Turkey's Digital Divides

By Max Hoffman   June 2016

Center for American Progress

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Introduction and summary

Turkey is emblematic of the promise of the digital revolution that is now sweeping through similarly emerging middle-income democracies around the world. Yet its approach to expanding internet penetration is shaped by its own set of political and social conditions. Wider internet access and use could contribute to a more dynamic Turkish economy that is driven by greater online competition and entrepreneurship. Turkey could likewise provide more efficient, responsive government services to more of its citizens by harnessing information and telecommunications technologies. But the efforts to reap these rewards are hindered by wide disparities in internet access and online literacy, as well as by very different customs that divide men and women, the old and the young, and urban and rural citizens.

These divides are evident in the nation's digital disparities and have roots in the country's recent political history and social norms. At first glance, Turkey's rapid but uneven economic development over the past several decades—with all of the accompanying social fissures—is akin to the experiences of other developing nations such as Albania, Chile, or Brazil. And Turkey, like other emerging middle-income democracies, is grappling with the need to privatize the internet and communications industries, which are often powerful political players with deep ties to ruling parties and with little interest in fostering serious online competition.

But Turkey's challenge of providing more internet accessibility at more affordable prices—a key step to becoming a full-fledged developed democratic nation and a new member of the European Union—faces obstacles that are particular to Turkey's political economy. The ruling Justice and Development Party—more commonly referred to by its Turkish acronym, AKP—must calculate the political gains and losses of more widespread internet access, particularly for those conservative working-class rural voters who are the backbone of its political strength.[1]

In some ways, Turkey's digital divide is just fine with the AKP and its de facto leader, President Recep Tayyip Erdoğan, because it gives the government greater control of the information flowing to its most important constituencies. But in other ways, the government recognizes the costs and consequences of Turkey's

digital divide and is actively seeking to bridge the gaps. The question is whether the nation can achieve this transformation and broaden access to the internet and its associated benefits despite the likelihood that this process would loosen the governing authorities' control over online information that it wants to suppress.

Troublingly, Turkey's state influence over the internet and telecommunications sectors aligns in particular with its efforts to constrain the internet as a space for public access, information, and expression. The country's extensive internet censorship rules take both legal and extralegal forms, with the government relying sometimes on changes implemented through legitimate political channels and sometimes through the selective or delayed implementation of rules and court decisions. These rules limit the degree to which those with minimal or no access to the internet— many of them supporters of the ruling party—can access information. More encouragingly, however, some of Turkey's genuine efforts to boost other aspects of online accessibility and literacy could well lead to a more robust economy and, eventually, a more open and free internet, as is happening among similar economies around the world. This should be the goal of the Turkish government.

This report examines the costs and consequences of this digital divide in Turkey and explores the reasons for the current disparities, the efforts by the government to overcome some of the divisions, and the prospects for success in all of these efforts.

The report begins by detailing the disparities in internet access between Turkish men and women. These disparities are alarming for a high-middle income country that sets its European neighbors as its benchmark. The report details the reasons why Turkey has struggled to develop internet literacy and to deliver content relevant to a wider swath of its population and outlines the ripple effects of these challenges on rural adoption and e-government penetration and effectiveness. It also outlines the consequences of Turkey's failure to develop a healthy privatized market for the advancement of high-quality, low-cost internet and communications services.

The report closes with some recommendations for the Turkish government and its citizens to consider. In particular, the government should take the following measures:

- Expand e-government services to reduce the need for some in-person interactions with the state bureaucracy. This step could entice more individuals who are low-income and less tech-literate to find value in internet usage and improve the efficiency of key government services.

- Develop creative ways to diminish the effects of abiding cultural norms that hamper internet access for women. Public internet access points that are located outside of strict familial control in the home could afford women from conservative families the freedom and anonymity to explore and find useful content on the web.

- Study how other developing democracies are handling their own expansions of online business opportunities for small- and medium-sized businesses, as well as how they are handling access to information online while holding true to their recent democratic gains. Albania, Chile, and Brazil offer useful comparisons for the Turkish government.

These are not trivial goals for Turkey to pursue. Extensive investigations by the World Bank and the Organisation for Economic Co-operation and Development, or OECD, into the importance of widespread internet adoption and use among middle-income countries such as Turkey demonstrate the broad economic and political benefits that can accrue to more fully digitized countries.[2] For the nation to achieve its larger sociopolitical and socioeconomic goals, closing the digital divide is of paramount importance.

The digital stakes for Turkey

The digital transformation that is sweeping developing middle-income nations, including Turkey, presents tremendous economic and political opportunities, yet the widespread and effective deployment of these technologies has not been fully realized. The adoption of a more expansive and free-wheeling internet can open opportunities for greater political inclusion, more dynamic economic growth, increased government efficiency, and expanded innovation. These gains can be realized at the individual, business, and governmental levels.

As the World Bank's "World Development Report 2016: Digital Dividends" details, the internet offers individuals greater inclusion in economic, political, and social activity through access to information—everything from news to employment opportunities. For businesses, the internet can reduce barriers to market entry and increase efficiency in the workplace. Governments can better gather data, deploy services, increase participation, and understand and address the public voice.[3]

Leveraging these technological advancements depends on the capable delivery of internet and telecommunications services and their effective usability. This means that while universal access and affordability are prerequisite achievements, they are not sufficient to drive change. As the World Bank's report concludes, digital and internet literacy, protections of security and user privacy, and healthy internet governance can all affect the internet's ability to deliver value to a nation's citizenry.[4]

Though some progress has been made, middle-income countries continue to grapple with the challenges of access and affordability. A variety of factors contribute to these enduring challenges: the underdevelopment of fixed broadband in countries that leapt headlong into the mobile telephony era; the difficult transition from state-owned telecommunications enterprises to true privatization; the online and telecommunications regulatory shortcomings that hamper robust competition, particularly unpredictable tax outcomes and occasionally punitive tax fines; and the difficulty of developing infrastructure to serve far flung populations.[5]

Turkey is grappling with all of these challenges that typify the advancement of internet and telecommunications in the developing world, yet the country exhibits some stark areas of underperformance compared with its peers—underperformance that is linked to the nation's cultural norms and recent political history. A thorough understanding of Turkey's unique obstacles to developing a robust internet economy and society must begin with a brief history to help place the present hurdles in appropriate context.

