Waiting on hold

Mobile-phone records would help combat the Ebola epidemic. But getting to look at them has proved hard


Rex Features

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IN THE battle against Ebola, mobile phones could be invaluable—not just in themselves, as devices that can be used to send people public-health information or let them call helplines, but also because of the data they generate. Phone companies use call-data records, or CDRs, to manage their networks and bill their customers. These records include a caller's identity, the time of the call, the phone tower that handled it and the number called. Other data which the firms collect can identify where a phone is even if it is not being used, because phones constantly send out signals so that their location is known, to enable them to receive calls.

CDRs can therefore tell epidemiologists where people have been, when—and perhaps also where they are headed, based on their past movements. Analysing the records has proved helpful in tracking the spread of diseases on previous occasions.
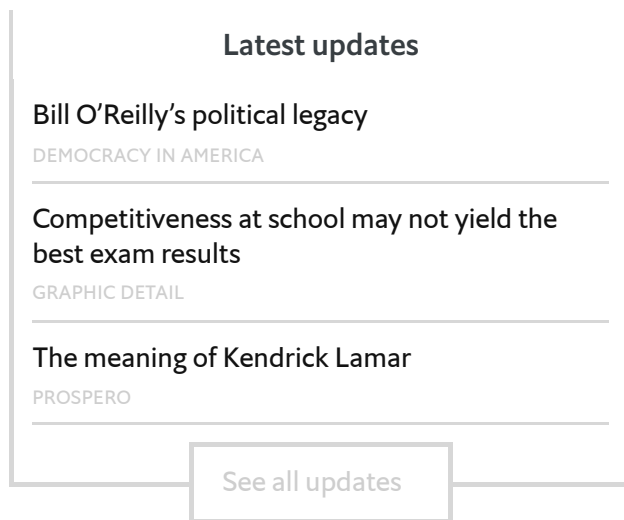
For instance, a study conducted by the Karolinska Institute, in Stockholm, in the wake of the earthquake and cholera outbreak in Haiti in 2010, used CDRs from almost 2m subscribers, gathered over the course of 200 days, to provide a more accurate measure of where people fled than official estimates could manage. Another piece of research, published in *Science* in 2012 by researchers at Carnegie Mellon University, Harvard and elsewhere analysed a year's worth of CDRs from 15m Kenyans. This suggested that many cases of malaria in Nairobi did not actually start in that city but were carried there from elsewhere. The telephone data were, moreover, able to identify the places that had the highest probability of spreading the disease—useful information for Kenya's hard-pressed health service. And, in a third example of the value of CDRs in analysing epidemics, Vanessa Frías-Martínez and others at Telefonica Research in Madrid showed that, during the Mexican swine-flu epidemic in 2009, medical alerts did not achieve their aim of reducing mobility whereas shutdowns of shops, offices and so on imposed by the government did—and this, in turn, did reduce the number of infections below what might otherwise have been expected.

In each of these cases, the data were historical. But there is no reason why CDRs should not be analysed as they come in. That would mean an epidemic's details could be tracked as they unfolded, and responses organised. In the case of the Ebola outbreak in west Africa, this might make a huge difference. But it is not happening.

Crossed wires

That is not for want of trying on the part of researchers, industry executives, charities and official bodies. Since the first signs of the outbreak earlier this year,

researchers at Flowminder, a group of epidemiologists from the Karolinska, Harvard and elsewhere that has done much of the pioneering work on CDRs in health crises, have been in discussions with local mobile-phone operators. The group has tried to get access to the phone companies' records, to build detailed maps of where people are, where they are travelling to, and the effects of government health warnings and travel advisories on the public's movements.
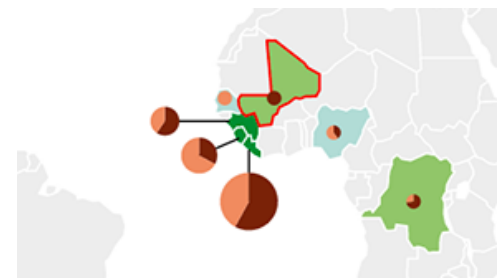
At the same time, the mobile industry's trade group, the GSMA, which has worked on technical standards and legal codes to facilitate access to CDRs, took the lead so that researchers could speak with one voice to request data. When the crisis escalated this summer, several United Nations agencies became involved as well.

But from then on it became a muddle. After lots of discussions in September, the process fell apart. The GSMA, set up to be its members' vassal, has been unable to become their leader. The UN groups turned their attention to other problems, leaving researchers frustrated that the valuable records exist, but remain inaccessible despite the gravity of the crisis.

Releasing the data, though, is not just a matter for firms, since people's privacy is involved. It requires government action as well. Regulators in each affected country would have to order operators to make their records accessible to selected researchers, who would have to sign legal agreements specifying how the data may be used. Technically, this is fairly straightforward: the standards are well established, as are examples of legal terms. Orange, a big mobile operator, has made millions of CDRs from Senegal and Ivory Coast available for research use for years, under its Data for Development initiative. Rather, the political will to do this among regulators and operators in the region seems to be lacking.

Explore our interactive world map of Ebola cases and deaths to date

Cynics might be tempted to blame what seasoned experts in international development refer to as "West Africa International Time" (also known as WAIT). But in this case bureaucratic slowness is not the main problem. Privacy is a factor, as is the risk of disclosing commercial information to rivals—things which would

be worries anywhere. But the biggest culprit is novelty. Because there is no precedent for using CDRs in an emergency like Ebola, it is hard to bring the parties together at a high-enough political or management level to make decisions.

Indeed, the UN agency overseeing telecoms standards, the International Telecommunications Union, is in the midst of a high-level diplomatic conference in Busan, South Korea, that will last until November 7th. Yet only a single meeting on CDR access was added to the agenda at the last minute. This underscores the degree to which the world's institutions have a hard time responding at the pace needed to tackle this particular woe.

Still, researchers are optimistic that small, pilot projects may create enough momentum to encourage governments to release data more widely. One, in Liberia, is orchestrated by America's Centres for Disease Control and Prevention. Its researchers have advised the health ministry, and local phone companies, on how to analyse aggregated data about calls to the country's Ebola helpline. That should provide information about how the disease is spreading. But the data are not being released to those with the best qualifications to unlock their insights; they are simply being analysed by researchers locally. Meanwhile time, and the virus, march on.