



Government of the District of Columbia



Office of Chief Technology Officer

Tegene Baharu
Acting Chief Technology Officer

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Committee of the Whole
Chairman Phil Mendelson

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Room 412
John A. Wilson Building
1350 Pennsylvania Avenue, NW
Washington, DC 20004

**STATEMENT OF TEGENE BAHARU, ACTING CHIEF TECHNOLOGY OFFICER,
BEFORE THE COMMITTEE OF THE WHOLE, DISTRICT OF COLUMBIA COUNCIL**

Tuesday, March 10, 2015

Chairman Mendelson and esteemed Members of the Committee of the Whole, it is an honor to appear before you today to report on the performance of the Office of the Chief Technology Officer (OCTO) in Fiscal Years 2014 and 2015 to date. My name is Tegene Baharu, and I am the Acting Chief Technology Officer of the District of Columbia. I am joined today by Maurice Henderson, OCTO's Chief Administrative Officer, and Phil Peng, our Agency Fiscal Officer. I would like to begin my testimony with an overview of OCTO. I will then provide highlights of OCTO's performance and close with a brief overview of my background and my plans for OCTO's future.

I. Introduction

OCTO's main function is to ensure that the District government remains at the forefront of technology innovation to enable it to better deliver services to residents, businesses, and visitors.

For more than 15 years, OCTO has led the strategy, deployment and management of the District's technology. This includes driving nearly 100 District agencies to deploy, centralize, consolidate, and modernize city technologies. OCTO's mission is underpinned by 5 critical objectives, designed

to facilitate successful government operations for the District through technology. First, ***OCTO***

provides strategic information technology leadership and fuels technology innovation for the

District government. This enhances the delivery of government services to the public. Second,

OCTO maintains and provides a ubiquitous, reliable, and secure computing environment. This

ensures continuity of government operations and safeguards the District's data and assets. Third,

OCTO facilitates the "Open Government" initiative by ensuring that government information

is readily available to the public electronically, through structured data sets. Fourth, ***OCTO***

manages the District's communications and IT assets strategically and efficiently to reduce the

cost of government operations and to save taxpayer dollars. Lastly, ***OCTO promotes digital***

literacy, broadband access, and technology inclusion.

OCTO is guided by the following key principles in order to deliver on its mission and to continuously provide value-added technology strategy and services to the nation's capital:

- **Innovation** – OCTO leverages industry best practices, private sector partnerships, and fosters a culture of agency-centric design to drive innovation. We develop new technologies and services that are private sector savvy and cost-competitive. We deliver clear value to constituents. The results are realized efficiencies, optimized processes, and financial value.
- **Service Delivery** – Technology does not stand on its own, it comes alive through a careful process that is born from a customer-centric mindset. Service delivery for OCTO necessitates a strong commitment to making technology intuitive yet effective and coupled with disciplined planning, implementation, and excellent support practices for the agencies we serve. These concepts are the fabric of service delivery for OCTO and are evident in how we engage District agencies, the public we serve, and the businesses that depend on District government operations every day.

- **Governance, Security, and Accountability** – With the ultimate goal of managing IT solutions that achieve the “common” good, OCTO is committed to improving technology performance for the District by shifting to a *Service Level* based measurement system. We deploy sustained and modernized solutions; maintain the intricate balance between the need for privacy and security with the empirical necessity and requirements to practice open government; and balance the need for customized solutions with the opportunities and benefits of standardization. It is our goal to ensure that each agency can benefit from a uniform and unified method for selecting and deploying technology, enabling all District agencies to achieve our mission with transparency and security preserved.
- **Efficiency** – We design products and services to function within the enterprise architecture, finding the most innovative and uniform approach to solving business problems and supporting commercial solutions that work well within existing platforms, infrastructure, and operations, wherever possible. We facilitate processes that promote the use of enterprise applications over a standard service-oriented middleware architecture, resulting in cost and operational efficiencies for the city.

Efficiency is the result of smart selection of technology, the disciplined deployment and management of technology solutions combined with exemplary Information and Communication Technology (ICT) management. OCTO excels in all named areas.