While the developed economies of the world saw the internet take off in the 1990s, Turkey remained a poor, developing country. After several years of strong economic growth under the leadership of president and economic and political reformist Turgut Özal, Turkey's nominal gross domestic product, or GDP, per capita hovered around $4,000 through the late 1990s compared with the United States' GDP per capita of more than $34,000.[6] In the United States—the epicenter in so many ways of the digital revolution—that same period marked the beginning of a sharp increase in the share of Americans who started using the internet. In 1995, just 14 percent of Americans used the internet; by 2001, more than 60 percent were online.[7]

In Turkey, the internet revolution remained some ways off. The internal political and economic crises of the late 1990s and the 2001 crash of the Turkish economy sparked capital flight, massive inflation, and painful job losses.[8] The early 2000s saw political stabilization after the crisis, first under technocratic leadership that spanned the Bülent Ecevit-helmed coalition government in place from 1999 to 2002 and then under the newly formed Justice and Development Party, which won a parliamentary majority in 2002 and remains in power today.

All of this political and economic upheaval, followed by steady steps at economic and political stabilization, did little to boost internet activity in Turkey. By 2005, with household internet access in the United States nearing 60 percent, only 8.7 percent of Turkish households had access. Similarly, less than 18 percent of Turks used the internet that year compared with more than 70 percent of Americans. In 2005, only 23 percent of Turks had even used a computer.[9] Across Western Europe, the share of households with internet access ranged between 40 percent and 80 percent.[10] In short, by 2005, Turkey already faced a considerable deficit in advancing internet and telecommunications penetration throughout its economy and society.

But then, over the ensuing decade, Turkey experienced a rapid expansion of internet adoption and use similar to what the United States had seen a decade earlier. Computer use increased to 55 percent of the population by 2015. Internet usage spiked to 56 percent of the population. Nearly 70 percent of households had some

form of internet connectivity in the same year.[11] Turkey benefited from steady economic growth that tracked the overall rise in emerging markets over the same period. Foreign capital inflows fueled growth and rising GDP per capita, and internet access became an affordable discretionary expense for many more Turkish citizens.[12] Yet a deep digital divide developed and remains within the nation's culture, geography, demography, and political economy.

The digital divide in Turkey today

In part because of the rapid expansion of access over the past decade, Turkey skipped a technological generation. Only one-quarter of Turkish households have desktop computers. Less than 30 percent of households have fixed telephone lines. At the same time, nearly 97 percent of households have mobile phones. Of Turkey's 32.5 million broadband internet subscribers, just more than one-quarter have fixed lines, while nearly three-quarters have mobile broadband access.[13] Turkey's economic rise and strides in internet access have leapfrogged the era of fixed connectivity and moved full-scale into the era of mobile telephony. In 2015, nearly 70 percent of households had access to the internet, but individual computer usage stood at 55 percent of Turkey's population, with internet usage standing at about 56 percent.[14]

Alas, these clear gains in internet access are not universally shared. Beyond the still-limited penetration of internet access, usage statistics reveal marked disparities across urban-rural, regional, and educational lines, as well as age and gender gaps.

FIGURE 1
Percentage of internet users by region (2015)
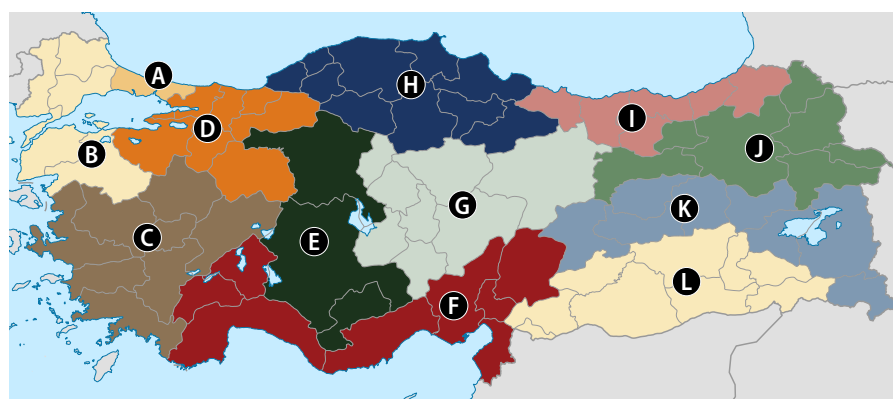
	Total	Male	Female
Total	55.9	65.8	46.1
A Istanbul	67.1	74.9	59.1
B West Marmara	59.4	67.1	51.4
C Aegean	56.9	65.9	48.1
D East Marmara	59.2	67.5	51
E West Anatolia	62	70.3	54.1
F Mediterranean	52.6	62.1	43.1
G Central Anatolia	51.5	61.7	40.7
H West Black Sea	50	60.9	39.4
I East Black Sea	52.1	62.3	41.1
J North East Anatolia	40.2	50.2	30.4
K Central East Anatolia	40.2	55.7	24.6
L South East Anatolia	43.1	59.6	28.1

Source: Turkish Statistical Institute, "Information and Communication Technology (ICT) Usage Survey on Households and Individuals, 2015," (August 18, 2015), available at: http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=18660.

Urban-rural, regional, and educational lines

The urban-rural, regional, and educational divides are clear. While 58 percent of urban individuals use the internet, just less than 29 percent of rural individuals are users.[15] While 67 percent of residents in the Istanbul metropolitan area use the internet, only 40 percent in Central Anatolia and 43 percent in Southeast Anatolia use the internet.[16] The educational divide is particularly stark. While 6 percent of those with no education and one-quarter of those with primary schooling use the internet, 94 percent of university-educated people and 80 percent of high school-educated people count themselves as internet users.

In all likelihood, these three divides exhibit some covariance, namely related to wealth and income. The U.N. Conference on Trade and Development produced a report detailing the high cost of internet service in low-income countries, where internet affordability can be 150 times greater than in a high-income country.[17] The effect is certainly intensified in especially low-income segments of middle-income developing countries such as Turkey, as this report examines in more detail in the next section. Educational attainment correlates strongly with income, and urban areas offer greater economic opportunity than rural ones. Urban areas also offer alternative internet access points beyond the home, such as internet cafes, which may be absent from some remote areas.

