

Data, Technology, and Innovation in Government

**Seminar 6: Smart Cities
and the Internet of Things
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Seminar Background

Personal Background



- **Government:** White House, Federal Communications Commission
- **Technology VC:** Insight Venture Partners, Lehman Brothers, Polaris

Goals

- Expose you to real projects, policy, and people
- Raise your Tech IQ
- Get credits toward your GSD degree

Logistics: Students get priority, seminar is not for credit

Seminar Series

- Introduction to Open Data
- Government Digital Services
- Privacy and Personal Data Portability
- Marketing U.S. Data: Data Jams, Datapaloozas, Hackathons, Prizes, & CDOs
- Government Spending Transparency
- Smart Cities/Internet of Things
- Data Journalism
- Freedom of Information Act
- Healthcare.gov: A Case Study
- Regulatory Modernization

Today's guest: Sokwoo Rhee



Associate Director, Cyber-Physical Systems

Presidential Innovation Fellow 2013-2014

National Institute of Standards and Technology (NIST)

US Department of Commerce

The Internet of Things

CONNECTED HOMES

- Smart Thermostats
- Smart Appliances
- HVAC Systems
- Security
- Smart Lighting
- Entertainment Systems



INDUSTRIAL INTERNET

- Real-Time Analytics
- Factory Automation
- Robotics
- Supply Chain Efficiency



WEARABLES

- Fitness Bands
- Smart Watches
- Smart Glasses
- Action Cameras

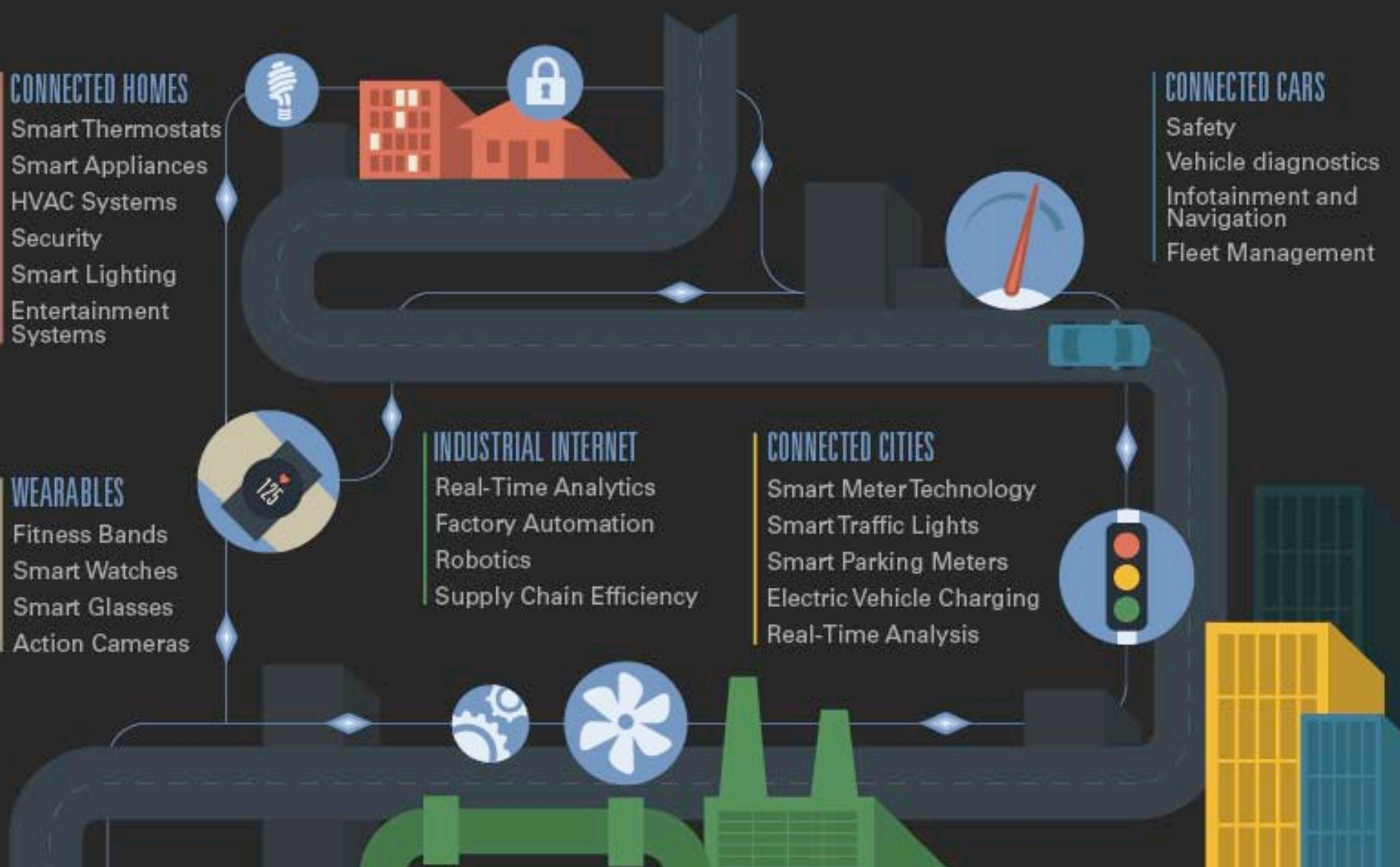
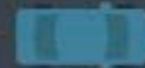
CONNECTED CITIES

