STATEMENT OF ARCHANA VEMULAPALLI,
CHIEF TECHNOLOGY OFFICER,
BEFORE THE COMMITTEE ON GOVERNMENT OPERATIONS,
DISTRICT OF COLUMBIA COUNCIL
Tuesday, February 28, 2017

Good morning, Chairperson Todd and members of the Committee on Government Operations. I am Archana Vemulapalli, Chief Technology Officer (CTO) of the District of Columbia. I am pleased to be here to testify on the Office of the Chief Technology Officer's (OCTO) performance in FY16 and FY17 to date.

Introduction

OCTO is the nerve center of city operations. Every agency serves a functional role, but it is important to remember that critical functions are either delivered by or supported with systems. We manage these critical systems. OCTO runs a 100 Gigabit core connecting over 650 government buildings, our 85 help desk technical staff (17 answering phones and 56 in the field and 12 technical leads) receive 152, 000 calls annually and resolve 255,000 tickets throughout the entire District. Our voice operations support more than 80 million phone calls annually, 40,000 phone land lines and thirty-one (31) call centers that handle close to 1.5 million phone calls. Our procurement system manages over Five (5) billion dollars' worth of transactions. We are amongst the leaders in open data (opendata.dc.gov has the highest number of page views of any jurisdiction using the ESRI platform worldwide) with 940 data sets currently available. We manage the District's telecom program and budget providing and supporting over 60,000 devices. Our Wi-Fi program leads the country – we already have 17% of the city covered (and 40,000 people connecting daily, 14 Million connect annually) and we are on track to have 25% of the city footprint covered by the end of FY18. We run the citywide cyber security operations center. Our email system transacts 740 Million emails in a year (that's about 75,000 emails every hour). The DC.GOV website received over 25 million visits a year. Our Connect DC team works tirelessly

every day to bridge the digital divide. Our applications team continually innovates to deliver cost effective better services. Our server team manages over 3,900 servers and hundreds of applications for 87 agencies, and our mainframe team keeps the Chief Financial Officer's System of Accounting & Reporting (SOAR) operational. This system manages the District's financial assets. We run the Human Resources system that manages over 37,000 employment records, benefits, time and attendance. And we run payroll.

A complex operation of this scale is not an easy feat. This takes a lot of effort from the 664 staff that work at OCTO – all 365 employees and 299 contractors (95% of which are from Certified Business Enterprises (CBEs)). OCTO as an agency is what I would define as a true technology public-private partnership – our success isn't just because of government but both government and businesses coming together with a strong sense of service on behalf of the District.

I want to take a moment to acknowledge my team at OCTO. Thank you for your hard work and dedication. For every late night operational call, surge support requests, rallying to meet any and every agency request and city needs even if its last minute, getting schools operational sometimes quickly over a weekend, addressing cybersecurity threats and supporting major events like the inauguration and more importantly for always prioritizing what is right for the city first – thank you. You have my gratitude as a District resident for your continued commitment to the city.

What we have done in 2016 and 2017:

Last year we informed the Council that we intended to carry out all OCTO operations, duties and responsibilities with a commitment toward transparency, efficiency, security, accountability and value to guide all areas of OCTO operations. We believe we have met and will

continue to meet that commitment on behalf of the District's residents, business community, our sister agencies and their employees.

Establishing DC as the thought leader:

