

*This report is a product of the Defense Innovation Board, a Federal Advisory Committee established to provide independent advice to the Secretary of Defense. Statements, opinions, conclusions, and recommendations in this report do not necessarily represent the official position of the Department of Defense (DoD).*

**CLEARED  
For Open Publication**

**Department of Defense Workforce: Competing for Digital Talent**  
***COVID-19 Lessons Learned***

Sep 15, 2020

Department of Defense  
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Co-authors: Kurt Delbene, Adam Grant, Marne Levine, Milo Medin, Jennifer Pahlka  
Staff Lead: Kaitlin Bulavinetz

The Department of Defense (DoD) is working to digitally transform its technology and operations. Critical to this transformation is the successful recruitment and retention of digital talent in the DoD civilian workforce. However, the Department struggles to attract and compete for talent in this field.

Building on the DIB’s previous works on digital talent, this report examines emerging workforce trends in the commercial sector resulting from the COVID-19 pandemic and how DoD might leverage those trends to be more competitive for civilian digital talent in this new environment. This report also highlights ongoing hiring innovations across the Department to recruit and retain remote digital talent.

Although the emerging workforce trends impact employees across many sectors, this report is focused primarily on civilian technologists, or civilians with digital talent. These are individuals who “possess technical degrees and/or highly specialized skills in digital technologies and innovation”<sup>1</sup> needed across DoD as part of its digital transformation.

Throughout the paper, the terms telework, remote work, and work from home are used interchangeably to indicate an employee who does not commute or travel to a central place of work and works outside of a traditional office environment. It should be noted that while telework is the preferred term in government,<sup>2</sup> industry utilizes the terms remote work or work from home. For the purposes of this report, flexible work is defined as a pre-coordinated work schedule that is a mix of working in the office and working from one’s place of residence.

<sup>1</sup> [https://media.defense.gov/2019/Oct/31/2002204196/-1/-1/0/WORKFORCE\\_NOW.PDF](https://media.defense.gov/2019/Oct/31/2002204196/-1/-1/0/WORKFORCE_NOW.PDF)

<sup>2</sup> <https://www.opm.gov/FAQs/QA.aspx?fid=b48bf83b-440c-4f1e-a88c-3cdc9d802ac8&pid=75346675-3b92-4aec-831d-58cf5b0e86d2#:~:text=In%20practice%2C%20%22telework%22%20is,%2C%20home%2C%20telework%20center>

## Overview

The hiring landscape is shifting for organizations looking to recruit digital talent. While companies have realized the need to recruit from a wider talent pool and remove geographic constraints, COVID-19 has driven widespread office closures that require employees to work from home, which in turn has long-term implications for how employers recruit, hire, and manage their workforce. In certain sectors and industries, work from home has proven more effective than expected and many technology companies, in particular, are seizing the opportunity to rethink human capital strategies and geographic constraints to access new and more diverse talent pools, and provide flexibility to existing employees.

DoD has traditionally struggled to compete for digital talent for reasons ranging from relocation requirements, to hiring speed, to access to modern information technology (IT) and tools. The emerging work from home norm creates an opening for the Department to either adapt and narrow the gap or fall further behind in competing for top-notch technical talent. If the Department wants to continue to be viewed as an attractive, modern-day employer, it must take action to keep pace with the private sector trends and offer remote work options as a competitive hiring tool, and in the longer term, consider a human capital strategy that includes remote work as the norm. Without this capability, DoD will further limit its ability to attract, hire, and retain technologists as the remote work trend continues to accelerate.

## Private Sector Digital Workforce Trends

Across the private sector, companies are actively exploring how remote work will shape the future of their workforce. Even before the pandemic, there was evidence from a Stanford University study that remote work could be successfully employed. In a case study at an international travel agency, economists found that employees who were randomly assigned to work from home completed 13.5% more calls—and they were half as likely to quit over the ensuing months.<sup>3</sup> The productivity gains were driven in part by working in a quieter environment and by the fact that employees worked more hours from home; they started working earlier in the morning, took shorter breaks and fewer sick days, and stayed focused until the end of the day. In a meta-analysis of 46 studies of nearly 13,000 employees, overall, telecommuting predicted higher performance and satisfaction, as well as lower stress, work-family conflict, and intentions to leave—in part because employees appreciated the autonomy.<sup>4</sup> And in a study of patent examiners at the U.S. Patent & Trade Office, being allowed to work from anywhere (rather than only from home) increased output by 4.4% without any observable cost to quality.<sup>5</sup>

