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LIBERATION TECHNOLOGY

Larry Diamond

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In March 2003, police in Guangzhou (Canton), China, stopped 27-year-old Sun Zhigang and demanded to see his temporary living permit and identification. When he could not produce these, he was sent to a detention center. Three days later, he died in its infirmary. The cause of death was recorded as a heart attack, but the autopsy authorized by his parents showed that he had been subjected to a brutal beating.

Sun's parents took his story to the liberal newspaper *Nanfang Dushi Bao* (Southern Metropolis Daily), and its investigation confirmed that Sun had been beaten to death in custody. As soon as its report appeared on April 25, "newspapers and Web sites throughout China republished the account, [Internet] chat rooms and bulletin boards exploded with outrage," and it quickly became a national story.[1] The central government was forced to launch its own investigation and on June 27, it found twelve people guilty of Sun's death.

Sun's case was a rare instance in China of official wrongdoing being exposed and punished. But it had a much wider and more lasting impact, provoking national debate about the "Custody and Repatriation" (C&R) measures that allowed the police to detain rural migrants (typically in appalling conditions) for lacking a residency or temporary-living permit. In the outrage following Sun's death, numerous Chinese citizens posted on the Internet stories of their own experiences of C&R, and the constitutionality of the legislation became a hotly debated topic in universities. An online petition asking the Standing Committee of the National People's Congress to reexamine C&R quickly garnered widespread popular support, and in June 2003 the government announced that it would close all of the more than eight-hundred C&R detention centers.[2]

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Sun's case was seen as a watershed—the first time that a peaceful outpouring of public opinion had forced the Communist Chinese state to change a national regulation. But it also soon became the case of muckraking editor Cheng Yizhong, whom local officials jailed (along with three of his colleagues) in retaliation for their efforts to ferret out the wrongdoing that led to Sun's death. The legal defense that Xu Zhiyong mounted on behalf of the four journalists itself became a *cause célèbre*. As their fellow journalists launched an unprecedented campaign for their release, using among other means an Internet petition, Xu established a website, the Open Constitutional Initiative, to post documents and legal arguments about the case. All of this reflected a burgeoning *weiquan* ("defend-rights") movement. But while Cheng and his deputy editor were released from prison without charge, they lost their jobs and the authorities closed down Xu's site. Xu continued his work in defense of rights until July of last year, when his organization was shut down and he was arrested on politically motivated charges of tax evasion.

Optimists discern in these events a striking ability of the Internet—and other forms of "liberation technology"—to empower individuals, facilitate independent communication and mobilization, and strengthen an emergent civil society. Pessimists argue that nothing in China has fundamentally changed. The Chinese Communist Party (CCP) remains firmly in control and beyond accountability. The *weiquan* movement has been crushed. And the Chinese state has developed an unparalleled system of digital censorship.

Both perspectives have merit. Liberation technology enables citizens to report news, expose wrongdoing, express opinions, mobilize protest, monitor elections, scrutinize government, deepen participation, and expand the horizons of freedom. But authoritarian states such as China, Belarus, and Iran have acquired (and shared) impressive technical capabilities to filter and control the Internet, and to identify and punish dissenters. Democrats and autocrats now compete to master these technologies. Ultimately, however, not just technology but political organization and strategy and deep-rooted normative, social, and economic forces will determine who "wins" the race.

Liberation technology is any form of information and communication technology (ICT) that can expand political, social, and economic freedom. In the contemporary era, it means essentially the modern, interrelated forms of digital ICT—the computer, the Internet, the mobile phone, and countless innovative applications for them, including "new social media" such as Facebook and Twitter. Digital ICT has some exciting advantages over earlier technologies. The Internet's decentralized character and ability (along with mobile-phone networks) to reach large numbers of people very quickly, are well suited to grassroots organizing. In sharp contrast to radio and television, the new ICTs are two-way and even multiway forms of communication. With tools such as Twitter (a social-networking

and microblogging service allowing its users to send and read messages with up to 140 characters), a user can instantly reach hundreds or even thousands of "followers." Users are thus not just passive recipients but journalists, commentators, videographers, entertainers, and organizers. Although most of this use is not political, the technology can empower those who wish to become political and to challenge authoritarian rule.

