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The Web vs. the Republic of Iran

Twitter gives Iranians a voice, but the government still controls the Internet.

By Anne-Marie Corley

Renewed efforts to stifle media reporting in Iran have turned Twitter and other social-networking websites into the main sources of unfettered and unfiltered information out of the country.

Attempts to censor the press have increased significantly since last Friday's disputed election. Yesterday, press credentials for foreign journalists were revoked, and many were told via phone and fax not to report from the streets. Other journalists have been injured, detained, or arrested by the authorities.

Yet despite the media crackdown, information continues to leak out of Iran via social networking, microblogging, and photo- and video-hosting websites. These resources have been used before to organize during political crises--in Georgia and Russia, Burma and Kenya--but the sheer scale and scope are striking in Iran's case.

[Ethan Zuckerman \(http://ethanzuckerman.com/\)](http://ethanzuckerman.com/), of the Berkman Center for Internet and Society, at Harvard University, and cofounder of the blogger advocacy group Global Voices, says that people inside Iran who are blogging, Tweeting, and sharing photos are "doing an amazing job of making this political movement visible to the world." Photo and video sharing, in particular, have brought the situation home to foreign observers and have made it "much more real, and much more real time," Zuckerman says.

Zuckerman attributes the continued information flow in part to "latent capability": savvy Internet users in Iran already know how to circumvent blocking measures, so in a political upheaval they don't have to relearn the process. "The longer a country censors and the more aggressively it censors," says Zuckerman, "the more incentive it gives citizens to learn how to get around that." Because Iran has been filtering since at least 2004, says Zuckerman, a lot of Iranians already know how to use proxies--computers that route traffic around a government-imposed block. So even if you're just using a proxy to surf porn, says Zuckerman, suddenly, a political crisis hits and you already have the means to communicate.

Normally, Iran's government maintains a tight grip on Internet use. Because Iran is

economically ostracized, the government doesn't have many business relationships that it can leverage to prompt censorship from the outside--unlike China, for example, which runs a censored version of Google (and its ads) through its state-controlled filters. But communications from Iranian ISPs serving the public, rather than academic institutions or private businesses, are all routed through the state-controlled Telecommunication Company of Iran (TCI), allowing for easy filtering. Blogs and websites dedicated to anti-Islamic and anti-government content are routinely blocked. Facebook was blocked sporadically in the months leading up to Friday's election and during the election itself, as were websites for the major opposition candidates and several pro-reform sites. Facebook and YouTube are still blocked in response to the post-election protests.

Having reportedly purchased an electronic surveillance system for Internet monitoring in 2008, the Iranian government is well equipped to handle tracking and recording through its centralized system. According to a just-released report from the [Open Net Initiative](http://opennet.net/) (ONI)--a project involving researchers from Harvard University, the University of Toronto, the University of Cambridge, and the University of Oxford--this has already occurred with women's-rights activists who were arrested and reportedly shown transcripts of their IM sessions.

In the past, the Iranian government has used the U.S. product SmartFilter to block offensive websites, but the ONI reports that it now has a homegrown system for searching the Internet for objectionable content and keywords. This makes Iran and China the only two countries that "aggressively filter" Internet content using their own technology.

Faced with similar unrest, other governments have pulled the plug on Internet communications entirely. Iran's authorities appear to have chosen to begin "bandwidth throttling" instead. By limiting the amount of information that gets through every second, the government can effectively slow down the Internet so that the average Internet user has to wait several minutes to add a post to Twitter or upload an image to Flickr. With reduced bandwidth, Zuckerman says, "it's harder to access Internet content from the outside, and it's really hard to upload content."

Some analysts suggest it is unlikely that Iran's Internet connectivity would ever be turned off completely. "It's one thing to anger a group of protesting rioters," says Andrew Lewman, a member of the team behind Tor--software that routes Internet traffic around government filters anonymously. "It's another to hurt the whole population" by shutting off Internet connection. With around 23 million Internet users in Iran, or about 35 percent of the population, Iran has far more Internet users than its Middle Eastern neighbors.

Lewman says that he's surprised by how little the Iranian government has blocked the Internet in recent days, given the attention that the current political unrest has received.

He attributes the continuing flow of information out of Iran to two possibilities: either there are people in the government who want to see it disseminated, or the government is tracking and recording everything that's happened in order to round up the perpetrators later. The government's main focus right now, Lewman says, is most likely dealing with the actual protestors on the streets.

Rob Faris, who contributed to the ONI report, is less optimistic about communication flow in Iran. The government has "ramped up filtering in a big way," he says. Even though Twitter remains accessible--through third party apps that don't access Twitter.com for example--"let's not kid ourselves," Faris says. "Access to Twitter, without all the other things you can do with the web, isn't a good deal." Meanwhile, the other measures Iran has taken have "significantly impacted" the communications infrastructure. "They've gone from a repressive regime to a more repressive regime," Faris says.

Still, Zuckerman believes that the Iranian government will likely crack down on the rioters first, and deal with the bloggers later. He suggests that government agencies may be tracking users via their Internet protocol addresses and planning to follow up with arrests.

But the most difficult question regarding the Web's involvement in the current situation, Zuckerman says, is to what extent these tools are helping to organize actual protests. "This is a legitimate street protest; people are extremely upset about their voting rights," he says. Zuckerman senses that the technology isn't helping opposition supporters as much as are traditional organizing methods like phone calls and word of mouth.

According to Steven Murdoch, a computer security researcher at the University of Cambridge, it's hard to tell how many people are actually involved with Web-based protests inside Iran because what we see outside the country is a "biased" sample. Twitter and Facebook are popular in the United States, but there are likely other social-networking sites geared toward Iranians that we can't monitor as closely. So the extent--and reach--of Web activity in Iran is hard to judge.

But the effect on the global community is clear, says Hal Roberts, also of Harvard's Berkman Center: "The press is driven by [Iran's] Twitter stream."

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Upcoming Events

Lab to Market Workshop (<http://www.technologyreview.com/emtech/09/workshop.aspx>)

Cambridge, MA

Tuesday, September 22, 2009

<http://www.technologyreview.com/emtech/09/workshop.aspx>
(<http://www.technologyreview.com/emtech/09/workshop.aspx>)

EmTech 09 (<http://www.technologyreview.com/emtech>)

Cambridge, MA

Tuesday, September 22, 2009 - Thursday, September 24, 2009

<http://www.technologyreview.com/emtech> (<http://www.technologyreview.com/emtech>)

Nanotech Europe 2009 (<http://www.nanotech.net>)

Berlin, Germany

Monday, September 28, 2009 - Wednesday, September 30, 2009

<http://www.nanotech.net> (<http://www.nanotech.net>)

2009 Medical Innovation Summit (<http://www.ClevelandClinic.org/innovations/summit>)

Cleveland, OH

Monday, October 05, 2009 - Wednesday, October 07, 2009

<http://www.ClevelandClinic.org/innovations/summit> (<http://www.ClevelandClinic.org/innovations/summit>)

Optimizing Innovation 2009 (<http://www.connecting-group.com/Web/EventOverview.aspx?Identificador=6>)

New York, NY

Wednesday, October 21, 2009 - Thursday, October 22, 2009

<http://www.connecting-group.com/Web/EventOverview.aspx?Identificador=6>
(<http://www.connecting-group.com/Web/EventOverview.aspx?Identificador=6>)