

Transforming the City of New York

New Platform for Public-Private Cooperation Ushers in Smart Cities of the Future

By Jeff Frazier and Tom Touchet

For centuries, cities have generated most of humankind's art, religion, culture, commerce, and technology. And while this trend is expected to continue, several emerging challenges are making it more difficult for cities to take advantage of the tremendous talent, thinking, leadership, and resources that exist within their borders:

- **Social.** With more than 50 percent of the world's population currently living in cities¹ and close to 700 million people moving into urban areas within the next 10 years,² tremendous stress is being placed on already aging public infrastructures.
- **Political.** A lack of shared goals that benefit all constituents has kept previous public-private partnerships (PPPs) from reaching their full potential.
- **Economic.** The global economic slowdown has dramatically reduced government budgets, making it difficult for cities to meet even basic citizen needs.
- **Technological.** Advances in information and communications technology (ICT) have changed traditional notions of where people work, taking away some of the "brain power" cities almost exclusively enjoyed in the past.

Fortunately, several converging factors will allow cities to regain their prominence in world innovation and development.

First, while creating stress on current city infrastructures, the influx of so many people to the world's cities is also a benefit, as these new inhabitants come with their own energy, thoughts, and ideas about how to improve the world and their new environment.

Additionally, the same technology advances that have made the world more flat—to cite the thinking of best-selling author Thomas Friedman—can be used to help people in urban areas better connect and collaborate among themselves, as well as with the rest of the world. Rapid adoption of mobile personal technologies such as smartphones and tablets, the evolution of the Internet, and acceptance of social media have also changed consumer behavior. People are now open to—and even demanding, as in the case of the bring-your-own-device (BYOD) phenomenon—using new forms of communication that improve the quality of their lives.



Cisco Internet Business Solutions Group (IBSG)

Finally, and perhaps most important, new economic models, which the Cisco® Internet Business Solutions Group (IBSG) calls “shared economies,” have emerged to create the optimum conditions for public-private partnerships (PPPs) to succeed. In the case of cities, shared economies bring together businesses, city governments, and citizens in a model where each participant benefits. Cisco IBSG and City24/7—a company committed to making public communications more accessible to everyone, everywhere—believe shared economies will greatly improve commerce and form new patterns of citizen, government, and business cooperation.

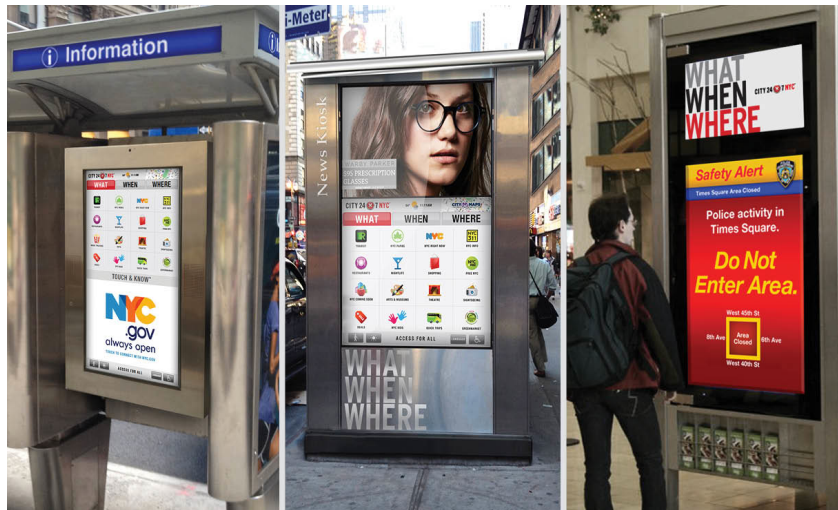
To optimize shared economies, government officials, private sector leaders, and ordinary citizens must recognize the need to overcome previous barriers to success such as individual interests, immature technology, lack of standardization, and burdensome regulation. Instead, each constituent must look for new ways to collaborate to generate and capture the tremendous value of urban areas.

City24/7: A Platform for Informing, Protecting, and Revitalizing

To optimize the value of these trends within existing city environments, City24/7, in collaboration with Cisco IBSG and the City of New York, has launched an interactive platform that integrates information from open government programs, local businesses, and citizens to provide meaningful and powerful knowledge anytime, anywhere, on any device. In short, City24/7 delivers the information people need to know, where and when it helps them most.

This information is displayed on durable, yet easy-to-use Smart Screens that replace unused and often outdated public furniture such as pay phones located at bus stops, train stations, major entryways, shopping malls, and sports facilities (see Figure 1).