It is tempting to think of the Internet as unprecedented in its potential for political progress. History, however, cautions against such hubris. In the fifteenth century, the printing press revolutionized the accumulation and dissemination of information, enabling the Renaissance, the Protestant Reformation, and the scientific revolution. On these foundations, modern democracy emerged. But the printing press also facilitated the rise of the centralized state and prompted the movement toward censorship.[3] A century and a half ago, the telegraph was hailed as a tool to promote peace and understanding. Suddenly, the world shrank; news that once took weeks to travel across the world could be conveyed instantly. What followed was not peace and freedom but the bloodiest century in human history. Today's enthusiasts of liberation technology could be accused of committing the analytic sins of their Victorian forebears, "technological utopianism" and "chronocentricity"—that is, "the egotism that one's own generation is poised on the very cusp of history."[4]

In the end, technology is merely a tool, open to both noble and nefarious purposes. Just as radio and TV could be vehicles of information pluralism and rational debate, so they could also be commandeered by totalitarian regimes for fanatical mobilization and total state control. Authoritarian states could commandeer digital ICT to a similar effect. Yet to the extent that innovative citizens can improve and better use these tools, they can bring authoritarianism down—as in several cases they have.

Mobilizing against authoritarian rule represents only one possible "liberating" use of digital ICT. Well before mobilization for democracy peaks, these tools may help to widen the public sphere, creating a more pluralistic and autonomous arena of news, commentary, and information. The new ICTs are also powerful instruments for transparency and accountability, documenting and deterring abuses of human rights and democratic procedures. And though I cannot elaborate here, digital ICT is also liberating people from poverty and ill health: conveying timely information about crop prices, facilitating microfinance for small entrepreneurs, mapping the outbreaks of epidemics, and putting primary healthcare providers in more efficient contact with rural areas. [5]

Malaysia: Widening the Public Sphere

A crucial pillar of authoritarian rule is control of information. Through blogs (there are currently more than a hundred million worldwide), blog sites, online chat rooms, and more formal online media, the Internet pro-

vides dramatic new possibilities for pluralizing flows of information and widening the scope of commentary, debate, and dissent.

One of the most successful instances of the latter type is *Malaysiakini*, an online newspaper that has become Malaysia's principal alternative source of news and commentary.[6] As Freedom House has documented, Malaysia lacks freedom of the press. The regime (both the state and the ruling Barisan Nasional [BN] coalition) dominates print and broadcast media through direct ownership and monopoly practices. Thus it can shape what Malaysians read and see, and it can punish critical journalists with dismissal. Repressive laws severely constrain freedom to report, publish, and broadcast. However, as a rapidly developing country with high literacy, Malaysia has witnessed explosive growth of Internet access (and recently, broadband access), from 15 percent of the population in 2000 to 66 percent in 2009 (equal to Taiwan and only slightly behind Hong Kong).[7] The combination of tight government control of the conventional media, widespread Internet access, and relative freedom on the Internet created an opening for online journalism in Malaysia, and two independent journalists—Steven Gan and Premesh Chandran—ventured into it. Opponents of authoritarian rule since their student days, Gan and Chandran became seized during the 1998 *reformasi* period with the need to reform the media and bring independent news and reporting to Malaysia. Using about US$9,000 of their own money (a tiny fraction of what it would take to start a print newspaper), they launched *Malaysiakini* in November 1999. Almost immediately, they gained fame by exposing how an establishment newspaper had digitally cropped jailed opposition leader (and former deputy prime minister) Anwar Ibrahim from a group photo of ruling-party politicians.

From its inception, *Malaysiakini* has won a loyal and growing readership by providing credible, independent reporting on Malaysian politics and governance. As its readership soared, that of the mainstream newspapers fell. Suddenly, Malaysians were able to read about such long-taboo subjects as corruption, human-rights abuses, ethnic discrimination, and police brutality. Now the online paper posts in English about fifteen news stories a day, in addition to opinion pieces, letters, readers' comments, and daily satire (in *Cartoonkini*), plus translations and original material in Chinese, Malay, and Tamil. *Malaysiakini* reports scandals that no establishment paper would touch, such as massive cost overruns related to conflicts of interest at the country's main port agency and ongoing financial misconduct at the government-supported Bank Islam Malaysia. With the regime's renewed legal assault on Anwar Ibrahim, *Malaysiakini* is the only place where Malaysians can turn for independent reporting on the legal persecution of the opposition leader. In July 2008, it became Malaysia's most visited news site with about 2.5 million visitors per month. Yet, like many online publications worldwide, it still strives for financial viability.

