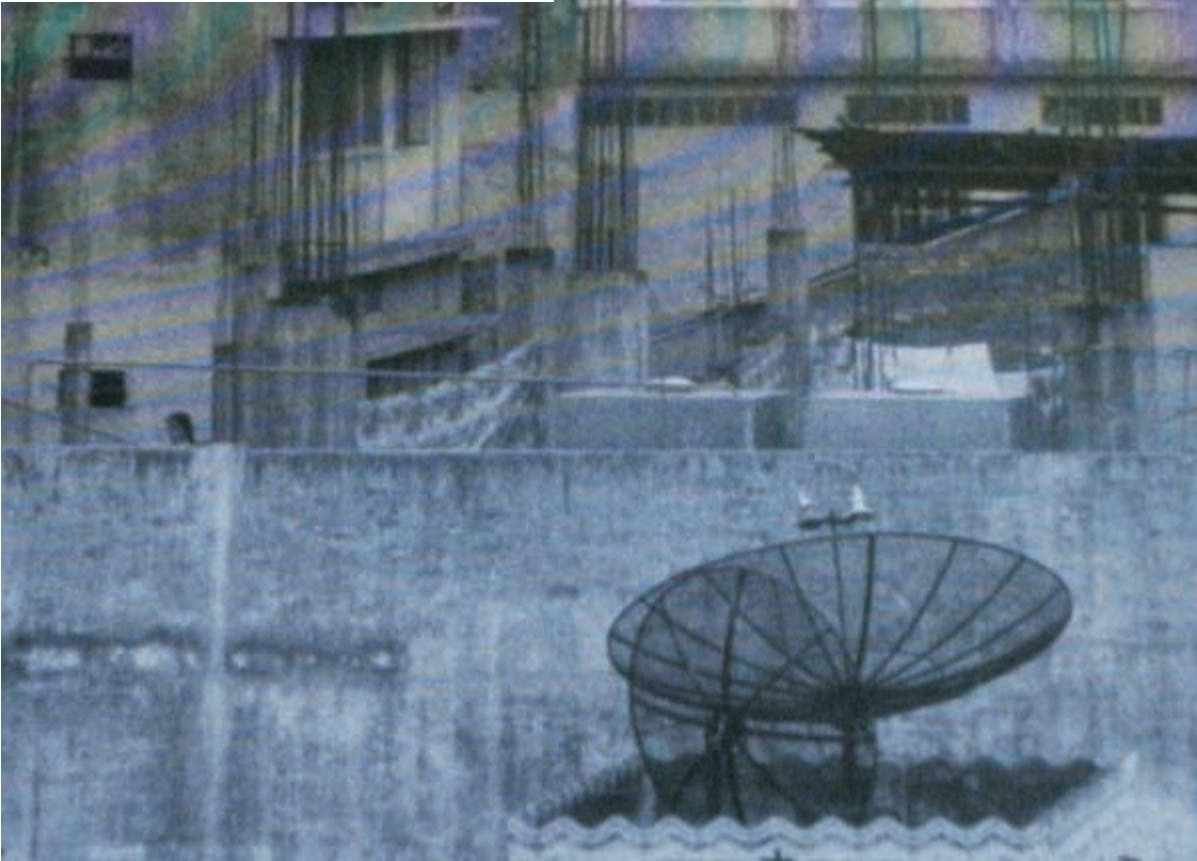


**THE DIGITAL
ORIGINS OF
DICTATORSHIP
AND DEMOCRACY**

*Information Technology
and Political Islam*

Philip N. Howard



The Digital Origins of Dictatorship and Democracy

Oxford Studies in Digital Politics

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Dictatorship and Democracy**
Information Technology and Political
Islam

Philip N. Howard

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This is for four men who served in the military and gave me things. Gordon Howard (Captain, 3rd Canadian Infantry) raised a great father for me; Colin Stratton (Sergeant, Australian 3rd Army Division) raised a great mother for me. Although I only knew them much later in life, Fonzie Graham (Seaman First Class, U.S. Navy) helped raised his fabulous granddaughter, and Charlie Moskos (Specialist, Combat Engineers, U.S. Army) helped raise me as a scholar.

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Doha, Qatar

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The Digital Origins of Dictatorship and Democracy

Chapter 1

Evolution and Revolution, Transition and Entrenchment

Since the early 1990s, 23 Muslim countries have developed more democratic institutions, with fairly run elections, energized and competitive political parties, greater civil liberties, or better legal protections for journalists. Some of these transitions have resulted in more durable political systems, a few have not. In some countries, evolution rather than revolution best describes the hard-fought, incremental improvements in democratic practices. And in a few countries, this evolution has really just meant a change from very authoritarian to somewhat authoritarian governance.

The ways in which people in the Muslim communities of the developing world communicate with family and friends and produce and consume culture have radically changed over the last decade. In 1996, 80 percent of the population in 50 Muslim countries did not have regular access to a telephone. By 2006, this proportion had dropped to 20 percent. The diffusion rates for other information and communication technologies are also high, generally higher than those in non-Muslim developing countries: between 2000 and 2010, the compound annual growth rate of internet users was 32 percent, compared with 24 percent for the rest of the developing world.