---

<sup>3</sup> <https://academic.oup.com/qje/article-abstract/130/1/165/2337855>

<sup>4</sup> <https://psycnet.apa.org/doiLanding?doi=10.1037%2F0021-9010.92.6.1524>

<sup>5</sup> <https://journals.aom.org/doi/abs/10.5465/AMBPP.2020.225>

Now, technology-oriented organizations are revisiting long-standing assumptions about office culture, productivity, and remote work as employees adjust to the current environment.<sup>6</sup> Organizations are also considering how remote work may support broader organizational goals, such as minimizing operating costs and office footprints, and recruiting a more diverse workforce.<sup>7</sup> These benefits may drive a longer-term shift towards remote work than has previously existed.

Initial data suggests many companies will extend work from home opportunities beyond the pandemic, as several technology companies have already announced permanent work from home options.<sup>8</sup> For example, Facebook CEO Mark Zuckerberg announced that a subset of current employees can apply to permanently work remotely, and Facebook now expects up to half of its 48,000 employees to be working remotely in the next five to ten years. Jack Dorsey, CEO of Twitter and Square, announced that all staff can choose to work from home permanently. Other industries vying for digital talent have also adjusted their remote work policies. Walmart announced that members of the 10,000 person technology team “thrived” while working at home during the pandemic and will continue to work remotely for the foreseeable future.<sup>9</sup>

As highlighted in the DoD Digital Modernization Strategy, “competition for high quality, experienced digital workforce personnel is constant and increasingly aggressive.”<sup>10</sup> As the private sector shifts towards remote work, DoD must similarly evaluate its digital talent management and strategy to determine how it can best compete for human capital in this new environment. This trend towards a remote workforce grants new flexibility to both existing and future employers and employees, and DoD must consider how this may continue to tip the scale of competitive hiring in favor of the private sector if DoD cannot offer similar benefits.

### **DoD Recruiting, Hiring, and Onboarding Remote Digital Talent**

DoD has already proven it is capable of rapidly adapting its workforce norms when confronted with crisis. Like the private sector, DoD was forced to shift to remote hiring and onboarding in recent months. DoD organizations used the new Commercial Virtual Remote (CVR) environment to conduct video interviews and employed new software products to hold virtual career fairs. Internal Department policies and processes have shifted to temporarily authorize remote onboarding.<sup>11</sup> These measures include swearing-in new employees over video and mailing new employees mobile technology. Although some onboarding activities, such as

---

<sup>6</sup> [https://sectigo.com/download-content?token=1596469741&target=resource-library/2020-work-from-home-it-impact-study&utm\\_campaign=wakfield-report-wfh](https://sectigo.com/download-content?token=1596469741&target=resource-library/2020-work-from-home-it-impact-study&utm_campaign=wakfield-report-wfh)

<sup>7</sup> <https://www.usatoday.com/story/money/2020/07/21/new-jobs-remote-work-growing-work-anywhere-coronavirus/5448032002>

<sup>8</sup> <https://www.gartner.com/en/newsroom/press-releases/2020-07-14-gartner-survey-reveals-82-percent-of-company-leaders-plan-to-allow-employees-to-work-remotely-some-of-the-time>

<sup>9</sup> <https://www.cnn.com/2020/05/28/walmart-says-its-thousands-of-tech-employees-will-continue-remote-work.html>

<sup>10</sup> <https://media.defense.gov/2019/Jul/12/2002156622/-1/-1/1/DOD-DIGITAL-MODERNIZATION-STRATEGY-2019.PDF>

<sup>11</sup> <https://www.chcoc.gov/content/boarding-processes-new-employees-during-covid-19-emergency>

issuing government credentials on ID cards, must still be done in person, the Department has laid the groundwork to hire and onboard remote digital talent beyond the pandemic. These changes have occurred at a rate previously unimaginable for DoD and indicate an opportunity for DoD to adapt its processes and image to become more competitive in the talent market.