Age gap

The age gap in internet usage is also pronounced but may be explained by Turkey's rapid advances in internet access over the past decade. While less than 6 percent of citizens ages 65 to 74 are internet users, 77 percent of 16- to 24-year-olds and 72 percent of 25- to 34-year-olds use the internet. Among seniors, the number of internet users remains durably low. Ten years ago, when Turkey's eldest citizens were 55 years to 64 years of age, only 2 percent of them used the internet—the same share for senior citizens today.[18]

TABLE 1A
Percentage of internet users by age

	16-24	25-34	35-44	45-54	55-64	65-74
2005	27.8	16.7	9.7	6.3	2.3	5.6
2015	77	71.7	55.4	34	17.2	5.6

TABLE 1B
Percentage of internet users by education

	No diploma	Primary school	Secondary school	High school	University
2005	0.4	1.7	15.1	32.9	62.6
2015	6.1	25.9	67.2	80.6	94.1

Source: Turkish Statistical Institute, "Information and Communication Technology (ICT) Usage Survey in Households and Individuals, 2004-2015," surveys for all years available at: http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=18660

In Istanbul's working class neighborhoods, interviews with senior citizens indicate the recognizable barriers to elder adoption of internet usage: lack of perceived relevance and self-doubt at learning something new and seemingly complex. "I don't know anything about it," said one 70-year-old retired factory worker. "I was never interested to learn about it." When asked whether he would be interested in social media as a mode of communication with relatives, he denied needing the internet for that purpose. Similarly, a 57-year-old homemaker expressed doubt about the personal value of internet access before adding, "Even if I were [interested], how would I learn at this age?"[19]

These conversations reveal the major difficulties of driving technological adoption among older people—a challenge that shows up in many countries beyond Turkey. But just as in other middle income countries, Turkey's 25- to 34-year-olds have wholeheartedly adopted internet use. In 2005, when that same cohort was 16- to 24-years-old, only 28 percent used the internet. Among today's 35- to 44-year-olds, 55 percent use the internet; only 17 percent were users in 2005, as 25- to 34-year-olds. Nearly 4 out of 5 Internet native Turks—the youngest cohort surveyed—count themselves as users.[20] While the age gap has left some Turks behind, the trend lines in Turkey are positive.

Gender disparities

More troubling are the use and access disparities between men and women. While 66 percent of men use the internet nationally, only 46 percent of women do. This marked disparity exists across the urban-rural divide, too. In urban areas, 68 percent of men and 48 percent of women are internet users compared with rural areas, where 39 percent of men and 18 percent of women report using the internet.[21]

TABLE 2
Information and communications technology (ICT) usage

Households and individuals

	2005 (%)	2015 (%)
Computer usage (total)	**22.9**	**54.8**
Male	30.0	64.0
Female	15.9	45.6
Urban (total)	**29.6**	**59.0***
Male	37.3	69.0*
Female	21.7	49.1*
Rural (total)	**11.7**	**29.5***
Male	17.1	40.1*
Female	6.6	19.3*
Internet usage (total)	**17.6**	**55.9**
Male	24.0	65.8
Female	11.1	46.1
Urban (total)	**23.1**	**58.0***
Male	30.3	68.1*
Female	15.6	48.0*
Rural (total)	**8.2**	**28.6***
Male	12.8	39.2*
Female	3.9	18.4*
Households with access to internet	**8.7**	**69.5**

* 2013 data was the most recent available.

Source: Turkish Statistical Institute, "Information and Communication Technology (ICT) Usage Survey in Households and Individuals, 2004-2015," surveys for all years available at: http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=18660.

One factor shaping this dynamic is women's access to education. While 94 percent of female university graduates and 79 percent of female high school graduates use the internet, less than 5 percent of women without a diploma are users.[22] Turkey remains a country in which fewer educational opportunities are open to women than to men, and educational attainment strongly correlates with internet use. Illiteracy is symptomatic of this problem: A program to bring internet-use training to women in the southeastern city of Şırnak discovered that women's illiteracy proved one of the greatest factors hampering the program's success.[23]

Enduring social norms in particular societal segments may also hinder women's free access to the internet. Interviews with individuals from working-class, conservative neighborhoods in Istanbul revealed indications of differential access for young men and women growing up in these communities. One mother insisted that while her sons were allowed to go online, her daughters were not—and that this state of affairs would continue until their marriages. "[My daughter] can do whatever she likes when she gets married. It's her husband's problem," the interviewee said. "Until then, no internet, no such things."[24] Other interviewees echoed this view, suggesting that cultural constraints on women constitute one aspect of the gender divide in internet use.

Internet access and use in Turkey

Turkey's digital divide manifests itself in a variety of ways. The country boasts a big business sector that uses internet access and advanced telecommunications services in the same way that businesses in other developed and major developing member nations of the Organisation for Economic Co-operation and Development do. At the same time, Turkey's overall internet adoption rates have ranked consistently among the lowest in the OECD.[25]

Indeed, in the OECD's "Digital Economy Outlook 2015," member nations' efforts to expand broadband networks and service access to their entire populations is a recurring theme due to the economic benefits of high-speed internet and cloud-based computing and data-storage services.[26] Turkey's largest conglomerates have adopted high-speed broadband service and its attendant enterprise service benefits, but Turkey's government faces a more basic challenge in enabling access and driving adoption of the internet among small- and medium-sized businesses and a wider swath of the population.

One key barrier to deepening internet access and use is the availability of useful content online for new adopters. This may seem surprising given the myriad range of content available, including in Turkish, but it underscores the cultural problems that inhibit the growth of internet use in the country. Consider Uşak, a medium-sized city in Anatolia about equidistant from Antalya and Istanbul. In Usak, Osman Coşkunoğlu—a former member of parliament, engineer, and internet-use expert—held internet training courses for women. Osman taught the participants how to access and use the internet, yet subsequent adoption—that is to say, continuing use—was limited because the women struggled to find meaningful content online.

When interviewed, Coşkunoğlu said, "At the root, the crucial aspect is the content: If there was suitable content for all groups, then there would be demand, as well." Indeed, in most rural areas of the country, many new internet users seek access only to social media.[27]

How do urban and rural people use the internet? (2013)

Purposes	Turkey	Urban	Rural
Sending/receiving e-mails	62.5	63.8	56.1
Participating in social networks	73.2	72.1	78.3
Reading or downloading online news	75.6	76.4	71.8
Subscribe to news services or products to receive them regularly	21.3	21.8	18.7
Seeking health-related information	59.6	62.4	46.2
Looking for information about education, training or course offers	45.9	47.7	37.5
Finding information about goods or services	59.9	62.7	46.3
Downloading software (other than games software)	19.1	20	14.7
Posting opinions on civic/political issues via websites	28.7	28.9	28
Taking part in online consultations or voting to define political issues	12.8	13.6	9.1
Doing an online course (in any subject)	8.4	9	5.5
Consulting wikis to obtain knowledge on any subject	32.6	33.8	26.2
Looking for a job or sending a job application	12.9	13.8	8.4
Participating in professional networks (LinkedIn etc.)	4.2	4.7	1.7
Using services related to travel	26.6	27.4	25.5
Selling of goods or services, e.g. via auctions	9.3	10	6
Telephoning / video calls over the Internet	55.1	56.6	47.4
Internet banking	24.8	26.8	15.4

Note: Respondents may choose more than one option, so columns do not equal 100%.