Perhaps a more telling figure is that of the “doubling time,” a figure used by demographers to refer to the amount of time it takes for a country’s population to double. Applied to technology diffusion, a similar measure reveals particularly rapid trends: between 2000 and 2010, the internet population in Albania, Nigeria, and Syria doubled every year. On average, since 2000, the number of internet users in Muslim countries doubled every 8 months. In non-Muslim developing countries, the internet population grew at a somewhat slower pace, and doubled every 16 months.¹ Logically, the doubling time of a country’s internet user base will eventually be measured in years, but for a fixed period of study, it is a useful measure of how rapid the diffusion of technologies has been. Simply reporting percentage increases in the internet user base is less meaningful information, since such growth would be measured in tens of thousands of percent.²

Scholars are understandably careful in the use of words like “revolution,” especially in studies of socio-technical change. But to describe the impact of ICTs in some countries, revolution might not be a misnomer. In some Muslim communities, democratic activism would barely exist without the internet. In many countries, political opposition has long taken the form of governments in exile, or political parties that risk being co-opted or suppressed by ruling elites. In many of these countries, the internet has actually provided the enabling infrastructure for secular, civic, and democratic discourse that formerly had no such infrastructure. In some Muslim countries, the only site of political discourse is online.

In 1998, Suharto’s rule over Indonesia was broken by a student movement that successfully used mobile phone infrastructure to organize their protests. During Kyrgyzstan’s Tulip Revolution of March 2005, mobile phones were again used to organize activists to join protests at key moments, helping democratic leaders build a social movement with sufficient clout to oust the president. Kuwait’s women’s suffrage movement was much more successful in 2005 than it had been in 2000, because it was able to use text messaging to call younger protesters out of schools to attend demonstrations. With little more than the online publication of a position paper in 2007, Turkish military leaders let it be known that they would act to protect the secular character of the country if voters elected too many Islamists—what several Turkish commentators called a “coup by website.” In 2004, when the Egyptian government cracked down on opposition parties, the banned newspapers of the Labour Party and Muslim Brotherhood reappeared as websites with the additional capacity to help coordinate opposition candidates running for office. On several occasions, when authoritarian regimes shut down opposition websites, political organizations easily move their content to servers in other countries: Tunisia’s online news site TUNeZINE.com was able to migrate to internet hosts in France; in Kazakhstan, political parties were able to relaunch from new locations after being banned just before elections in October 2007. Such authoritarian regimes are especially sensitive to investigation by citizen journalists, who use digital technologies to research and expose graft. In 2008, bloggers reconstructed flight paths for the Tunisian president’s plane using photos from plane watchers across Europe—at times when the Tunisian leader was known to be in-country. The research revealed that the president’s wife had been using the plane for shopping trips, greatly eroding the leader’s credibility.

Multiple blogs in Iraq, Iran, and Afghanistan provide alternative sources of news and photos, and often help mainstream media break news stories. Al-Qaeda uses the internet to organize and publicize its attacks, and for some fundamentalist organizations it is only electronic networks that hold them together. In 2005 it was estimated that there were more than 4,500

terrorist websites (Weimann 2006). Yet even at that time there were over 500 major political parties online and over a thousand online newspapers, 200 major libraries, and over two thousand civic groups online. It can be difficult to assay the number of “terrorist websites” actively maintained and read. But it is certain that today, the volume of citizen blogs, online newspapers, and mainstream political content is significantly greater, is more widely read, and is a constituent component and defining feature of civic Islam. As both Giustozzi and Dartnell demonstrate, ICTs are valuable to those who want their propaganda to reach the political leaders of an enemy army (Giustozzi 2001; Dartnell 2006). When ICTs play a role in more democratic transitions, threatened political elites in authoritarian regimes and emerging democracies try to strip social movements of communications tools. Both Iran and Albania, for example, have blocked internet gateways and mobile phone networks during politically tumultuous periods.

THE IMPACT OF INFORMATION TECHNOLOGY ON ISLAMIC POLITICAL CULTURE

It has been difficult to establish a causal link between the diffusion of information technology and the democratization of political cultures. On a case by case basis, scholars acknowledge that information technologies are part of many recent democratic transitions, whether these transitions take the form of sudden surges in social protest and rapid political turnover, or incremental improvements in the effectiveness of democratic institutions and practices. The leaders of social movements have used ICTs such as mobile phones and the internet to mobilize public opinion, organize mass protests, project their demands onto national and international agendas, and challenge authoritarian regimes.

What has been the overall political impact of the internet on the Muslim countries of the developing world? Have information technologies played a part in making Islamic countries a little more democratic? These kinds of questions about the political impact of ICTs are not asked just by political communication scholars in the West; they are being asked by Muslims as well. In 1997, as the Saudi government was considering the introduction of public internet use, several intellectuals argued that the internet was in fact the primary tool of globalization. “Since you have agreed to adopt this civilization’s instruments,” opined a columnist in *Al-Yawm*, “including its factories, its weapons, and its computers, then you are forced to adopt its ideas and values” (Teitelbaum 2002). In what ways is the internet a Western technology, and how is its design and content being reshaped by Muslim political

culture? Does the internet homogenize, Americanize, or democratize political culture?

First and foremost, I argue that the internet has had a crucial role in bringing about contemporary currents of democratic Islam. I also argue that the new media technologies, such as mobile phones and the internet, have radically transformed the means of political communication in Muslim countries. ICTs have mediated an extensive transnational Islamic identity, one that is constituted by *both* the production and the consumption of political culture by Muslims around the world. Thus, I argue that the internet has had a causal role in the formation of contemporary transnational Muslim identity. Spiritual iconography and the shared text of the Koran have always provided the basis for Muslim collective identity. International incidents, such as foreign military intervention (Russian or U.S.) in Afghanistan and the ongoing conflicts between Israel and its neighbors, have also provided a source of shared grievances and a collective sense of persecution. Specialized news services, such as the Interpress wire service, BBC Arab service, and Al Jazeera, have been instrumental in constructing a transnational news audience. But there are forms of social interaction and cultural content that are unique to the internet and that have created the conditions and opportunities for contemporary transnational identity. The formation of transnational Islamic identity began with satellite and specialized cable TV services, but these unidirectional elite-owned infrastructures for political communication did not offer opportunities for user-generated content and the permanent connectivity that mobile phones and the internet now provide.

