a result of the 2017 Tax Act, including a measurement period adjustment associated with the unbilled receivables method change approved by the IRS in the third quarter of fiscal 2019.
- f. Fiscal 2017 reflects the tax effect of adjustments at an assumed effective tax rate of 40%. With the enactment of the 2017 Tax Act, fiscal 2018 and fiscal 2019 adjustments are reflected using assumed effective tax rates of 36.5% and 26%, which approximate the blended federal and state tax rates for fiscal 2018 and 2019, respectively, and consistently exclude the impact of other tax credits and incentive benefits realized.
- g. Excludes an adjustment of approximately \$1.8 million, \$1.9 million, and \$2.3 million of net earnings for fiscal 2019, 2018, and 2017, respectively, associated with the application of the two-class method for computing diluted earnings per share.

