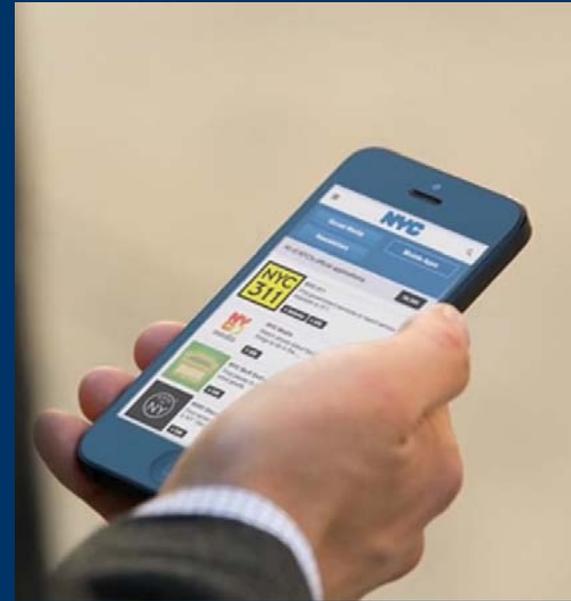




Information  
Technology &  
Telecommunications



Department of Information Technology and Telecommunications

# STRATEGIC PLAN 2015-2017

Bill de Blasio, Mayor  
Anthony Shorris, First Deputy Mayor  
Anne Roest, DoITT Commissioner

**The Department of  
Information Technology and  
Telecommunications (DoITT)  
provides for the sustained,  
efficient, and effective delivery  
of IT services, infrastructure, and  
telecommunications to enhance  
service delivery to New York City's  
residents, businesses, employees,  
and visitors.**

# CONTENTS

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Message from the Commissioner	2
Executive Summary	3
Strategic Plan Approach	4
DoITT's Role and Functions	5
Current Landscape	6
Goal 1: Enhance and Improve Services	7
Goal 2: Expand Strategic Role with Agencies	10
Goal 3: Invest in Human Capital	13
Goal 4: Provide Robust Infrastructure	16
Goal 5: Optimize Citywide Technology Administration	19
Goal 6: Facilitate Greater Access to Technology for All New Yorkers	21
Note on Implementation	24
Concluding Remarks	25
Acknowledgements	26

## MESSAGE FROM THE COMMISSIONER

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New York City is one of the most innovative places in the world to live and work. Throughout its history, leaders have been committed to investing in infrastructure and public services that keep it that way. In the past quarter century, advances in information technology have made these public services more accessible, efficient, and reliable while connecting New Yorkers and allowing them to drive creativity and productivity as never before.

These advancements also bring challenges in meeting an ever-growing demand for services in the digital age, and managing the information technology and telecommunications infrastructure that keeps the City running is a massive responsibility. Fortunately, the talented men and women of New York City's Department of Information Technology and Telecommunications (DoITT) are more than up to the task. It is my honor to serve with them in further shaping DoITT into a premier destination for technology professionals to start and build their careers.

DoITT delivers foundational information technology, infrastructure, and telecommunications services to City agencies, empowering them to deliver upon Mayor de Blasio's vision for a more equitable, inclusive, vibrant, and safe city for all. By centrally managing much of the City's technology infrastructure and core IT services we can also help create efficiencies and lower costs – informing thoughtful, fiscally-responsible decisions around government operations.

From social services and business empowerment, to education and transportation, DoITT works with City agencies on technology solutions that span the full range of government services. Already, in the Administration's first year, our efforts leading or supporting Mayoral initiatives like broadband deployment, open data, Universal Pre-K, and IDNYC should benefit New Yorkers for a generation to come. And our work is just beginning.

The DoITT Strategic Plan, 2015-2017, outlines the priorities underscoring our vision to be a more customer-centric service provider and technology steward for our City agency clients. This is an action plan developed around principles of collaboration, accountability, and achievability – and it contains specific objectives to guide our progress in better facilitating access to technology, information, and public services to New York City residents, businesses, employees and visitors.

DoITT is committed to excellence in technology service delivery, and with this strategic plan as a guide, we seek to further empower and support City agencies and the New Yorkers they serve.

Our City deserves no less.

Anne Roest  
Commissioner  
New York City Department of Information Technology & Telecommunications



## EXECUTIVE SUMMARY

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The City of New York employs more than 300,000 men and women who do everything from teach elementary school to operate water treatment facilities, making it one of the largest and most diverse organizations in the world. Their fundamental mission is to serve nearly 8.5 million New Yorkers every day, and City employees in all fields increasingly depend on a vast array of information technology (IT) and telecommunications services to carry out this mission.

The Department of Information Technology and Telecommunications (DoITT) is responsible for supporting these IT and telecommunications services, and in doing so, is focused on providing solutions that position New York City as a leader in public service and technology innovation. As technology constantly evolves, it remains imperative to stay current with industry trends and anticipate the impact these developments have on business processes and operations. DoITT must consider this dynamic landscape among the many complex challenges and opportunities that affect New York City's government and its people.

This strategic plan outlines DoITT's commitment to be a top service provider for City agencies and the public – its customers. The plan was developed based on input from its customers and employees, and provides the central framework needed to define priorities, allocate resources, and hold DoITT accountable for achieving its mission.

### Strategic Plan Overview

The DoITT Strategic Plan is a practical and living action plan, articulating the agency's top priorities and initiatives as informed by DoITT staff and customers. The plan is developed around six core goals and the underlying improvement areas necessary to ensure DoITT continues to be a mature technology organization:

- 1. Enhance and Improve Services** to offer more advanced and timely technology implementations and streamline processes.
- 2. Expand Strategic Role with Agencies** to be more aligned with their needs.
- 3. Invest in Human Capital** to cultivate and diversify DoITT's talent resources to best deliver services.
- 4. Provide Robust Infrastructure** to protect the City's technology, telecommunications, and information assets and maintain service operations.
- 5. Optimize Citywide Technology Administration** to improve IT procurement options and vendor accountability and save the City cost and time.
- 6. Facilitate Greater Access to Technology** to engage all New Yorkers and expand broadband to underserved communities.

