

Broadband in NYC

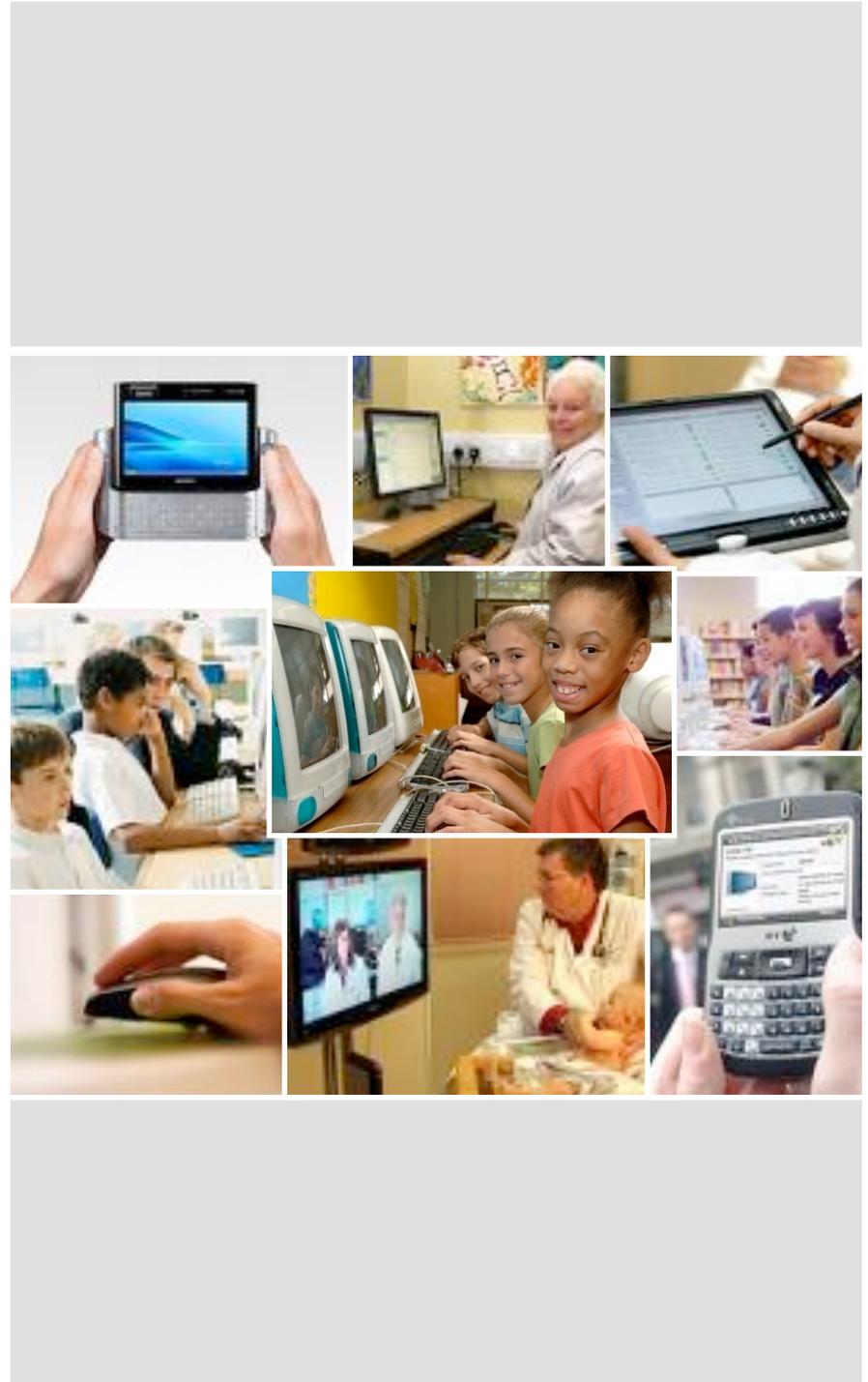
*New York City's Recommendations for the
Broadband Technology Opportunities Program*

