URPL-GP.4611  Intelligent Cities: Technology, Policy and Planning

Spring 2014
March 28 – May 9 (7 sessions)
Friday, 9:15 – 10:55am
25 West 4th Street, Room C-13

Instructor:
Dr. Anthony Townsend
Senior Research Fellow
Rudin Center for Transportation Policy & Management
NYU Wagner
+1-212-992-9869 • amt3@nyu.edu

Course Overview

Global urbanization is driving demand for an estimated $40 trillion in infrastructure over the next two decades. At the same time information technology is spreading off the desktop and out of offices and homes into buildings, infrastructure and objects.

As these two trends collide, a broad range of stakeholders - the information technology industry, real estate developers, technology startups, citizens and civic leaders – are all looking for new opportunities to address both existing and emerging urban problems using “intelligent” systems. This course will cut through the thick hype around intelligent cities by discussing - what are intelligent cities really? Where, why and by whom are they being built? What are the intended and unintended potential consequences? What is the role of urban policy and planning in shaping their evolution?

Students are expected to have some basic knowledge of fundamentals of urban affairs. This is not a technology or engineering course – technical concepts will be explored during the lectures as needed to explain their significance for cities.

There is a LOT of reading for this class. Be warned.
REQUIRED AND SUPPLEMENTAL READING


**Additional Required Readings:** There are 2-3 additional required readings each week, typically one research article and one case study. Be prepared to discuss these in class.

**Supplemental Readings:** I have made available an enormous research library of supplemental readings related to each week’s topics. These can be accessed at www.bitsandatoms.org/nyu (username and password both ‘nyu’ lowercase).

COURSE WEBSITES

**Additional Readings and Research Library:** You have received an invitation to a shared folder on Dropbox.com (Which I believe you’ll need to register for a free account to access). This contains PDFs of all additional required readings, lecture materials, as well as a large library of extra readings, documents and links I collected over the last few years doing research for my book.

**Signals Blog:** http://intelligentcities.bitsandatoms.org - for submitting your assignments. Anything you post here will be public. Let me know if you are not comfortable with this.

**Social Bookmarks:** https://pinboard.in/u:anthonymobile/t:smartcities/- a huge collection of signals I have been tracking for the last year. Feel free to draw from here for your own signals and research.
ASSIGNMENTS & GRADING

Future Signals (25% of grade)

For the second through sixth class, students must submit a “signal” of a recent development in intelligent cities, related to the reading and the upcoming week’s topic.

A signal is a news item, research paper, photograph, video or other content that represents a direction of change or emerging trend. Each signal should contain a pointer to the document (a URL, or APA-style citation) and a 200-250 word (1 page) synopsis highlighting the key development(s) in the signal, and your interpretation of its significance for urban policy, planning or design.

You should choose and document the signals so that they are building on each other rather than being a random collection of links. In successive weeks, draw connections back to what you submitted in earlier weeks. Basically, you should think of this process as research and note-taking and idea refinement for your final paper.

Signals are to be posted to the class blog at http://intelligentcities.bitsandatoms.org - you will receive login information after the first class session. Make sure to tag your post with at least three keywords.

***SIGNALS ARE DUE THURSDAY AT NOON***. I need time to review them before class.

Final paper (75% of grade)

By COB May 12, students must submit a written position paper of 8-10 pages (maximum 2500 words plus images and illustrations) examining a real world example taken from one of those used in class, or a different example approved by the instructor. Your paper should be an expository essay making an argument about the efficacy or deficiency of some intelligent city policy, planning or design issue or problem.
CLASS SCHEDULE

March 28
**Intelligent Cities: Past, Present and Future**
The first session will survey the topics to be discussed throughout the rest of the course. We’ll look at the key trends of urbanization and the rise of ubiquitous computing, and the symbiotic relationship between information technologies and urban growth. We’ll discuss the main stakeholders in intelligent cities– and how they are engaging in the development and deployment of new urban technologies.

We’ll dissect several of the most notable intelligent city projects, being led by industry – New Songdo City in South Korea and PlanIT Valley in Portugal. We’ll conclude by examining some of the emerging conflicts and how they manifest themselves within the historical and technological context of urban policy, planning and design in the 20th century.