Source: Turkish Statistical Institute, "Information and Communication Technology (ICT) Usage Survey on Households and Individuals, 2013," (August 22, 2013), available at: http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=13569.

The Turkish government is actively trying to provide useful content to current and new internet users via access to government services. In Şırnak, women applied for internet training through the Life is Simpler with Internet project, whose motivation, in part, is to promote wider use of the online appointment system used by all Turkish state-run public hospitals. The public school system also uses a centralized online system, called E-Okul, or e-school. Parents are able to follow their children's academic progress and class notes through the online system, which the government hopes is another potentially motivating factor for wider adoption.[28]

How do men and women use the internet? (2015)

Purposes	Turkey	Male	Female
Sending / receiving e-mails	49.5	52.9	44.5
Telephoning / video calls over the Internet	38.1	38.8	37.1
Participating in social networks	80.9	83.1	77.6
Uploading self-created content (text, photos, music, videos, software etc.) to any website to be shared	62.1	63.9	59.6
Reading online news / newspapers / news magazines	70.2	72.3	67.2
Seeking health-related information	66.3	60.1	75.2
Looking for information about education, training or course offers	41.3	37.3	47.1
Consulting wikis to obtain knowledge on any subject	47.2	46.1	48.8
Finding information about goods or services	59.4	61.9	55.7
Downloading software (other than games software)	19.5	22.7	14.8
Posting opinions on civic or political issues	22.3	24.2	19.7
Taking part in on-line consultations or voting to define civic or political issues	12	13.1	10.5
Looking for a job or sending a job application	10.1	10.2	9.9
Participating in professional networks	4.4	4.7	3.9
Using services related to travel	19.7	21.2	17.7
Selling of goods or services (e.g. eBay)	20.8	23.1	17.4
Internet banking	29.3	34.5	21.8

Source: Turkish Statistical Institute, "Information and Communication Technology (ICT) Usage Survey on Households and Individuals, 2015," (August 18, 2015), available at: http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=18660.

Elsewhere in government, existing e-government offerings include the prime minister's online complaints system to promote government participation and transparency. In theory, this could help drive internet adoption by people in poor and rural areas—men and women and young and old alike—who want more responsive government services. In practice, the system has been used most intensively in Istanbul and other metropolitan areas such as Konya, Adana, and Samsun. Moreover, the plurality of the system's users have been well-educated urban dwellers, with nearly half of the submissions coming from high school and university graduates.[29]

The Turkish government's Fatih Project also aims to bring technology to more of society by advancing the adoption of technology in schools. The government program outfits classrooms with smart boards and provides tablets to students. Internationally, these efforts often stem from a belief that technological advance-

ment in classrooms will improve learning outcomes, but the Turkish government also seeks to use schools to drive the wider adoption and use of the internet.[30]

As Coşkunoğlu explains, however, the "second digital divide"—the lack of technological literacy necessary to derive benefit from these technologies—often inhibits poorer people from fully embracing the internet. They are reticent to use these technologies, and as a result, affluent citizens realize most of the gain from e-government and technological innovation initiatives.[31] Absent a more intensive effort to make internet use more meaningful, subsidizing technological adoption and dissemination via classrooms may have limited success.
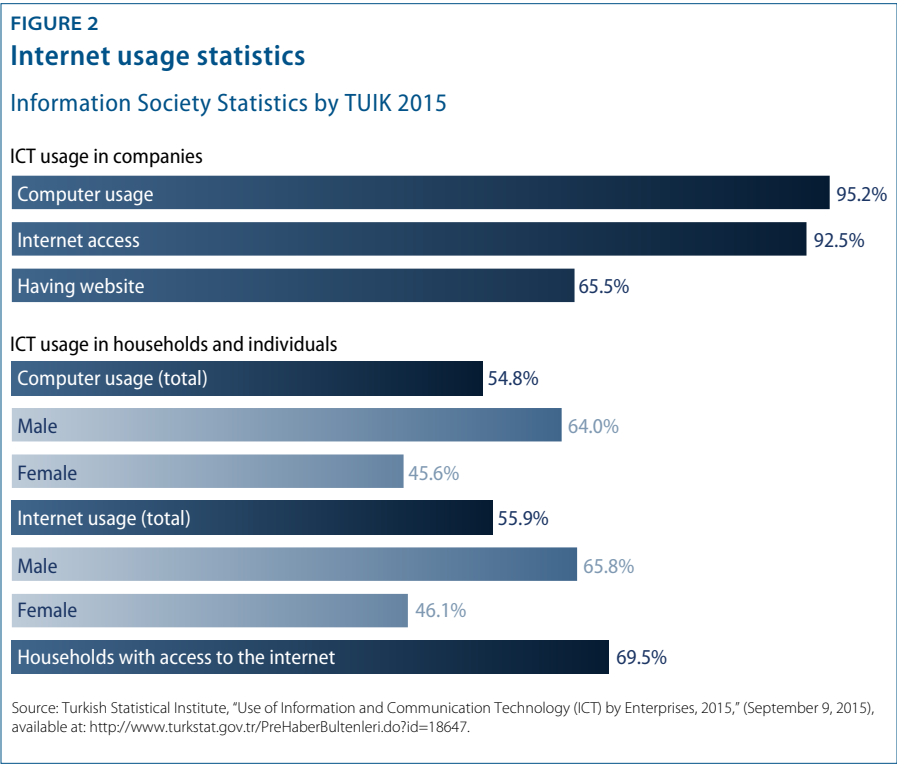
Competition and regulation in Turkey

Competition in the internet service provider market is an enduring challenge in Turkey. Law No. 4502 decreed that Türk Telekom would lose its monopoly rights in 2003. Yet by 2008, the telecommunications giant still controlled 91 percent of service and 81 percent of revenue in the telephone services market.[32] A 2015 report from the Turkish Information and Communication Technologies Authority, or BTK, reported that Türk Telekom retained a 75 percent market share in the internet service provider, or ISP, market through its subsidiary TTNet.[33] Essentially, Türk Telekom sells wholesale service to independent ISPs and simultaneously competes with those providers in the retail market through its TTNet retailing arm, resulting in an unfair playing field for retail competitors and reduced pressure on Türk Telekom for high-quality service.[34] Though more than 70 other internet service providers compete for market share, Türk Telekom remains the dominant provider.[35] Indeed, Türk Telekom was fined 12.4 million Turkish lira, about $9 million, in 2008 for abusing its dominance in the wholesale broadband internet market.[36]