OCTO is the common platform for District government operations that encompass the public safety, education, health, and economic development sectors. OCTO plays a critical role both for emergency and routine services of the District government. Further, OCTO powers the platform that District agencies rely on--whether through voice systems that help make the 911 and 311 call centers efficient and effective, location-aware applications that link residents with city services, wireless connectivity for student testing in schools, or public safety infrastructure supporting first responders in the line of duty. These examples represent a fraction of the mission-critical city services and eGovernment offerings that OCTO provides to ensure that the District functions at the highest levels using the latest technologies that make good sense for our government.

II. FY2014 and FY2015 Performance Highlights

Now that I have given an overview of OCTO, let's begin with the details of OCTO's FY2014 and FY2015 to date activities and accomplishments. The areas I will highlight include: Education, Government Operations, Infrastructure, Digital Inclusion, and Public Safety.

A. Education

In the education sector, OCTO has partnered with the District of Columbia Public Schools (DCPS) to ensure that the schools and central office staff have the operational resources, application support, help desk, security, and infrastructure they need so that educators can focus on the instruction of our students. OCTO is supporting DCPS through a number of programs to include modernization of the IT infrastructure and other initiatives, while establishing an education network platform that will benefit the District's entire educational eco-system. I'd like to share a few examples:

1. Equity in Education – “MySchoolDC”

MySchoolDC (MSDC) lottery is an application that OCTO developed and deployed for the Deputy Mayor of Education (DME), DCPS and the Public Charter School Board (PCSB) to enable school-choice services for families with enrollment requests at traditional public and charter schools in the District for grades PreK3 -12. This comprehensive application enables an automated application process and corresponding random lottery system to determine equitable placement for students in participating schools.

2. An overhaul for Student Information System – “DC STARS”

DCPS is engaged in the replacement of its aging Student Information System (SIS) - DC STARS. The Student Information System is the primary system for tracking information such as attendance, discipline, and perhaps grades. As part of the modernization effort, DCPS has selected Follett’s Aspen Student Information System (Aspen) and is planning to roll out a solution in three distinct phases: Elementary Schools, Secondary Schools Scheduling, and Secondary Schools. As part of this effort, OCTO is providing a multi-tiered database, application, and web environment to support the student information system (SIS).

3. Next Generation Internet for the District’s Educational Echo System – “Edu-Net”

OCTO has developed and deployed “Edu-Net”, a next-generation Education Network platform that supports the entire educational ecosystem with dedicated, fully redundant, high-speed broadband access and a matching equipment refresh program. Edu-Net enables students, teachers, and educational administrators in the District to utilize advanced technology. Enabling this high-speed capacity promotes an educational environment where information can be readily shared. Using Edu-Net, the District’s educational and library organizations, which include DCPS, the District Charter Schools and institutions of higher learning, can segregate data and resources based on their unique needs. Edu-Net’s smart design provides the ability to meet the broadband needs of educational institutions, both now and in the future.

4. A high-performance research and education infrastructure for the District “CAAREN”

In addition to our role in Edu-Net, OCTO established a key working partnership with the George Washington University’s Capital Area Advanced Research and Education Network (CAAREN).

CAAREN offers research network services to government, education and research organizations, and private sector organizations within the District of Columbia and Northern Virginia. This partnership enables connectivity and is key for Science, Technology, Education, and Mathematics (STEM) and other school initiatives by enabling them to utilize advanced research programming.

5. DCPS Citywide Infrastructure Upgrade – Schools Modernization Program

OCTO's Information and Communications Technology (ICT) team successfully upgraded IT infrastructure in 11 public schools in FY2014 and 14 public schools in FY2015 to date, bringing the total of school IT upgrades to 49 since FY2013. These upgrades are significant. OCTO provides state-of-the-art unified communications platforms, benefiting students and educators throughout the District by providing secure and reliable wired and wireless access. These upgrades are essential for the successful execution of Common Core PARCC online testing, day-to-day classroom and administrative use. The platform also supports IP-enabled security and other applications. OCTO has also expanded our virtual computing platform to public schools as a means to protect data.

6. OCTO's FY2015 Vision for Education

While the accomplishments of FY2014 are promising, there is still much to do in the education sector. OCTO plans to enhance education through the following actions. First, we are making high-speed broadband access available to all schools in the District, enabling readiness for online testing and blended learning opportunities. Second, we are enabling technology applications and systems that help students learn, teachers get needed resources, and administrators manage schools more effectively and efficiently. Third, DCPS will leverage OCTO subject matter experts to develop career track opportunities for summer internships as well as post-graduate employment opportunities, providing higher earning wages and jobs.

