

DR. ANTHONY M. TOWNSEND, PH.D.

BIOGRAPHICAL SKETCH (100 words)

Dr. Anthony Townsend is an internationally-recognized expert on the future of cities and urban technology. He is the author of two critically-acclaimed books, *Smart Cities: Big Data, Civic Hackers*, and *the Quest for A New Utopia* and *Ghost Road: Beyond the Driverless Car*.

As Urbanist in Residence at Cornell Tech in New York City Anthony's work focuses on forecasting development in artificial intelligence, assessing infrastructure innovation, and developing research partnerships for aging and climate adaptation technology. He works globally with government, philanthropy, startups, and investors on urban tech foresight, strategy, policy, and planning through his consultancy Star City Group.

RESEARCH

Cornell University, Jacobs Urban Tech Hub. As the inaugural Urbanist in Residence (2020-present) at the new Cornell Tech campus in New York City, led content curation for annual Urban Tech Summit, and developed research initiatives to quantify the city's urban tech sector, forecast global urban tech trends, and develop novel solutions at the intersection of urban climate adaptation and aging,

Data and Society Research Institute. As Research Fellow (2014-2015), developed a long-range forecast on the future of urban science.

New York University, Rudin Center for Transportation Policy and Management. As Research Scientist (2013-2014), developed a landmark forecast on the impact of digitalization on transportation.

Institute for the Future. As Research Director (2005-2013) for the Technology Horizons sponsored research program, led more than two dozen trend forecasting and scenario development projects for Fortune 500 clients, state and national government agencies, and NGOs in North America, Europe, Asia, and the Middle East. As Affiliate (2013-present), contribute to foresight activities on automated mobility.

Seoul Development Institute. As Fulbright Fellow (2005), conducted research on the development of broadband infrastructure and district-scale planning for urban technology. Lectured at government agencies and universities throughout Korea on emerging global technology and urbanization trends.

New York University, Center for Catastrophe Preparedness and Response and Taub Urban Research Center. As Research Assistant Professor (2004-2005) designed and conducted a multi-year research project funded by the Department of Homeland Security on improving readiness of telecommunications infrastructure for large-scale disasters. As Associate Research Scientist (2000-2002) managed multi-year National Science Foundation Urban Research Initiative grant on "Information Technology and the Future of Urban Environments". Organized two major public symposia on emerging technology issues shaping the future of cities.

PUBLIC SERVICE

Singapore Urban Redevelopment Authority. International Panel of Experts, 2019-2022.

Illinois Technology Association. Internet of Things Council, 2015 to 2017.

City of Los Angeles. Transportation Technology Strategy Advisory Board, 2015-2016.

Regional Plan Association. Fourth Regional Plan Steering Committee, 2014-2018.

New York City Economic Development Corporation. Technical Review Panel, Resiliency Innovations for a Stronger Economy, 2014.

New York City Council. dotNYC Community Advisory Board, 2013-2014.

World Economic Forum. Future of Urban Development Initiative, Advisory Board, 2012-2016.

New York State READY Commission. Telecommunications Working Group, 2012-2013.

International Association of Science Parks. Advisory Board, 2011-2014.

Metropolitan Transportation Authority. Advisor on open data, 2008-2009.

City of New York. Mayor's Broadband Advisory Committee, 2007-2008.

National Foreign Trade Council. Global Innovation Forum Brain Trust, 2009-2011.

City of San Francisco. Digital Inclusion Advisory Board, 2006.

Lower Manhattan Cultural Council. Advisory Board, 2003-2004.

NYCwireless. Chair, Board of Directors, 2002-2005.

TEACHING

Cornell University. Smart Cities: Requirements, Ambitions, and Limitations, 2022—.

Cornell University. Specialization Project, 2022—.

New York University. Intelligent Cities: Technology, Policy and Planning, 2012-2014.

New York University. Wireless Public Space, 2004.

New York University. Technology, New Media and Cities, 2002-2004.

New York University. Theory and Design of Mediated Urban Spaces, 2002.

New York University. Geographic Information Systems in Planning, 2001-2002.