These **goals** define DoITT's top priorities in delivering IT and telecommunications services to the City. **Objectives** lay out pathways to achieve each goal. These objectives are designed to be distinct and measurable, yet broad enough to allow for flexibility as this plan evolves to meet new priorities. **Initiatives** detail DoITT's key projects and programs that directly support these goals and objectives.

# STRATEGIC PLAN APPROACH

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DoITT developed this plan following three themes:

## Collaboration

From the beginning, this plan was developed in collaboration with DoITT stakeholders in order to identify areas of strength and opportunities for improvement. Several open and productive feedback sessions were held with City agency chief information officers (CIOs), who represent DoITT's core customer base. They provided critical insight and ideas. The Mayor's Office, the Office of Management and Budget, and the City's Chief Technology Officer reviewed the plan and provided input as well. Additionally, DoITT's staff was surveyed for input and responses were received from all divisions.

## Accountability

Objectives and key initiatives were articulated with measurability in mind, and specific metrics will define success on two levels:

1. For progress, individual initiatives will be tracked on their status toward completion; and
2. For impact, key performance indicators (KPIs) are being developed to assess the actual impact these initiatives have on the overall goals – and ultimately on DoITT's customers and New Yorkers at large.

## Achievable Scope

This plan targets initiatives that can be completed or achieve significant progress within the next two to three years. While long-term planning was a key factor in determining these goals and objectives, this time horizon allows for an emphasis on action and provides the ability to measure and adjust based on results. Every effort was made to identify initiatives that launch new programs or re-imagine DoITT's existing work, yet which can be accomplished given existing or reasonably expected resources.

## DOITT'S ROLE AND FUNCTIONS

DoITT is organized into seven core divisions working in technology implementation, operations, and administration. In 2015, it will create two new divisions for more targeted oversight: the **Office of Diversity and Inclusion** and the **Division of Telecommunications Planning**.

### Application Development Management

- Supports **127 applications** across **40+ agencies**
- Manages the City's **geospatial repository** and provides mapping services
- Provides business intelligence/analytical reporting to over **1,700 agency users**
- Manages the City's enterprise hub for **data sharing and exchanges**
- Enables information access via *NYC.gov* to nearly **8.5 million New Yorkers**
- Conducts performance testing of applications to optimize **user experience**

### Financial Management and Administration

- Oversees DoITT's **\$526 million** expense budget and **\$337 million** capital budget for FY15
- Manages enterprise licenses, contracts, and agreements available to **80+ entities**, including:
  - **10** active Enterprise License Agreements (ELA) and Master Services Agreements (MSA)
  - **37** professional services parent contracts
- Oversees **11 DoITT facilities**

### Governance and External Affairs

- Ensures DoITT **emergency preparedness** and response readiness
- Manages over **50 citywide technology policies** and resources
- Employs evolving project methodology on a portfolio of roughly **65 active projects**
- Coordinates with over **30 City, private, and academic partners** on strategic engagements
- Engages nearly **12,000 followers** on Twitter, Facebook, and Tumblr

### Human Resources and Special Legal Affairs

- Supports over **1,100 employees**, including DoITT, 311, and three mayoral offices
- Recruits and on-boards **80 new staff members** annually
- Manages compliance with federal, state, and local **employment and labor laws**
- Coordinates over **30 professional development and diversity events** annually

### Infrastructure Management

- Maintains and operates the **City's state-of-the-art data center**, which hosts:
  - **7,500+ servers**, both physical and virtual
  - **2,000+ agency applications**, including open systems and mainframe
- Resolves nearly **200,000 incidents** annually through the Citywide Service Desk
- Supports over **35,000 radios** and **34,000 commercial wireless devices**
- Averages **95% success rate** in meeting service level agreement (SLA) targets for incidents

### Office of the Chief of Staff

- Directly manages relationships with over **70 customer agencies**
- Coordinates agency response to over **600 requests** via the DoITT Service Catalog annually

### Office of the General Counsel

- Negotiates, drafts, and enforces contracts, closing **30+ agreements a year**
- Ensures technology projects are compliant with **Federal, State, and City laws**
- Grants and administers the City's telecom franchises, bringing in **\$163 million** in FY14

## CURRENT LANDSCAPE

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IT and telecommunications services will continue to transform the way we live, work, and govern. Worldwide IT and telecommunications spending is estimated to grow 3.8% to more than \$3.8 trillion in 2015, with 100% of this growth, and 1/3 of the total spending, coming from new technologies, such as mobile, cloud, big data analytics, and the Internet of Things.<sup>1</sup> New York City is a leader in technology, and government should be no different. In 2014 for example, 53,000 children were identified and enrolled in Universal Pre-Kindergarten at locations across five boroughs in just a few months. This important initiative was supported by online applications and tools for parents to look up their local preschools and enroll online. **Strategically engaging** City agencies to serve fundamental City functions – such as public safety, education, and sanitation – will reveal more opportunities to leverage technology in creative and supportive ways. Meanwhile, **investing in DoITT's people** and **improving its services** will ensure that DoITT is an effective partner in these endeavors.

Aside from supporting City operations, the ability of IT and telecommunications services to facilitate more transparency and engagement with the public is a unique and beneficial aspect when coupled with **access to technology for all New Yorkers**. Meanwhile, the risks that come from increased reliance on IT and telecommunications must be addressed as well, whether they come from natural and man-made physical disasters or malicious web attacks. These risks can be mitigated with **robust IT infrastructure** and a well-coordinated **Citywide approach to technology administration**.

### Key Considerations

For DoITT to effectively develop a strategic plan and deliver IT and telecommunication services, it must be able to shepherd change and navigate not only technological, but organizational, social, and political considerations, including:

- Size and scope of New York City and City government;
- Variation in City agency size and IT capacity;
- Need for government accountability and transparency;
- Compliance with federal, state, and local laws and regulations;
- Evolving cyber threat landscape;
- Complexities and economies of scale in shared services; and
- Sourcing and administering services in a fast-paced technology industry.