- Smart Meter Technology
- Smart Traffic Lights
- Smart Parking Meters
- Electric Vehicle Charging
- Real-Time Analysis



CONNECTED CARS

- Safety
- Vehicle diagnostics
- Infotainment and Navigation
- Fleet Management



City of Boston Snow Plowing

How to Submit Street Plowing Requests



Online Form

[Submit Online Request »](#)



On Your Mobile Device

Use the Citizens Connect application to submit a request.

[Citizens Connect for iOS »](#)

[Citizens Connect for Android »](#)



Via Social Media

Tweet [@CitizensConnect](#) & tag your request with [#plow](#).



By Phone

Call the Mayor's Hotline at 617-635-4500 (24 hours a day/7



Snow Season Stats

Neighborhood Miles Plowed

314,901

Amount of Salt

113,376 tons

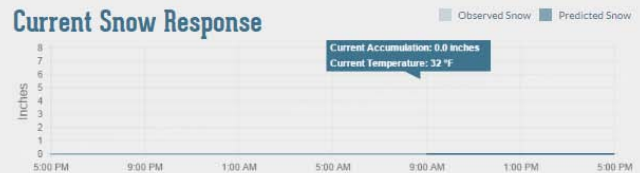
Hours Worked

208,863

Season Total Snowfall

105.7"

Current Snow Response



PREP

Open ALL Public Works
Yards
Pre-salt all main routes, hills,
and bridges

PLOW

Stop Salting and Activate snow plow contractors
Prioritize main routes, schools, hospitals
Continuous snow removal