While Malaysia today is no less authoritarian than when *Malaysiakini* began publishing a decade ago, it is more competitive and possibly closer to a democratic breakthrough than at any time in the last four decades. If a transition occurs, it will be mainly due to political factors—the coalescence of an effective opposition and the blunders of an arrogant regime. In addition, economic and social change is generating a better-educated and more diverse population, less tolerant of government paternalism and control. Polling and other data show that young Malaysians in particular support the (more democratic) opposition. But it is hard to disentangle these political and social factors from the expansion of the independent public sphere that *Malaysiakini* has spearheaded. In March 2008, the BN made its worst showing at the polls in half a century, losing its two-thirds parliamentary majority for the first time since independence. Facilitating this was the growing prominence of online journalism, which diminished the massive BN advantage in media access and "shocked the country" by documenting gross police abuse of demonstrators, particularly those of Indian descent.

Malaysiakini and its brethren perform a number of democratic functions. They report news and convey images that Malaysians would not otherwise see. They provide an uncensored forum for commentary and debate, giving rise to a critical public sphere. They offer space and voice to those whose income, ethnicity, or age put them on the margins of society. They give the political opposition, which is largely shut out of the establishment media, a chance to make its case. In the process, they educate Malaysians politically and foster more democratic norms. Many online publications and Internet blog sites perform similar functions in other semi-authoritarian countries, such as Nigeria, and in emerging and illiberal democracies. But is it possible for these functions to take root in a country as authoritarian as China is today?

Opening a Public Sphere in China

The prevailing answer is no: China's "Great Firewall" of Internet filtering and control prevents the rise of an independent public sphere online. Indeed, China's policing of the Internet is extraordinary in both scope and sophistication. China now has the world's largest population of Internet users—more than 380 million people (a number equal to 29 percent of the population, and a sixteen-fold increase since the year 2000). But it also has the world's most extensive, "multilayered," and sophisticated system "for censoring, monitoring, and controlling activities on the internet and mobile phones."[8] Connection to the international Internet is monopolized by a handful of state-run operators hemmed in by rigid constraints that produce in essence "a national intranet," cut off from anything that might challenge the CCP's monopoly on power.

Access to critical websites and online reporting is systematically

blocked. Google has withdrawn from China in protest of censorship, while YouTube, Facebook, and Blogspot, among other widely used sites, are extensively blocked or obstructed. Chinese companies that provide search and networking services agree to even tighter self-censorship than do international companies. When protests erupt (as they did over Tibet in 2008, for instance) or other sensitive political moments approach, authorities preemptively close data centers and online forums. Now the party-state is also trying to eliminate anonymous communication and networking, by requiring registration of real names to blog or comment and by tightly controlling and monitoring cybercafés. Fifty-thousand Internet police prowl cyberspace removing "harmful content"—usually within 24 to 48 hours. Students are recruited to spy on their fellows. And the regime pays a quarter of a million online hacks (called "50-centers" because of the low piece rate they get) to post favorable comments about the party-state and report negative comments.

Such quasi-Orwellian control of cyberspace is only part of the story, however. There is simply too much communication and networking online (and via mobile phones) for the state to monitor and censor it all. Moreover, Chinese "netizens"—particularly the young who are growing up immersed in this technology—are inventive, determined, and cynical about official orthodoxy. Many constantly search for better techniques to circumvent cyber-censorship, and they quickly share what they learn. If most of China's young Internet users are apolitical and cautious, they are also alienated from political authority and eagerly embrace modest forms of defiance, often turning on wordplay.

Recently, young Chinese bloggers have invented and extensively lauded a cartoon creature they call the "grass mud horse" (the name in Chinese is an obscene pun) as a vehicle for protest. This mythical equine, so the narrative goes, is a brave and intelligent animal whose habitat is threatened by encroaching "river crabs." In Chinese, the name for these freshwater crustaceans *(hexie)* sounds very much like the word for Hu Jintao's official governing philosophy of "harmony"—a label that critics see as little more than a euphemism for censorship and the suppression of criticism. Xiao Qiang, editor of *China Digital Times,* argues that the grass mud horse

> has become an icon of resistance to censorship. The expression and cartoon videos may seem like a juvenile response to unreasonable rule. But the fact that the vast online population has joined the chorus, from serious scholars to usually politically apathetic urban white-collar workers, shows how strongly this expression resonates.[9]

In order to spread defiance, Chinese have a growing array of digital tools. Twitter has become one of the most potent means for political and social networking and the rapid dissemination of news, views, and withering satire. On April 22 at People's University in Beijing, three human-

rights activists protested a speech by a well-known CCP propaganda official, Wu Hao. Showering him with small bills, they declared, "Wu Hao, wu mao!" ("Wu Hao is a fifty-center!"). Twitter flashed photographs of the episode across China, delighting millions of students who revel in mocking the outmoded substance, tortured logic, and painfully crude style of regime propagandists.