Part of Türk Telekom's continuing dominance stems from the lack of rigorous government policing of the devolution of Türk Telekom's monopoly. In 2005, Türk Telekom was nominally privatized. Yet the company retains close ties to the government. Turkey's Undersecretariat of Treasury still owns 35 percent of the company;[37] the Undersecretary of the Turkish Prime Ministry, Acting Deputy Undersecretary for Transportation of the Ministry of Transport and Communications, the Presidential Secretary-General, and the Chief Advisor to President Erdoğan on economic issues serve on the board of directors.[38] In 2014, then-Prime Minister Erdoğan appointed a close adviser to the Türk Telekom board, despite his adviser having no background in telecommunications.[39] These intimate relationships between the private sector and the government hinder Türk Telekom's privatization efforts.

This state of affairs is not unfamiliar to Turkey. Privatization of state-owned enterprises has proceeded sluggishly in other sectors as well. Innovation and competition have sometimes been the casualties of this difficult process. In the energy sector, for example, government monopolies have long dominated exploration and production, the refining process, and construction and maintenance of pipelines through Türkiye Petrolleri AO, Tüpraş, and BOTAŞ—the state-owned petroleum exploration and production company, refining company, and pipeline company, respectively.

Given this context and its record thus far, it is fair to question the government's zeal for genuine privatization and real competition in the internet and telecommunications sectors. According to former Member of Parliament Coşkunoğlu—formerly of the Republican People's Party, or CHP, the main opposition party—the government gains considerable advantages from the ongoing state of affairs with Türk Telekom through intelligence and surveillance capabilities and through continuing influence over board seats and annuity payments.[40] Indeed, the close adviser who President Erdoğan named to Türk Telekom's board in 2014, economic advisor Yiğit Bulut, is reported to make more than $160,000 per year from his board appointment.[41] Absent sectoral reforms, Turkey will struggle to fulfill its potential for growth in infrastructure and innovation in internet service provision.
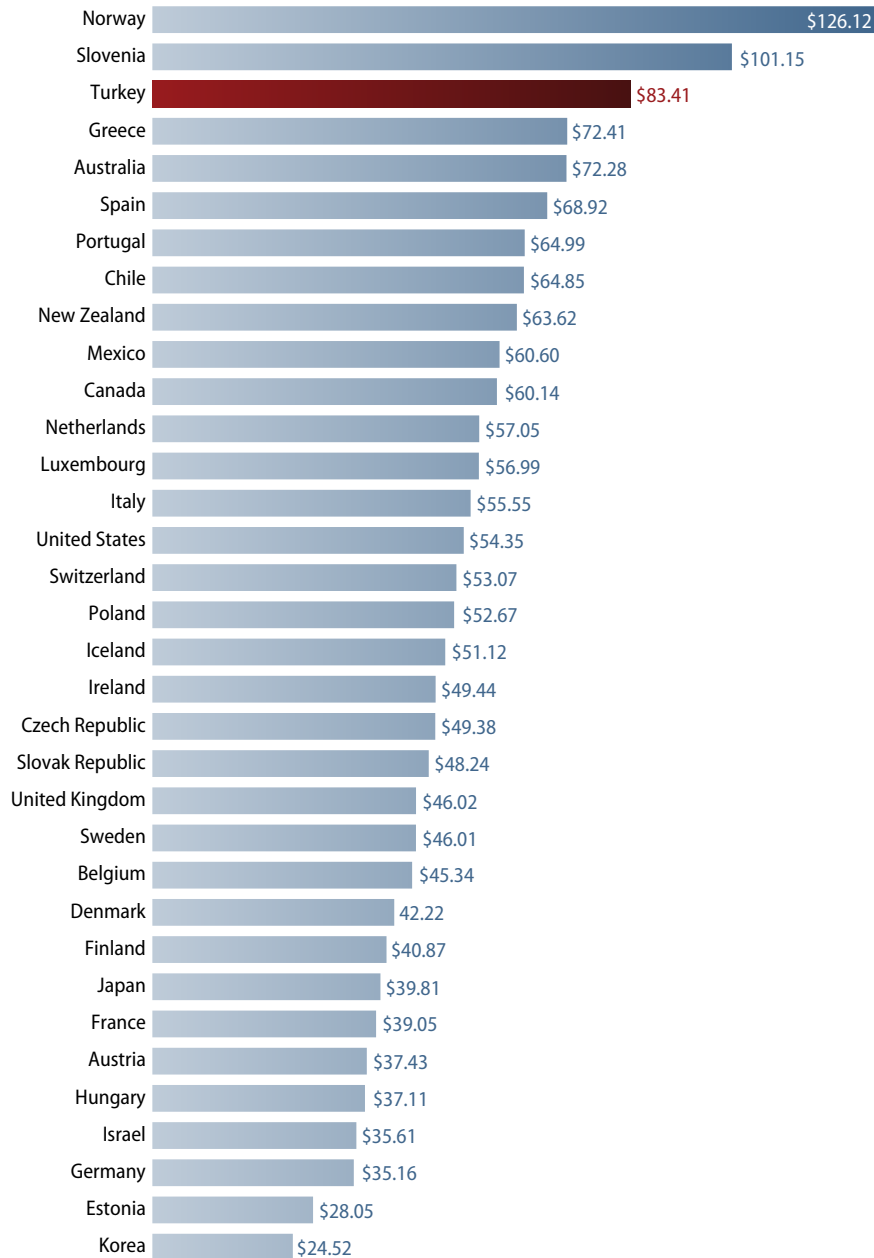
FIGURE 2
Internet usage statistics

Information Society Statistics by TUIK 2015

ICT usage in companies

Computer usage	95.2%
Internet access	92.5%
Having website	65.5%

ICT usage in households and individuals

Computer usage (total)	54.8%
Male	64.0%
Female	45.6%
Internet usage (total)	55.9%
Male	65.8%
Female	46.1%
Households with access to the internet	69.5%

Source: Turkish Statistical Institute, "Use of Information and Communication Technology (ICT) by Enterprises, 2015," (September 9, 2015), available at: http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=18647.