New media technologies support significant community debates about gender politics, international security, and Koranic interpretation. A number of scholars have argued that for every new information technology, a battle over the presentation and interpretation of Islamic texts ensues. The history of Koranic interpretation is beyond the scope of this book, but it is within the scope of this book to analyze the mediated structure over which such interpretation occurs online. In recent decades, the Muslim diaspora in the West produced a significant amount of politically critical content via mass media such as radio, television, film, and newspapers, but such content was consumed in the diaspora and rarely in-country. Now this critical content does reach the home country as webpages and digital media streams, and some of it is actually produced in-country. I argue that the internet has a causal and supportive role in the formation of democratic discourse in the Muslim communities of the developing world.

Participation in the political economy of information societies has become a policy goal for most governments in the developing world. ICTs have enabled many of these countries to participate in the global information economy in new ways. Some of these economic opportunities come as

outsourcing, for example when the Bibliothèque Nationale de France contracted a Moroccan company to digitize government archives. The documents were scanned in France and edited in Rabat. Though this kind of informational outsourcing, the technology sector in many Muslim countries is expanding, with local entrepreneurs and engineers who design their own software and hardware. Craftspeople sell their wares online. A growing number of governments announce tenders for public works projects online, as they do in Algeria and Tunisia. In Senegal, local fishermen use mobile phones and PDAs to improve the distribution, pricing, and marketing of their catches; in Tanzania, mobile phones help fishermen identify endangered species and deliver sustainable harvesting information by SMS; when police payroll systems in Afghanistan began distributing monthly pay through SMS, many officers discovered their real salaries were 30 percent higher than what local bureaucrats had been giving out. Information and communication technologies enable the transfer of significant amounts of remittances back to home countries from the diaspora.

Finally, information technologies themselves have a symbolic role in contemporary political life and a discursive role in the formation of modern political identity for many Muslims—especially the youth. Political parties without websites simply aren't considered modern. Challenger candidates in Iran use Facebook to help their supporters find a shared sense of community, and in Malaysia both challengers and incumbents actively blog around election time. Since 2002, almost every Muslim president and prime minister has developed a national ICT action plan to satisfy international and local business interests—and multilateral lending agencies.

Perhaps more subtle is the way that technology itself increasingly shapes people's political identities. In the West, for example, video games are helping to shape young players' understandings of the world in which they live (Machin and Suleiman 2006; Souri 2007). NovaLogic created "Delta Force" using terrain maps from declassified U.S. Department of Defense imagery and scenarios; it was designed by the same firms that create simulations of military air and ground operations. Video game players become immersed in virtual environments where they conduct military "missions" into Islamic countries. To "contest the view of Arabs and Muslims being portrayed as terrorists in Western games and introduce the Resistance to the young people" (Karouny 2003), the video game "Special Force" was designed. In this video game, a group of Islamic resistance fighters must defeat Israeli commandos to return water diverted from villages in southern Lebanon. Whereas "Delta Force" sourced its imagery and scenarios from the U.S. Department of Defense, "Special Force" sourced its imagery and scenarios from Hezbollah's Central Internet Bureau. These two games share striking similarities: both have overt political messages; both promote violent military solutions to

social problems; both are digital artifacts designed to help shape the political identity of youth (Machin and Suleiman 2006).

ICT ACCESS IN THE MUSLIM COMMUNITIES OF THE DEVELOPING WORLD

Currently, there are approximately 1.4 billion Muslims living in the 75 countries where Muslims are known to be a majority (more than 50 percent of the population) or a sizable minority (more than 10 percent). If we assume that internet use rates for a country are consistent across the country's subpopulations, then across these 75 countries, some 141 million Muslims are online.³ Based on these numbers, about 10 percent of the global Muslim population is online. This is almost certainly an underestimate, since there is evidence that internet access in developing Muslim countries is not only a personal, home, or work-based information service for wealthy elites. A much larger—and difficult to assay—population uses public internet access points such as cybercafés and libraries.⁴

As in many other countries, new information and communication technologies were first available to the social elite across Muslim Europe, North Africa, Central Asia, the Arab peninsula, the Indian subcontinent, and Southeast Asia. Technologies such as mobile phones and the internet were for the wealthy and well educated, business and political leaders who often traveled to the world's urban centers. Not only did internet users in these parts of the world need to be computer literate, they needed to be able to read English and afford the high cost of international dial-up connections. Since 2000, however, the cost of computers and internet use has dropped, mobile phones have become an additional platform for connectivity, and many people have access to information technologies through family and friends. To understand how Muslims go online is both a question of history and modalities. How has information infrastructure in these countries developed? How do people now use this information infrastructure?

Before 1990, only a few hospitals and universities in these countries had some form of internet connection, primarily for distance education and telemedicine. Indeed, the first significant Muslim communities online were émigrés living in the West; based in London, Los Angeles, Toronto, and New York, they had established ethnic broadcast networks and quickly found created community online (Naficy 1995). "They created mailing lists, news groups, and Web sites dealing with topics ranging from Arabic music to searching for cheap tickets to the Middle East, from looking for wives to finding Halal grocers and the nearest mosque or church" (Ghareeb 2000). International development projects sometimes outfitted urban community

centers or rural schools with computers and internet connections, but they rarely achieved project goals because of irregular electricity supplies, the high costs of landline connections, bureaucratic blockages, and the fact that most computer donations came in the form of older models unable to run contemporary software. Such early projects often succeeded in generating interest in computer use, getting teachers to communicate using email and to use pedagogical materials from the internet, but they rarely succeeded in improving the computer literacy of students, drawing the community into education or technology policy issues, or increasing the local production of digital content, learning materials, or curricula (Sluma, Brode, and Roberts 2004). Across a range of projects to build youth cyber clubs or put computers in schools during the 1990s, one of the most consistent findings was that internet access did most to improve the organizational capacity of school teachers and education administrators—student learning of computer skills or internet search skills occurred in some of the projects but was difficult to correlate with project funding amounts or design elements (Thioune and Camara 2004).