<sup>1</sup> International Data Corporation (IDC) report, IDC Predictions 2015: Accelerating Innovation – and Growth – on the 3rd Platform, Dec 2014. As accessed on 1/5/2015 at <http://www.idc.com/getdoc.jsp?containerId=252700>

## GOAL 1: ENHANCE AND IMPROVE SERVICES

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DoITT's core mission is to provide high-quality, reliable technology services and support to meet a wide range of customer agency demands, both simple and more complex. At times, DoITT delivery methodologies are complicated by the variation in IT sophistication and capacity at agencies across the City. Therefore, to improve its interactions with and service delivery to agencies, DoITT will enhance service quality, responsiveness, and flexibility to best serve all agencies. DoITT will prioritize its service delivery through more advanced technology implementation, more streamlined and transparent processes, and more efficient resource alignment.

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### Objective 1: Improve key DoITT processes to increase customer satisfaction with service delivery

DoITT aims to improve the customer service experience by soliciting feedback from City agencies and streamlining key processes to be faster and clearer. Ultimately, DoITT seeks ways to better understand its customer agencies, make targeted adjustments to its operations based on feedback, and implement business process improvements that produce faster, higher-quality service.

- **Intake Process Improvements** – improve the speed, quality, and overall value of the way DoITT on-boards projects by streamlining information-gathering, providing better expectations and transparency around the process, and improving request prioritization and resource assignment
- **Security Assessment and Authorization** – reform the security accreditation process by simplifying the required documentation and introducing a shared workflow to facilitate interactions between agencies and DoITT IT Security
- **Citywide Service Desk Improvements** – optimize the Citywide Service Desk by identifying process improvements, rolling out a self-service portal to thousands of agency users, and leveraging enhanced analytics to better forecast staffing needs based on ticket volume



The **Citywide Service Desk** is a 24x7 single point of contact for agency customers to report incidents or outages, request technical services, and check ticket status. Among a number of improvements, DoITT will launch **My Desk**, a self-service portal that will offer agencies an additional channel to make service desk requests. My Desk leverages automation to reduce the time it takes to receive an online help desk ticket.

## Objective 2: Integrate new and emerging processes and technologies to improve operational effectiveness and IT service management

DoITT continually seeks to improve its operational effectiveness with better processes and technologies. Specifically, DoITT is investing in strategies to improve time-to-market, such as self-service provisioning and automated application deployment, giving customer agencies the agility needed when faced with new mandates that often require immediate action. Additionally, IT Service Management (ITSM) allows DoITT to be a better business partner in managing technology assets and operations. Upcoming enhancements to ITSM's suite of tools, such as developing end-to-end proactive monitoring, aim to strengthen the City's ability to keep essential services free of disruption.

- **Self-Service Provisioning Offerings** – enable customer agencies to request and initiate the automatic provisioning of their own select environments and systems within DoITT's data centers
- **Automated Application Deployment and Maintenance** – automate key build processes, deployment, and management tasks, so that applications can be deployed more quickly and supported more effectively
- **IT Service Management Upgrades and Integrations** – extend customer agency IT operations management through enhanced capabilities in Remedy and integrations with various application and infrastructure management software tools
- **Update and Enhance Configuration Management Database (CMDB) Asset User Information** – update and enhance the data in the CMDB—DoITT's database of record for configuration items—with detailed user contact and relationship information for DoITT-hosted assets to improve communication with users and increase transparency into service delivery

### >> IT Service Management integrations with tools for:

- Project Management
- Lightweight Directory Access Protocol
- Application Performance Monitoring
- Data Center Discovery
- Service Management
- Business Intelligence
- Server Automation
- Data Integration
- Analytics

## Objective 3: Align DoITT resources to best deliver DoITT services

Enhanced services require resources that are deployed at the right time and in the right capacities. To manage and allocate resources, DoITT will structure its scope more clearly around a well-defined list of services and customer base, identifying additional opportunities to meet agency demands. DoITT is better able to serve a well-informed customer, and to that end, will provide clearer information around its services, as well as resources to empower agencies to plan technology projects more effectively.

- **Service Catalog Redesign** – update the DoITT Service Catalog to deliver information more clearly through updated and reorganized content and improved search and status lookup functionality
- **Define and Publicize Who DoITT Serves** – refine what services DoITT provides to which customer agencies and under which circumstances so that it can focus on delivering its core services consistently and most effectively
- **Build Towards a 24x7 On-Site Support Model** – evaluate existing staffing model to re-align and optimize shifts, and find opportunities to provide resources for 24x7 on-site operational support to agencies

## Objective 4: Identify more effective development methodologies to produce better products

Technological solutions are most effective if they are developed around the people who use that technology. DoITT will take advantage of its technology expertise to explore new and improved ways of building applications more quickly and cost-effectively, whether that means developing a human-centered design approach, integrating more prototyping, or eliminating unnecessary processes for certain application builds. In the end, the solutions developed should get to customers faster and be used more effectively, leading to cost savings down the road.

- **Human-Centered Design (HCD) Offering** – develop a full-service HCD offering, which centers technology design on the needs of human end-users, by expanding HCD workshops and providing physical space for staff collaboration
- **Integrate Prototyping Processes** – incorporate prototyping tools and methodologies into the design cycle, provide prototypes more widely to project stakeholders, and better integrate user testing into new and existing processes
- **Build On the Lightning Track (BOLT)** – implement an expedited process with dedicated resources to deliver lighter-weight, non-mission critical applications faster



### Supporting the Growth of New York City >> NYC Business

New York City is recognized as a global leader economically, culturally, and socially. To support the City's continued economic development and growth, DoITT provides essential technology solutions, such as NYC Business.

NYC Business is an online platform that will provide a more efficient and transparent way for businesses to access the resources needed to meet the City's permitting, licensing, and other regulatory requirements. Businesses will be able to receive clear information for operating in the City, as well as follow the status of their applications, plans, and inspections.

As part of the Small Business First initiative, DoITT is working with the Department of Small Business Services (SBS), the Mayor's Office, and several other business support agencies to develop technology identified through Human-Centered Design methodology, which focuses on the needs of the end-user. This new technology will be integrated into the existing NYC Business platform, which combines various work streams, including case management and certificate applications, to streamline City resources and services to the public.