Nonetheless, at 92 percent, Turkey has a fairly high rate of internet access for small- and medium-sized enterprises with more than 10 employees.[42] Broadband pricing data is difficult to synthesize, as there are many different offerings of varying speed, size, and format, either mobile or fixed. Turkey has a wide range of prices; extremely basic services can be quite affordable, but faster speeds or higher data limits—requirements for business activity—rapidly increase in cost. Overall, fixed broadband access is still quite expensive in Turkey, particularly for the poor. The average of all fixed broadband service offerings—including different speeds and data limits—in Turkey, as reported to the OECD, was the third-highest among OECD countries at more than $83 per month in purchasing power parity terms for residential access. It is worth noting that this data is influenced by the status of the lira.[43] For those at the bottom of the income ladder, even entry-level plans can cost 15 percent to 25 percent of the average income, a worse relative position for the nation's poor than in other countries that were surveyed.[44] The cost of fixed broadband internet access in Turkey limits the kind of at-home access individual citizens generally rely on for activities like e-commerce, job searches and applications, and in-depth research.[45]

By some measures, Turkey's overall mobile—as opposed to fixed broadband—internet affordability is quite good for individuals when measured against peers: An entry-level mobile broadband plan—500 megabytes, prepaid—costs less than 1 percent of per capita gross national income, which is the Alliance for Affordable Internet's preferred measure of affordability.[46] Yet, again, faster third-generation, or 3G, mobile broadband plans or higher data limits can be expensive. An entry-level plan with 2 gigabytes of data can cost $12 to $17 per month, while plans with 15 gigabytes of data can cost $55 per month including taxes and other fees. With Turkey's net monthly minimum wage at about $450, for the poor, even mobile internet access is a stretch.[47] These cost disparities are a major problem for a country trying to shrink its digital divide—a problem compounded by Turkey's rising censorship of the internet.

FIGURE 3
OECD broadband statistics

Average of broadband pricing offers for residential users
in the OECD area, September 2011

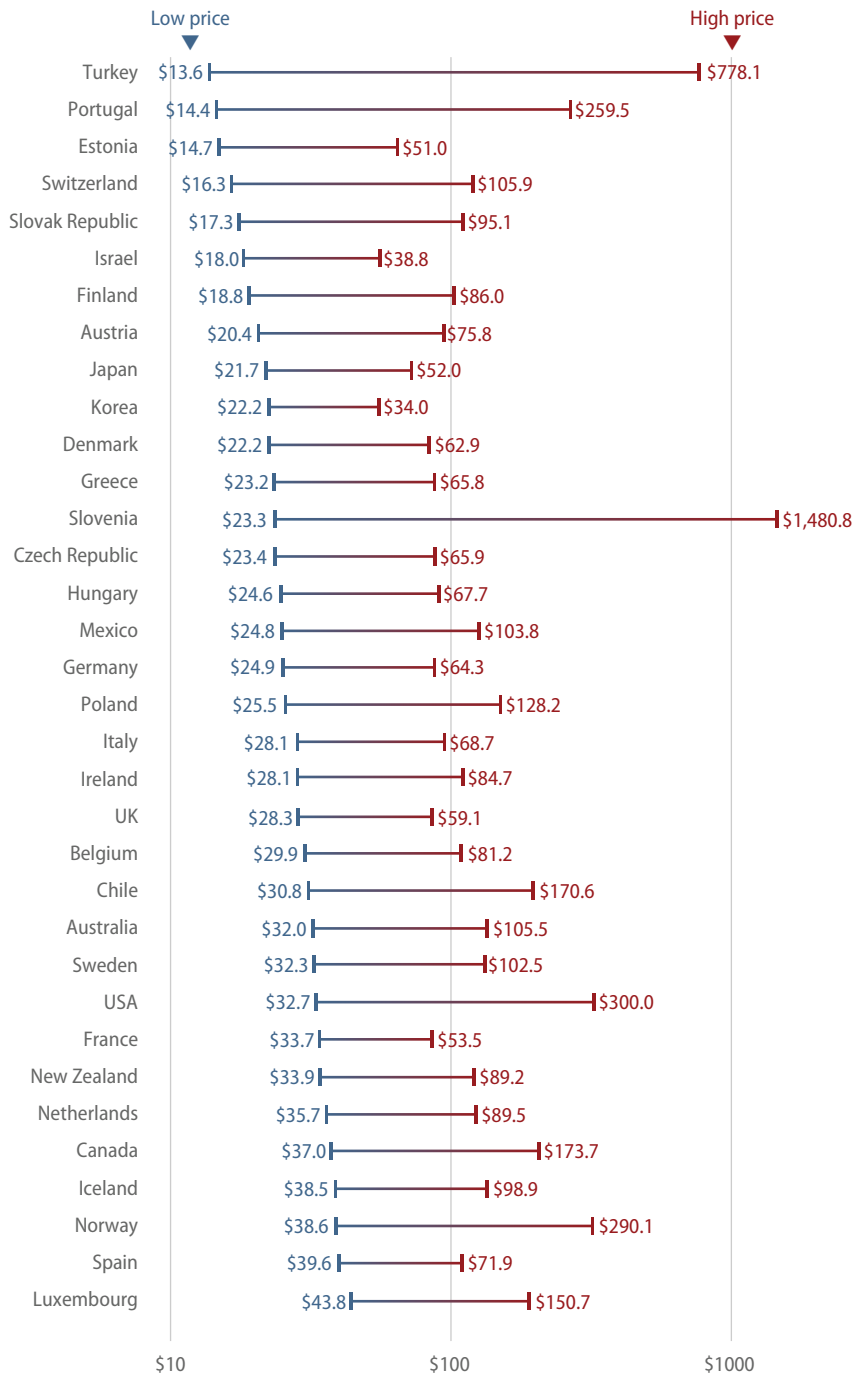| Country	Price
Norway	$126.12
Slovenia	$101.15
Turkey	$83.41
Greece	$72.41
Australia	$72.28
Spain	$68.92
Portugal	$64.99
Chile	$64.85
New Zealand	$63.62
Mexico	$60.60
Canada	$60.14
Netherlands	$57.05
Luxembourg	$56.99
Italy	$55.55
United States	$54.35
Switzerland	$53.07
Poland	$52.67
Iceland	$51.12
Ireland	$49.44
Czech Republic	$49.38
Slovak Republic	$48.24
United Kingdom	$46.02
Sweden	$46.01
Belgium	$45.34
Denmark	42.22
Finland	$40.87
Japan	$39.81
France	$39.05
Austria	$37.43
Hungary	$37.11
Israel	$35.61
Germany	$35.16
Estonia	$28.05
Korea	$24.52

Note: prices reflect average of monthly prices for a range of broadband services in U.S. dollars adjusted for purchasing power parity, as reported to the OECD.
Source: Organisation for Economic Co-operation and Development, "OECD Broadband Portal," available at: http://www.oecd.org/internet/broadband/oecdbroadbandportal.htm#prices (last accessed June 2016).