When Google announced in late March 2010 it was withdrawing its online search services from mainland China (after failing to resolve its conflict with the government over censorship and cyber-attacks), the Chinese Twitter-sphere lit up. Many Chinese were upset that Google would abandon them to the more pervasive censorship of the Chinese search-engine alternatives (such as Baidu), and they worried that the Great Firewall would block other services such as Google Scholar and Google Maps. Others suspected Google of doing the U.S. government's bidding. But the company's decision provoked a wave of sympathy and mourning, similar to what happened in January when Google first announced that it was considering withdrawing: "Citizen reporters posted constant updates on . . . Twitter, documenting the Chinese netizens who endlessly offered flowers, cards, poems, candles, and even formal bows in front of the big outdoor sign 'Google' located outside the company's offices in Beijing, Shanghai and Guangzhou."[10] Security guards chased the mourners away, declaring the offerings "illegal flower tributes." The term quickly spread in China's online forums, symbolizing the suppression of freedom.

The public sphere in China involves much more than "tweets," of course. Those often link to much longer blogs, discussion groups, and news reports. And many thought-provoking sites are harder to block because their critiques of CCP orthodoxy are subtler, elucidating democratic principles and general philosophical concepts, sometimes with reference to Confucianism, Taoism, and other strains of traditional Chinese thought that the CCP dares not ban. Full-scale blog posts (not subject to Twitter's severe length limits) are far likelier to criticize the government (albeit artfully and euphemistically). Rebecca MacKinnon finds that China's blogosphere is a "much more freewheeling space than the mainstream media," with censorship varying widely across the fifteen blog-service providers that she examined. Thus, "a great deal of politically sensitive material survives in the Chinese blogosphere, and chances for survival can likely be improved with knowledge and strategy."[11]

Despite the diffuse controls, China's activists see digital tools such as Twitter, Gmail, and filtration-evading software as enabling levels of communication, networking, and publishing that would otherwise be unimaginable in China today. With the aid of liberation technology, dissident intellectuals have gone from being a loose assortment of individuals with no specific goal or program to forming a vibrant and increasingly visible collaborative force. Their groundbreaking manifesto—Charter 08, a call

for nineteen reforms to achieve "liberties, democracy, and the rule of law" in China—garnered most of its signatures through the aid of blog sites such as *bullog.cn*. When Charter 08 was released online on 10 December 2008, with the signatures of more than three-hundred Chinese intellectuals and human-rights activists, the government quickly moved to suppress all mention of it. But then, "something unusual happened. Ordinary people such as Tang [Xiaozhao] with no history of challenging the government began to circulate the document and declare themselves supporters," shedding their previous fear. Within a month, more than five-thousand other Chinese citizens had signed the document. They included not just the usual dissidents but "scholars, journalists, computer technicians, businessmen, teachers and students whose names had not been associated with such movements before, as well as some on the lower rungs of China's social hierarchy—factory and construction workers and farmers."[12]

Officials shut down Tang's blog soon after she signed the Charter, and did the same to countless other blogs that supported it (including the entire *bullog.cn* site). But the campaign persists in underground salons, elliptical references, and subversive jokes spread virally through social media and instant messaging. One such joke imagines a testy Chinese president Hu Jintao complaining about the Charter's democratic concepts such as federalism, opposition parties, and freedom of association. "Where do they all come from?" he demands. His minions run down the sources and bring him the bad news: The troublesome notions can be traced to Mao Zedong, Zhou Enlai, the CCP, the official newspaper (the *Xinhua Daily*), and the constitution of the People's Republic itself. A flustered Hu wonders what to do. His staff suggests banning all mention of these names. "You idiots!" shouts Hu. "If you ban them, you might as well ban me too!" "Well," his staff retorts, "People do say that if they ban you, at least the Charter will be left alone."[13]