Ultimately, NYC Business will give New Yorkers a seamless and versatile platform through which to turn their business ideas into reality.

## GOAL 2: EXPAND STRATEGIC ROLE WITH AGENCIES

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Technology is a vital tool for carrying out City agency missions when leveraged within a more comprehensive business strategy. Accordingly, DoITT can greatly increase its effectiveness when delivering technology services to City agencies when engaging them holistically rather than through transactional engagements alone. This is a top priority for DoITT, which aims to deepen agency relationships and better understand the short- and long-term goals and mandates of its customer agencies. Furthermore, DoITT seeks to play a more strategic role across City agencies by facilitating information-sharing, providing and promoting enterprise solutions, and supporting transformational trends like the proliferation of mobile technology.

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### Objective 1: Expand relationship management to increase the frequency and quality of interactions with customer agencies

DoITT intends to build stronger partnerships with its customer agencies and expand the team dedicated to relationship management in order to engage more frequently. DoITT will also provide customer agencies with more access to their technology assets and applications, in order to increase transparency, share operational visibility, and establish stronger working relationships.

- **Expand Agency Relationship Management (ARM)** – develop a larger and more empowered ARM team to enhance planning and facilitate tighter coordination between agencies and DoITT’s technical teams; implement a customer relationship management tool for improved customer follow-up and tracking
- **Agency-Facing Operational Dashboards** – build operational dashboards for customer agencies to view technical operations in real-time; recalibrate trend analysis dashboards using business intelligence tools, so the performance indicators agencies view will align with DoITT’s upgraded service management database

### Objective 2: Better understand agency strategic goals and business needs to gain trust and build meaningful partnerships

DoITT aims to develop a better understanding of each agency’s mission, major projects, strategic direction, and core technology needs so that it can be more attuned to specific agency needs. This will be achieved through the expanded ARM team’s increased engagement, as well as through new mechanisms for soliciting agency goals and needs regularly.

- **Agency Report** – deliver regular reports and updates to CIOs that give a comprehensive overview of each agency’s active DoITT portfolio and provide an opportunity for customer agency feedback on their own strategic direction and planned projects
- **CIO IT Operations Council** – coordinate regular meetings, with agendas collaboratively developed with the DoITT Commissioner and her executive staff, as well as with agency CIOs, to discuss technology topics that impact agency operations

### Objective 3: Facilitate collaboration among City agencies to share information and best practices

Agencies, regardless of size and scope, benefit from sharing best practices and experiences. DoITT strives to expand and improve its role as key facilitator to promote interagency communication, aggregate and share technology expertise, and connect agencies to each other on Citywide initiatives that would benefit from shared technologies and data.

- **NYC IT Community Forums** – build upon forum series to share knowledge and best practices on targeted technology topics, leveraging the expertise and experience of technologists across City agencies to facilitate interagency engagement
- **Source Code Collaboration** – leverage GitHub to promote collaborative code development within DoITT, among agencies, and with the public, supporting a more open and engaging government
- **Support Interagency Data Sharing** – sustain and enhance data sharing programs and projects across City agencies through the upgrade of foundational DataShare hardware and software, and through participation in related strategic projects
- **Technology Reference Model** – improve communication regarding products and tools that DoITT prefers, supports, considers emerging, or plans to sunset in order to guide agencies and promote cost-efficient technology solutions

## Empowering Data-Driven City Services >> DataShare

DoITT partners with the Mayor's Office of Data Analytics and the Mayor's Office of Operations to enable agencies to share data through the Citywide data-sharing platform. DataShare facilitates data sharing across 38 agencies, supporting various initiatives, such as NYC 311, HHS Connect, NYC Business Express, Integrated Justice Project, and DataBridge.

## Objective 4: Build tools and promote services to leverage enterprise solutions

As the City's centralized technology provider, DoITT focuses on the development, procurement, and application of re-usable, scalable solutions that save the City time and money. Already core to its mission, DoITT will build upon its inventory of enterprise solutions, promote increased utilization through targeted communications, and make enterprise tools more accessible by providing a dedicated enterprise architecture repository.

- **Enterprise Architecture Portal and Tools** – collaborate with agencies to identify and share experiences on widely used technology applications; disseminate information, tools, and reference materials to promote re-usable solutions and minimize citywide cost
- **Deliver Key Enterprise Solutions** – expand DoITT enterprise offerings, such as Citrix, VoIP telephony services, email, and applications for customer relationship management and document management, saving agencies and the City significant costs in infrastructure management and software services
- **Reference Applications** – package pre-built and configured standard application stacks – such as NYC.ID, OpenGeo, DataShare, and Google Search Appliance – for agencies to quickly deploy and integrate with their systems

## Objective 5: Enhance agency program operations through Citywide mobile technology support

City agencies increasingly rely on mobile technology to carry out their field operations and missions, as well as to deliver information and services to the public. In support of this, DoITT is implementing a Mobile Device Management strategy to optimize the functionality and security of Citywide mobile communications while minimizing cost and downtime. At the same time, DoITT aims to develop its resources to provide increased mobile application development services and support.

- **Mobile Device Management (MDM)** – roll out a Citywide MDM application to enable reliable and secure use of City government devices and support agency Bring Your Own Device (BYOD) policies
- **Mobile Application Development and Support** – expand DoITT's capacity and expertise to provide services in mobile development and mobile-friendly website transformation

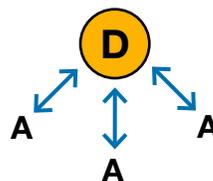
### BUNDLED REFERENCE APPLICATIONS may include:

Identity Management:  
**NYC.ID**

Mapping:  
**OpenGeo**



Data Exchange:  
**DataShare**



## GOAL 3: INVEST IN HUMAN CAPITAL

A skilled and diverse workforce supported in an inclusive and collaborative environment is the foundation for innovative, high-quality services. Cultivating this talent is essential to maintaining the IT services that keep the City running. DoITT will leverage its role as the City's principle IT provider to model IT recruitment and career advancement across the City, developing standards to share and providing guidance and leadership needed to attract and retain a diverse pool of talent. DoITT is committed to its workforce and will expand programs to recruit and retain IT talent, facilitate skills and career advancement, and increase staff diversity.