In 2016 and 2017, we have been working tirelessly to re-establish DC as the leader in technology and to showcase the work the district has already been doing.
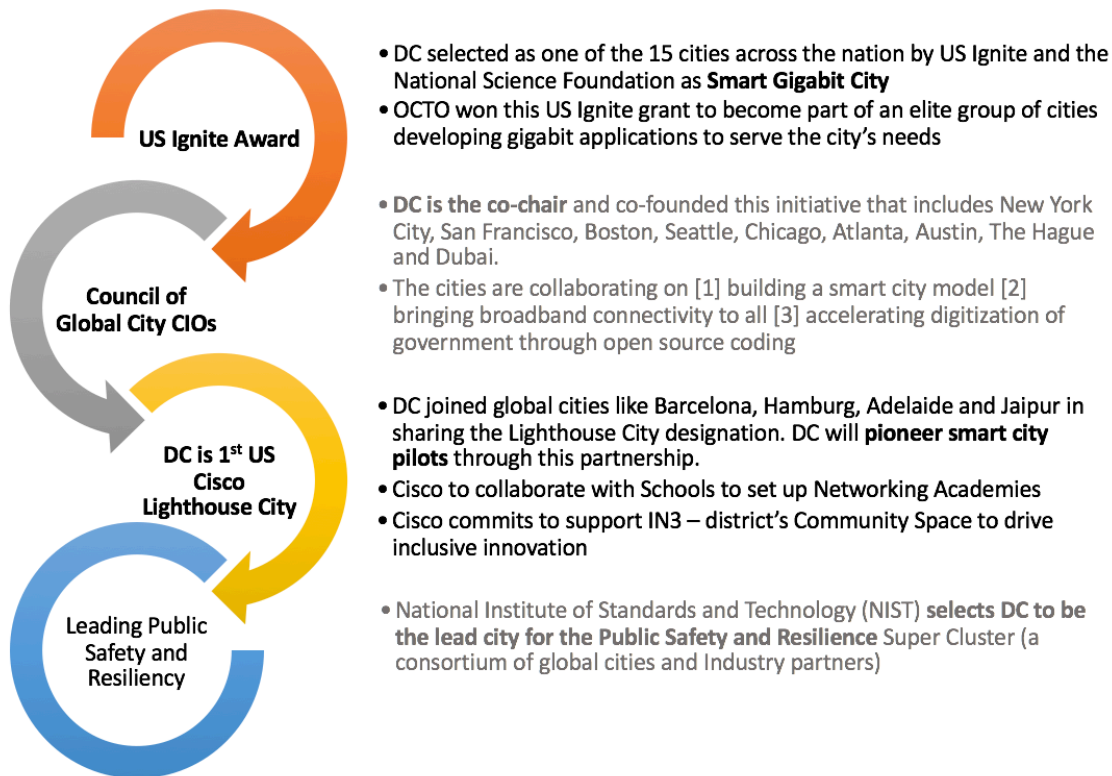
US Ignite Award
- DC selected as one of the 15 cities across the nation by US Ignite and the National Science Foundation as **Smart Gigabit City**
- OCTO won this US Ignite grant to become part of an elite group of cities developing gigabit applications to serve the city's needs

Council of Global City CIOs
- **DC is the co-chair** and co-founded this initiative that includes New York City, San Francisco, Boston, Seattle, Chicago, Atlanta, Austin, The Hague and Dubai.
- The cities are collaborating on [1] building a smart city model [2] bringing broadband connectivity to all [3] accelerating digitization of government through open source coding

DC is 1st US Cisco Lighthouse City
- DC joined global cities like Barcelona, Hamburg, Adelaide and Jaipur in sharing the Lighthouse City designation. DC will **pioneer smart city pilots** through this partnership.
- Cisco to collaborate with Schools to set up Networking Academies
- Cisco commits to support IN3 – district's Community Space to drive inclusive innovation

Leading Public Safety and Resiliency
- National Institute of Standards and Technology (NIST) **selects DC to be the lead city for the Public Safety and Resilience** Super Cluster (a consortium of global cities and Industry partners)

Figure 1: DC taking a Leadership Role in Technology and Innovation

Because of our efforts, the District was selected by the National Science Foundation to be part of an exclusive network of Smart Gigabit communities to develop gigabit applications that will assist the City with its critical business and societal needs in the areas of healthcare, public

safety, education and transportation. The District will develop gigabit applications that explore new uses for networking technology, and further its capabilities and understanding of network infrastructure to meet our City's needs.

DC co-founded and co-chairs the Council of Global City CIOs. This group consists of leading city technologists (CIO, CTOs) from across the world. The City will be instrumental in developing a Smart Cities model, bringing broadband connectivity to everyone and accelerating the digitization of government through open source coding.

The District, has been chosen by Cisco as the first Lighthouse City in the United States to pioneer smart city technology. Through this initiative the District is a designated global standard bearer of how new and innovative technology can affect our city. The District will pioneer new smart city infrastructure technology. For example, it will collaborate with District public schools and universities to develop the next generation workforce for a "#SmarterDC". It will expand STEM (Science, Technology, Engineering and Math) programs throughout the schools, and the City will partner with other private entities to create innovative solutions to meet the City's challenges. Because of this partnership with Cisco, the City will be connected to Cisco's global network of Cisco Innovation Centers, thereby taking advantage of the new ideas being developed in the Cisco Innovation Centers.