Monitoring Governance, Exposing Abuses

Liberation technology is also "accountability technology," in that it provides efficient and powerful tools for transparency and monitoring. Digital cameras combined with sites such as YouTube create new possibilities for exposing and challenging abuses of power. Incidents of police brutality have been filmed on cellphone cameras and posted to YouTube and other sites, after which bloggers have called outraged public attention to them. Enter "human rights abuses" into YouTube's search box and you will get roughly ten-thousand videos showing everything from cotton-growers' working conditions in Uzbekistan, to mining practices in the Philippines, to human-organ harvesting in China, to the persecution of Bahá'ís in Iran. A YouTube video of a young Malaysian woman forced by the police to do squats while naked forced the country's prime minister to call for an independent inquiry. When Venezuelan president Hugo Chávez forced Radio

Caracas Television off the air in May 2007, it continued its broadcasts via YouTube. No wonder, then, that authoritarian states such as Iran and Saudi Arabia completely block access to that video-posting site.

Across much of the world, and especially in Africa, the quest for accountability makes use of the simplest form of liberation technology: text messaging via mobile phone. (Mobile-phone networks have proven particularly useful in infrastructure-starved Africa since they can cover vast areas without requiring much in the way of physical facilities beyond some cell towers.) Around the world, the reach and capabilities of cellphones are being dramatically expanded by open-source software such as FrontlineSMS, which enables large-scale, two-way text messaging purely via mobile phones. In recent years, the software has been used over mobile-phone networks to monitor national elections in Nigeria and Ghana, to facilitate rapid reporting of human-rights violations in Egypt, to inform citizens about anticorruption and human-rights issues in Senegal, and to monitor and report civil unrest in Pakistan. A Kenyan organization, Ushahidi (Swahili for "testimony"), has adapted the software for "crisis-mapping." This allows anyone to submit crisis information through text messaging using a mobile phone, e-mail, or online-contact form, and then aggregates the information and projects it onto a map in real time. It was initially developed by citizen journalists to map reports of postelection violence in Kenya in early 2008, drawing some 45,000 Kenyan users. It has since been used to report incidents of xenophobic violence in South Africa; to track violence and human-rights violations in the Democratic Republic of Congo; and to monitor elections in Afghanistan, India, Lebanon, and Mexico.

The largest funder of both Ushahidi and FrontlineSMS is the Omidyar Network (ON), a philanthropic investment firm established six years ago by eBay founder Pierre Omidyar and his wife Pam. It extends into the worlds of political and social innovation the eBay approach: giving everyone equal access to information and opportunity to leverage the potential of individuals and the power of markets. This innovative effort—which comprises both a venture-capital fund directed at for-profit start-ups and a nonprofit grant-making fund—has committed more than $325 million in investments and grants in two broad areas: "access to capital" (microfinance, entrepreneurship, and property rights), and "media, markets and transparency" (which supports technology that promotes transparency, accountability, and trust across media, markets, and government). The ON supports national partners in Nigeria, Ghana, and Kenya that are using information technology to improve governance and free expression. These include Infonet—a web portal that provides citizens, media, and NGOs with easy-to-access information on national- and local-government budgets in Kenya—and Mzalendo, a comprehensive site that enables Kenyans to follow what their members of parliament are doing.

The ON's support for transparency initiatives also extends to other countries and to U.S.-based organizations. These include Global Integrity,

which harnesses the Internet and other sources of information in order to generate detailed assessments of corruption in more than ninety countries; and the Sunlight Foundation, which utilizes the Internet and related technology in order to make information about federal-government spending, legislation, and decision making more accessible to U.S. voters.

Mobilizing Digitally

One of the most direct, powerful, and—to authoritarian regimes—alarming effects of the digital revolution has been its facilitation of fast, large-scale popular mobilizations. Cellphones with SMS text messaging have made possible what technology guru Howard Rheingold calls "smart mobs"—vast networks of individuals who communicate rapidly and with little hierarchy or central direction in order to gather (or "swarm") at a certain location for the sake of protest. In January 2001, Philippine president Joseph Estrada "became the first head of state in history to lose power to a smart mob," when tens of thousands and then, within four days, more than a million digitally mobilized Filipinos assembled at a historic protest site in Manila.[14] Since then, liberation technology has been instrumental in virtually all of the instances where people have turned out *en masse* for democracy or political reform.