During the 1990s, state policy makers reacted differently to the perceived opportunities and risks of new ICTs. In many countries, the publicly owned telecommunications provider monopolized the provision of such services. The organization that provided telecommunications services also regulated content and reported directly to the executive branch of government. This provider determined the pace of national ICT development, almost always with direct political supervision. Singapore became a hub of ICT design and manufacture. Other countries simply banned new information technologies: Tanzania initially banned computers; Syria and Saudi Arabia banned internet access. But as the economic value of computer access became evident to the Tanzanian government, and Saudis began using dial-up services in Bahrain and Syrians began using dial-up services in Jordan, even the most recalcitrant bureaucrats began crafting policy regimes for permitting and regulating internet access. Over time, international development agencies learned that their connectivity projects had to include training, build in incentives to attract boys and girls equally, and work out technical solutions that did not burden schools and community centers with old equipment or onerous phone bills (Katahoire, Baguma, and Etta 2004).

Established democracies in the Muslim world responded somewhat more quickly than other regime types, often allowing open competition in the market for consumer electronics, and sometimes allowing competition in the market for telecommunications services. Constitutional monarchies were somewhat slower to organize, and when they did they built in censorship mechanisms. For example, planning for Saudi Arabia's first internet node began in 1997. Both the information infrastructure and the organization

for connecting to the internet were guided by the principle that, with proper planning, Saudis could have the benefits of information access, without the risk of cultural corruption from the West. The social risks of internet access could be minimized by building both the information infrastructure and the cultural habits of internet use. Through a combination of public education, advertising, and internet regulation, the state would train Saudi users to not partake in illegitimate uses such as viewing pornography, gambling, sending or receiving coded information, using the network to cause “annoyance, threats, or spreading rumors,” and activities that violated the “social, cultural, political, media, economic, and religious values of the Kingdom of Saudi Arabia” (Teitelbaum 2002). Over 200 subcontractors applied to provide internet access within the Kingdom, but they had to share the responsibility of managing internet exposure, and promise to only allow customers to connect via the censoring proxy servers of the King Abdulaziz City for Science and Technology. The state co-opted commercial operators to participate in ideologically safeguarding state power. By building both infrastructure and the culture of use, ruling elites can involve citizens in self censorship, and today Saudis themselves can nominate words and websites they would like blocked by the government firewall.

Autocracies, especially those with significant oil and natural gas revenues, were the slowest governments to develop a national internet service provider (ISP) and internet access policies. Because they were less beholden to multilateral lending agencies such as the European Bank for Reconstruction and Development (EBRD) and the International Monetary Fund (IMF), they were less obliged to meet the policy reform conditions of loans. In petroleum-rich Central Asia, for example, ruling elites have been able to retain firm control of the media and telecommunications infrastructure, because they have not faced the pressure to privatize public assets (McGlinchey and Johnson 2007).

In many small communities, telecenters provide ICT access to photocopying, telephony, and training in computer hardware, software, internet access, and word processing. Faxing, document design, processing, and printing and email services are often also available. If the connections are speedy, internet users also download movies and software and make voice-over-internet-protocol (VoIP) phone calls. The range of services in multipurpose community telecenters is often greater than in private telecenters or cybercafés. In many developing Islamic countries they are run by NGOs, international aid agencies, and secular or religious madrasahs.

Gomez and colleagues (1999b) identify five types of telecenters. The most basic telecenters are usually located in rural marginalized areas, where there is limited access to basic services in general and where training of potential users is a popular service in addition to internet access. Telecenter franchises

are independently owned and managed, or are supervised by a local organization, which offers technical and, on occasion, financial support. Civic telecenters, the most common, are established where a public organization such as a university opens up its facilities, like computers, for use by the public. These telecenter services tend to be an addition to the other day-to-day activities of the organization. Commercial cybercafés are often found in affluent neighborhoods or hotels in major towns and cities. Finally, the multipurpose community center, one of the newer models recently introduced in a number of countries, offers more specialized services such as telemedicine. In the Muslim communities of the developing world, however, where internet use is often a culturally managed practice, many youth have internet access at their madrassa. The secular madrassas offer telecenter services not unlike the civic telecenters, but the more religious madrassas allow for more culturally bounded technology use.

In many rich countries, there is a generational divide between older people who cannot or do not choose to use the latest information technologies and younger generations for whom these technologies provide not only communications options but status markers. In recent years, the gender divide has closed, such that the internet user population in most wealthy countries is a balanced population of men and women. This gender imbalance in public places where technology is available is anecdotally consistent in many Muslim communities. In 2000, women usually made up a fraction of the user population in public internet access points: 30 percent in Mozambique and Uganda, 23 percent in Mali and India, and only 6 percent in Jordan (Etta and Parvyn-Wamahiu 2003; Hafkin and Taggart 2001). Today, the gender gap in such public internet access points is still noticeable, but women have taken to the internet from access points at home or work. In Egypt, some 60 percent of the popular Facebook group “Yeah, We Are Seculars and We Are Proud” are women. Although it is difficult to assay the gender distribution of online groups, it is certain that women are active in many corners of the Islamic internet (Fleishman 2008).