FIGURE 4
Fixed broadband monthly subscription price ranges (2014)

All platforms, logarithmic scale, in U.S. dollars adjusted for purchasing power parity

Low price ▼   High price ▼

Country	Low price	High price
Turkey	$13.6	$778.1
Portugal	$14.4	$259.5
Estonia	$14.7	$51.0
Switzerland	$16.3	$105.9
Slovak Republic	$17.3	$95.1
Israel	$18.0	$38.8
Finland	$18.8	$86.0
Austria	$20.4	$75.8
Japan	$21.7	$52.0
Korea	$22.2	$34.0
Denmark	$22.2	$62.9
Greece	$23.2	$65.8
Slovenia	$23.3	$1,480.8
Czech Republic	$23.4	$65.9
Hungary	$24.6	$67.7
Mexico	$24.8	$103.8
Germany	$24.9	$64.3
Poland	$25.5	$128.2
Italy	$28.1	$68.7
Ireland	$28.1	$84.7
UK	$28.3	$59.1
Belgium	$29.9	$81.2
Chile	$30.8	$170.6
Australia	$32.0	$105.5
Sweden	$32.3	$102.5
USA	$32.7	$300.0
France	$33.7	$53.5
New Zealand	$33.9	$89.2
Netherlands	$35.7	$89.5
Canada	$37.0	$173.7
Iceland	$38.5	$98.9
Norway	$38.6	$290.1
Spain	$39.6	$71.9
Luxembourg	$43.8	$150.7

$10 $100 $1000

Source: Organisation for Economic Co-operation and Development, "OECD Digital Economy Outlook 2015," (July 15, 2015), available at:
http://www.oecd.org/internet/oecd-digital-economy-outlook-2015-9789264232440-en.htm.

Censorship in Turkey

The Turkish government possesses broad powers of internet censorship. In 2007, Turkey passed Law 5651, which enabled the government to block websites and webpages for the purpose of "protecting families and minors."[48] It denoted nine catalogue crimes—all in reference to existing crimes in the Turkish Penal Code—for which sites and pages could be blocked by a unit within the Information and Communication Technologies Authority, or BTK, its Turkish acronym. One of the units at BTK, the Telekom İletişim Başkanlığı—which translates to the Turkish Telecommunications Commission/Presidency—or TIB, can block websites based abroad without a court order and block sites within Turkey, subject to a subsequent court review.[49]

In practice, however, the legal checks on censorship are weak to nonexistent. Today, TIB can block entire websites for one piece of harmful content on a single sub-page, and even if a court orders such a ban to be lifted, TIB has on several occasions delayed the unblocking for several days. In the second half of 2015, for example, the government unilaterally blocked access to about 100 websites, arguing that the sites were in technical violation of a variety of often unenforced rules. Some of the websites sued the government; the courts agreed with the plaintiffs, deciding that the blocking of access was politically motivated. The government, however, was slow to respond to the court order and continued to block numerous other websites.[50]

The 2007 law expanded the censorship tools available to the government in its effort to control access to web content within Turkey and led to a surge in blocked sites. As of the beginning of May 2016, there were more than 110,000 blocked websites, compared with just less than 60,000 in 2004.[51] The rise in the number of blocked websites was mostly the result of TIB orders and subsequent court orders upholding the regulator.[52] What's more, several recent amendments to the law have further extended the government's censorship authority. The April 2015 omnibus law amending Internet Law 5651 included new, broad provisions that allowed sites to be blocked for privacy violations and defamation, increased the speed with which sites could be blocked, and extended the authority to initiate such blocks to government ministers.[53] All of these actions have brought internet service providers under more direct government control, enabling the government to meddle with access to content for political reasons.[54]

Turkey's internet censorship laws are unprecedented among middle-income democracies. As the report examines in the next section, several of Turkey's peers around the world have nothing close to this level of internet censorship. No developed democracy—in the European Union or elsewhere—imposes a law similar to that of Turkey. Indeed, Turkey's efforts to censor objectionable political content on the internet appear more akin to efforts to control information in Russia, which Freedom House classifies as a "Consolidated Authoritarian Regime."[55]

Many forms of internet censorship in Turkey, however, can be circumvented with relative ease: Those who are motivated to bypass censorship via virtual private networks, mostly the highly educated and politically engaged, are not the government's primary concern. Rather, the Turkish government seeks to control access to information for those citizens who are sympathetic to the ruling AKP government and inclined to support its policies.[56] In this way, the government has managed to mirror its control over television and print news sources on the more unruly web.[57] Through control over access, speed, and content, the government ensures that information reaching the mainstream internet-using public harmonizes with the government's interests.

How does Turkey compare?

Several countries provide useful points of comparison for Turkey's challenges with driving the adoption of internet usage across the country and society. This section of the report examines three nations—Albania, Chile, and Brazil—that share different aspects of Turkey's internet development story in the hopes of offering a varied comparative perspective. Albania shares similar cultural and religious hurdles, along with a similar privatization trajectory. Chile's government initially struggled to privatize its telecommunications industry, like Turkey, but has since broken with the Turkish story. And Brazil, a powerful emerging economy and democracy, offers comparable infrastructure, educational challenges, and logistical hurdles. All three countries have taken vastly different approaches to censorship and fair access.

