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In a span of minutes, a country goes offline

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It took just 13 minutes to wipe 80 million Egyptians off the Internet.

As the protests against authoritarian President Hosni Mubarak's 30-year regime widened this week, the Egyptian government took the unprecedented step of ordering virtually all the country's Internet service providers to shut down all connections, taking the country's citizens and institutions off the digital map.

"We've been watching with horror as Egypt has been pulled offline," said Andrew Lewman, executive director of the Tor Project, which designs Internet anonymity software that has proven vital to Egyptian activists. "There's one small ISP left, and that's the one hosting the Egyptian stock market."

Although other governments such as Myanmar and China have tried to block their citizens' access to the Web during politically unstable times, the situation in Egypt is unique in scope and impact, both because of the country's pivotal role as the fulcrum of the Arab world, and the speed with which a major regional power went silent.

According to research by Arbor Networks, a company that provides security solutions to many of the world's ISPs, Internet traffic ceased almost entirely in less than four hours on Thursday. At 2 p.m. EST, the company monitored Egyptian traffic transfer rates peaking at about 2,700 megabits per second. By 6 p.m., the rate had plunged to less than 50 megabits per second.

An analysis by Internet research firm Renesys shows that around 5:12 p.m. EST on Thursday, Telecom Egypt, the country's main telecom provider, began shutting down its services. By 5:25 p.m., four other ISPs had also gone quiet.

"We have internal tools [for monitoring global Internet traffic]," said James Cowie, chief technology officer at Renesys. "Yesterday, some of those tools started showing impossible things."

Essentially, all Egyptian nodes dropped from the global routing table that acts as the Internet's traffic road map. In Internet terms, it was as though the country

had never existed.

Normally, when an undersea fibre-optic cable is cut or a network suffers a technical problem, there are some telltale signs, Mr. Cowie added.

“But here we see a sequence; it was carefully timed. Telecom Egypt, the old state-owned incumbent, went, then the next provider, and the next, and so forth until Egypt is silenced.

“That's not the hallmark of a technical problem.”

Information from citizens within Egypt indicated that cellular networks and text-messaging services were also being throttled. Egyptian contacts on services such as BlackBerry Messenger universally appeared as unavailable.

Jacob Applebaum, a computer security expert who has become a central figure in the effort to get information in and out of Egypt, said he is working on getting satellite-based communication tools to Egyptians. Such tools are especially useful because their relay stations are located outside the country.

Like a number of other activists on sites such as Twitter, Mr. Applebaum has been helping distribute the phone numbers and login information for dial-up Internet services in other countries. He confirmed that one small Egyptian ISP, Noor, is still online.

“[Noor] was sort of the last outpost to get information out,” he said. “They deserve a medal right now.”

Mr. Applebaum cautioned that just because some ISPs remain active in Egypt, users should not assume their usage isn't being logged or monitored. He urged Internet users in Egypt to use services such as Tor, which render users' Web surfing anonymous by routing through a network of volunteers' computers around the world.

Mr. Lewman of the Tor Project said the service averages between 50 and 100 requests a second out of Egypt. On Thursday, that number spiked to 3,000.

Prior to this week, Egypt's Web censorship was largely limited to Muslim Brotherhood websites, according to Ronald J. Deibert, director of the Canada Centre for Global Security Studies and the Citizen Lab at the University of Toronto.

Today, Mr. Deibert estimates about 88 per cent of the Egyptian network is down.

If the purpose of the Internet blockade was to keep protesters from communicating, it appears to have largely failed. Activists used the occasion of Friday prayers to organize, and handed out instructional leaflets by hand.

But Mr. Deibert said the Egyptian government may have had an entirely

different motive in blocking Internet access.

“[After the Internet shutdown] what you’re left with are few spotty satellite connections which then really put a spotlight on those who may be the ringleaders of the protest,” he said. “There's a kind of surveillance angle to this.”

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