*Spotlight on Innovative Virtual Hiring and Onboarding: The Talent Hunter*

*The Defense Digital Service's (DDS) in-house recruiting team uses tech recruiting websites and other commercial sector techniques, such as accepting candidate referrals, to pursue remote digital talent.<sup>12</sup> These practices help DDS maintain a diverse workforce (for example, women hold 47% of technical positions in DDS despite women making up 25% of computer jobs in the United States).<sup>13</sup> DDS seamlessly transitioned to 100% remote hiring and onboarding during the pandemic and provided onboarding support to other offices.*

*Collaboration Tools and IT Infrastructure*

As explored in previous DIB recommendations, the IT capability gap between the DoD and private sector is an underlying reason why DoD struggles to recruit and retain digital talent. In response to a shift to remote work, DoD's Chief Information Officer (CIO) rapidly deployed and expanded the set of IT capabilities to DoD employees.<sup>14</sup> While working remotely, DoD employees are using some of the same virtual collaboration products used by commercial technology companies with an added layer of security, shrinking the IT capability gap between the private and public sector while continuing to understand and mitigate risks to the network, moving DoD closer toward approaches to identity management and network security that are employed in the commercial sector.

*Spotlight on Innovative Collaborative Capability: Commercial Virtual Remote Environment*

*The Cloud Computing Program Office (CCPO) team within DoD CIO deployed a new DoD-wide collaboration capability, the Commercial Virtual Remote (CVR) environment, to over 1.1M Department of Defense users in the midst of the pandemic, all while working completely remotely. CCPO established this collaborative environment for the entire Department's use to allow the DoD workforce increased flexibility and enable seamless operations. The small CCPO team deployed CVR by leveraging a scrum methodology, which focuses on iterative delivery driven by user feedback. This is typically a "high touch" development method with frequent team and user interaction, but these interactions were able to take place in the virtual environment and deliver critical capabilities across DoD.*

<sup>12</sup> <https://www.nextgov.com/emerging-tech/2020/06/3-ways-hire-more-tech-talent/166239/>

<sup>13</sup> <https://www.cio.com/article/3516012/women-in-tech-statistics-the-hard-truths-of-an-uphill-battle.html>

<sup>14</sup> <https://breakingdefense.com/2020/04/covid-19-dod-remote-access-capacity-soars-tenfold/>

However, these changes may not be permanent. The DoD is considering which capabilities will be available after workers return to the office. Department leaders should preserve IT modernization gains, as DoD's ability to offer remote work options depends on secure and stable infrastructure enabled by remote collaboration tools to ensure operational resilience.

*Spotlight on Innovative IT Infrastructure: The Facilitator*

*The Defense Information Systems Agency (DISA) has played a critical role in the Department's monumental surge in remote work capabilities during the pandemic. With DISA's support, DoD saw months and years of IT modernization (e.g., new circuits, increased bandwidth and increased conference call lines) occur within mere weeks as it worked to support social distancing practices while maintaining mission continuity.<sup>15</sup> This effort enabled approximately one million DoD military, civilian and contractor personnel to leverage the increased network capacity.*

*Remote Culture Enabled by Leadership*

COVID-19 drove many DoD leaders to experience remote work for the first time in their careers and is changing widely held views on remote work, management, and employee productivity, performance and presence. Department leaders have expressed their appreciation for remote work as a powerful tool that can support their missions if used intentionally and for specific teams and roles, a significant leap from the Department's deep-rooted in-office culture.<sup>16</sup>

Department leaders can build on the progress made during the pandemic by continuing to adapt the culture around remote work. Changes in leaders' approaches, management philosophies, office norms, and decision-making processes, as well as modern infrastructure and tools, will help attract and employ a more agile, diverse, and distributed workforce. As employees return to the office, it is critical that senior leaders model and normalize interactions with remote colleagues to maintain collaboration, creativity and innovation. One recent study suggests the shift to remote work during COVID-19 increased communications 40% among employees with strong ties, but decreased communications 10% where there were weak ties.<sup>17</sup> Because leaders set office culture and norms - "command culture" in DoD - they can help shift the culture and offset impacts to office communication and collaboration by incorporating telework into their schedules, prioritizing internal communications and modifying in-person practices to account for remote employees.<sup>18</sup>

<sup>15</sup> <https://www.defense.gov/Explore/News/Article/Article/2275595/disa-boosts-telework-connections-in-response-to-pandemic/>

<sup>16</sup> <https://fcw.com/articles/2020/07/24/williams-telework-dod-ranks.aspx>

<sup>17</sup> <https://hbr.org/2020/07/the-implications-of-working-without-an-office>