A Smarter DC:

The goals of a Smarter DC are to align functional and technical leadership to drive innovation that is impactful and delivers value to district residents. Our core goals with Smarter DC initiatives are –

✓ To align technology innovation with citizen inclusion and enhanced quality of life

✓ Encourage more efficient use of District infrastructure

- ✓ Effectively engage the local community in the innovation process

- ✓ Improve overall intelligence of the District's institutions

Figure 2: Smarter DC Ecosystem

We cannot achieve successful outcomes for the city if we don't coordinate, collaborate and invest so that every resident in the city can experience the impact. To achieve this, the Smarter DC Tiger Team was established – the primary goal of this team was to be "Inclusive." Technologists alone cannot implement ideal solutions – we need functional experts (agencies), businesses, universities, non-profits, think tanks, residents – essentially all voices to be heard as we evolve and make smart investments where they are needed the most.

Figure 3: Smarter DC Tiger Team - Working Model
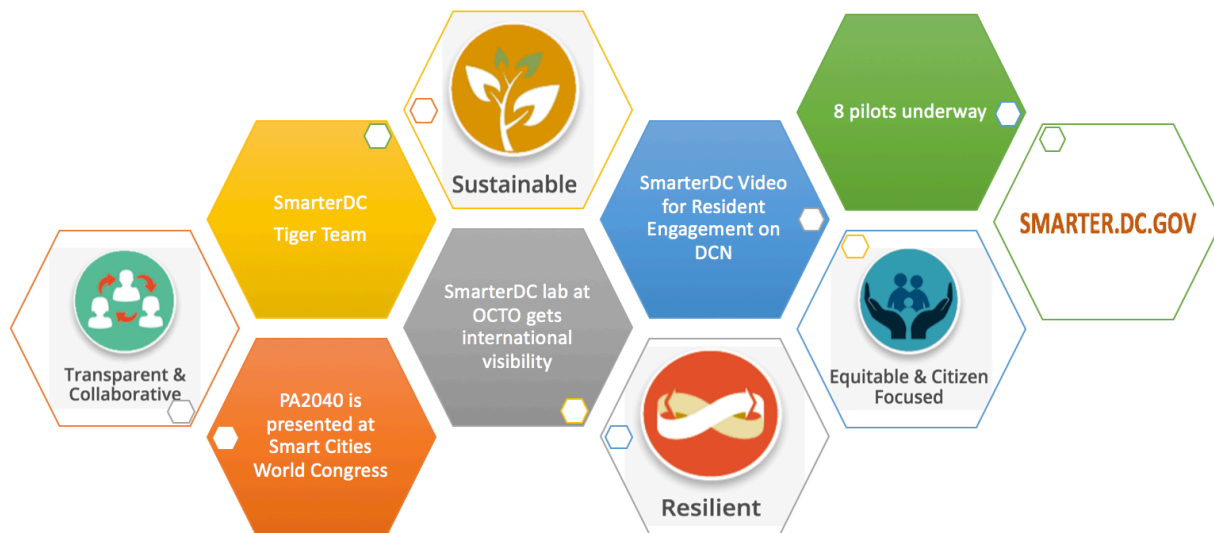
Figure 4: A Safer Stronger and Smarter DC

We launched a Smarter DC technology lab that includes numerous advanced smart city technologies, for example, Smart Lighting, Gigabit Wi-Fi, Video Sensors for movement analytics, environmental sensors, and smart waste management. We created a Smarter DC SharePoint site which is available to our sister agencies so that they can collaborate with us on Smart City pilots, grant opportunities, industry engagements and other governance activities. Participation in these

various projects will ensure that the District remains current, relevant, and bring added value and efficiencies to our operations.

Supporting Residents and District Small Businesses:

As the central technology agency of the District, we actively engage with residents and community to – [1] bridge the digital divide; [2] promote the growth of the tech sector and champion DC startups and small businesses; [3] drive inclusive innovation; [4] improve city services; and [5] leverage technology to provide greater transparency.

We need to bridge the digital divide in the District – through our ConnectDC program we aim to chip away at this every day. Here again, we work closely with our non-profit partners, service providers and residents to provide training, tools (equipment) and connectivity.