Telecenter use, for the most part, seems to involve more social and cultural activities than economic activities. The most frequently used services are contacting friends and family for email, preparing documents for social events such as weddings and funerals, streaming cultural content from radio and television stations, viewing films that have been digitized for online distribution, and reading online newspapers. Often, professional and economic needs, such as finding agricultural information, tax rules, or banking, are only a secondary reason to use a telecenter. For example, in Uganda, only 10 to 20 percent of telecenter users reported making a commercial transaction. Often telecenters are meeting places, places of shelter and safety, and places for training groups of people (Etta and Parvyn-Wamahiu 2003).⁵

If cultural production and consumption is the primary purpose of telecenters in the developing Muslim world, economic activity a close, secondary purpose. Project reports in Senegal suggest that telecenter computers are most frequently used for office tasks, to capture or store data by businesspeople and small groups (e.g., artisans and other micro-enterprises), and for recordkeeping by community associations (Etta and Parvyn-Wamahiu 2003). It is likely that different kinds of telecenters are used for different things: those established by aid agencies and libraries may see more of these professional and business-oriented activities; those commercial and less regulated telecenters may see more entertainment and social activities. Given the various modalities of internet access in Muslim countries and the wide range of activities online, how can we compare technology diffusion and democratization across these very different countries?

INDEXING DEMOCRACY AND ICT DIFFUSION

Poor countries have computer and internet penetration rates that are a fraction of those found in wealthy countries, but among these, some rates of change are high. By 2010, 8 out of every 1,000 people in Mali, 8 out of every 100 people in Georgia, and 8 of every 10 people in the United States had used the internet. However, the proportion of countries with a small fraction of the world's internet users has not changed much over the last 10 years. Since there is a strong link between economic wealth and ICT access, expressing internet use per dollar of GDP, rather than per capita, makes the inequality in the distribution of ICTs between and within countries—the digital divide—much less dramatic (Fink and Kenny 2006). Of course, the digital divide is not simply between countries, but within countries; in rich countries the digital divide by categories of race, gender, and income is slowly closing (Youngs 2002; Hoffman and Novak 1998; Howard, Rainie, and Jones 2001; Margolis and Fisher 2002; Howard and Massanari 2007).

Research suggests that economic performance is the strongest single predictor of a country's technology adoption rate (Nour 2002). Although some researchers determine ICT diffusion through simple counts of computers or mobile phones per capita, a more revealing method is to look at whether a country has more or less ICT than reasonably expected, given its economic performance. Economic wealth is not the only predictor of a country's technology adoption rates and does not explain all of the variation among different countries. Many of these secondary factors, such as education, language, public policy, and level of corruption, are all components of a country's political culture. This secondary category of explanatory variables is large, and in any particular country these variables will be relevant in different

ways. Thus an index of technology diffusion in Muslim countries should offer a way of classifying countries that in some way controls for the impact of economic growth and isolates the impact of political culture. This method must allow distinctions among the diverse political cultures that make the rate of technology adoption in Muslim countries high considering their wealth, about what can be expected given their wealth, or unusually low given their wealth.

To better weight for the impact of economic wealth and isolate the impact of political culture on technology diffusion, it is possible to formulate a weighted index of technology diffusion. This index relates the number of internet users to the GDP of each country in a way that allows us to identify, for example, countries where the number of internet users is more or less than what would be expected. For instance, countries with a lower GDP may have surprising numbers of computer, mobile phone, and internet users, while countries with high levels of GDP may have fewer such users.

Countries with an index score of around zero have about the levels of ICTs expected, given the size of its economy. Consequently, a country with a high ICT diffusion score has a surprisingly high number of computers, given its GDP. A country with a low index score has a lower number of computers than expected, given its GDP. Missing data does not affect the rankings, though countries with several low levels of some ICTs are also those with missing data for other ICTs.

Many Muslim countries in Central Africa and Central Asia have low index values because computers, mobile phones, and internet access have been slow to come to these parts of the world. India has about the number of internet users it should have, given its economic productivity, but it may seem surprising that it has such low index scores in other ICT categories, given the amount of news reporting on that country's booming technology industries. Since this index is a ratio of ratios, however, India's low scores suggests that it actually has fewer computers, mobile phones, secure servers, and internet hosts than would be expected, given its economic productivity. Its index values suggest that, given how large India's economy is—some \$3.9 trillion in 2010—it should actually have more ICTs than it currently does. The number of internet users in India is in keeping with its economic productivity, but the proportion of computers, mobile phones, secure servers, and internet hosts is disproportionately small.

Of the six different ICT indicators indexed this way, many countries have a positive value for mobile phones. This gives quantitative evidence for the anecdotal observations that in many of these countries, mobile phones seem to be in every hand. It is easy to claim that there are lots of mobile phones, on a per capita basis, in these countries. This index allows the additional analytical purchase of revealing that some countries have a surprising number

of mobile phones, given their economic performance. To assess the impact of ICTs on Islamic political culture, an index of institutionalized democracy is also needed.

DOES INFORMATION INFRASTRUCTURE ENHANCE DEMOCRACY?

Perhaps the most pernicious theoretical problem for scholars of development, communication, and international relations is the question of whether information and communication technologies “cause” societies to become more democratic. In theory, we might also be interested in the possibility that democracy causes technology diffusion. This causal possibility, however, has been examined elsewhere and found to be weak. As explained above, economic wealth has a much more distinct and direct impact on ICT diffusion. It might be that democratic countries are more likely to be wealthy, and therefore also will be rapid technology adopters. Yet when technology adoption is weighted by economic wealth and treated in time series analysis, the effect of being a democratic regime has little statistical significance (Howard and Mazaheri 2009). Indeed, it is specific types of policy reforms that provide the most useful insight into the causes of technology adoption, and these reforms have been enacted by both dictatorships and democracies (van Dijk and Szirmai 2006). So there is little evidence that generally democratic institutions will cause greater levels of technology use in a country. Is it plausible that technology use might cause political institutions to become more democratic? What would evidence of this causal relationship look like?