Liberation technology figured prominently in the Orange Revolution that toppled the electoral authoritarian regime in Ukraine via mass protests during November and December 2004. The Internet newspaper *Ukrainskaya Pravda* provided a vital source of news and information about both the regime's efforts to steal the presidential election and the opposition's attempts to stop it. By the revolution's end, this online paper had become "the most widely read news source of any kind in Ukraine."[15] Website discussion boards gave activists a venue for documenting fraud and sharing best practices.[16] Text messaging helped to mobilize and coordinate the massive public protests—bringing hundreds of thousands to Kyiv's Independence Square in freezing weather—that ultimately forced a new runoff, won by the democratic opposition.

These digital tools also facilitated the 2005 Cedar Revolution in Lebanon (which drew more than a million demonstrators to demand the withdrawal of Syrian troops); the 2005 protests for women's voting rights in Kuwait; the 2007 protests by Venezuelan students against the closure of Radio Caracas Television; and the April 2008 general strike in Egypt, where tens of thousands of young demonstrators mobilized through Facebook.[17] In September 2007, the "Internet, camera phones, and other digital networked technologies played a critical role" in Burma's Saffron Revolution, so called because of the involvement of thousands of Buddhist monks. Although digital technology did little directly to mobilize the protests, it vividly informed the world of them, and revealed the bloody crackdown that the government launched in response: "Burmese citizens

took pictures and videos, many on their mobile phones, and secretly uploaded them from Internet cafes or sent digital files across the border to be uploaded." This international visibility may have saved many lives by inhibiting the military from using force as widely and brutally as it had in 1988.[18]

In China, pervasive text messaging has been a key factor in the mushrooming of grassroots protests. In 2007, an eruption of hundreds of thousands of cellphone text messages in Xiamen, a city on the Taiwan Strait, generated so much public dismay at the building of an environmentally hazardous chemical plant that authorities suspended the project.[19] The impact of the text messages was magnified and spread nationally as bloggers in other Chinese cities received them and quickly fanned the outrage. The technology is even seeping into North Korea, the world's most closed society, as North Korean defectors and South Korean human-rights activists entice North Koreans to carry the phones back home with them from China and then use them to report what is happening (via the Chinese mobile network).[20] In the oil-rich Gulf states, text messaging allows civic activists and political oppositionists "to build unofficial membership lists, spread news about detained activists, encourage voter turnout, schedule meetings and rallies, and develop new issue campaigns—all while avoiding government-censored newspapers, television stations, and Web sites."[21]

The most dramatic recent instance of digital mobilization was Iran's Green Movement, following the egregious electoral malpractices that appeared to rob opposition presidential candidate Mir Hosein Musavi of victory on 12 June 2009. In the preceding years, Iran's online public sphere had been growing dramatically, as evidenced by its more than "60,000 routinely updated blogs" exploring a wide range of social, cultural, religious, and political issues;[22] the explosion of Facebook to encompass an estimated 600,000 Persian-language users;[23] and the growing utilization of the Internet by news organizations, civic groups, political parties, and candidates.

As incumbent president Mahmoud Ahmedinejad's election victory was announced (complete with claims of a 62 percent landslide) on June 13, outraged accounts of vote fraud spread rapidly via Internet chatrooms, blogs, and social networks. Through Twitter, text messaging, Facebook, and Persian-language social-networking sites such as Balatarin and Donbleh, Iranians quickly spread news, opinions, and calls for demonstrations. On June 17, Musavi supporters used Twitter to attract tens of thousands of their fellow citizens to a rally in downtown Tehran. Internet users organized nationwide protests throughout the month, including more large demonstrations in the capital, some apparently attended by two to three million people. YouTube also provided a space to post pictures and videos of human-rights abuses and government crackdowns. A 37-second video of the death of Neda Agha-Soltan during Tehran's violent protests on

June 20 quickly spread across the Internet, as did other images of the police and regime thugs beating peaceful demonstrators. Neda's death and the distressing images of wanton brutality decimated the remaining legitimacy of the Islamic Republic domestically and internationally.