CLEAN

Salt
In large storms, move snow to
large snow farms

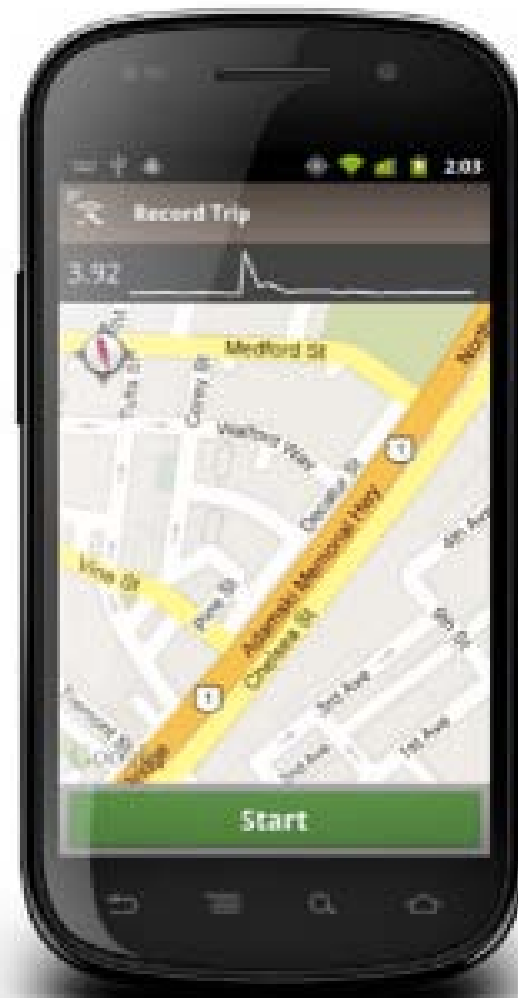
Welcome to Snow Stats

Thank you for your interest in Snow Stats.

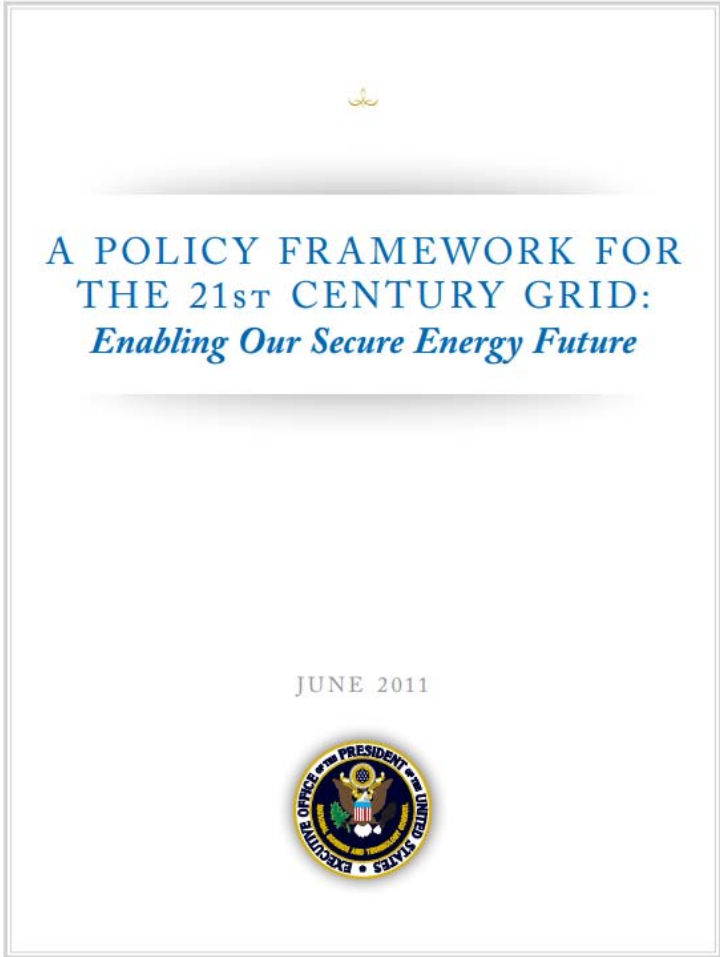
During the clean up phase of the storm, the Department of Public Works pursues a city-wide strategy. Consequently, your neighborhood specific statistics are not available now. Please visit our website during the next snow event.

Let us know at newurbanmechanics@boston.gov if you have any suggestions to improve Snow Stats.

Street Bump



Smart Grid



<http://www.whitehouse.gov/sites/default/files/microsites/ostp/nstc-smart-grid-june2011.pdf>

Green Button

Helping You Find and Use Your Energy Data

2015 Birth of the Green Button Ecosystem Presentations are now Available
U.S. CTO Megan Smith (mp4)
CTO Megan Smith welcoming the birth of the Green Button Ecosystem - 6 Feb 2015

What is Green Button?
Green Button is a secure way to get your energy usage information electronically.