Figure 1. City24/7 Smart Screen Locations.



Source: City24/7, 2012

City24/7 Smart Screens incorporate touch, voice, and audio technology to deliver a wide array of hyper-local (about two square city blocks) information, services, and offerings in real time. The Smart Screens can also be accessed via Wi-Fi on nearby smartphones, tablets, and laptop computers. In addition to supplying information about local events and merchants, City24/7 Smart Screens keep people safe by providing security alerts for the

immediate area. The City24/7 Smart Screens are also designed to deliver “access for all” by offering information in a variety of languages and supporting people with disabilities. The Smart Screens include:

- An induction loop and headphone jacks for the hearing-impaired
- A high-contrast screen mode for the sight-impaired
- Visual recognition for people with guide dogs and walking canes
- Wayfinder key-fob access and mobile applications for the blind
- A patent-pending flip screen for people in wheelchairs

Inform, Protect, Revitalize

The overarching goals of the City24/7 Smart Screens are to *inform*, *protect*, and *revitalize*. In doing so, the Smart Screens benefit citizens and visitors, city governments (all departments), and businesses (local, national, and international). These goals are very much in line with the work of Joel Kotkin, who posits in his book, *The City: A Global History*, that cities must possess three elements to thrive—they must be busy, safe, and sacred.³

Inform

As people interact with the City24/7 Smart Screens, they can instantly connect with information that is relevant to their immediate proximity. For example, a local resident can view real-time neighborhood news, explore local events and programs, find reviews of nearby restaurants and bars, and receive offers and promotions from merchants within walking distance. For visitors, the Smart Screens improve their experience by informing them about little-known attractions, providing discounts at local hotspots, and making suggestions about their travel plans.

At a deeper level, City24/7 expands the reach of government and private services to meet citizens' needs. Conversely, City24/7 provides a venue for enhancing the urban experience by giving citizens a voice and platform for shaping their own communities.

Protect

City24/7 Smart Screens play an important role in improving the safety and security of people in surrounding areas. And once fully deployed, the Smart Screens give local police and fire departments a citywide sensing, communications, and response network that can direct needed personnel and resources exactly where and when they are needed. Sensors in the Smart Screens also allow public officials to alert people about dangerous chemical, biohazard, and environmental conditions before they do harm. Finally, the City24/7 video backhaul network lets officials view conditions in real time, as well as study past footage, to help solve crimes and settle lawsuits—thereby decreasing liabilities for taxpayers.

Revitalize

By informing and protecting citizens and visitors, cities are more likely to thrive through increased levels of commerce, investment, and tourism. In addition, an informed and engaged public is more likely to improve their community. In this environment, property values increase, adding more tax revenue to government coffers. This allows cities to provide improved services that further revitalize the community.

From a broader perspective, City24/7 Smart Screens create a new and lucrative opportunity for advertisers to reach and connect with local shoppers. For example, ads offered on the Smart Screens or delivered to nearby smartphones and tablets can be tailored for local conditions, including the time of day (e.g., a coupon for free entry to happy hour at the corner club), weather (e.g., a discount on a cup of coffee when temperatures fall below 50 degrees), and even ambient light (e.g., a promotion for sunscreen at the local convenience store when the UV index reaches dangerous levels).

Importantly, during the pilot phase, City24/7 and Cisco IBSG discovered that users were very willing to engage with the advertising displayed on the Smart Screens. Tests also showed a strong correlation between location and consumption. Combined, these findings indicate that people are highly likely to act on the promotions and offers they receive.

Overcoming the Monetization Barrier

To develop a solution that works for the public and private sectors, as well as for citizens, City24/7 needed to overcome the obstacle of monetization—a key barrier that has prevented the success of other PPPs with similar goals.

City24/7 worked with numerous organizations during the development and testing phases, including the New York City Department of Information Technology & Telecommunications, Amtrak, New Jersey Transit, New York City Health and Hospitals Corporation, the New York Mets, the United States Postal Service, the Javits Center, the New York City Department of Parks & Recreation, the New York City Department of Transportation, and New York University.

It became clear to City24/7 and its main development partners, Cisco and the City of New York, that it was critical to leverage the network—in combination with ubiquitous platform support and powerful analytics—to gather and distribute valuable insights and data to all of the program's participants.