Figure 5: Serving District Residents

OCTO through its Mobile Tech Lab (MTL) has been able to provide digital literacy classes targeted to low income residents, seniors, returning citizens, and entrepreneurs. As a result, OCTO, in conjunction with Byte Back, was able to train 185 residents in basic computer skills, for example, how to use email, search the internet, and file and folder management. Residents were instructed in the use of Microsoft Office Word, Excel, Outlook and PowerPoint programs. These courses are designed to help residents successfully compete for jobs in a world that's increasingly reliant on computers for everyday tasks.

We launched an ad campaign on local buses and in Metrorail stations around the city to promote technology training. In addition, we published a Cyber Security Awareness Guide to educate residents on how to safely navigate/browse the internet.

As part of the ConnectHome initiative OCTO, through its partnership with the D.C. Housing Authority and the Mayor's Office of Federal and Regional Affairs, upgraded the infrastructure in 21 DCHA managed properties and delivered free DCWiFi to more than 1,500 households. This provided broadband access to more than 750 school-age children.

OCTO's ConnectDC program has also subsidized hardware and internet service for more than 100 District residents who successfully completed training through our program in FY 2016. We have also provided 200 months of free internet service to 32 families through our partnership with EveryoneOn to provide technology access to students who need it to complete homework assignments.

To improve city services, OCTO finalized and implemented the Text 311 application and Live Agent for the Office of Unified Communications (OUC) which allows District residents and visitors to engage DC Government via text. Through this application, residents can report potholes,

broken parking meters, missed trash pick-up, and request bulk trash pick-up, and other vital city services.

We believe that data should be open, freely accessible and available in format that is usable and reusable. Data should also be available in a timely manner. Open data not only improves accountability, it drives efficiency. It allows for residents to innovate and build new businesses and helps solve problems and give lens to a problem that would have otherwise been only limited to a department or a few resources. In FY16, OCTO hired a Chief Data Officer (CDO) to drive the District's leadership in data forward. The CDO has been instrumental in finalizing the Data Policy, a collaborative effort with District stakeholders and members of the public. This policy -makes government more open, transparent and accountable, yet still abides by statutory requirements to classify some data as ineligible for release because of safety, privacy or security concerns. It prohibits the inappropriate disclosure of personal information which could potentially be misused to permit identity theft. The CDO and his unit would collaborate with the Chief Information Security Officer (CISO) and agency Chief Information Officers to classify and catalog agency data, and share only those datasets which are not prohibited by law. The release of the Data Policy is imminent.

To drive entrepreneurship, recognize inclusive innovation and engage in the tech community OCTO has been playing a more active role in the tech community. OCTO successfully sponsored a hack-a-thon, in which more than 100 women hackers participated in a two-day event to build apps and websites to promote social good. This "Hack for Good – DC Fem Tech" took place in June of last year.

OCTO has represented the District in more than 48 events, including hack-a-thons and conferences. Through these efforts OCTO is an advocate for the technology sector growth and inclusive innovation here in the District.
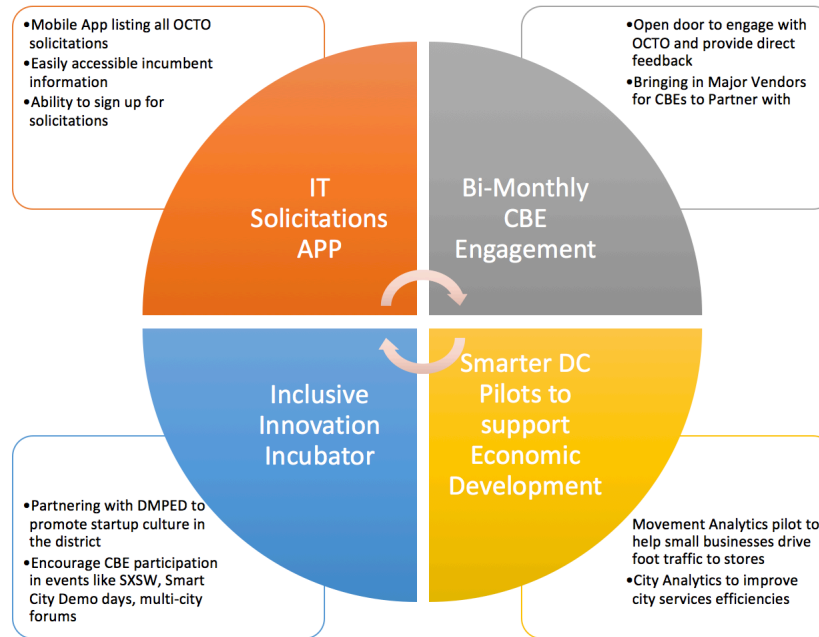