B. Enabling Government Operations

OCTO's charge is to use technology to facilitate effective government operations. To meet this end, OCTO enhances how the District government operates through a number of initiatives. Our accomplishments illustrate how technology makes our government work smarter. I would now like to share a few of OCTO's initiatives and accomplishments in this area:

1. Service Delivery, Innovation, and Open Government

With respect to service delivery, innovation, and open government, OCTO is expanding and enhancing data availability, fostering strategic partnerships, and developing and enhancing mobile applications for government services.

Mobile apps and web-based technologies are the cornerstone of eGovernment services, and OCTO continues to pursue an ever-increasing amount of mobility services for the District government and the public.

In our continuing effort to increase data transparency in the District, OCTO launched the new Open Data Portal in FY2014 (see <http://opendata.dc.gov>), which we continue to improve and enhance in FY2015. This easy-to-use repository provides access to a wide and growing array of District government data. It provides online agency dashboards, budget and revenue information, mapping, public safety, property tax, school performance and faculty data, and much more. Additionally, OCTO has enabled the site for mobile applications so users can consume this data from any device.

2. Vital support for Healthcare

The well being of District residents is a mission OCTO supports through our agency partner, the Department of Human Services (DHS). OCTO has supported the successful implementation and on-going support of the DC Access System (DCAS), which includes the District's first Health Benefit Exchange. DCAS provides the District with a new health and human services eligibility and enrollment platform, including an insurance marketplace for individuals and small business employees. OCTO is engaged in Phase II, which includes the management of social service benefits such as Medicaid, Supplemental Nutrition Assistance Program (SNAP), and Temporary Assistance for Needy Families (TANF), thereby allowing the District to decommission the legacy system.

OCTO also brings low-cost broadband service to hospitals, connecting a community of over 63 health clinics and health care advocacy organizations in the city, enabling health providers to leverage OCTO's DC-Net services for HIPAA-compliant transport of telemedicine and other bandwidth-intensive applications.

3. Economic Development (DMPED)

In the area of economic development, OCTO supported the “R.I.S.E. Center” on the campus of the St. Elizabeths East Development Project. OCTO worked with the Deputy Mayor of Planning and Economic Development (DMPED) in FY2014 to develop a technology infrastructure plan that would enable DMPED to leverage OCTO-managed telecommunications infrastructure in its planning for the St. Elizabeths East development project. OCTO also worked with DMPED on its “Digital DC” initiative. The project leveraged OCTO-managed infrastructure to enhance the “Tech Corridors” that DMPED is creating throughout the District.

OCTO also developed the framework system for the Affordable Housing Database Project that includes a back-end database necessary to capture data and provide a dashboard view of reliable housing data with search functionality in accordance with the Affordable Housing Clearinghouse Directory Act of 2008. OCTO is working now to ensure that all of the necessary data sharing agreements are in place and once those are established then we will prepare a more complete timeline for making the system publicly available.

C. OCTO Mission Execution

Next, I will discuss OCTO's execution of its mission. As a provider of technology services, and in its role of developing, implementing, and maintaining the District's technology infrastructure and applications, OCTO had a number of key successes in FY2014 and FY2015 to date. From upgrading the last of District agency landlines (2,000 in FY2014) to the upgrade of our citywide messaging platform, ensuring reliable enhancements to email, OCTO operates around the clock to maintain business continuity, on-going technology improvements, and realized savings in the millions of dollars for the District.

1. DC.gov

The operation of the District government's website, DC.gov, is a core OCTO function. Comprised of more than 100 separate agency websites and more than 14 million visitors per year, DC.gov is the mechanism for delivering hundreds of services and online information.

In 2014, following a comprehensive re-design, DC.gov won the coveted Center for Digital Government's Best of the Web award. In FY2014, the DC.gov portal underwent a comprehensive re-design and was enhanced to include "responsive design." This means that the website is built in such a way that it will work seamlessly with mobile devices or tablets.

As mobile devices and tablets become more popular, and in some instances the only point of access for the Internet, it is important for the District government's websites and services to be easily accessible on any device. Our goal is to ensure that District residents can access city services or pay fees on the device of their choice. A handful of District websites already utilize responsive design. We will continue to expand the number of websites in FY2015 and beyond.