There are several methodological approaches to answering this question: a quantitative approach using large-N datasets and statistical tools that demonstrate how variation in democratic outcomes are correlated with variables that serve as proxies for theoretically interesting explanatory factors; a qualitative and comparative approach using specific cases and narrative arguments that trace out causal connections in a more direct and nuanced manner. Visualizing real cases as data points that deviate from a grand theoretical trend could mean graphing trend lines for ICT use and democratization. Visualizing real cases as having degrees of membership in a theoretically interesting set—the set of countries where technology diffusion has led to democratization—could mean graphing cases as being fully in, partly in, or fully out of the set.

One approach has been to use qualitative evidence and single case studies about the importance of communications media in democratic transitions (Horwitz 2001). Scholars build carefully formed and nuanced arguments about democratic transitions in a single country, with detail about causal

connections and narratives of change over time. Unfortunately, while single case studies help generate theories about the importance of ICTs in democratic transitions, such theories cannot be meaningfully tested on a single case alone. When such detailed causal theories are transported to other countries, invariably some factors lose relevance, and new factors seem important.

Once equipped with some theories about the role of ICTs in a country's transition to democracy, comparative research is the next step to test which theories apply most broadly and under which conditions. Thus, comparative research often works with multiple cases and a reduced set of properties for each particular case (George 2006; McMahan and Chesebro 2003). Studies such as these successfully argue that over time, democratic transitions occur as media systems modernize. Unfortunately, authors using this approach must forfeit strong language about causal connections. As more cases are added, more caveats, nuances, and variations are added. They find strong correlations between attributes of media systems and political cultures, and their knowledge of the cases gives credibility to their claims of causality. Such comparativists work to generalize trends and form transportable theory about how technologies can drive the evolution of democratic political practices. Appendix B identifies the useful single case and small set comparative studies of technology use and regime change used in this study.

The third approach to studying the role of technology in democratization has been quantitative, working with many if not all available cases and severely reduced sets of properties for each particular case (Milner 2006; Howard and Mazaheri 2009). This approach seeks parsimonious models of the impact of country case attributes on scales of democratic performance. The models are used to test theories of how communication technologies bring about democratic processes, theories that are usually developed by the qualitative and comparative researchers. Unfortunately, many of the traditional statistical techniques do not lead to conclusions about causal connections. Instead, they lead to models of "explained variation," a different thing altogether. To explain the variation in a range of country experiences, researchers often have to pool data from multiple years, artificially expanding the number of case studies they have so that the assumptions of traditional statistical methods can be met.

To accommodate correlational analysis, researchers often have to make significant sacrifices in the amount of variation a model can explain. Regression analysis takes into account the impact of variables on a given outcome, but the resulting explanation is fitted for only a few real cases. Indeed, qualitative researchers are very good at explaining nuanced, causal pathways; through in-depth case studies, comparativists must privilege some causal pathways shared by multiple countries; quantitative researchers have

yet to develop the toolkit for analyzing causal pathways. To an eye trained for seeing correlations, the points of data in Figure 1.1 are important inasmuch as they are some distance from a central tendency. (In this figure, a linear trend line is provided, but a nonlinear trend line could also fit within the distribution of cases.)

Correlational statistical techniques help explain the observed variation from a central tendency. If there is a plausible theoretical relationship between the diffusion of digital information technologies and democratization, a simple correlational approach reveals that 6 percent of the variation in democratization can be explained by technology diffusion. This means that 94 percent of the variation remains unexplained. A host of additional explanatory variables could be added, interactive effects could be tested, and outlier cases could be cut out of the sample. Ultimately, a Nonlinear model would probably make for a better fit. Yet the outlier cases are usually very interesting, and it is rare that this extra work yields more explained variation

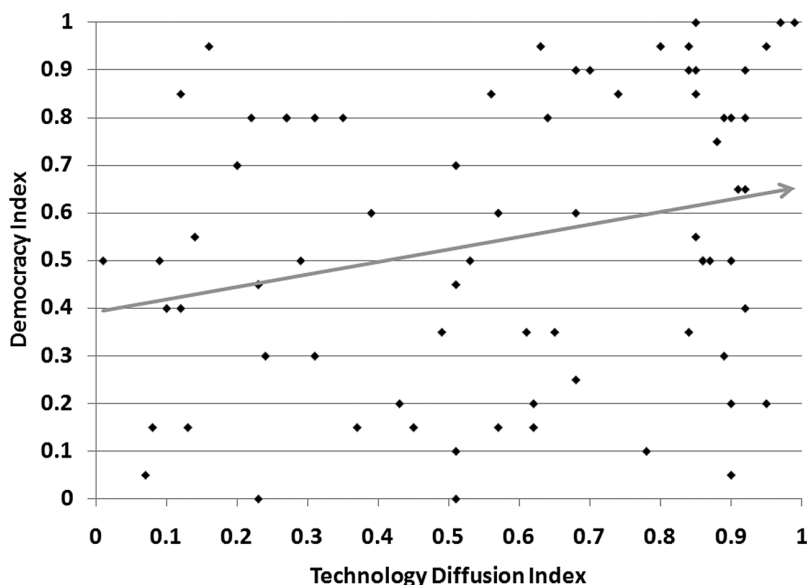


Figure 1.1 A Trend Line for Technology Diffusion and Democratization, 2010

Source: Based on author's calculations with data from Polity IV (2007) and the World Bank (2007).

Notes: The index for technology diffusion was created from World Bank data, transformed as described in the text to be weighted by economic wealth, then turned into a fuzzy set variable and calibrated to distribute cases across the theoretical set of countries where information and communication technologies have diffused. The index for democracy was taken from Polity IV, adjusted for particular countries as described in Appendix A, then turned into a fuzzy set variable and calibrated to distribute cases across the set of countries with significant Muslim communities.

