New York and the Vanguard of Digital Design
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Several works in "Design and the Elastic Mind," an exhibition that opens at the Museum of Modern Art on Sunday, offer intriguing and unexpected perspectives on New York. A team at the Massachusetts Institute of Technology has mapped the international phone calls and Internet traffic that connect the city with countries around the world, showing, for example, just how often Queens immigrants are on the phone back home with India. A design lab at Columbia University has traced the costs of incarceration in poor minority neighborhoods, demonstrating that taxpayers in some cases pay $1 million a year to imprison inmates from a single Brooklyn block.

In a review published today in The Times, Nicolai Ouroussoff writes that the exhibition "makes the case that through the mechanism of design, scientific advances of the last decade have at least opened the way to unexpected visual pleasures." Several of the works are of particular interest to people who care about the future of cities.

New York Talks With the World

Perhaps the most striking New York-themed work in the show is the New York Talk Exchange, a visual analysis of telecommunications traffic flowing to and from New York City. "It is like showing how the heart of New York pulsates in real time and how it connects with the global network of cities," said Carlo Ratti, director of the Senseable City Laboratory and associate professor of the practice of urban technologies at the Massachusetts Technology of Institute.

"This can allow us in a new way to describe connections between cities at a global level," Mr. Ratti said in a phone interview from Zaragosa, Spain. The project's director, Kristian Kloeckl, said, "We are interested in visualizing and exploring the connections that New York entertains with the rest of the world, how they change over the course of a day, and how the city's neighborhoods differ from each other by maintaining special and distinct relationships with particular cities and countries."

The project uses data flows from AT&T that measure the volume of Internet protocol and voice traffic flowing in and out of New York at a given time. The data were then projected as three large visualizations that are on view in the exhibition.

The first visualization, called "Globe Encounters," uses three-dimensional, real-time animations to show New York's global connections to other world cities. The second, called "Pulse of the Planet," shows how those connections change over the course of the day as time zones sweep across the planet and demonstrates that New York truly never sleeps (or stops making phone calls), with immigrants calling their families at all hours. The third visualization zooms into the five boroughs and explores how global connections vary from neighborhood to neighborhood.

Reflecting the large concentration of Indian immigrants in Queens, for example, Mumbai (formerly Bombay), India's most populous city, is the 11th most frequent origin of calls into Queens, but only the 24th of calls into Manhattan. Toronto, Canada's largest city, is one of the main destinations for calls out of Manhattan, but accounts for only 1 percent of calls from the Bronx.

"The striking piece of evidence coming out of this project is that global talk happens both at the top of the economy and at its lower end," Saskia Sassen, a Columbia University sociologist, wrote in an essay for a book accompanying the New York Talk Exchange Project. "The vast middle layers of our society are far less global; the middle talks mostly nationally and locally." Ms. Sassen wrote:

Some of the AT&T data capture with astounding clarity particular geographies of talk. Thus on Nov. 1, 2007, Kingston (Jamaica) accounted for about ten percent of all calls out of Brooklyn. Together, Kingston, Santo Domingo and Haiti (no city specified) account for 17 percent of all calls out of Brooklyn. In the Bronx there is a symmetry between incoming and outgoing calls. Kingston and Santo Domingo accounted for 30 percent of all calls out of the Bronx. Santo Domingo and Santiago (the second major city in the Dominican Republic) accounted for almost 20 percent of the calls going into the Bronx. But there are also notable asymmetries: Toronto accounted for almost 5 percent of AT&T calls coming into the Bronx but only 1 percent of calls from the Bronx.

Mr. Ratti said a comparison with phone data for London showed that New York had a more global reach into Asian, South American and Middle Eastern cities like Beijing, Bogotá and Riyadh, while London was more connected with Europe.

"Perhaps London's relationship to Europe is analogous to what is conventionally believed to be New York's relationship to the whole of the United States," Mr. Ratti suggested. "The 'continent' may be closer to London than the British believe."

The Price of Prisons

Another work in the exhibition, "Million Dollar Blocks," takes a stark look at the economic costs of imprisonment in New York City. More than 60,000 people are incarcerated in New York State prisons, down from a high of more than 70,000 in 2000. But a partnership of Columbia University planners and two nonprofit advocacy groups, the Justice Mapping Center and the JFA Institute, found that the overwhelming majority of inmates from New York City come from a few neighborhoods and even a few city blocks.

"In many places the concentration is so dense that states are spending in excess of a million dollars a year to incarcerate the residents of single city blocks," the project's organizers wrote when the Architectural League of New York displayed the project in 2006.

The Columbia designers, from the Spatial Information Design Lab at the university's Graduate School of Architecture, Planning and Preservation, used rarely accessible public data for 2003, by the Justice Mapping Center, to show the flow of inmates from city neighborhoods to upstate prisons. They also showed a single block in Brownsville, Brooklyn, superimposing the costs of incarceration on individual apartment buildings and homes.

"In 2003, Community Districts 10 and 11 in Manhattan had around 40 percent of prison admissions in the whole of Manhattan," said Laura Kurgan, the director of visual studies and the director of the Spatial Information Design Lab at the architecture school. The two community boards represent Harlem and East Harlem, respectively.

Other cities studied for the project — New Orleans; Wichita, Kan.; Phoenix; and New Haven — showed similar concentrations of inmate origins. "For me, the surprise was that city after city after city in the United States reveals the same pattern," Ms. Kurgan said. "That's what the surprise was."

The disparities in incarceration rates across neighborhoods suggest the strong disparities in race and class with respect to criminal justice policies, Ms. Kurgan argued. "You could say with a broad stroke that incarceration is in response to poverty, that it's not a response to crime," she said. "We have to look very closely at what has counted as a crime over the years and how ideas about that have changed."

Wooden Blocks and Neighborhood Diversity

To be sure, not all the works on view in "Design and the Elastic Mind" are about the cutting edge of technology and design. There's nothing really digital about "Babel Blocks," a series of wooden figures, each about 6 inches tall, designed by Constantin Boym and Laurene Leon Boym, the principals of Boym Partners a design firm in SoHo. The first five wooden figures in the series are named Mary, Chen, Nafisa, Jose and Moishe; represent the cultural and religious diversity of the Lower East Side, where all the Boyms live; and are on sale for $70 at the MoMA Design Store. Each figure has its own MySpace page, according to the Boyms.

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