Townsend, Preface, Introduction, Ch. 1,2 & 3

Research & Case Studies:
- ARUP, “Smart Cities: transforming the 21st century city via the creative use of technology”, 2010
- UK Dept. for Business Innovation and Skills, “The Smart City Market: Opportunities for the UK”, 2013

April 4
**Technology and Local Governments**
City governments are pursuing a broad range of initiatives using information technology for everything from precise infrastructure management to engaging citizens in long-term planning. We’ll look at some of the leading cities that are using intelligent systems and the web to spur innovation in public service delivery and governance, and the ways in which digital technology investments are being planned. We’ll look at the open government movement and the role of open data in enabling the development of intelligent systems.

Townsend, Ch. 7.

Research & Case Studies
- FIREBALL White Paper

***1st signal due.***
April 11
The Civic Hacking Movement
Entrepreneurs, citizen hackers and NGOs are developing a more grassroots vision for intelligent systems and building them using open source and low-cost tools. We’ll look at the motivations and means by which intelligent capabilities are being deployed in the city from the bottom up. As a way of understanding the potential consequences of bottom-up and top-down models, we’ll look at how this intersects with industry’s vision discussed in the previous week, and historic parallels with the introduction of automobiles in 20th century cities. Guest speaker Noel Hidalgo of BetaNYC and Code for America Brigade will share his insider’s view of the civic hacking movement.

Townsend, Ch. 4-5, Ch. 8 first section on “Summer of Smart”
Research & Case Studies
• “Field Scan of Civic Technologies”, OpenPlans
• Evgeny Morozov, “Technological Utopianism”
• “Smart Cities: Opportunities for Startups”, Shaun Abrahamson

***2nd signal due.

April 18
Risks of Intelligent Cities: Exclusion, Resilience, Security
Intelligent systems add value by personalizing, customizing, measuring and controlling – but all of that precision is at odds with many civic virtues such as equality, openness, transparency and inclusion. We’ll look at several dilemmas around exclusionary risks in new technological systems, digital privacy, crowdsourcing public services, and economic development. We will also explore the array of risks created by excessive automation, reliability and surveillance.

Townsend, Ch. 6, 9
Research & Case Studies
• Institute for the Future “A Planet of Civic Laboratories: The Future of Cities, Information and Inclusion”
• Richard Heeks, “ICT4D 2.0: The Next Phase of Applying ICT for International Development”.
• New York Department of Sanitation, “Spatial Analysis of Complaints”
• “Cisco Poised to Help China Keep an Eye on Its Citizens”, Wall Street Journal
• “Why Quants Don’t Know Everything”, Felix Salmon for WIRED

***3rd signal due & 1 paragraph overview of your final paper/project topic
April 25
Cross-Fertilizing Innovation

What best practices are emerging, and how are they going to be identified and circulated. We’ll look at some of the emerging organizations that are harvesting, standardizing and cross-fertilizing good ideas for intelligent city policy, planning and design. We will also discuss how cities use economic development policy and urban planning to encourage the development of local technology innovation clusters.

Townsend, Ch. 8
• “Connected Cities: Your 256 Billion Euro Dividend”, Sascha Haselmayer.
• “New Tech City”, Center for an Urban Future
• “Here be Startups: Exploring a Young Digital Cluster in Inner East London”
• Technology Innovation Management Review, “Living Labs”

***4th signal due.

May 2
Emerging Issues: Mobility and Transportation

This class will zero in on emerging issues in transportation and mobility, an area that is seeing tremendous disruption through the introduction of new technologies by both public and private sector institutions, as well as new citizen behaviors. We will draw on the signals we have collected, and ongoing research at the Rudin Center for Transportation – e.g. electronic hailing, autonomous vehicles, etc.

Research & Case Studies
• “Auto Correct: Has the Self-Driving Car At Last Arrived”, The New Yorker
• “Catalyzing the New Mobility”, Rockefeller Foundation
• “Driving Sideways”, New York Times
• “Is Uber’s Surge Pricing An Example of High-Tech Gouging?”

***5th signal due.
May 9
New Civics for the Intelligent City

We’ll wrap up with speculation and brainstorming about desired paths forward. How could this all play out over the next few decades – what are ways that intelligent systems can be future-proofed to prevent obsolescence?

Townsend, Ch. 10

• Hollands, “Will the Real Smart City Please Stand Up?”
• “Smart Citizens”, collected essays
• “Social Life of Cities”, Cisco-sponsored report
• Seltzer and Mamoudi, “Citizen Participation, Open Innovation, and Crowdsourcing: Challenges and Opportunities for Planning”

****FINAL PAPERS DUE Friday May 16 COB.****