April 8, 2009



NYCTM
**Information
Technology &
Telecommunications**

Diamond
Management & Technology Consultants



Executive Summary

- In 2006-2007, New York City conducted a comprehensive broadband study; a primary finding was that broadband **adoption**, not availability, is a key challenge in NYC
- The problem of adoption is not limited to NYC, but is **common to many urban areas** (where more than 60% of the US population resides), and will be the **most pressing national issue going forward**
- In response to the Study findings, NYC crafted a comprehensive broadband program that includes **holistic** initiatives to help citizens overcome **multiple obstacles to adoption**
- The City will employ a **highly coordinated approach** that leverages the most **innovative ideas** and **creates the most jobs** by including all relevant NYC agencies and strong strategic partners
- BTOP funding offers NYC the opportunity to **immediately** execute its programs on a **scale that would otherwise not have been possible**

New York City's broadband programs are **directly in line with key BTOP objectives**, and can serve as a **model for national initiatives**



Key BTOP Objectives



1. **Enhance broadband access for** citizens in unserved & **underserved** areas
2. **Provide broadband education, awareness, training, access, equipment and support to:**
 - a) Schools, libraries...other community support organizations...to **facilitate greater use of broadband service by or through these organizations**
 - b) Organizations and agencies that provide outreach, access, equipment and support **to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations**
3. **Stimulate the demand for broadband, economic growth and job creation**

Introduction

- The BTOP clearly makes **adoption** a major priority
- New York City's work on broadband demonstrates in **real terms** why such programs are vital to the broader national goal of universal access
- The City's proposed programs **directly address adoption**, and can serve as **model for adoption-focused efforts across the country**

A primary finding of the Broadband Needs Assessment was that **adoption, not service availability**, is the major challenge in NYC

Key Findings

1. **Broadband for Residents**

Home residential service widely available; low-income residents *adopt* at less than half the rate of middle- and high-income residents

2. **Broadband for Businesses**

Large businesses well served; service options may be limited in some industrial/manufacturing areas

3. **Availability of Public Access Centers**

Public technology centers fill critical need, yet many public library branches and City-operated centers in need of connectivity, computers, staff

4. **Availability of WiFi in Public Spaces**

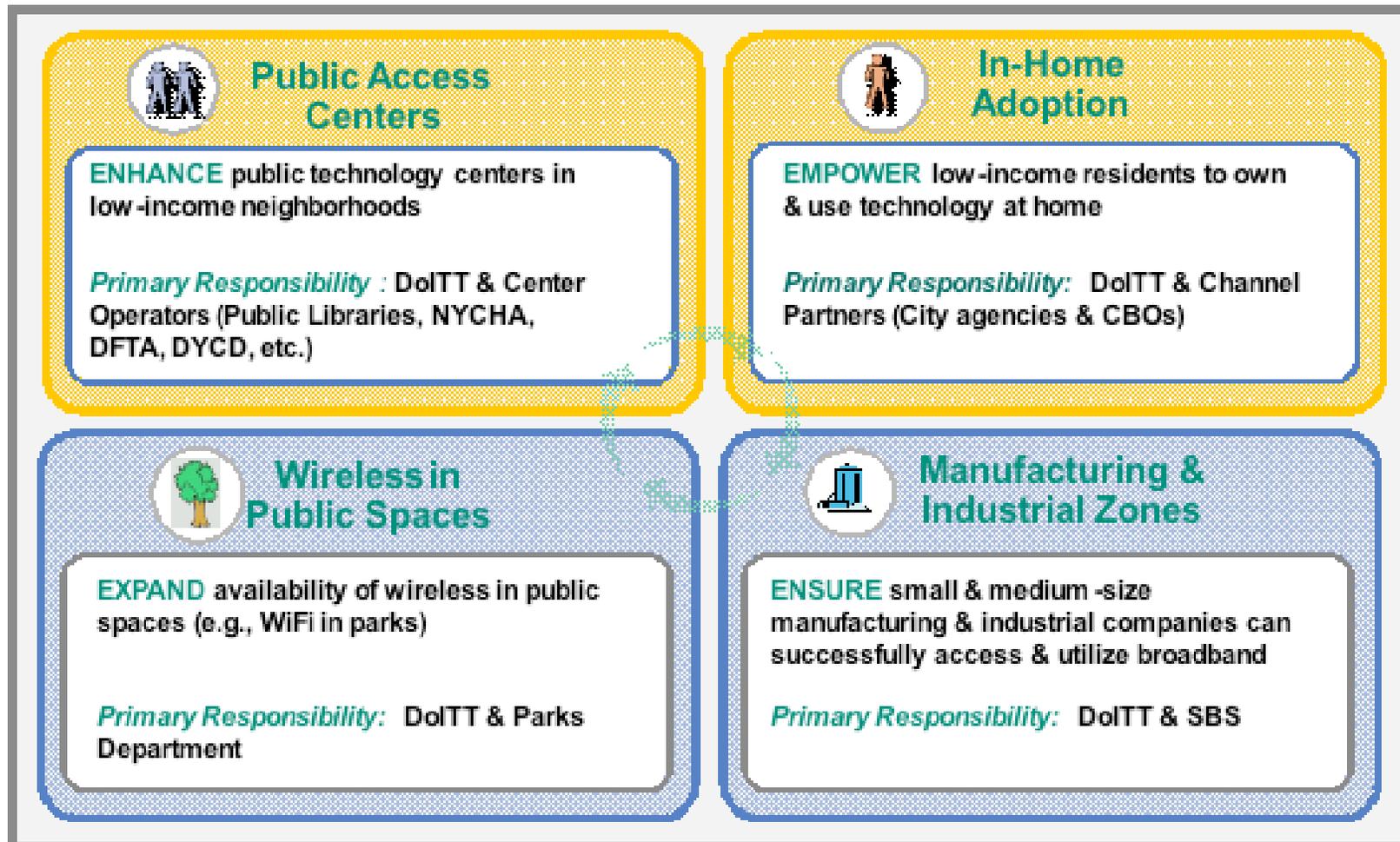
NYC well covered by WiFi hotspots, but opportunity to expand coverage in public spaces