As the network grows by deploying more Smart Screens, the amount of valuable insights and data also grow, delivering even more value to cities, businesses, and citizens. In effect, City24/7 becomes a virtuous cycle—as more citizens use and gain value from the system, cities and businesses can offer even better services, which, in turn, increase people's involvement. Initial revenue streams from City24/7 include:

- Advertising (outdoor, mobile, online, and Wi-Fi)
- Corporate sponsorships
- Transaction fees
- Promotions
- Data aggregation

In addition to advertisers and local merchants, City24/7 provides a significant opportunity for SPs to further monetize their investments in urban wireline and wireless networks.

Development of City24/7

The two main development partners for City24/7 are Cisco IBSG—Cisco's global consultancy that serves as a trusted adviser to help CXOs and public-sector leaders grow their organizations—and the Office of the Mayor, New York City.

Cisco IBSG's Role

Cisco IBSG became involved with City24/7 in the first half of 2011. During that time, Cisco IBSG provided valuable insights into the critical success factors for creating intelligent urban environments, smart and connected cities, and the city network infrastructure. Specifically, Cisco IBSG delivered both primary and secondary market research, intellectual capital, and consulting support.

"Cisco IBSG has been at the forefront of smart and connected city thought leadership. Their insights and vision for change were critical to ensuring the successful launch of City24/7."

Tom Touche
CEO
City24/7

New York City's Role

The City of New York and Mayor Michael Bloomberg were critical to ensuring City24/7 delivered the required benefits for both New York City and other major cities to participate in the rollout. The mayor's roadmap for the city aligned almost perfectly with the City24/7 vision and goals:

- **Access for all.** New York City is dedicated to bridging the digital divide for people with disabilities. As described earlier, City24/7 Smart Screens incorporate innovative features that accomplish this goal.
- **Open government information.** New York City's Open Data initiative makes the wealth of public data generated by various city agencies and other city organizations available for public use. City24/7 uses this information to educate and deliver innovative services to Smart Screen users.
- **Citizen-centric engagement.** City24/7 is an open two-way communications channel that promotes government initiatives and events while collecting direct feedback and improving the quality of life for citizens.
- **Vibrant digital community.** New York City wants to use technology to harness the power of diversity and innovation. City24/7 takes advantage of the local thriving tech community to continually improve the Smart Screens for residents and visitors. For example, transit information is delivered through an application developed by Roadify, a startup that won New York City's BigApps contest in 2011.

Transforming the World's Major Cities

The City24/7 rollout will take place in two phases. The first phase, which has already begun, involves deploying 250 Smart Screens throughout New York City. As these systems are implemented, City24/7, Cisco IBSG, and the City of New York will work to improve the platform through further integration of mobile applications, safety and security capabilities, city information feeds, and location-based advertising. The user experience will also be enhanced with video calling and the introduction of “gamification” techniques.⁴

Once the Smart Screens have reached critical mass in New York City, City24/7 will start the second phase, which includes expansion to Los Angeles and London, followed closely by other major cities in the United States and around the world. U.S. cities will include Boston, Chicago, Miami, New Orleans, Seattle, San Francisco, Tampa, and Washington D.C. International cities include Amsterdam, Barcelona, Milan, Munich, Paris, Rio de Janeiro, Seoul, Toronto, and Vancouver.

The ultimate goal of City24/7 is to power two-way, real-time communication among city governments, businesses, and citizens to enable Smart Cities of the future. And while City24/7, with the help of Cisco and the City of New York, has overcome many of the barriers that led to the downfall of previous efforts, there is still much work to do. To this end, Cisco IBSG has developed a framework for maximizing the opportunities of Smart City solutions such as City24/7.⁵ With the progress City24/7 and Cisco IBSG have made toward development of Smart Cities, one thing is clear: we are much closer than ever to achieving the three conditions Joel Kotkin says are necessary for cities to thrive—vibrant commerce, safety, and a unique personality.

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For more information, please contact:

Jeff Frazier
Senior Director, Global Public Sector
Cisco Internet Business Solutions Group
+1 919 392 4132
jefrazie@cisco.com

Tom Touchet
CEO
City24/7
+1 917 846 1524
tom@city24x7.com

Endnotes

1. "State of World Population 2007: Unleashing the Potential of Urban Growth," United Nations Population Fund, 2007.
2. Goldman Sachs, 2007.
3. *The City: A Global History*, Joel Kotkin, 2006.
4. According to the Gamification Wiki, gamification typically involves applying game design thinking to non-game applications to make them more fun and engaging (<http://gamification.org/wiki/Gamification>).
5. Cisco IBSG recently published "Smart City Framework: A Systematic Process for Enabling Smart+Connected Communities." The paper defines a Smart City Framework designed to move the Smart City debate from merely an academic or esoteric discussion to a call to action.

More Information

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