ADVISORY

Minderoo Foundation, *Inclusive Futures for Local Delivery*. As part of the foundation's launch of its flagship effort to reset the global conversation about technology platforms and power, Future Says, we developed a set of three fictional narrative scenarios that explore how consumer cooperatives, maker collectives, and national postal systems can rewrite the future of last mile delivery systems as a tool for wealth development rather than wealth extraction. (2020)

SeaAhead, Inc., *A Narrative for the University of Southern Mississippi's Role in the Gulf Coast's New Blue Economy*. As part of our growing partnership with Boston-based bluetech startup platform SeaAhead, led research, strategy development and authorship of a strategic narrative for a regional applied science and technology cluster on the state's Gulf Coast. (2018-2019)

Bloomberg Philanthropies, *Initiative on Cities and Autonomous Vehicles*. Conceived, developed and delivered research briefings for a group of 10 cities participating in the trend briefing, including: a primer on industry trends and policy concerns, an interactive web atlas of more than 150 urban AV pilots, and a set of illustrated scenarios highlighting the potential impacts of planning and policy interventions. (2017-2019)

Inter-American Development Bank, *Big Urban Data: A Strategic Guide for Cities*. As cities in the Latin America and Caribbean region seek to use big data and analytics to drive innovation, this report and big urban data maturity model provide tools to help them think strategically about big data and make coordinated investments and reforms that pay off over time. (2016-2019)

Sidewalk Labs, *"Yellow Book"*. As part of the startup team for Alphabet's flagship smart city venture, led editorial development of an internal pitch book to Alphabet leadership, a key milestone in consolidating support for subsequent pursuit of a major development opportunity at Toronto Quayside. (2015-2016)

GRANTS

Sloan Foundation & Ford Foundation. Assessing Municipal Digital Infrastructure. 2021-2023.

Minderoo Foundation. The Most Important Mile: Inclusive Futures for Local Delivery, 2020.

New York University, Marron Institute for Urban Management. Digital Master Planning: An Emerging Strategic Practice in Global Cities, 2015.

Knight & MacArthur Foundations. Cities of Data: Understanding the New Urban Science, 2014-2015.

Rockefeller Foundation. Re-Programming Mobility: The Digital Transformation of Transportation in the United States, 2013-2014.

Kauffman Foundation. Smart Cities: The Role of Entrepreneurs, 2011.

Architectural League of New York. Breakout! Escape From the Office, 2009-2010.

Department of Homeland Security, Office of Domestic Preparedness. Telecommunications in Catastrophe Preparedness and Response, 2004 to 2006.

National Center for Geographic Information Analysis. Planning for an Internet Census, 1998-1999.

EDUCATION

Massachusetts Institute of Technology. Doctor of Philosophy, Urban & Regional Planning, 2003.

New York University. Master of Urban Planning, 1998.

Rutgers University. Bachelor of Arts, Urban Studies (minor in Physics), 1996.

Stevens Institute of Technology. Civil Engineering, n.d., 1994.

HONORS, SCHOLARSHIPS AND AWARDS

Delft University. Honorary Doctorate, Architecture and Computer Science, 2015.

Strategy+Business. Best Business Books of 2020: Technology & Innovation, 2020.

MIT Department of Urban Studies and Planning. Departmental Fellow, 1998-2003.

New York University, Wagner Graduate School of Public Service. Dean's Scholar, 1996-1998.

New Jersey Department of Community Affairs. Housing Scholar Fellow, 1995.

BOOKS

Townsend, A.M. 2020, *Ghost Road: Beyond the Driverless Car*. (W.W. Norton & Co.:New York). Translations available in Arabic and Chinese.

Townsend, A.M. 2013, *Smart Cities: Big Data, Civic Hackers, and the Quest for A New Utopia*. (W.W. Norton & Co.:New York). Translations available in Arabic, Chinese, Estonia, Korean, and Russian.

BOOK CHAPTERS

Townsend, A.M. 2021, "Rethinking Robots". In *Rethink: How We Can Make A Better World*, Amol Rajan, ed. Penguin UK London.

