

CARLO RATTI

NEW YORK TALK EXCHANGE

*Un bon croquis vaut mieux
qu'un long discours¹*
Napoleon

Ironically, one of the greatest *croquis* ever drawn depicted one of Napoleon's greatest defeats. Charles Joseph Minard's classic *Carte of the Russian Campaign of 1812-1815* condenses the story of that disastrous military adventure to just a few lines.² The passing of the seasons, the harshness of the climate, and more poignantly, the rising death tolls that decimated his troops are compellingly represented in one concise graph.

To a certain extent, Minard's map has been the inspiration for the graphic design of the New York Talk Exchange project on view at The Museum of Modern Art. As in Minard's case, we had to succinctly combine many types of information: New York's connections across the planet; the linkages between the city's different neighborhoods and other cities, countries and continents; and the dynamic changes that happen in the course of a day as time zones sweep across the globe. How to do it?

The source data provided to the *sensible* city lab by AT&T is based on countless entries in the following format:

Time of Day | Switch of Origin | Destination City | Traffic (megabyte data)

It should be noted that this telecommunications traffic is measured at a high level in the global network of flows. No information about

¹ "A good picture is worth more than a lengthy discourse."

² Minard's map was described by Edward Tufte as "the best statistical graph ever drawn."

individual calls or data transfers is collected at any point in the process, thus the end user's privacy is assured (for additional information on data collection, please see AT&T's data statement on p. 31). Considering the flow of bits at a planetary level is like looking at a river from a distance; it is not about tracing individual particles but about surveying the entire stream.

The seeming simplicity of AT&T's data format conceals some very complex dynamics that exist between New York and cities around the world. To reveal these complexities, we decided to create two different types of visualizations. The first one aims to show New York's global connections to the international network of cities – a kind of 'globalization in real time.' The second type of visualization zooms inside New York City's five boroughs and explores how global connections vary in different neighborhoods – a kind of 'globalization from the bottom.' As Saskia Sassen puts it (see page 10):

Global talk happens largely among those at the top of the economy and at its lower end. This point is one of the striking pieces of evidence coming out of the data analyzed here. The vast middle layers of our society are far less global; the middle talks mostly nationally and locally...

The MoMA exhibition, and the illuminating essays contained in this book, mark the beginning of our work. Our plan in the coming months is to analyze the data in more depth. We hope to address some important research questions that loom behind the MoMA visualizations: how is the structure of global cities evolving? How could telecommunications data allow us to gain new insights into the dynamics of globalization? How do byte transfers across the globe affect the need for travel and physical displacement? The list goes on.

Other Talk Exchange projects might follow. The exciting aspect of NYTE is that it offers the potential to build a comparative database of global cities. British Telecom, for example, has shared data with us that show the top 100 locations connecting to London, arranged by IP traffic volumes for a day in December 2007. While the statistical significance of this data will have to be explored further, an initial comparison with equivalent IP data from the AT&T network reveals an intriguing dy-

namic. There has been much discourse in the popular media about the rivalry between New York and London for world city preeminence, with the majority concluding that London is the more cosmopolitan city.³ However, the telecom-provider data reveals something different. Of the top 100 cities connecting with London – as determined by a comparison of IP traffic volume – all are located either in Europe or North America. In contrast, the top 100 cities connecting with New York include Asian and South American hubs such as Beijing, Bogotá and Riyadh. By examining the two carriers' data, we can surmise that London has a more limited 'cyber-hinterland' than New York. London seems to look to more established economies in the north, while New York opens itself up to emerging markets in the Middle and Far East and the global south. The AT&T and BT data comparison hints at a striking parallel: in an age of globalization, 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. The 'continent' may be closer to London than the British believe.

This cursory analysis illustrates how telecom data can help us to expand our conception of global cities and their role in the process of globalization. In the end, the NYTE project reveals as much about the city of New York as it does about its worldwide counterparts in immigration, business and culture. In other words, our visualizations demonstrate that in the information age, urban life is as global as it is local.

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³ "New York defines the metropolitan, London the cosmopolitan." Quoted from James Harding, "London Calling," *Times Online*, March 13, 2007.