

Can the engagement of the smart citizen and the division of our cities into quantified communities creates a more effective smart city?

Smart Cities: General

- Efficiency, security, economic improvement, management of natural resources, and an overall improvement of the quality of life
- Big Data, information and communication technologies (ICTs) the Internet of Things (IoT)
- Urban planners now have to take into account how ICT's are imbedded into the urban fabric and infrastructure

Smart Cities: Criticism

- Obvious concerns of security and effectiveness, but also with political concerns of capital, initiatives, distribution of power, citizenship, participation, and mass surveillance
- Cities are a very complex system full of differentiating problems and interests, and the technical solutions implemented into cities to make them smarter treat the city as something that can be rationalized and controlled through big data.
- Smart cities developed for profit rather than the public good. Privatization and corporatization of the city, thus creating technical lock-ins.

Why Quantified Communities?

- As smart cities continue to gain flourishing, attention, and criticism, the question that arises is how can smart cities goals be implemented at the scale of the grass roots, where a bottom-up form of implementation can start focusing on the citizen and their immediate environment before it begins to scale-up?
- Cities in general are already broken up into different districts, neighborhoods, and communities, which entail various types of cultures, interests, and issues.
- Quantified Communities and a network of experimental environments of neighborhood labs gives the impression of being more geared towards creating a more effective smart city that prioritizes on citizen's interests and needs.

Quantified Communities

- Kontokosta defines the QC as “a network of instrumented urban neighborhoods that collect, measure, and analyze data on physical and environmental conditions and human behavior to better understand how neighborhoods and the built environment affect individual and social well-being.”
- QC uses an integrated, participatory network of sensors and automated technology, but combines it with exiting data collected from surveys, mobile sensors, and social media on the scale of the neighborhood to measure and analyze it and it’s citizens.
- The QC’s initiative is to treat the neighborhood as an experimental test-bed where technical solutions can be used to understand the neighborhood with a much bigger initiative in being able to use this “informatics overlay” or to provide a framework for future urban development planning that focuses around the conditions of the neighborhood in hopes to increase the scale of the framework to the city.
- QCs: Hudson Yards, the Lower Manhattan Neighborhood Pilot, and the QC at Red Hook

QC: Lower Manhattan Neighborhood Pilot

- Measures and analyzes social behavior, integration, sustainability, and the conditions of the local neighborhood through an integrated and expandable sensor network.
- The Downtown Alliance operates and controls a free public Wi-Fi network in Lower Manhattan, with 174 connected trash compactors and recycling bins.
- Real-time insight into the neighborhood's issues, such as data being collected to improve air and noise quality, urban mobility (pedestrians, bikes, and automobiles), and reduce pedestrian deaths.

QC: Red Hook

- Residents of the neighborhood, a third of them living below the federal poverty line, can expect to live ten years shorter than their counterparts in NYC's wealthiest communities due to the fact that asthma rates are 2.5 times higher than the national average.
- Implemented a low-cost sensing network through sensor nodes that are cost-effective, yet reliable, and non-invasive
- Real-time insight into the neighborhood's issues, such as data being collected to improve air and noise quality, urban mobility (pedestrians, bikes, and automobiles), and reduce pedestrian deaths.

Final Thoughts

- Size, and relative issues and interests are better solved through quantified communities because they can be better rationalized than the city-scale.
- Quantified communities strive on citizen and community engagement because it is they who have first hand knowledge, and should have the information and technologies that will benefit them the most.
- Engaged citizens can help with problem identification and solving, as well as assist in the hypothesis, testing, and overall scope of the problem being addressed.