One Firm Routes All Phone Calls in North America

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Once upon a time, there was one telephone company.
Routing phone calls was pretty straightforward.

Now there are hundreds, and it's much more complicated.
Whenever someone dials a phone, texts on a cellphone or
punches in a Web site on a laptop, chances are the
connection will rely on a central database that belongs to a
Northern Virginia firm.

That database is perhaps the most significant cog in the communications network that most people have
never heard of.

Sterling-based NeuStar is the carriers' digital directory for all phone calls in North America. More than 800
telephone companies have numbers in the database. NeuStar assigns blocks of available telephone numbers
to carriers. It also manages the directory for common short codes: five- or six-digit codes that people punch
into their cellphones to take part in sweepstakes or to vote for game-show contestants, for instance. And
about one out of every four Internet transactions is routed using a NeuStar database, as NeuStar handles
traffic for domains that include .biz, .us, .org and .info.

NeuStar's databases are so powerful that the FBI a few years ago sought direct, unfettered access to one
containing 310 million phone numbers in the United States and Canada. The telephone companies that pay
NeuStar to run the database denied the FBI's request, but they did allow NeuStar to create a site where
authorized law enforcement officials with court orders can obtain carrier information on telephone numbers.

NeuStar is part of an evolving telecom industry that is creating caches of information attractive to the
government without clear guidelines governing who may have access and under what circumstances. Its
registries fall under international, U.S. government and trade association rules, including those set by the
Federal Communications Commission.

The company is dependent on and crucial to telecom companies and state, local and federal governments,
part of the government-industrial complex that drives the region's economy. Indeed, said Jeffrey E. Ganek,
NeuStar chairman and chief executive, "this is a business that could only have grown up in Washington."

NeuStar was once a division of Lockheed Martin, where, under a different name, it was created in part to
help carriers manage one aspect of the Telecommunications Act of 1996. That law made it possible for
consumers to keep their phone numbers even if they switched service providers or moved to another state.
Competing telephone companies needed a way to keep track of those numbers to route calls. And other
information, such as billing data, the FCC said, needed to be provided by a neutral, trusted party.

The current contracts, covering all of North America, run through 2015. The FCC created the rules that
govern the contracts, but delegated oversight and administration of the contracts to the industry.

The carriers in 1997 awarded the work to Lockheed Information Management Systems. In 1999, Lockheed
spun off the division, and NeuStar was born. It went public in 2005.
Revenue last year was $429.2 million, and profit was $92.3 million, up from $73.9 million the previous year. Company officials expect revenue to exceed $500 million this year. Soon, they said, NeuStar expects to be providing digital directory service for about 85 percent of all wireless devices in the world.

NeuStar officials say the government has not sought direct access to any of its databases other than the one the FBI requested, which covered numbers kept by customers as they switched providers, called a ported number registry.

But Al Gidari, a lawyer representing wireless carriers, said other major telecom entities -- billing vendors, 911 emergency service providers and call center operators -- have databases the government might want to tap. "If the government wanted access to their databases, there are no clear procedures regulating that access as there are for phone companies," he said. "That's a danger."

NeuStar says trust is a significant part of its business.

"If we were to precipitously allow some overzealous law enforcement official access to data that has not been formally authorized by the courts, we are instantly jeopardizing our franchise," Ganek said.

NeuStar charges its client companies about 89 cents for every update to the ported number registry, about $500 to $1,000 a month for every common short code and about $5 a year for each entry in the Internet domain name registry.

NeuStar also helps optimize Web traffic for clients such as Amazon so that when a customer types in Amazon.com, NeuStar directs the request to one of Amazon's thousands of servers around the world. It provides the same kind of service for Oracle, Emirates Airlines and Forbes.

"We're at all the key Internet nodes in the world," Ganek said. "Depending on the time of the day and the point of origination, we send the traffic to Seattle, for instance, or to a data center in Miami or another data center in Singapore. If there's a fiber cable cut in the Pacific, we see it before [the carriers] do and turn the traffic in the other direction so it goes counterclockwise around the globe."

NeuStar helps maintain communication during crises. The Sept. 11, 2001, attack on the World Trade Center took out a large AT&T switch that served 50,000 telephones for the Wall Street area, Ganek said. Within a week, AT&T found another switching device, trucked it into lower Manhattan and installed it at a telecommunications facility at 60 Hudson St. As soon as the switch was plugged in and the green lights on the control panel were blinking, NeuStar, instructed by AT&T, went into its database and deleted the World Trade Center address for each of the 50,000 numbers and replaced it with 60 Hudson St., Ganek said.

"Within 10 seconds of making that change, anyone could dial those numbers and the calls were sent not to the World Trade Center, but six or seven blocks south," Ganek said.

About 70 percent of NeuStar's revenue comes from its ported number database. But as more communication takes place over the Internet, Ganek foresees a need for more Internet routing information services.

"It's just a matter of time before Google and AOL and Facebook and LinkedIn are all managing communications between and among users," Ganek said.

In 2005, the FBI and the Drug Enforcement Administration wanted a direct link to the database in NeuStar's Sterling headquarters, according to a January 2005 letter from the Justice Department criminal division to a consortium of carriers that have given NeuStar the contract to run the database. The department wanted to use the data to identify which carrier to subpoena for records concerning telephone numbers in an investigation, the letter said.
"What they were asking for in a nutshell was a copy of the database," said Mike Warren, NeuStar vice president of fiduciary services. "They wanted us to send them an update of the database once a day."

Instead, NeuStar set up LEAP, or Local Number Portability Enhanced Analytical Platform, a Web site to help local, state and federal law enforcement in investigations that rely on phone call surveillance. The database gives basic information such as carrier but not more technical details such as whether a phone number is for a wireless phone or a landline. Earlier this year, NeuStar added historical carrier information to that service.

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