



Dialogue on Smart Cities and Regions

MEETING SUMMARY

Panel 1: What are different organizations doing to make a smarter Greater Philadelphia?

Amy McIlvaine, AT&T Smart Cities

- Smart cities business unit partnered with GE, focused on LED streetlights.
- Small cell sensors are wireless antennas that can be placed on streetlights and are the foundation of 5G technology.
- Take an integrated approach to citizen engagement.
- Goals:
 - Automate decision making.
 - Leverage existing infrastructure (e.g., streetlights).
 - Add sensors and computing power.
 - Extensible and scalable (future-proof).
 - Private partner ecosystem.
- San Diego project is undertaking a \$30 million smart city project.
- Putting in 14,000 intelligent street lights with thousands of nodes.
- Financed over 13 years and repaid with savings from cost avoidance.
- ROI hard to calculate.
- Cities will be the next beneficiaries of app economy.
- Smart city tech is disruptive.

Lenny Kravets, Interdigital and Philadelphia IoT Meetup

- How do you get machines to do what humans do?
- Many smart cities definitions are things we should be able to do today.

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- View on the ground is different: how do you report a pothole? How do we ensure everyone has internet access?
- We need to get to a certain level of connectivity. Basic level of connectivity and data access is still lacking in Philadelphia. Hard to get the level of investment needed to have a true smart city just from cost avoidance.
- Requires long-term thinking and seeing the long-term benefit. Return on investment takes decades, which is out of sync with short electoral cycle.
- Past investments and; legacy systems are hard to integrate and make compatible with new ones. SCADA is an example of this. It is easier to build smart cities from scratch.
- Biggest issues: privacy and data ownership. Citizen data is most valuable. Security ties in with this.
- Need open standards and to avoid proprietary systems in order to put everything on the same playing field.

Ellen Hwang, City of Philadelphia OIT

- Focused on enterprise systems and technology. Making investments in new areas, undergoing workforce changes, and need to be able to take some risks.
- Key questions: Is it practical? Does it have tangible and evaluable benefits?
- City departments are clients.
 - Smart city thinking provides opportunity break down government silos.
- Working on a strategic roadmap for smart city investments, which is applicable to many different business needs. Should be ready to publish soon.
 - Identifies best practices in privacy and security, governance, and enterprise-level decisionmaking.
 - When and why to adopt technology.
- Data integration is the key to smart cities.
- Data quality - how are we getting it? Who is collecting it? Where is stored? Who is testing it?

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- Must be aware of unconscious bias.
- Operationalizing data - a lot of the city's paper records have been digitized. Working to automate and integrate it. Then using data to shape policy and change business practices.
- How does data affect decision making?
- What is the right level of risk tolerance

Q & A

- Where are we seeing smart city technology deployed in Philadelphia?
 - Mostly just small pilot projects so far.
- When can citizens start seeing benefits?
 - Data is useless if you can operationalize.
 - Privacy concerns.
- How can smart cities and big data solve problems like the city's opioid crisis?
 - Combine machine learning with historical data.
 - Not always a smart city solution to every problem.
- Working with local startups?
 - Would love to see more IoT companies in Philly, ingredients are here but startup scene is lacking.
 - Partner with larger, established companies for easier access to government contracts.
- What standards currently exist for IoT/Smart Cities?
- How to use cost savings to pay for future upgrades?

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Panel 2: What is a smart city? What opportunities and challenges do they present?

Anthony Townsend

- First Law of Smart Cities: Computers outnumber people.
- Second Law of Smart Cities: Everything is a service.
- Smart cities elude clear definition.
 - Engineering version.
 - Governance version.
 - Planning version.
- Smart city infrastructure market exploding.
- Only 1-3% of public infrastructure funding actually spent on tech.
- Planning smart cities is traditionally top down (e.g., Asia, Middle East), but now spreading to many of the world's most dysfunctional democracies.
- There is more potential for broader participation.
- Worked with NYU to review digital master plans from around the world.
 - Looked at content, process, and use.
 - Review of smart city plans shows dramatic variation from city to city.
 - Dublin, Ireland is notable for its evaluation framework.
 - Chicago is notable for its vision for tech in public space.
 - London tried to devolve as much of its plans to other parties as it could.
 - Common elements: strong authorship, 2nd half mayoral plays, celebrational.
 - Big differences: time horizons, evaluation criteria, role of stakeholders.
- Smart cities benefit most from the new institutional networks that get built, not from the technology itself.

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David Zipper, Urban streets can't become a black box

- Explosion of new mobility services generating data.
 - New transportation services are emerging thanks to smartphones, big data, and the realization that cars are a poor investment.
- A battle is emerging over public and private transportation data.
- Unanswerable questions because of proprietary data.
 - Should a city convert parking meters to TNC pick-up/drop-off zones? Meters generate revenue, and there isn't the data needed to justify converting them because it hasn't been provided.
 - Are these services equitable, in that low-income and minority groups don't wait longer to be picked up? Sharing this data is all downside for TNCs.
 - When dockless bikes are left blocking the sidewalk, how do elderly and persons with disabilities get around them? Dockless bike zones are being tried as a fix.
- TNCs and dockless bike sharing companies aren't sharing data with cities, which leaves them operating in a black box.
 - TNCs say cities don't know what data they need, and it is burdensome when they ask for everything or need help from TNCs to understand the data.
 - Cities need to get better at articulating policy goals and the problems they are trying to solve.
 - Zip code data level doesn't help much. It can't be plugged into helping with transit operations. More valuable would be what curbs are being highly used. How well are minorities being served?
- There is a growing backlash against TNCs, and cities aren't waiting for TNC to cooperate.
- Sidewalk Labs has developed Coord, which collects and anonymizes data for cities. In addition, Regina Clewlow has a startup called populus.ai, and Ford has bought out the TransLoc platform (but it's still available).
- Who gets to be the platform? TNCs are trying to be it.

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- Qubic's payment system has been a problem with the vision for integrated mobility, luckily SEPTA is using Conduit. Find ways to use it to do multimodal ticketing.

Q & A

- How do we incorporate smart elements into current development?
 - Incentives, set-asides, etc.
 - Performance-based codes.
- Citizen representation?
- Input from political system?
 - Boston was leading here under Thomas Menino. Embraced tech but sensitive to people.
- Smart city tech in the suburbs?
 - Tech is most profitable with higher density.
 - With right incentives, sometimes can replace other government services that are equally dependent on density and therefore currently inefficient. E.g., Ride-hailing vs rural bus networks.
 - Central city can serve as a hub for shared services.
 - New tech might solve some current problems with suburbs, or just increase sprawl further and create new problems. Depends on deployment.
 - Opportunities to use ride-hailing to replace low-ridership transit routes.
 - Rooftop solar works better in suburban settings.
- Smart cities solution to potholes?
 - Citizens don't want to have to take pictures of potholes and send them to government. Just want them fixed.
- How do smart cities address people not connected to the internet?
 - Most people now have internet through their smartphones, it is more a question in how people use the Internet rather than just one of access to it.

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