### Objective 1: Develop training and programs to recruit and cultivate IT talent

DoITT must ensure that its staff is adequately equipped with the critical skills necessary to remain current with evolving technology service needs. DoITT will take a holistic examination of its competency gaps as an organization and provide training opportunities to make targeted improvements in staff development. DoITT will also identify better standards and recruitment tools based on an assessment of IT positions Citywide, sharing this knowledge with other agencies.

- **Skills Assessment** – conduct agency-wide evaluation of skills and competencies to identify gaps that inform DoITT's human resource needs, such as where to target trainings and certifications
- **Study IT Positions and Salaries across the City and Industry** – conduct a Citywide review of IT positions and use findings to create more accurate and consistent salaries and job descriptions across City agencies, and facilitate opportunities for professional growth and career mobility
- **Review IT Civil Service Titles and Specifications** – partner with Department of Citywide Administrative Services (DCAS) to review Civil Service Titles with qualifications and requirements that align with today's technology climate and the City's IT needs
- **Inter-Disciplinary Training Workshops** – expand training workshops available to all City staff, such as Project Management and Application Development, to build cross-functional and hands-on skills



Staff at work at DoITT's Operations Center.

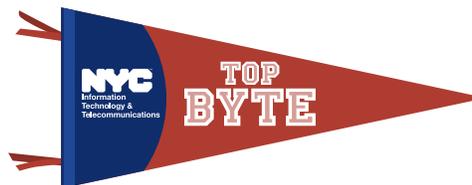
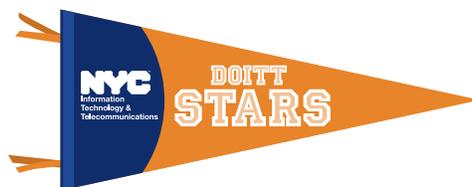
## Objective 2: Facilitate professional growth to encourage high performance and innovation

DoITT's people are dedicated and talented individuals who are highly motivated to serve the public. With proper management training, clearer roles and pathways for advancement, and opportunities to grow professionally, DoITT strives to create an environment that rewards performance and innovation and facilitates career development.

- **Expand Performance Recognition** – build a more inclusive and participatory performance management program that increases opportunities for managers to acknowledge and motivate exemplary staff
- **Increase Professional Development Opportunities** – provide regular and more individualized follow-ups of professional development progress to ensure staff leverage relevant trainings and target areas of improvement



Top: Staff performance awards | Bottom: Infrastructure staff members



### Objective 3: Foster a culture of inclusion and diversity to maximize applicant pool and increase retention

New York City has one of the most diverse and dynamic workforces in the world, establishing a rich ecosystem of different perspectives and creativity. DoITT will channel that potential into IT talent recruitment and retention and serve as a model for other City agencies by appointing its first Chief Diversity and Inclusion Officer. Furthermore, City agencies, civic and advocacy groups, nonprofits, academic institutions, and private sector companies provide a rich source for collaboration and diverse talent pipelines, so DoITT will seek strategic partnerships to engage the community, promote technical job training, and encourage people of diverse backgrounds to explore careers in government technology.

- **Establish Diversity and Inclusion Office** – further promote an inclusive organizational culture led by the newly-appointed Chief Diversity and Inclusion Officer; develop initiatives focused on diverse workforce recruitment, particularly among technology staff
- **Expand and Advertise Strategic Partnerships** – continue existing initiatives, such as the City University of New York (CUNY) IT Internships program, and explore additional partnerships with academic and non-academic organizations alike to identify untapped talent and potential
- **University Project Delivery Collaboration** – partner with a local academic institution to engage students on a substantive project for a City agency, with mentorship and guidance from experienced DoITT staff

### >> STAFF FEEDBACK

The development of this plan included an all-staff survey, which provided valuable comments.

“A stronger [employee] base will promote teamwork and knowledge transfer that is necessary for growth and health of DoITT.”

“ ‘Enhance and Improve Service’ starts internally with our own agency personnel.”

“The goal is to build a strong team internally. Once the team is established, success in delivering services is *limitless...*”

“Communication is the key to success, both inter- and intra-agency”

“Invest into improving IT technology internally, within DoITT.”

“I can’t stress how important the following goal is: Expand affordable high-speed public broadband access.”

## GOAL 4: PROVIDE ROBUST INFRASTRUCTURE

The City's IT infrastructure includes the hardware and software that power City government's data storage and computing needs, the telecommunications network that connects the City, and the policies, security operations, and architecture that make it all function as a system. As the backbone of City operations, agencies depend on this infrastructure to provide fundamental public services every day. To sustain the City's daily services and safeguard its information assets, DoITT must continue to maintain IT infrastructure that is resilient, scalable, agile, and secure from cyber-threats and natural disasters.

### Objective 1: Streamline the City's IT infrastructure to promote efficiency, agility, and greener IT

A more cohesive IT infrastructure provides City agencies with increased agility and scalability, shared support, and lower costs for their data storage and computing needs. DoITT is already building and hosting approximately 100 new virtual servers each month as agencies see the benefits of a shared hosting model. DoITT will leverage its infrastructure resources and take advantage of these economies of scale by further improving the City's data center management and investing in network hardware and support.

- **Shared Data Center and "Best Practices"** – continue to streamline data center operations to realize greater efficiencies, economies of scale for City agencies, greener operations; establish guidelines and "best practices" for City's data centers to ensure agencies follow standards for resiliency and efficiency
- **Collaborative Infrastructure Migrations and Transformations** – engage agencies when requested to assess, plan, and implement infrastructure migrations to DoITT data centers to leverage the efficiencies of shared data center services; partner with agencies to transform and upgrade legacy applications, enabling them to fully utilize DoITT's support and operations services
- **Network Enhancements** – add more hardware and fiber links to the City's institutional fiber network (CityNet) locations and create new locations for increased resiliency



#### DoITT Data Centers:

- 99.999% availability
- Operationally secure
- Monitored 24x7
- Supported with backup retention services
- Promotes efficiency through consolidation
- Provides agencies with reporting and monitoring tools
- Hosts over 72,000 email accounts and over 7,500 environments

## Objective 2: Maintain world class security measures to safeguard IT systems and balance business needs

DoITT is responsible for IT security on the City's network and for applications DoITT hosts, as well as enterprise processes that strengthen the security of applications across City agencies. DoITT IT Security detects and defends the City from constantly evolving threats by conducting various functions, such as security engineering, operations, and monitoring. In addition to the Security Accreditation process mentioned earlier in the plan, DoITT is implementing key initiatives that continue to make security a primary consideration while balancing agency business needs and empowering them to operate more securely.