<sup>18</sup> <https://hbr.org/2020/03/a-guide-to-managing-your-newly-remote-workers>

*Spotlight on Innovative Culture: The Progressive*

*During COVID-19, leaders in the Air Force’s Kessel Run encourage collaboration and flexibility while ensuring teams have access to necessary equipment and tools. With team members working remotely, leaders and managers have shifted their focus on internal communications to ensure remote workers are fully integrated into office activities and culture. Kessel Run has found that the teams pushed 30% more code into the field while working from home during the pandemic than previously when working in the office. The code passed all necessary tests and cybersecurity requirements prior to deployment, reflecting no decrease in quality and exponential increase to mission support and effectiveness.*

**A Window of Opportunity**

As pandemic restrictions adjust over the coming months, DoD has the opportunity to learn from its current remote workforce experience and that of the commercial sector, and build on successes like the “Spotlights” listed in this report to streamline and standardize policies and processes and adapt the culture around performance and presence to keep pace with the modern workforce. The Department cannot afford to fall further behind the private sector or other government agencies in the battle to attract and retain digital talent, and the Department’s ability to adapt to modern workforce trends will either widen the gap or serve as the springboard for DoD to transform its workforce. DoD has an opportunity to propel a step-change in culture and management, and accelerate access to modern IT infrastructure and tools to strengthen its recruiting and leverage the effects of a highly professional and productive distributed workforce that can tap into talent worldwide in support of the Department’s mission.

*Spotlight on Innovation: The Pioneer*

*The Air Force’s Platform One became the first federal office to adopt a “work from anywhere” policy beyond COVID-19.<sup>19</sup> The decision was made after results from an internal survey revealed that many employees wanted to continue working remotely and leadership realized there was an increase in productivity while employees worked remotely during COVID-19.<sup>20</sup> Specifically, the Platform One team increased their container hardening work by 35%. The office consistently prioritizes providing essential technical capabilities and modern tools for employees. Platform One’s leaders maintain regular communication by hosting daily calls open to all employees where they discuss works in progress. Since the start of the pandemic, the organization has not only retained its existing elite technical workforce but grown from 40 to over 180 employees.*

<sup>19</sup> <https://medium.com/dodcollective/to-the-employees-of-department-of-defense-platform-one-stay-remote-b26880f84491>

<sup>20</sup> <https://www.nextgov.com/emerging-tech/2020/05/air-forces-platform-one-team-thought-it-was-agile-then-covid-19-hit/165676/>

## Defense Innovation Board Recommendations

1. The DoD should preserve and expand IT infrastructure upgrades and tools made available during COVID-19 to enable a more distributed workforce.
  - The DoD should consider publishing a remote and distributed workforce plan beyond COVID-19, taking into account industry best practices.
  - The DoD should develop metrics and benchmarks on both IT capabilities and infrastructure, as well as remote workforce trends, to report annually.
  - The DoD should enhance identity management tools and protection against insider threats, incorporating zero trust architecture (ZTA) as outlined in DIB's *The Road to Zero Trust (Security)*, to securely scale remote work capabilities.<sup>21</sup>
  - The DoD should ensure software tools and applications are made available to employees regardless of their physical location.
2. The Department should continue to expand classified remote work options, while exploring novel approaches to classified work.
  - The DoD should continue to invest in mobile devices that allow more employees to, whenever possible, complete classified work remotely without sacrificing security.<sup>22</sup>
  - The DoD should consider creating a nationwide network of dedicated co-working or shared workspaces (e.g., regional SCIF hubs) for remote employees (who are properly credentialed and cleared) to work on or access classified materials.
3. The Department should standardize and streamline efforts to recruit and retain remote civilian digital talent through adjusted policies and incentives.
  - The DoD should prioritize hiring digital talent, setting annual goals and benchmarks, and leveraging new tools, platforms and approaches to recruit diverse technical talent.
  - The DoD should standardize processes for fully-remote recruiting and hiring activities (e.g., virtual job fairs and interviews, issuance of credentials and IT equipment).
  - The DoD should appoint a digital recruitment and management officer, as outlined in the FY20 National Defense Authorization Action §230 and the DIB's *Digital People Officer* report<sup>23</sup> to more effectively and rapidly recruit, develop and retain digital talent.