Townsend, A.M. 2013, "Smart Cities: Promise and Peril for Urban Policy and Planning in the Atlantic Basin". In *Urban Futures: An Atlantic Perspective*, German Marshall Fund of the United States: Washington, DC.

Townsend, A.M. 2009. "Networked cities and the global structure of the Internet". In *Globalization and Culture*, Paul James, ed. (Sage).

Townsend, A.M. 2008. "Public space in the broadband metropolis: Lessons from Seoul". In *Augmented Urban Spaces*, A Aurigi A and F De Cindio, eds., Ashgate: Aldershot, England.

- Townsend, A.M. 2008. "Foreword: Urban Informatics Comes of Age". In M. Foth (Ed.), *Handbook of Research on Urban Informatics: The Practice and Promise of the Real-Time City*, Information Science Reference, IGI Global: Hershey, Penn.
- Townsend, A.M. 2008. "Thinking in Telepathic Cities". In Kristof Nyiri (Ed.), *Integration and Ubiquity: Towards a Philosophy of Telecommunications Convergence*. Passagen Verlag: Vienna.
- Townsend, A.M. 2008. "Modem (1999)". In Sherry Turkle (Ed.), *Falling for Science: Objects in Mind*, MIT Press: Cambridge, Mass.
- Townsend, A.M. and Moss, M.L. 2008. "New York: The City of the Telephone". In *New York Talk Exchange*, School of Architecture and Planning Press, Massachusetts Institute of Technology: Cambridge, Mass.
- Townsend, A.M. 2004. "Learning from Sept 11: ICT infrastructure collapses in a 'global' cybercity". In *Cybercities Reader*, Stephen Graham, ed., Routledge, New York.
- Moss, M.L. and Townsend, A.M. 2004. "Moving information in the twenty-first century city". In *Moving People, Goods, and Information in the Twenty-First Century City*, Richard E. Hanley, ed., Routledge, New York.
- Zook, M., Dodge, M., Aoyama, Y., and A. Townsend. 2004. "New Digital Geographies: Information, Communication, and Place". In *Geography and Technology*, Brunn, Cutter and Harrington, eds. pp. 155-176. Kluwer Academic: Dordrecht, The Netherlands.
- Moss, M.L. and Townsend, A.M. 2004. "Response, restoration, and recovery: September 11th and New York City's digital networks". In *Crisis Communications: Perspectives on September 11th*. A. Michael Noll, ed. Rowan and Littlefield: Chicago, Ill.
- Moss, M.L. Townsend, A.M. 2004. "Telecommunications: catastrophe and recovery in the information city". In *Digital Infrastructures: Enabling Civil and Environmental Systems Through Information Technology*, Rae Zimmerman, ed. Routledge: New York.
- Mitchell, W. J. and Townsend, A.M. 2004. "Trauma and rebuilding in the digital era". In *The Resilient City*, Larry Vale and Thomas Campanella, eds. Oxford University Press: Cambridge, England.
- Townsend, A.M. 2001. "Mobile communications in the 21st century city". In *The Wireless World: Social and Interactional Aspects of the Mobile Age*, Barry Brown, Ed. Springer-Verlag: Berlin.
- Moss, M.L. and Townsend, A.M. 2000. "The role of the real city in cyberspace: measuring and representing regional variations in Internet accessibility". In *Information, Place, and Cyberspace*, Donald Janelle and David Hodge, eds. Springer- Verlag: Berlin.
- Moss, M.L. and Townsend, A.M. 1999. "How telecommunications systems are transforming urban spaces". In *Fractured Geographies: Cities in the Telecommunications Age*. James O. Wheeler and Yuko Aoyama, eds. Routledge: New York.