Significantly, DC.gov is now hosted at the Terremark Global Data Center, located in Culpeper, VA, ensuring that in case of any disaster in the District of Columbia, government websites will continue to be available.

2. GIS and Mobile Applications

In the area of GIS-based applications and data, OCTO provided bi-annual maps of broadband availability and adoption in the District using grant funds from the American Recovery and Reinvestment Act. This data joined over 500 datasets and feeds available to the public on data.dc.gov. The re-launch was Phase I of a much larger initiative. It ensures that data sets are current and that we are responsive to the open data community.

OCTO also worked with District agencies and public interests to develop, implement, and publish standards for mobile applications across all District services. In FY2015, OCTO launched a Wi-Fi hotspot finder app for the public and made its DC-Net service catalog and corresponding mobile application publicly available (<http://servicecatalog.dcnnet.dc.gov>).

3. Digital Inclusion

With respect to Digital Inclusion, OCTO is committed to promoting digital literacy, removing barriers to broadband access, and improving technology inclusion, especially in underserved areas of the District. In FY2014, OCTO launched a successful media and public awareness campaign as part of our Digital Inclusion Initiative (DII), publicly known as Connect.DC.

This campaign highlighted the benefits of broadband adoption and provides information on affordable Internet and hardware to District residents. OCTO also built a “Tech Locator” to help residents locate free or low-cost Internet services and computer training. The community Mobile Technology Lab also traveled the city and provided training and accessibility to underserved communities.

4. Infrastructure and Effective IT Asset Management

OCTO is leading the District government to a highly centralized and standardized IT infrastructure and disciplined delivery of technology services. OCTO’s effective governance of IT programs will ensure that investments are made in the right initiatives from a mission, business and security perspective, and that they are executed well at the program and project levels. This approach will decrease technical complexity, promote standardization, reduce costs, and ensure predictable service delivery. Most importantly, it will enable District agencies to leverage emerging technologies in direct support of specific mission priorities and goals. OCTO is also planning to create a new Chief Information Officer (CIO) Certification program. Certifying CIOs across agencies will enhance and standardize IT leadership functions.

D. Assurance for Public Safety & Security

1. First Responders (OUC, FEMS, MPD and FirstNet)

With respect to our first responders, which include the Office of Unified Communications (OUC), the Fire and Emergency Management Service Department (FEMS), and the Metropolitan Police Department (MPD), there are a number of operational functions that OCTO performs to ensure our first responders are equipped with everything from the latest map enhancements for emergency response to the configuration and implementation of MPD's AWARE services. AWARE is a program that ensures protective and efficient operations are daily orders of business for our officers on duty. The public safety cluster of agencies holds a high priority for OCTO and our partners at OUC. In FY2014, OCTO implemented a comprehensive, highly available network architecture that supports multiple wireless carriers for new mobile routers on more than 1,200 FEMS and MPD vehicles. This enables faster response times, reliable up time and the best available technology for our first responders.

OCTO's most strategic initiative relative to public safety has been that of FirstNet. In line with federal mandates to establish a nationwide, interoperable broadband public safety network, OCTO, in partnership with OUC and HSEMA, drives the advancement of the FirstNet initiative for the District.

The goal of FirstNet is to allow for seamless communications between jurisdictions and departments and to also create a secure, reliable 4G network on par with national wireless carriers. OCTO has led the District's planning for FirstNet, which will bring dedicated mobile broadband services to the District's first responders.

2. Network Security

OCTO supports more than 30,000+ government users and provides end-to-end security, safeguarding District data and assets by continuously monitoring and addressing security threats and attacks. In FY2014, we made significant investments in network security. Our Citywide Information Technology Security (CWITS) team devotes a high degree of focus and attention to protecting sensitive as well as personal data collected by District government technology infrastructure. OCTO's Information Security framework ensures that District agencies and residents will have secure access to applications and data while striving to prevent unauthorized access and data disclosures.

OCTO has made a number of key strides that will improve our ability to prevent, mitigate, and respond to security threats. Supporting all aspects of government operations, in FY2014, OCTO built a Security Operations Center (SOC), which is now operational. In January of FY2015, we have hired an interim Chief Information Security Officer, who will oversee security policies and operations for the District of Columbia. We have implemented information sharing strategies for the Cyber Aware Workforce, and diversified the District's security advisory distributions—increasing awareness against the growing social engineering attacks. We have transitioned all MPD locations to OCTO's high-bandwidth data and unified communication platforms, enabling the use of innovations in public safety technology in a secure environment.