5. **Competition in the Marketplace**

NYC has above average provider competition, but can continue to enhance through franchise process

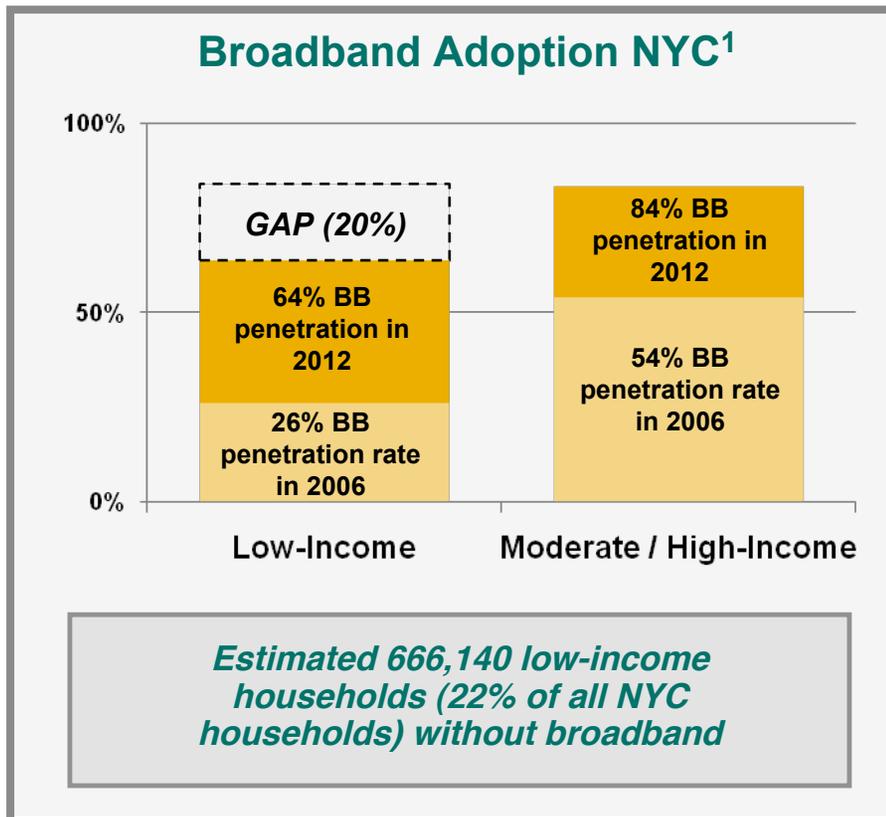
In response to the findings the City crafted a **comprehensive** broadband strategy