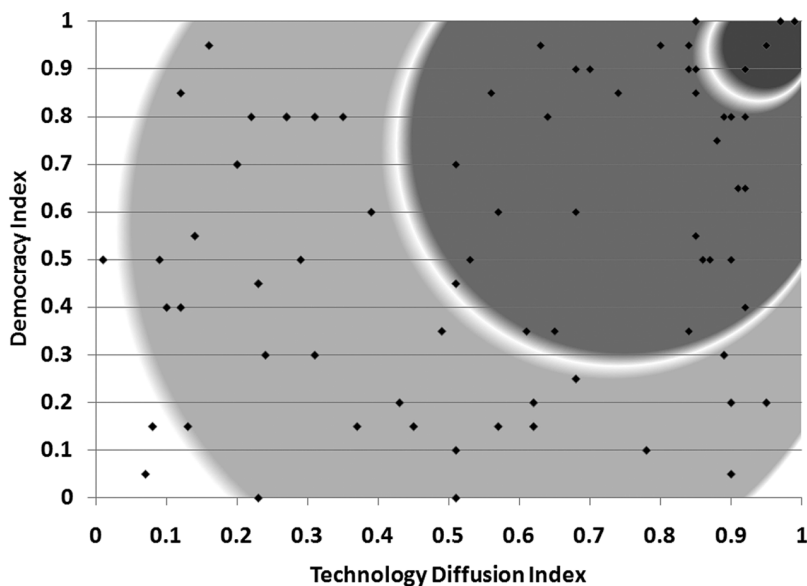


Figure 1.2 Degrees of Membership in the Set of Countries Where Technology Diffusion Caused Democratization

Source: See Figure 1.1.

Notes: See Figure 1.1.

than unexplained variation. Some would argue that any explained variation is better than none at all. But to reveal how ICTs may be an ingredient for democratization—as experienced by Muslim communities around the developing world over the last 15 years—a qualitative and comparative approach is even better.

Figure 1.2 charts the degree of membership for 75 Muslim countries in two theoretically important sets: the set of countries that experienced a democratic transition between 1994 and 2010; and the set of countries that experienced rapid technology diffusion over this period. The points of data are the same as those in the previous figure. Membership in the set of countries that experienced a democratic transition is defined by having at least a 3-point change in the index of democratic institutions offered in the Polity IV dataset.⁶ The set is constructed according to the magnitude of the transition so that countries which experienced significant democratic transitions are given high index values, countries that experienced little change are given median values, and countries that receded into dictatorship are given low values. Comparatively, Indonesia experienced the most sweeping transformation of these countries, a democratic transition in 1998–1999 that is graded as an 11-point rise in the Polity IV index, so with full membership in the set of countries experiencing a democratic transition,

Indonesia is valued at 1.0. In contrast, Pakistan experienced a slide into authoritarianism, graded as a 13-point drop, so it is fully out of the set of countries experiencing a democratic transition and is valued at 0.0. In terms of membership in this set, the other countries fall in between these high and low values.

The index of technology diffusion was computed using the expression described in the introduction, for mobile phones, internet users, internet hosts, personal computers, national internet bandwidth, and broadband internet users, and then averaged and transformed into set-theoretic values (a process of calibration that is described in Appendix A). A few countries are full members in the set of countries experiencing rapid technology diffusion in recent years: Bosnia, Morocco, Singapore. Others are out of the set because they have comparatively smaller information infrastructure than would be expected, given the size of the national economy: Iraq, Turkmenistan, and Yemen. At the midpoints are countries such as Eritrea and Kuwait; though they have very different levels of economic development, they have about the level of information infrastructure expected, given the level of economic development they do have.

To introduce this comparative study of the role of information infrastructure in democratic transitions in the Muslim communities of the developing world, Figure 1.2 organizes countries according to their membership in these two theoretically interesting sets. There are many recipes for democracy, and there are clearly some countries for which technology diffusion has been a key ingredient.

Cases appearing at the top right of the figure, in the dark grey circle are those that are fully in the theoretical set of countries where technology diffusion contributed to democratic outcomes. There are only a few of these countries, but in important ways they help define the set. Moving below the threshold of full membership in the set reveals a much larger number of countries that are mostly in the set—though membership values vary. This larger collection of cases, which appear over a grey background, are countries that have high levels of technology diffusion and high levels of democracy. Another threshold, sometimes called the transition point, distinguishes these cases from those that are not members of the set. These cases may have high levels of technology diffusion but low levels of democracy, or vice versa. Either way, these cases are mostly out of the theoretical set, and they appear in the light grey area. Finally, there are a handful of cases that are definitely out of the set. Countries such as Saudi Arabia and Turkmenistan are definitely not members of the set of countries where technology diffusion has contributed to democratization. Cases at the bottom left of the figure are countries where the absence of technology diffusion probably contributed to a lack of democratization.

Countries with high levels of democratization but low levels of technology diffusion probably democratized for reasons unrelated to the availability of information technologies to state agencies, political parties, journalists, and civil society groups. These cases do not undermine the theoretical relationship between information technology and democratization, because they are not directly relevant. In other words, whereas the democratization recipe for the cases in the top right of the figure includes technology diffusion as an ingredient, the democratization recipe for the cases in the top left of the figure is probably different.

Figure 1.2 also helps us think about how technology diffusion may be a sufficient or necessary cause of democratization. Imagining a diagonal line from the point 0,0 to 1,1 separates the cases into two groups. For countries above the diagonal, information infrastructure may have been a sufficient causal condition for the democratic transition, because all values for the causal condition are less than or equal to their corresponding outcome values. Cases in the upper-left corner of the plot may be there because of other causal conditions, suggesting that information infrastructure may be a sufficient but not necessary condition for democratization. However, this relationship is not consistent across all cases, because those below the imagined diagonal are ones in which information infrastructure is a necessary but not sufficient cause of democratic change. For these countries, the set of countries experiencing a democratic outcome is a subset of those experiencing rapid technology diffusion, meaning that all the values for the outcome are less than or equal to the values for the causal condition.