- **Citywide Internet Content Filtering and Advanced Malware Protection** – provide DoITT with the capability to filter and more securely monitor Internet traffic citywide, the first line of defense against web attacks
- **Cyber Incident Response** – enhance the existing protocol by strengthening interagency tactics and techniques for handling common types of security threats and incidents that require collaboration among City, State, and Federal partners; conduct regular workshops with agencies on incident response
- **Public Key Infrastructure** – automate and simplify the management of security certificates for City applications, addressing key “pain points” and enabling more effective and secure handling of City data

## Protecting the City's Digital Assets

### >> Cyber Security

DoITT is committed to the protection of the City's information and technical assets that are essential to delivering services to the public. DoITT IT Security is the core of the City's Computer Emergency Response Team, responding to emergencies, such as system penetrations or compromises. The unit works with numerous City agencies, New York State, and external business partners to coordinate IT security. DoITT's IT Security team:

- Manages the security of nearly 90,000 City computer systems daily;
- Grants security accreditation to roughly 7 applications monthly; and
- Provides security solutions to 60 City agencies.

To further aid agencies in protecting the City's IT assets, IT Security will conduct regular Cyber Security workshops related to incident response. In addition to providing increased security training to agencies, the workshops aim to facilitate increased interagency information sharing and collaboration on emerging threats.

## Promoting a More Resilient and Sustainable New York City

### >> Resiliency

Recent catastrophic events, such as Hurricane Sandy, have underscored the importance of strengthening New York City's capacity to withstand and recover from extreme weather. For DoITT, this means protecting and enhancing the resiliency of the City's physical IT and telecommunications infrastructure. Meanwhile, City agencies must maintain continuity of operations plans that address their IT needs and are centrally coordinated with DoITT in order to properly plan for disruptions.

Key initiatives in this plan directly enhance the City of New York's IT and telecommunications resiliency, particularly Site B, emergency readiness training, and improved franchise agreements that hold providers accountable for investing in resiliency.

### >> Sustainability

The City continues to develop policies and programs to combat the effects of climate change, protect the City's natural assets, and create more sustainable and livable communities. DoITT plays a role in reducing the City's overall carbon footprint and will continue working with the Mayor's Office and DCAS to identify ways to improve data center and IT energy efficiency across City agencies in four key areas:

- Data center technical characteristics, such as size and configuration;
- Data center facilities, such as cooling system efficiency and power generation;
- Servers and storage, such as physical servers versus virtual machines; and
- Desktop usage, including monitor and PC settings.

As DoITT implements key initiatives in this plan, such as streamlining data center operations and establishing best practices, it is uniquely positioned to seek ways to make the City's IT systems more energy efficient.

### Objective 3: Facilitate disaster recovery options to strengthen the City's technical systems and infrastructure

The City's ability to function during a disaster depends upon a resilient IT infrastructure that keeps critical agency applications running, data accessible and secure, and telecommunications networks operating. DoITT will continue to implement the hardening needed to keep the City's network up and running and manage the City's ready-built backup facility in case there is a disruption.

- **Site B Resiliency Program** – continue to populate Site B data centers with replication and backup of critical applications hosted by DoITT; help incorporate Site B into business Continuity of Operations Plans (COOP) for agencies Citywide
- **Site B Co-Location** – offer agencies the ability to leverage Site B for non-DoITT hosted critical applications by providing white space for use for disaster recovery
- **Harden Network Assets for Critical City Services** – continue hardening network and infrastructure assets to withstand both storm-related power outages and power grid outages and strengthen DoITT's support of mission-critical operations for the City's first responders and essential City services

## GOAL 5: OPTIMIZE CITYWIDE TECHNOLOGY ADMINISTRATION

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DoITT's technical expertise, experience supporting a broad array of City operations, and role as the City's largest consumer of IT services make it a key stakeholder in Citywide technology procurement. In partnership with the Mayor's Office and the City's administrative stakeholders, DoITT can help City agencies better manage the regulatory requirements, budget constraints, and lengthy negotiation processes that make technology procurement challenging. Through a strategic approach to procurement and proactive interagency engagement, DoITT will deliver the state-of-the-art technology necessary for City operations, while also improving vendor management and increasing the diversity of service providers.

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### Objective 1: Establish a strategic approach for technology sourcing and procurement to support City agencies

DoITT has established a Strategic Sourcing group to aggregate Citywide demand and efficiently procure and manage software and technical services. The group works with agencies to forecast software usage requirements and negotiate terms that maximize value. Additionally, DoITT is a lead partner in a mayoral initiative to reform the City's overall procurement process to ensure more efficiency and transparency.

- **Enterprise License Agreements (ELAs)** – utilize DoITT's expertise and the City's purchasing power to negotiate favorable software agreements for IT products most in demand by agencies
- **Citywide Information Technology and Consulting Contracts** – facilitate the ability for agencies to more quickly and efficiently obtain IT professional services from established registered vendors with Citywide contracts
- **Enter into New Telecom Master Service Agreements (MSAs)** – aggressively negotiate with telecom providers when entering into new contracts in order to ensure affordable and resilient service

### Objective 2: Promote the participation of Minority- and Women-Owned Business Enterprises (M/WBE) and small businesses to broaden and diversify the pool of DoITT vendors

It is DoITT's priority to ensure that the City gets the best value in its contracts by drawing from the broadest pool of talent. This encompasses consultants, businesses, and non-profits that have competitive services but may face difficulty navigating the procurement process. DoITT seeks to level the playing field for a more diverse pool of vendors and expand its commitment to the M/WBE program and accessibility to small, emerging businesses.