The NYC Digital Inclusion initiative is a comprehensive effort to address the gaps identified in the 2006-7 study



The City plans to request funding to address **adoption** in NYC

The Broadband Needs Assessment Study identified a growing gap in broadband adoption between low-income and moderate- to high-income New York City residents



Uneven broadband adoption hinders low-income residents and the City

- Lack of digital literacy and connectivity limits low-income residents' access to:
 - Educational resources
 - Employment opportunities
 - Information (health, news, etc.)
 - Social & civic participation
- Connected citizenry prerequisite for the City to provide low cost, efficient online services
- Digitally literate workforce is critical to NYC's ability to attract high growth companies and drive economic prosperity

Sources: ¹American Community Survey 2006, survey of Internet and broadband availability and adoption among NYCHA residents, Scarborough Research, Pew Internet & American Life Project, Diamond analysis.

The proposal will include a **holistic** approach to address key obstacles to adoption in NYC

Research revealed that low-income residents typically face multiple obstacles to broadband adoption

Obstacle	Research Findings ¹
<p>Lack of computer ownership</p>	<ul style="list-style-type: none"> • Lack of computer ownership most commonly cited reason for not having home Internet service (53% of public library patrons, 83% of NYCHA residents)
<p>Cost of broadband service</p>	<ul style="list-style-type: none"> • Cost of broadband service 2nd most commonly-cited obstacle to having home Internet service among library patrons and NYCHA residents
<p>Lack of computer literacy skills</p>	<ul style="list-style-type: none"> • Only 14% of NYCHA residents without broadband service were satisfied with their computer skills vs. 80% of those with home Internet service
<p>Failure to recognize value of technology</p>	<ul style="list-style-type: none"> • Stakeholder interviews highlight critical need to provide concrete benefits to incent technology adoption

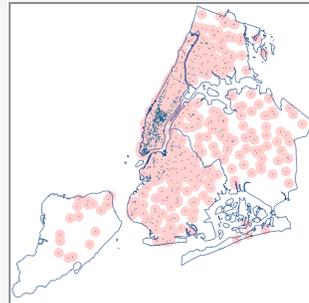
Sources: ¹ NYCHA findings based on Diamond's collection of 1,140 valid survey responses, representing a 95% confidence level and 3% confidence interval. Library findings based on 2,249 survey responses from 58 branches across the five boroughs. Diamond research.

The proposal will include a two-pronged strategy to **enhance adoption**

NYC's BTOP proposal will build on the two most relevant areas of NYC's broadband program

1. Expanded Public Access

- **Enhance public technology centers in low-income neighborhoods**
 - Provide connectivity, access devices (desktops/laptops) and staff resources in public places
 - Targets include public library branches and City-run facilities, NYCHA, and DFTA centers



2. Support In-Home Adoption

- **Empower low-income residents to own and use technology at home**
 - Provide target segments with a technology 'bundle' to spur adoption
 - Partner with organizations that have existing citizen touch points to distribute the bundles