In conventional correlational explanations, cases in the lower right corner are considered errors that undermine the correlation between the causal condition of information infrastructure and the democratic outcomes. These cases are still substantively valuable, however, because they reveal much about how information infrastructure could be a necessary causal condition that must be combined with other causal conditions. When is information infrastructure a necessary or sufficient causal condition for a democratic transition?

Appendix A presents evidence about technology diffusion and political transformation in a way that allows for easier comparison among countries; 1994 is a sensible start date because internet use in these countries would have been minor before 1994, and many of the political transitions just before 1994 were part of the wave of democratization that followed the collapse of the Soviet Union. It is reasonable to expect that there are no cases of political transformation prior to 1994 in which internet, mobile phone, or other ICT use had much of a role.

The regime type rankings from the Polity IV dataset offer a full spectrum from very authoritarian (scored as -10) to very democratic (scored as +10).

If the range -10 to -6 is considered authoritarian, -5 to -1 somewhat authoritarian, 0 a transitional rank, 1 to 5 somewhat democratic, and 5 to 10 democratic, then it is possible for a country to have a significant shift in several directions: it can become more authoritarian, more democratic, a little less authoritarian, or a little less democratic. Appendix A presents countries that have undergone such shifts, the period in which the transition occurred, and the point shift over this period. Many countries have improved or regressed only one or two points since 1994, or did not change rank at all; a few experienced more complex changes. Some countries had several transitions of more than three points, but only transitions begun after 1994 are included.

The democratic transition regimes include countries that underwent a 3-point transformation in the level of institutionalized democracy, between 1994 and 2010. The regimes that experienced democratic entrenchment had young democratic institutions that became more effective and durable. There are no examples of high ICT diffusion countries that became more authoritarian, and the only countries that became much more authoritarian had average or low levels of information infrastructure. There are many countries that became more democratic and had average or high levels of information infrastructure. There were no examples of democracies that became less democratic, at any level of technology diffusion. Moreover, countries that were authoritarian and became less so tend to be countries with average or below average levels of ICT diffusion. In some cases, the transitions were meaningful but took a long time—as much as a decade in countries such as Georgia and Algeria. In other cases, the transformations were rapid, with significant improvements in democratic policies and practices. Some countries, such as Somalia, probably have relatively high technology diffusion because of the influx of foreign aid workers (Ein-Dor, Goodman, and Wolcott 2000).

For countries such as Bosnia, Georgia, and Indonesia, good ICT infrastructure supported strong democratic movements. For Azerbaijan and the Central African Republic, the lack of technology diffusion has allowed for deepening authoritarianism. For countries such as Benin, Eritrea, and Gambia, technology diffusion has not been particularly rapid, and democratization movements in these countries have had little success. Several of the states that did not go through political transitions are in crisis, where both war and institutional collapse make democratization and technology diffusion impossible. For explanatory purposes, these cases are irrelevant. Some countries have had very low levels of technology diffusion and became more democratic anyway. Information technologies probably have little to do with political change in Algeria, Comoros, and Liberia. Yet a causal argument cannot be neatly composed from this evidence alone. Ideally, the countries

would be clearly distributed into two batches: a group with high levels of ICT diffusion that became more democratic over time; and a group with low levels of ICT diffusion that became more authoritarian or made little democratic progress. Unfortunately, real cases cannot be grouped so easily. Instead, there are many countries with high levels of technology diffusion that had little change in democratic institutions, and many countries with low levels of technology diffusion that had little change in authoritarian institutions. And there is a long list of countries that had only a one- or two-point improvement over time.

The goal of this chapter has been to introduce some of the complexities of studying the impact of new information technologies on political life in countries with large Muslim populations. Indexing countries by level of democratization and level of technology diffusion suggests that there might be a statistical model for explaining the variation of countries from hypothetical trend lines, but a theoretical argument for why democracy enhances technology diffusion or why technology diffusion enhances democracy is still needed. Treating countries by cross-case comparison allows for some theorizing along the way: any connection between information infrastructure and democratization is not just theorized, it is observed. A large-N quantitative approach, with its assumption of well-defined categories and populations and quest for the net effects of independent variables in linear models, is the least appropriate template for this research. Therefore, this argument will use one of the new alternatives available in the social sciences: analysis of relations among the set of countries with large Muslim populations experiencing political transitions and technology diffusion, between 1995 and the present.

Perhaps the best reason to proceed in a qualitative and comparative way is that the categories of “democracy” and “technology diffusion” are themselves aggregates and proxies for other measurable phenomena. Separate assessments could be done for different components that built the democratization index: how regulated or independent are the heads of state; how open and competitive is the process to replace the head of state; how regulated political participation is. Separate assessments could also be done for the different parts of a country’s information infrastructure: mobile phones, internet users, internet hosts, personal computers, internet bandwidth, broadband internet subscribers. Researchers have assessed the role of mobile phones in executive turnover in Indonesia and Kyrgyzstan, the importance of websites for civil society groups in Bahrain and Turkey, and the restrictions on internet users in Saudi Arabia and Tunisia. To preserve the nuances of cross-case comparison while seeking generalizable knowledge, the argument in this book proceeds in a comparative manner. Moreover, the book is organized in chapters dedicated to types of political actors, largely

because the single country studies and small set comparisons that form much of the knowledge base also make these causal distinctions. How does information infrastructure enhance or support democratic transitions? Answering this question with confidence in generalizable conclusions and being respectful of the diversity of experience among Muslim countries is the goal of this book.