- **Expand Leadership Structure for M/WBE Participation** – establish a management-level task force to drive M/WBE planning and accountability and work with SBS to continue to plan and host vendor workshops to encourage subcontracting with M/WBEs, focus on efforts to enforce M/WBE subcontracting goals, and increase outreach and networking sessions designed to reach M/WBEs and encourage their participation in City contracting opportunities

### Objective 3: Improve accountability and management of DoITT technology vendors and suppliers to ensure optimal performance and compliance

DoITT strives to take a more coordinated, holistic approach to the full lifecycle management of technology projects with vendors, ensuring the highest levels of performance and accountability. To assume a more proactive role in vendor performance, DoITT will further integrate the evaluation of vendors beginning from initial contract development, to the management of vendor teams, to in-process performance reporting and contract compliance.

- **Streamline and Enhance Vendor and Contract Management** – combine vendor and contract management functions and incorporate vendor performance to inform decision-making when hiring vendors, sharing feedback with City agencies
- **Integrate Vendor Management Processes into Project Methodologies** – integrate vendor management processes and performance monitoring into DoITT’s established project methodologies; provide support and training for City project managers to routinely monitor and control vendor engagements
- **Formalize DoITT Internal Compliance Function to Include Vendor Compliance** – strengthen escalation process that includes DoITT’s legal team for vendors exhibiting poor performance, resulting in contractual penalties

## Reforming Vendor Management and Restoring Accountability >> Emergency Communications Transformation Program

The DoITT Commissioner led a formal assessment to identify solutions to the challenges encountered by the City’s Emergency Communications Transformation Program (ECTP), a multi-year, multi-agency initiative to upgrade all facets of the critical Emergency 911 system. Moving forward with the new implementation of the ECTP program, DoITT coordinates with the Fire Department, Police Department, and the Mayor’s Office to institute stronger governance practices and re-establish the City (rather than the Systems Integrator) as the program lead for more accountable management.

The ECTP overhaul integrates several areas for improved technology implementation and administration, demonstrating DoITT’s commitment to government accountability, cost control, and more efficient program management. The new implementation will:

- Reduce project risk by breaking down large programs into smaller, more manageable projects;
- Ensure operational needs drive technology implementation;
- Establish a governance model that facilitates regular communication and collaboration between stakeholders;
- Reduce the previous layers of vendors and appoints vendor management and contract leads to oversee staffing engagements; and
- Develop strategic sourcing to more efficiently carry out procurements.

## GOAL 6: FACILITATE GREATER ACCESS TO TECHNOLOGY FOR ALL NEW YORKERS

Technology improves City operations and services, making them more streamlined and efficient. It can also transform the relationship between City government and the public by improving engagement and accessibility. To expand the benefits of IT and telecommunications to all New Yorkers, DoITT will build upon efforts in making City data and agency services more transparent and accessible to the public, ensuring affordable high-speed broadband access for all communities, and to leverage the City's telecommunications franchise agreements to hold those providers accountable to the public.

### Objective 1: Make City data and services more accessible and transparent through technology

New York City has led the way on open data, with Local Law 11 of 2012 among the first and most comprehensive open data laws in the country. In building upon this work, DoITT recognizes that true engagement and transparency involves not just releasing data, but expanding opportunities for open collaboration on broad City topics. DoITT will support the City's effort to empower agencies to engage the public as inclusively as possible, while also providing the public with the tools to fully participate in driving a data-informed City.

- **Open Data** – work with the Mayor's Office of Data Analytics (MODA) and City agencies to ensure that data is not just available, but part of a strategy to problem-solve collaboratively with civic and advocacy groups, academic institutions, and the general public to participate in and improve government

## Streamlining Public Access to Information and Services

### >> NYC.gov and NYC 311



*NYC.gov*, the official NYC website, serves more than 35 million unique visitors a year. DoITT rebuilt the *NYC.gov* portal to be more robust and responsive than ever to better meet user needs. Working with City agencies, DoITT will rebuild the entire *NYC.gov* landscape to be as fast, direct, and helpful.



NYC 311 is the City's source for non-emergency services. Its use continually grows, and in 2014, the system received a record 28 million total customer contacts. DoITT will redesign the 311 architecture to make the system more robust, further streamline customer service, enhance service request processing, and increase access to 311 data.

## Objective 2: Expand broadband access to the public, particularly underserved communities

Access to high-speed and affordable Internet service is no longer a luxury, but a requirement for New Yorkers to function adequately in the modern world. Broadband provides communication around City services – including public health, transportation, and social services – and access to broadband can be lifesaving during emergencies. Broadband access also provides opportunity for jobs and education and supports an active and participatory democracy. DoITT is already rolling out continuous free public Wi-Fi networks to targeted communities, such as Harlem, and will continue to work with the Mayor’s Office to enable free or low-cost Internet access to other underserved areas.

- **Parks Wi-Fi** – install Wi-Fi access points in City parks through a \$10 million commitment from cable providers to bring affordable Internet access to the public
- **LinkNYC** – replace aging network of public payphones with a network of up to 10,000 access points for free high-speed public Wi-Fi across all five boroughs; use these kiosks to disseminate critical information during emergencies via digital display screens