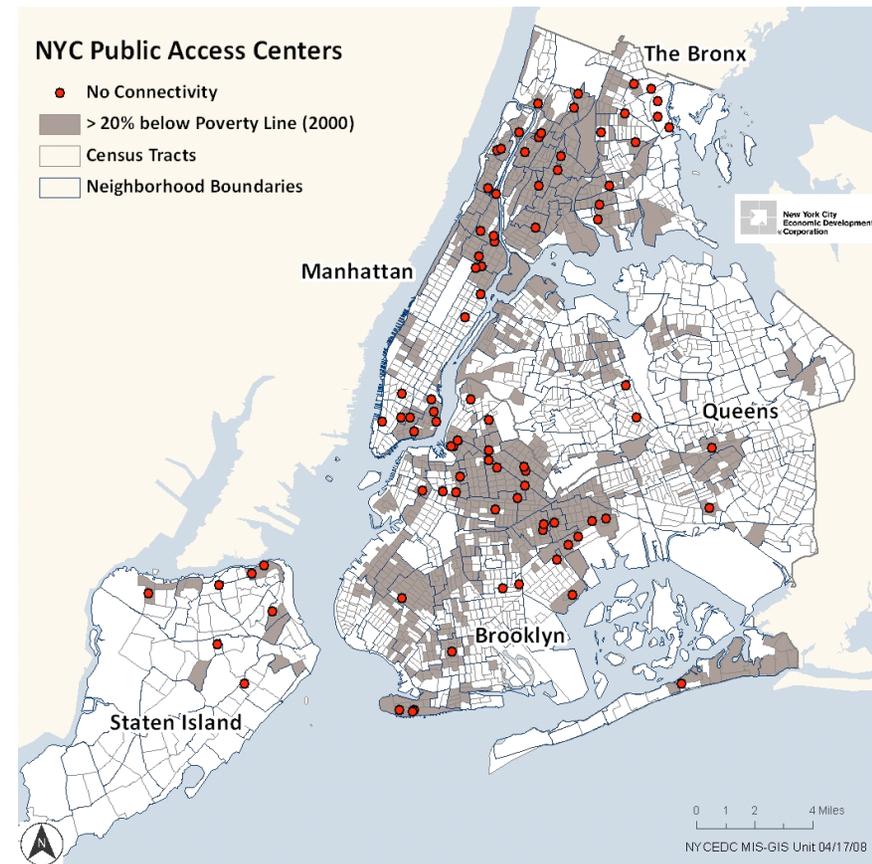
BTOP Strategy 1: Expanded Public Access

The Challenge

- Many public library branches are unable to meet current technology demand with existing resources
- Many City-operated centers, NYCHA and DFTA centers, do not currently have Internet connectivity
- Most are in high-need communities

Initiative: Assist facilities in upgrading connectivity, computers, and expand staff resources, focusing on low income communities to ensure all New Yorkers live within immediate proximity to a public access point

Target Public Access Centers



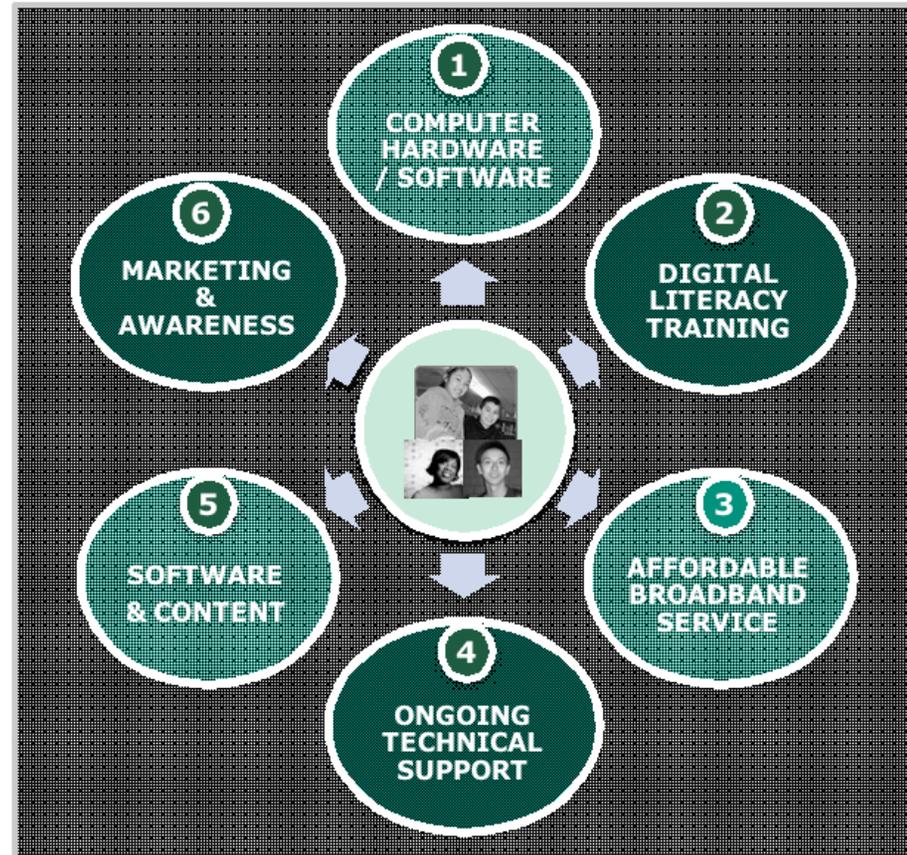
BTOP Strategy 2: In-Home Adoption Support