- Learn**
How the Green Button Initiative helps you!
- Use**
Energy usage data for you!
- Community**
Getting involved in the Green Button Alliance!
- Build**
The technology of Green Button.
- Library**
Videos, presentations, and documents.

Who's offering Green Button?
Today, more than 60 million households and businesses can use Green Button to access their own energy usage data from their electric utility, and a growing set of companies are offering products, services, and apps that use Green Button data.

<http://greenbuttondata.org/>

SmartAmerica Challenge



Participants will demonstrate *measurable impacts* of CPS:

- Fueling job creation - development, installation, maintenance of these new Cyber-physical system components, expansion of knowledge workers
- Creating new business opportunities - design and development of CPS and the management and use of data
- Improving the economy - drive growth in manufacturing, expansion of the digital economy
- Saving lives - health systems, city and community resiliency technology and utilization of health data

Vehicle to Pedestrian

Vehicle-to-Pedestrian CPS Safety Concept

14% of U.S. traffic fatalities were incurred by pedestrians in 2011

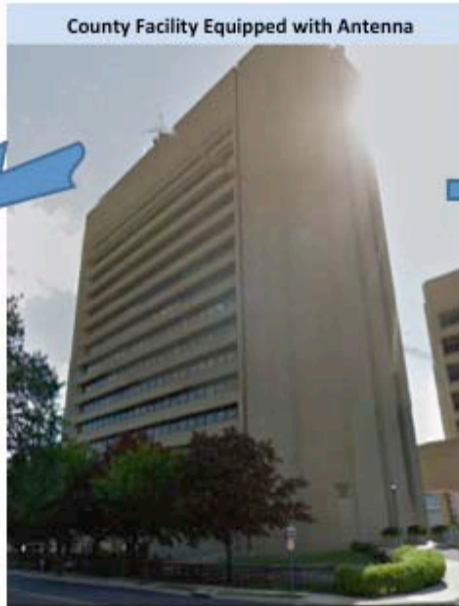
Honda & Qualcomm collaborated to extend existing V2V development to the new area of vehicle-to-pedestrian (V2P) safety



Community alerting

(((SCALE: Safe Community Alert Network)))

Extending the Internet of Things to Everyone: Residents of an affordable housing complex who cannot otherwise afford broadband are given smart community sensors. A resident, possibly elderly, is in distress and the sensor sends a signal to the nearest base station.



Dispatch Center

Emergency validated via mobile device; alert is sent to the dispatch center and a first response unit is sent to the resident in distress.



Emergency Response



Global City Teams Challenge



Current Status

Currently more than 35 action clusters

More than 170
corporations/organizations

Anticipated Outcomes

Summer 2015: Global City Teams
Festival(s)

Establishment of a Smart Cities/IoT
Connectivity Framework

Discussion Topics

Privacy Implications

Civic and Private Sector Collaboration

Implications for efficiency

Risks and Challenges

Key Takeaways

IoT presents a whole host of new opportunities from a more connected world

With new data from sensors and people, comes great responsibility

Next Week: Spring Break!

March 25: Data Journalism

Guest: Alex Howard, E Pluribus Unum & TechRepublic

Homework

- **Download Boston's Street Bump App
(Available at the App Store)**

Resources

- **Findings of the White House Big Data Report**
 - <http://www.whitehouse.gov/blog/2014/05/01/findings-big-data-and-privacy-working-group-review>
- **Challenge web site: Meet the action clusters**
 - www.globalcityteams.org
- **Webinar replay – Introduction to Global City Teams Challenge**
 - <http://www.nist.gov/cps/global-city-teams-challenge-webinar.cfm>
- **Webcast replay of the kick-off event (Sep 2014)**
 - <http://www.nist.gov/cps/global-city-teams-challenge-webcast.cfm>
- **Webcast replay of the Tech Jam event (Feb 2015)**
 - <http://www.nist.gov/cps/global-city-teams-challenge-tech-jam-webcast.cfm>
- **SmartAmerica Round One web site**
 - <http://www.smartamerica.org/>