JOURNAL ARTICLES

- Townsend, Anthony. 2015. Cities of Data: Examining the New Urban Science. *Public Culture*. 27 (2 (76)): 201–212. doi: <https://doi.org/10.1215/08992363-2841808>
- Townsend, A.M. 2007. "Seoul: Birth of a broadband metropolis". *Environment and Planning B*. 34(3):396–413.
- Moss, M.L., Kauffman, S. M. and Townsend A.M. 2006. "The relationship of sustainability to telecommunications", with Mitchell L. Moss and Sarah M. Kaufman. *Technology and Society*. 28(1-2):235-244.
- Townsend, A.M. 2004. "Digitally mediated urban space: new lessons for design". *Praxis: journal of writing + building*. 6:100-105.
- Townsend A M. and Schmidt, T. 2003. *Why wireless networks want to be free*. *Communications of the Association for Computing Machinery (ACM)*. 46(5):47-52.
- Townsend, A.M. 2001. "The Internet and the rise of the new network cities: 1969-1999". *Environment and Planning B*, special issue on "Cybergeography". 28(1):39-58.
- Townsend, A.M. 2001. "Networked cities and the global structure of the Internet". *American Behavioral Scientist*, special issue on "Mapping the Global Web". 44(10):1698-1717.
- Moss, M.L. and Townsend, A.M. 2000. "The Internet backbone and the American metropolis". With Mitchell L. Moss. *The Information Society Journal*. 16(1):35-47.
- Townsend, A.M. 2000. "Life in the real-time city: mobile telephones and urban metabolism". *Journal of Urban Technology*. (7)2:85-104.
- Moss M.L. and Townsend, A.M. 1997. "Tracking the 'net: using domain names to measure the growth of the Internet in U.S. cities". *Journal of Urban Technology*. 4(3):47-60.

OTHER ARTICLES AND LETTERS

- Townsend, A. "The Self-Driving Car Is a Red Herring: Ghost roads of robot workhorses will power cities through the shocks of the 21st century." *Nautilus*, October 21, 2020.
- Townsend, A. "A Manifesto for Smart City Development", *The European*, March 20, 2014.
- Townsend, A. "Debate: Are Smart Cities Empty Hype?" *The Economist*, Dec. 3, 2013
- Townsend, A. "Quest for A New Utopia", *Cairo Review of Global Affairs*, Nov. 24, 2013
- Townsend, A. "The Shame of Boston's Wireless Woes", *The Atlantic Cities*, April 17, 2013,
- Townsend, A. July 31, 2011. "How New York Can Become A Genius Magnet: The Art of Engineering a 21st Century Science Center", *New York Daily News*.
- Townsend, A.M. and Ratti, C. "Smart Cities: People Trump Technology", *Scientific American*, special issue on "Cities as Solutions". September 2011.

Townsend, A.M. 2006. "The Internet of Things". *Muniwireless*. September, p.29.

Townsend, A.M. 2006. "Contested Aware Cities: How Locative Media Artists are Shaping the Future of the Urban Experience". *Leonardo*.

Townsend, A.M. 2005. "Seoul searching: cybernomads and the ubiquitous city". *Receiver*. (Vodafone Group, Plc.) Vol. 13.

Townsend, A.M. 2004. "Big in South Korea". *The New Statesman*. 31 May, pp. xxxi- xxxiii.

Townsend, A.M. 2004. "Envisioning the Ubiquitous City" *Acoustic Space*, 5:124-125.

Townsend, A.M. 2001. "America's new communications hubs" Reflections on the Fifth Anniversary of the Telecommunications Act. (New Millennium Research Council: Washington, DC)

Townsend, A.M. 2000. "Life in the real-time city". *On: The New World of Communication*. (Ericsson Telecommunications).

WHITE PAPERS AND REPORTS

Townsend A. 2020. "What is urban tech? Definitions, aims, and ethical tensions". (Jacobs Urban Tech Hub, Cornell Tech: New York)

Townsend, A.M., A. Soojung-Kim Pang and R. Weddle. 2009. *Future Knowledge Ecosystems: The Next Twenty Years of Technology-Led Economic Development*. (Institute for the Future: Palo Alto, California)

Moss M.L and Townsend, A.M. 1997. "Manhattan leads the 'net nation". Taub Urban Research Center: New York University.

Moss M.L. and Townsend, A.M. 1996. "Leaders and losers on the Internet". Taub Urban Research Center: New York University.