The Challenge

- Low-income residents often face multiple obstacles to broadband adoption
- Affordability, lack of skills, and limited awareness of benefits of technology are common barriers
- Comprehensive support is needed to help residents overcome fear of technology and recognize benefits of adoption

Initiative: Provide low-income residents with 'technology bundles' that address ALL common obstacles to home broadband adoption

'Technology Bundle' Components



A BTOP program that addresses these issues would best fit NYC's needs and **most effectively confront the adoption problem nationally**

Issue	Description	Recommendation
<p>1</p> <p><u>Adoption not Availability</u></p>	<ul style="list-style-type: none"> • <u>Adoption</u>, not availability, is primary problem for NYC and many urban areas (increasingly also for rural areas) • With more than 60% citizens living in urban areas, this is a key national challenge that will intensify going forward 	<ul style="list-style-type: none"> • Place strong emphasis on programs that facilitate adoption and stimulate demand
<p>2</p> <p><u>Holistic Approach</u></p>	<ul style="list-style-type: none"> • Low-income and other vulnerable groups typically face <u>multiple</u> obstacles to adoption (including affordability, etc.) • A holistic approach that targets these obstacles simultaneously is required to help citizens become long-term, 'active' technology users 	<ul style="list-style-type: none"> • Priority should be given to proposals that put forth holistic programs that address multiple obstacles to broadband adoption • These programs should be tailored to the specific needs of vulnerable citizen segments (e.g., students, unemployed adults, older adults)
<p>3</p> <p><u>Sustainability</u></p>	<ul style="list-style-type: none"> • NYC believes programs must be sustainable from both <u>citizen</u> and <u>government</u> perspectives • Citizen means empowering people to become active technology users • Government means demonstrating power of broadband to enhance service delivery 	<ul style="list-style-type: none"> • Priority should be given to proposals that ensure sustainability from both citizen and government perspective • This will ensure that social and economic objectives are achieved

Additional recommendations to ensure the success of BTOP projects:

Issue	Description	Recommendation
<p>4</p> <p>Coordination</p>	<ul style="list-style-type: none"> • Coalitions of public-private partners will expand the resources, expertise, and innovative thinking available to address these critical issues • Coordination and collaboration is required to ensure efforts are not duplicated or wasted 	<ul style="list-style-type: none"> • Priority should be given to proposals that forge effective coalitions with capable public and private entities • Successful grant applicants should clearly demonstrate planned coordination amongst all relevant groups in specific geographic areas
<p>5</p> <p>Performance Measurement</p>	<ul style="list-style-type: none"> • Impact of digital inclusion programs must be carefully monitored and measured • The optimal programmatic approach must first be determined to avoid wasted resource investments and to enhance outcomes 	<ul style="list-style-type: none"> • Priority should be given to targeted 'demonstration' programs that properly evaluate impact and benefits • This approach will provide invaluable lessons learned and best practices for future initiatives across the nation

APPENDIX

Appendix

Broadband Needs Assessment Stakeholder Interviews (1/2)

City Agencies / Organizations

- ◆ Brooklyn Public Library
- ◆ City Hall
- ◆ City University of New York (CUNY)
- ◆ Mayor's Office of Comprehensive Neighborhood Economic Development (CNED)
- ◆ Metropolitan Transit Authority
- ◆ New York City Council
- ◆ NYC Center for Economic Opportunity (CEO)
- ◆ NYC Dept. for the Aging (DFTA)
- ◆ NYC Dept. of City Planning (DCP)
- ◆ NYC Dept. of Education (DOE)

- ◆ NYC Dept. of Housing Preservation & Development (HPD)
- ◆ NYC Dept. of Information Technology & Telecom (DoITT)
- ◆ NYC Dept. of Parks & Recreation
- ◆ NYC Dept. of Small Business Services (SBS)
- ◆ NYC Dept. of Youth & Community Development (DYCD)
- ◆ NYC Economic Development Corporation (EDC)
- ◆ NYC Housing Authority (NYCHA)
- ◆ NYC Law Department
- ◆ NYC & Company
- ◆ New York Public Library (NYPL)
- ◆ Queens Borough Public Library