- Mobile App listing all OCTO solicitations
- Easily accessible incumbent information
- Ability to sign up for solicitations

IT Solicitations APP

Bi-Monthly CBE Engagement

- Open door to engage with OCTO and provide direct feedback
- Bringing in Major Vendors for CBEs to Partner with

Inclusive Innovation Incubator

Smarter DC Pilots to support Economic Development

- Partnering with DMPED to promote startup culture in the district
- Encourage CBE participation in events like SXSW, Smart City Demo days, multi-city forums

- Movement Analytics pilot to help small businesses drive foot traffic to stores
- City Analytics to improve city services efficiencies

Figure 6: Supporting Economic Development

To improve transparency with the business community, OCTO began hosting town hall style meetings with CBEs on a bi-monthly basis to provide forecasts about upcoming procurement opportunities, answer questions about OCTO engagement, and provide important updates. These forums have been used to get vital feedback from the CBE community. OCTO listens to the CBEs and have used these as learning opportunities. For instance, the CBEs informed us that they were not getting information about upcoming solicitations in a timely manner. Thus, OCTO created a website which lists all OCTO IT solicitations for CBE vendors. The vendors are invited to apply to the solicitation directly from this website.

OCTO also created a mobile application which alerts CBE vendors when an IT solicitation is placed on the website. This app allows vendors to monitor the opportunities, receive real time updates and push notifications for all IT procurement opportunities throughout the District. The combination of these two actions alone have come a long way in promoting the transparency of OCTO IT solicitations, and easing the CBE community's access to this information.

OCTO also recognizes that it does a lot of business with major equipment vendors that some members of our CBE community are just not able to compete with in securing some of the larger solicitations. As a result, we looked at ways to open doors for the CBE community to partner with these larger vendors. For instance, we have begun hosting sessions in which the larger vendors come in and inform the CBE community how they can take advantage of their existing programs to become eligible partners with the larger vendor. It is our hope that by bringing these private entities together it will expand our IT vendor base, and create efficiencies within the solicitation arena.

Enhancing and Securing the District's IT Infrastructure and Investments:

Enterprise IT Governance

OCTO has made strides in creating transparency and accountability between its sister agencies. It has re-activated the Chief Information Officer ("CIO") Council, a group consisting of every agency CIO. This Council meets monthly to discuss various technology projects, new project requests, issues associated with their hardware and operating software, as well as discuss trends in the industry, and educate agency CIOs regarding OCTO policies.

To build a baseline of our technology investments, it is critical that the District establish a dashboard to capture our assets, investments and initiatives in one central location – this helps improve investment decisions, prioritize projects and ensure that technology investments are

coordinated and drive greater value for the agencies and residents. OCTO established an Agency IT Dashboard and is working with Agencies and their CIOs to capture all critical IT information.
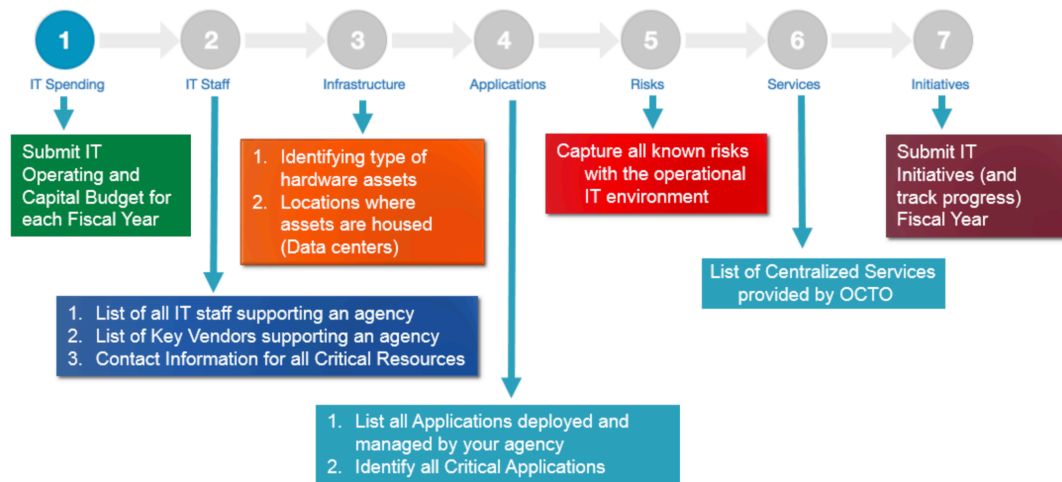