And finally, we have initiated a range of security controls against unauthorized access, including: (1) upgraded Wi-Fi infrastructure; (2) implemented Network Access Control to prevent unauthorized access to District's local area network (wired and wireless); (3) deployed Enterprise Mobile Device Management technologies for mobile devices; (4) improved security for mainframe software and microcode through upgrades to latest industry standards; and (5) enhanced physical security controls at key OCTO locations.

III. Conclusion

OCTO has a comprehensive listing of our FY2015 operational initiatives and plans in our FY2015 Agency Performance Plan submission. While OCTO's accomplishments to date are promising, there is still much work to be done. Technological innovation and growth promote vibrant and effective modes of governance. As CTO, I am committed to ensuring that the District is positioned to more effectively serve the community's needs through technology. We are in the process of working with the City Administrator to better capture our Key Performance Indicators (KPIs), shifting OCTO to a service level focused performance plan.

Since 2001, I have had the distinct pleasure of serving the District through various roles within OCTO. My 14-year tenure has spanned engineering, technology infrastructure and information communications and technology (ICT). I started as a network engineer, eventually becoming a chief architect for DC-Net and transitioning into a Logical Engineering Manager, later taking on the Directorship of DC-Net, the District's secure high-speed municipal broadband network for public safety, government and community anchor institutions. For the past 4 years, I have been in Deputy CTO roles with oversight of Citywide Technology, Infrastructure Services and ICT. The District has provided me a fantastic career path within OCTO.

The critical programs and functions I managed have had the benefit of your support. I look to your continued partnership as I recalibrate OCTO's mission, ultimately enabling the District to benefit from next generation technology innovation, centralization and optimized processes.

I am humbled by the Mayor's appointment of me as Acting CTO. My commitment to the Mayor, Council, District agencies, and community at large is to wield OCTO as a catalyst, expanding our pivotal role and enabling the Mayor's Fresh Start objectives for our city. In exchange for the opportunities I have been granted by the District, I will balance my technical expertise, data-driven problem solving, and results-focused governance to challenge the way we operate today. I will inaugurate new ways for OCTO to undergird the administration's Fresh Start Goals for Schools, Homes and Communities. OCTO's new mission will further reflect Mayor Bowser's goal of advancing Government innovation and accountability through data and technology.

These Fresh Start initiatives will be built on the foundation of OCTO's fundamental service, which today, quietly "powers" the District's 30,000 plus work force and 90+ agencies with secure, reliable, and accessible computing and telecommunications products and services, 24/7 with a continued uptime of 99.999%.

In FY2015 and beyond, OCTO will be the common denominator across several initiatives ranging from open government and smart connective community programs to citizen centric engagement through state-of-the-art listening posts. To anchor the Mayor's commitment of innovation and bolstering Digital DC, OCTO has completed a framework for "innovation as a process" and will launch a technology innovation center that will pilot solutions quickly and cost effectively, delivering in fresh start areas to include Open Government, human services, and public safety, to name a few. OCTO will look to implement a standardized model to provide cloud-computing services to District agencies, driven by a "Cloud First" and "Virtualization First" approach.

Recent wins include a pilot of a portal that delivers early response information for city services, an application that automates and centralizes the view of cross-agency front burner issues and an application that captures and automates the process for MOUs. These and future projects are in line with OCTO's new open government initiative "default to open" and will release additional data sets while providing a transparent view of critical issues, supporting information sharing, and decision support for the highest levels of government.

With a relentless focus on security, OCTO will operationalize its first-rate Cyber and Security operations including the development and launch of a new threat assessment unit. OCTO will strengthen its security resolve and commit to meeting the growing cyber, digital and public safety threats the District faces.

OCTO's plans for a citywide enterprise architecture strategy will drive efficiency, transparency and higher achievement levels of non-mandated centralization. The enterprise architecture will ensure a logical, proactive and aggressive approach to getting ahead of challenges such as rogue technology practices and disparate technology spend.

Customer service, efficiency, accountability and security will anchor my leadership of the agency and underpin my commitment to the Mayor of building a world-class technology organization. I will seek your continued support and look forward to working with the administration and Council to achieve service to all communities in this great city. Mr. Chairman, my colleagues and I will be happy to answer any questions that you may have at this time.