Service & Technology Providers

- ◆ Ambient
- ◆ Bway.net
- ◆ Cablevision
- ◆ Covad Communications
- ◆ Crown Castle Solutions Corp.
- ◆ Exenet Systems
- ◆ Mobilitie
- ◆ Nokia Networks
- ◆ RCN
- ◆ Sprint

- ◆ TCC Teleplex
- ◆ Telkonet / MST
- ◆ Terabeam / Proxim Wireless
- ◆ Time Warner Cable
- ◆ T-Mobile USA
- ◆ Towerstream
- ◆ Urban Communications Transport
- ◆ Verizon
- ◆ Verizon Wireless
- ◆ Wi-Fi Salon

Additional Stakeholders

- ◆ Alliance for Downtown NY
- ◆ Andrew Rasiej (FON, MOUSE)
- ◆ Anthony Townsend (Institute for the Future)
- ◆ Baruch College School of Public Affairs
- ◆ Center for an Urban Future
- ◆ Columbia Institute for Tele-Information (CITI)
- ◆ Computers for Youth
- ◆ Dragonfly Technologies
- ◆ Empire City Subway
- ◆ Hispanic Information & Telecom Network (HITN)
- ◆ Industrial & Technology Assistance Corp. (ITAC)
- ◆ Jewish Community Council of Greater Coney Island Non-Profit Help Desk
- ◆ Jewish Home and Hospital
- ◆ Mount Hope Housing Company

- ◆ New York State Public Service Commission (PSC)
- ◆ Non-Profit Coordinating Committee of New York
- ◆ NPower NY
- ◆ NYCwireless
- ◆ NYSErNet
- ◆ Older Adults Technology Services (OATS)
- ◆ Partnership for New York City
- ◆ People's Production House (PPH)
- ◆ Per Scholas
- ◆ Rudin Management Company
- ◆ Securities Industry & Financial Markets Association (SIFMA)
- ◆ South Bronx Overall Economic Development Corp. (SoBro)
- ◆ Wireless Harlem Initiative
- ◆ Wolf Block

Appendix

Broadband Needs Assessment Stakeholder Interviews (1/2)

Peer City Representatives

- ◆ Berkshire Connect
- ◆ Boston Digital Bridge Foundation
- ◆ Brookline, MA
- ◆ Charlie Kaylor (Connect Kentucky)
- ◆ City and County of San Francisco, CA
- ◆ City of Boston, MA
- ◆ City of Chicago, IL
- ◆ City of Grand Rapids, MI
- ◆ City of Miami, FL
- ◆ City of Philadelphia, PA
- ◆ City of Seattle, WA
- ◆ Earthlink Municipal Network Division
- ◆ Wi-Fi Long Island

Additional Subject Matter Experts

- ◆ Angela McIntee (The MITRE Corporation)
- ◆ Area Development Magazine
- ◆ Blair Levin (Stifel Nicolaus)
- ◆ Bonocore Technology Partners
- ◆ Business Facility Planning Consultants
- ◆ CB Richard Ellis Consulting
- ◆ ChicagoFIRST
- ◆ Current Technologies
- ◆ Ed Malecki (Ohio State University)
- ◆ Harris Wiltshire & Grannis
- ◆ Intel Corporation
- ◆ International Center for Advanced Internet Research (iCAIR)
- ◆ Microsoft Corporation
- ◆ MSTAR (ISP on Utah's UTOPIA network)
- ◆ One Economy
- ◆ Rahul Telang (Carnegie Mellon University)
- ◆ Regional Partnership Council (aka RPCFIRST)
- ◆ Saskia Sassen (Columbia University)
- ◆ Sean Gorman (Fortius One)
- ◆ Sharon Gillett (Formerly of MIT and the Boston Task Force)
- ◆ Tony Grubestic (Indiana University)
- ◆ Tropos Networks

Diamond also conducted interviews to gain a better understanding of broadband and digital inclusion initiatives in other cities / regions and consulted numerous subject matter experts.