---

<sup>21</sup> [https://media.defense.gov/2019/Jul/09/2002155219/-1/-1/0/DIB\\_THE\\_ROAD\\_TO\\_ZERO\\_TRUST\\_\(SECURITY\)\\_07.08.2019.PDF](https://media.defense.gov/2019/Jul/09/2002155219/-1/-1/0/DIB_THE_ROAD_TO_ZERO_TRUST_(SECURITY)_07.08.2019.PDF)

<sup>22</sup> <https://fedtechmagazine.com/article/2020/09/dod-wants-remote-workers-be-able-access-classified-information>

<sup>23</sup> [https://media.defense.gov/2020/Mar/05/2002259780/-1/-1/0/DIB\\_SEC.%20230\\_RECOMMENDATIONS\\_%20FINAL\\_.PDF](https://media.defense.gov/2020/Mar/05/2002259780/-1/-1/0/DIB_SEC.%20230_RECOMMENDATIONS_%20FINAL_.PDF)

4. The Department should prioritize efforts to change the culture around remote work.
  - Senior-most Department leaders should commit to periodically working from home to model behavior, norms and expectations around performance and presence; this will also create a demand for IT capabilities to remain up-to-date and do not atrophy.
  - DoD organizations should consider dedicated unclassified areas for in-office teams operating in a SCIF to fully utilize virtual collaboration tools on government or approved personal devices to enable engagement with remote work staff and teams and foster office culture.
  - The Department should issue a playbook or guide on best practices to educate DoD employees, teams, managers, and leaders on effective operating models and practices for remote work.
  - The DoD should consider annual awards for excellence recognizing organizations making strides in embracing remote work to meet mission.
5. DoD should consider dedicated remote work pilot programs to recruit and fill critical civilian technical talent gaps at priority organizations.
  - DoD should identify priority organizations or roles with digital talent gaps or requirements and identify jobs that the organizations will hire fully-remote staff.
  - The organizations should capture and document practices to develop DoD-wide best practices and models to replicate and scale remote work.

## Addendum

Best Practices & Tools:  
Defense Digital Services & Platform One  
Formulas for Successfully Employing Remote Teams  
Recruiting + Technology + Culture

This addendum captures Defense Digital Service (DDS) and Platform One best practices and tools that enable success among and across their remote digital teams to demonstrate what can be adopted by other DoD organizations today.<sup>24</sup>

**Recruiting:** Below are excerpts from Defense Digital Service’s Recruiting and Hiring Best Practices Playbook.<sup>25</sup>

DDS on remote work culture: *Remote work is the new normal. For a technologist, it is not simply a preference, but a work style that is highly negotiated with potential employers. There are several studies that have proven that employees who work remotely are often more engaged with their team.*

DDS recruiting and hiring best practices from Playbook:

- *Ask people in tech roles to write and review job announcements and position descriptions (Speak Nerd).*
- *Make hiring a team effort by allowing employees to be part of the hiring process and offering incentives for employees who refer strong technical talent.*
- *Place job announcements on platforms outside of USAJobs.gov by establishing an account with an online employment marketplace (e.g., LinkedIn, ZipRecruiter, or AngelList).*
- *Ensure your organization is inviting to all people and review your team’s hiring practices to eliminate conscious or unconscious discrimination.*
- *Work with key stakeholders (e.g., security, drug testing office) to identify how to onboard candidates quickly.*
- *Engage with newly hired candidates on a weekly basis during onboarding.*
- *Use people operations tools when onboarding new employees to streamline the system.*