Figure 7: Agency IT Dashboard

Securing our Infrastructure

OCTO has taken several measures to secure the District's IT system and networks. We hired and expanded the role and scope of the Chief Information Security Officer (CISO), as well as hired a Governance, Risk and Compliance Manager (GRC) to establish a security baseline and measure compliance with its policies on a District wide basis. The security team is building an enterprise GRC program to improve upon existing IT policies. The GRC team is conducting an internal assessment of all our major systems to determine compliance and control risks.

OCTO has also expanded the vulnerability management process for all new applications that are added to the DC Enterprise Network; provided guidance to agencies and expanded endpoint management protection of its devices from 15,000 devices to nearly 21,000 devices; it has reduced the number of rogue or unmanaged devices in half from a high of 3,000 devices to 1,500; and we have implemented Full Disk Encryption on all OCTO devices and have requested that our sister agencies follow suit in order that they come into full compliance with Personally

Identifiable Information/ Health Insurance Portability and Accountability Act (PII/HIPAA) requirements.

OCTO implemented cyber security awareness training which requires all District employees to complete online training to ensure they understand their role in protecting the District's IT environment. This training provides security guidance based on industry standards and federal guidelines. It will assist OCTO in strengthening the District's information security governance, and help standardize and improve security practices throughout District government. All OCTO employees have completed this training. This project is ongoing.

Cybersecurity threats are on an exponential rise. We need to learn to operate in this chaos. We will focus on training every District employee and contractor about their role in securing District data and systems they have access to. OCTO has enforced Non-Disclosure Agreements (NDAs) with all contractors supporting critical applications. OCTO is developing a Cybersecurity Communication Strategy to drive more responsible behavior and timely reporting in case of breaches. The OCTO security team is building a talent pool of engineers to ensure the city can continually remediate and proactively secure our critical assets.

Continual enhancement of our infrastructure and enterprise applications

OCTO's Enterprise Network Infrastructure is the underlying foundation for District Agencies' voice, data, wireless, and video communication. This infrastructure requires the highest level of availability for meeting critical service-level agreements (SLAs) and must have enough capacity to scale as the demand for network bandwidth grows. The high-availability needs are especially critical at the network edge – convergence point for terminating customer connections and deploying new services. To meet the ever-growing demands of the next-generation applications that require mobile, virtual, and instantaneous connections, OCTO is upgrading and

consolidating the District's Enterprise-wide Network Infrastructure where necessary to ensure optimal service delivery, high-availability, and continuous network operations in support of the District mission critical operations and services. This investment will position DC-Net to support critically valuable District initiatives ranging from public Wi-Fi connectivity to school and library-based education, to Metropolitan Police Department's Body Worn Cameras, OUC's NextGen911, and District Department of Transportation's Smart City corridors. We are working closely with District of Columbia Public Schools (DCPS) to leverage this investment to provide gigabit connectivity to DCPS schools. Our children need to have access to technology and distance learning opportunities all of which operate best in a high-speed environment. As a city, this investment, will ensure our schools have the cutting-edge connectivity.

We are focusing on building our disaster recovery and continuity of operations capability for all critical applications. OCTO is working closely with agencies to strengthen disaster recovery capabilities so that citywide financial, human resources, and payroll systems remain available in case of any disruptive event. We are ensuring that we take a series of steps and tasks to maintain government function always.

Across all critical functions for the District, OCTO is looking at People, Process and Technology, and ensuring the right structures are in place to ensure efficient and effective government services. For every program we oversee, we are ensuring we build a strategic plan and identify technology refresh to ensure the District benefits from IT investments.

Conclusion

In closing, I'd like to thank you for your leadership and support. As always, we operate with complete transparency and I will ensure that the communication channels with your staff

always remain open and productive. This concludes my presentation and I am happy to address your questions as well as those of other Committee members.