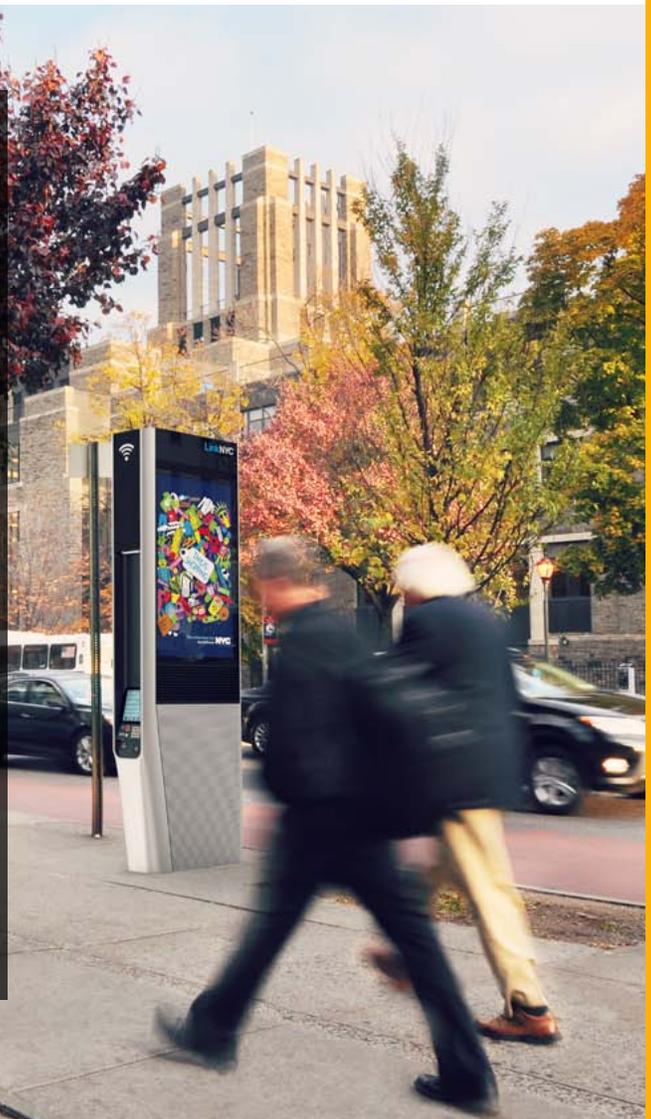
### Supporting Equity by Expanding Public Wi-Fi

#### >> LinkNYC

LinkNYC revitalizes an outdated telecommunications infrastructure to support the City’s broad goals across equality, public safety, and public engagement. Up to 10,000 Link kiosks will replace outdated payphones to provide the public with:

- Free phone calls to anywhere in the U.S.;
- Touchscreen access to the Internet;
- 24/7 free Wi-Fi access with up to gigabit speeds;
- Easy access to NYC 311 and 911 calls; and
- Free charging for mobile devices.

LinkNYC helps bridge the digital divide by expanding access to the power of the Internet, and also enables City agencies to communicate with the public during emergencies. In addition, through this franchise agreement with DoITT, digital advertising on Links will bring the City over \$500 million in revenue over 12 years, which will allow significant reinvestment in other broadband inclusion programs.



### Objective 3: Hold telecommunications franchises accountable for adequately delivering resilient services to the public

New York City depends on telecommunications infrastructure and services to stay connected. City government, through DoITT's franchise administration, must ensure that such services are delivered reliably to the public. This is especially true in an environment of uncertain federal regulations and possible telecommunications company mergers. Furthermore, Hurricane Sandy exposed vulnerabilities to New York City's telecommunication infrastructure and revealed the consequences of a disruption in communications along with the need for DoITT to hold service providers accountable to invest in resiliency.

- **Incorporate Resiliency Requirements into Franchise Agreements** – using the LinkNYC agreement as a model, incorporate resiliency requirements into franchise agreements to require measures such as enhancing cyber-security and encryption, hardening and increasing networking, submitting an annual resiliency plan, utilizing backup power supply, and reporting outages regularly
- **Establish New Division of Telecommunications Planning** – create a new division and appoint a new Deputy Commissioner to manage policy and planning for telecommunications and enhance franchise oversight



## NOTE ON IMPLEMENTATION

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This strategic plan considers the long-term role DoITT has in serving New York City rooted in actionable steps with immediate impacts. Implementing this plan therefore requires thorough planning and resource allocation. It also requires collaboration, rigorous evaluation, and transparency in order to ensure that these initiatives, once carried out, indeed achieve the intended goals.

This plan will adhere to key principles of collaboration, accountability, and achievability within a two-to-three year timeframe. To accomplish this, the implementation strategy will focus on: inclusive governance, comprehensive project tracking and impact assessment, and transparency around plan progress by way of regular reporting.

### Governance

Implementing this plan will require commitment and collaboration at all levels, from the Commissioner to the individual project managers responsible for each initiative. To drive plan governance, DoITT will:

- Conduct a series of briefings with initiative stakeholders to guide them through project implementation and tracking and familiarize them with how each initiative fits into the larger strategic picture;
- Provide opportunities for stakeholders, such as customer City agencies, to give feedback;
- Incorporate strategic plan feedback and tracking into DoITT’s core governance process; and
- Form an internal working group of DoITT staff to guide implementation and evaluation.

### Tracking Progress and Assessing Impact

Objectives and key initiatives were developed with measurability in mind, and specific metrics will define success on two levels: 1) tracking the progress of each initiative, and 2) assessing the impact achieved.

- 1. Tracking Progress:** The initiatives are the fundamental action steps for this plan, and their progress will be tracked through DoITT’s internal project management software platform. DoITT’s Policy and Strategic Planning team will work with project managers to make sure critical project data, such as key milestones and deadlines, are entered and updated regularly.
- 2. Impact Assessment:** Key performance indicators (KPIs) are being developed for each objective to measure how effectively it is being addressed. These KPIs will contain a mix of quantitative and qualitative metrics and are constructed around the central challenges and opportunities each objective addresses.

### Reporting

Every year, DoITT leadership and key stakeholders, including the working group, will review the plan and update it as appropriate. Ongoing collaboration and accountability, combined with the flexibility to adjust this plan and agency resources as needed, will ensure that the implementation stays true to the vision for these goals and objectives.

Initiative progress will be monitored continually, with monthly reporting submitted to DoITT leadership. KPIs will be assessed on a regular basis. These KPIs and a snapshot of initiative progress will be periodically distributed to customer City agencies.

## CONCLUDING REMARKS

DoITT is staffed by talented and dedicated people committed to serving New Yorkers. This plan aims to outline a vision for how the agency will better deliver IT and telecommunications services to its customers and lays out an action plan for doing so. While no strategic plan can prescribe the future perfectly, especially in the complex and fast-changing world of technology, this plan supplies a guiding framework around DoITT's work and efforts toward improving the way it serves its customers. Through this plan, DoITT seeks to better fulfill its mission to provide for the sustained, efficient, and effective delivery of IT services, infrastructure, and telecommunications to enhance service delivery to New York City's residents, businesses, employees, and visitors.



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