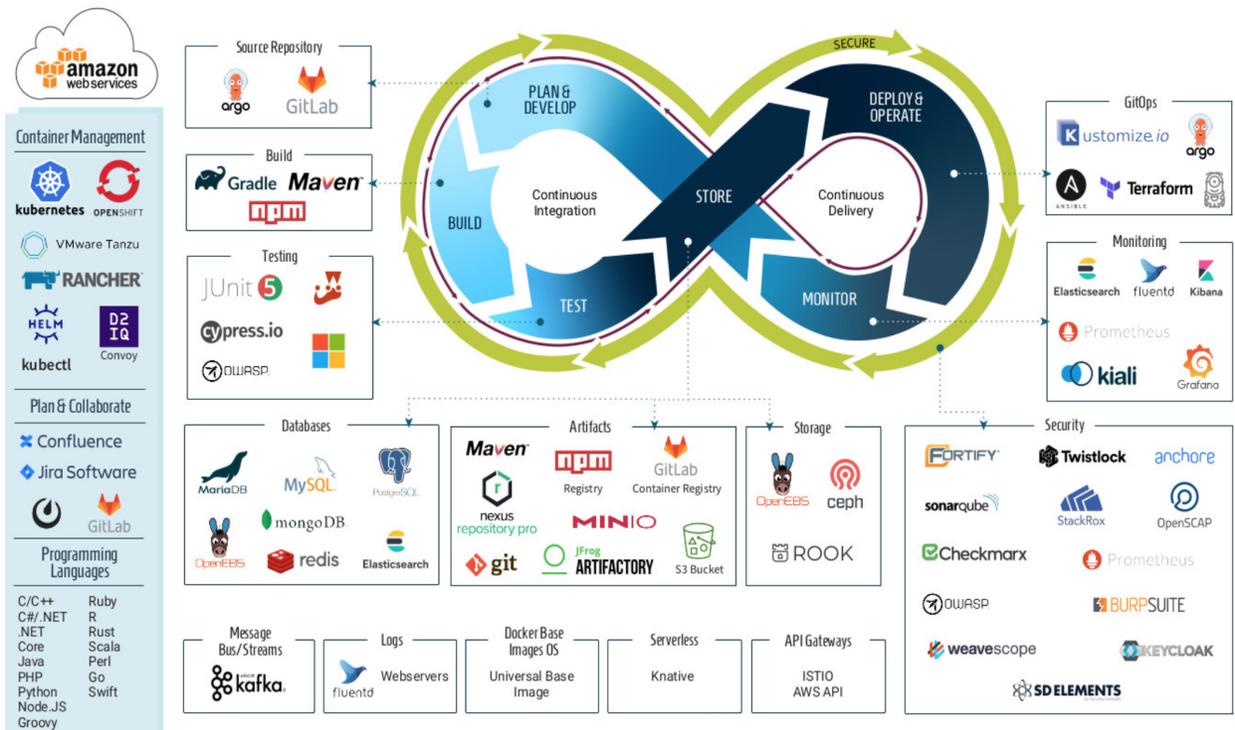
---

<sup>24</sup> Tools listed/shown in this addendum are for illustration only: no endorsement implied.

<sup>25</sup> Majority of language is directly from DDS presentation “Break the Code.”

**Technology:** Below is Platform One’s technology ecosystem, demonstrating the tools they make available to their staff. The tools depicted in the graphic are used by technologists on a daily basis and enable the organization to execute at the “speed of the cloud with the security DoD mandates and trusts.” All commercial products are FOUO compliant and available as an enterprise service. This means any DoD organization can leverage the capabilities as long as they pay for their own overhead.

Platform One’s Technology Stack<sup>26</sup>



<sup>26</sup> This graphic illustrates many of the tools in the Platform One Technology Stack on the date of publication. The most up-to-date list of available tools can be found here for CAC enabled users: <https://ironbank.dsop.io/ironbank/repomap>

Platform One’s collaboration and security model: *If a technologist needs a tool that doesn’t exist, the team should build it and deploy it. This is how Platform One created Mattermost, the organization’s collaboration platform. As depicted in the graphic below, Mattermost integrates with developer tools for streamlined communications. CNAP serves as the Zero Trust stack to verify the identity of anyone accessing applications.*



**Culture:** Below are examples of how both DDS and Platform One leadership teams cultivate a culture of excellence, inclusion, and performance decoupled from presence that enables a culture of high-performing teams who meet their missions.

For DDS, consistent communication is key to sustaining its culture when employees are fully remote. To accomplish this, the leadership team embraces technology. For example, DDS uses surveys from Culture Amp to maintain a pulse on the organization’s culture to identify any changes in employee morale. Leaders also work remotely and encourage employees to maintain a healthy work-life balance through maxi-flex schedules. In addition to weekly check-in calls about projects, the team regularly participates in virtual social engagements.

Platform One’s leadership team fosters an environment of transparency and hyper connectivity for the fully remote team. Each day employees participate in a 15-minute structured “Stand-Up” call where they learn about major project updates. This is immediately followed by an optional 30 minute “Daily” call, which has an open door attendance policy. Platform One adopted the practice of holding a Daily from Pixar as a way to foster team camaraderie and creativity. Chat channels and Jira boards are public so anyone in the organization can learn about a project.