To date, the Green Movement illustrates both the potential and limits of liberation technology. So far, the Islamic Republic's reactionary establishment has clung to power through its control over the instruments of coercion and its willingness to wield them with murderous resolve. Digital technology could not stop bullets and clubs in 2009, and it has not prevented the rape, torture, and execution of many protestors. But it has vividly documented these abuses, alienating key pillars of the regime's support base, including large segments of the Shia clergy. While the regime has tortured dissidents to get their e-mail passwords and round up more opponents, the Internet has fostered civic and political pluralism in Iran; linked the opposition within that country to the Iranian diaspora and other global communities; and generated the consciousness, knowledge, and mobilizational capacity that will eventually bring down autocracy in Iran. A key factor affecting when that will happen will be the ability of Iranians to communicate more freely and securely online.

Breaking Down the Walls

Even in the freest environments, the new digital means of information and communication have important limits and costs. There are fine lines between pluralism and cacophony, between advocacy and intolerance, and between the expansion of the public sphere and its hopeless fragmentation. As the sheer number of media portals has multiplied, more voices have become empowered, but they are hardly all rational and civil. The proliferation of online (and cable) media has not uniformly improved the quality of public deliberation, but rather has given rise to an "echo chamber" of the ideologically like-minded egging each other on. And open access facilitates much worse: hate-mongering, pornography, terrorism, digital crime, online espionage, and cyberwarfare. These are real challenges, and they require careful analysis—prior to regulation and legislation—to determine how democracies can balance the great possibilities for expanding human freedom, knowledge, and capacity with the dangers that these technologies may pose for individual and collective security alike.

Still the overriding challenge for the digital world remains freedom of access. The use of Internet filtering and surveillance by undemocratic regimes is becoming both more widespread and more sophisticated. And some less-sophisticated efforts, using commercial filtering software, may block sites even more indiscriminately. Currently, more than three-dozen states filter the Internet or completely deny their citizens access.[24] Enterprising users can avail themselves of many circumvention technologies,

but some require installation of software and so will not be available if the Internet is accessed from public computers or Internet cafes; many of the Web-based applications are blocked by the same filters that block politically sensitive sites; and most of these means require some degree of technical competence by the user.[25] Not all circumvention methods protect netizens' privacy and anonymity, which can be a particularly acute problem when state-run companies provide the Internet service. The free software Tor, popular among Iranians, promises anonymity by "redirecting encrypted traffic through multiple relays . . . around the world," making it difficult for a regime to intercept a transmission.[26] But if it effectively monopolizes the provision of Internet service, a desperate regime such as Burma's in 2007 can always respond by shutting down the country's Internet service or, as Iran's government did, by slowing service to a paralyzing crawl while authorities searched electronic-data traffic for protest-related content.[27]

Even in liberal democracies, issues of access arise. Recently netizens worldwide—and the U.S. government—have become concerned over excessively broad legislative proposals in Australia that would force Internet service providers to blacklist a large number of sites for legal and moral considerations (including the protection of children). The Chinese practice of forcing Internet providers to assume liability for the content to which they provide access is seeping into European legal and regulatory thinking regarding the Internet.[28]

There is now a technological race underway between democrats seeking to circumvent Internet censorship and dictatorships that want to extend and refine it. Recently, dictatorships such as Iran's have made significant gains in repression. In part, this has happened because Western companies like Nokia-Siemens are willing to sell them advanced surveillance and filtering technologies. In part, it has also been the work of dictatorships that eagerly share their worst practices with one another. A host of new circumvention technologies are coming onto the market, and millions of Chinese, Vietnamese, Iranians, Tunisians, and others fervently want access to them. Rich liberal democracies need to do much more to support the development of such technologies, and to facilitate (and subsidize) their cheap and safe dissemination to countries where the Internet is suppressed. More could be done to improve encryption so that people in authoritarian regimes can more safely communicate and organize online. Breakthroughs may also come with the expansion of satellite access that bypasses national systems, if the cost of the satellite dishes and monthly usage rates can be reduced dramatically. Western governments can help by banning the export of advanced filtering and surveillance technologies to repressive governments, and by standing behind Western technology companies when dictatorships pressure them "to hand over Internet users' personal data."[29] And finally, liberal democracies should stand up for the human rights of bloggers, activists, and journalists who have been arrested for peacefully reporting, networking, and organizing online.

It is important for the United States to have declared, as Secretary of State Hillary Clinton did in a historic speech on January 21, that "We stand for a single Internet where all of humanity has equal access to knowledge and ideas." But the struggle for electronic access is really just the timeless struggle for freedom by new means. It is not technology, but people, organizations, and governments that will determine who prevails.

NOTES

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