FIGURE 5
Wireless mobile broadband subscriptions

Total per 100 inhabitants, Q2 2010 – Q2 2015, with other OECD members
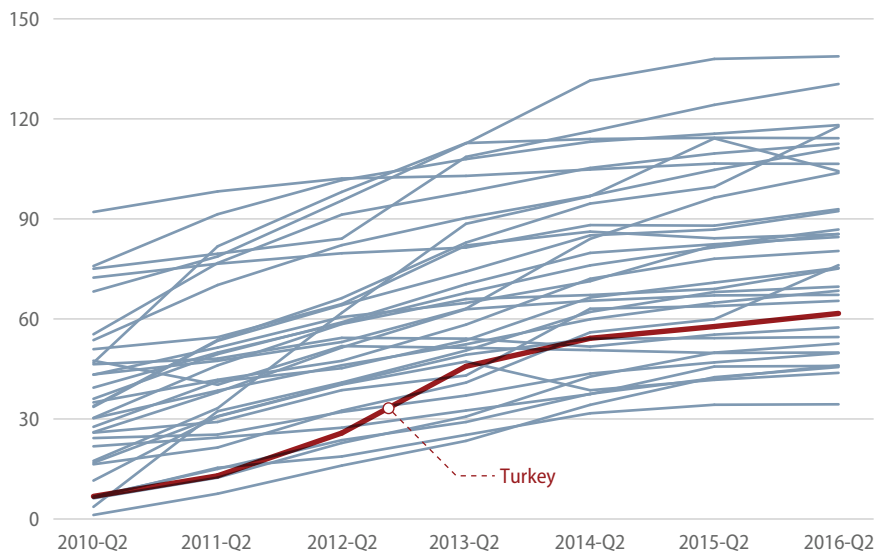
Source: Organisation for Economic Co-operation and Development, "OECD Broadband Portal," available at: http://www.oecd.org/internet/broadband/oecdbroadbandportal.htm#prices (last accessed June 2016).

All three nations and Turkey are also closely ranked in the World Economic Forum's extensive database that tracks global equitable growth and development benchmarks. In the most recent update of its "digital infrastructure" category in September 2015, Turkey is only slightly behind Chile and Brazil in most of the benchmarks—households with internet access, fixed broadband internet subscriptions, active mobile broadband subscriptions, and affordability of mobile cellular internet—but leads the two countries in the category of affordability of fixed broadband. Although Albania is ranked as a lower-middle-income country in the database, which means the comparisons with upper-middle-income Brazil, Chile, and Turkey are not directly comparable, Albania ranks near the top of its peer nations in all of these same categories except affordability of mobile cellular access.[58] The close similarities in these nation's digital infrastructures point to possible lessons Turkey could learn.

The report then looks briefly at the Broadband Initiatives passed as part of the American Recovery and Reinvestment Act of 2009 in the United States, which in surprising ways is seeking to address some of the challenges also faced by Turkey. Indeed, the World Economic Forum's database of digital infrastructure puts the United States well behind in most categories compared with its peers among advanced economies—except in the category of fixed broadband costs, in which it is the most highly ranked—an indication of the lagging development of most digital infrastructure in rural America.[59] The report also looks at the age gap in users' access to the internet in the United States, which offers additional perspective on Turkey's similar problem.

Albania

Though far smaller in area and population than Turkey, Albania's economic and cultural profile is more similar to that of Turkey. After the fall of the Soviet Union, Albania—a majority Muslim nation—ranked among the poorest countries in Europe. Like Turkey, it registered high economic growth rates in the 1990s and 2000s as capital inflows buoyed the economy. And as the economy grew, the Albanian government made internet and telecommunications development a top priority. The government rapidly expanded e-government services—moving 100 percent of public procurement online, in addition to the civil registry, licensing, and business registration.[60] Albania also improved its national employment service's job vacancy portal.[61]

Alongside these usefulness improvements, Albania expanded access points for its citizens. At each of Albania's 510 post offices, free internet service is provided, and the country plans to further expand coverage across the country—presumably through other public buildings.[62] Albania also invested in e-classroom initiatives. Beyond merely acquiring and distributing hardware and wiring schools for broadband, Albania has also adopted curricula that are purpose-built for the wired classroom.[63]

Yet Albania also shares Turkey's history of uneven and incomplete privatization of its internet and telecommunications industries. The first mobile operator in Albania, Albanian Mobile Communications, was founded in 1996 as a state-run entity and was privatized with the sale of 85 percent of its stock in 2000. Several firms have since entered the market through a flurry of foreign direct investments—including through one of the privatized companies, ALBtelecom, which the government sold—primarily to a Turkish consortium.[64] But competition remains low.

Overall internet usage also remains low. Roughly 60 percent of the population used the internet last year. As in Turkey, Albania mostly skipped the fixed broadband stage and jumped straight to mobile. About 35 percent of access occurred through mobile phones compared with 5.8 percent through fixed broadband.[65]

But Albania—despite similarities in its history and some shared cultural norms with Turkey—has taken a fundamentally different approach to internet censorship: There is next to no censorship or restriction of internet content. The U.S. Department of State reported in 2015 that the Albanian government "did not restrict or disrupt access to the internet or censor online content, and there were no credible reports the government monitored private online communications without appropriate legal authority."[66]

Chile

Chile's experience with fostering greater internet adoption and usage demonstrates that some of Turkey's shortcomings are common to other middle-income countries that have enjoyed rapid economic growth. Chile today faces a digital divide between urban and rural residents similar to the one evident in Turkey: 65 percent of urban households in Chile have internet access, but only 40 percent of rural homes have access. Just as in Turkey, internet use came rapidly to Chile. Usage rates have surged in the past 20 years: from zero percent in 1990 to 16.6 percent in 2000, 45 percent in 2010, and 72.4 percent in 2014. From 1997 to 2001, the number of internet users in Chile grew from 200,000 to 2.5 million.[67]

Chile has undertaken some efforts to broaden and deepen internet adoption among its citizenry. The government has created "infocentros"—public spaces with internet connections oriented toward people without private access. Like Turkey, Chile also provides students with computers, but this program has faced effectiveness challenges because some of the population is not technologically literate.[68]

A primary focus of Chile's internet development programs has been its business sector, especially entrepreneurs and small- and medium-sized enterprises. Recognizing that increased interaction with internet and advanced telecommunications technologies can improve these businesses' competitiveness and growth prospects, Chile prioritized these efforts under its successive digital action plans from 2008 through 2014.[69]

Tellingly, Chile's efforts to deregulate its internet and telecommunications markets and to foster competition have been more effective and complete than those in Turkey. Starting in 1982 with the General Law on Telecommunications, Chile liberalized its internal telecommunication markets to drive private investment in order to connect the entire nation. Legal ambiguities continued to give regulatory agencies the authority to make rulings that shaped the market until 1997, when Chile adopted a deregulation agenda that was considered one of the most innovative in the world and created intense market competition.[70]

Significantly, Chile has paired this open, competitive environment with a degree of national consciousness supporting the idea of fair internet usage: Chile was the first country in the world to adopt national net neutrality laws.[71] And, most importantly, the U.S. State Department reports no major restriction or censorship of the internet in Chile.[72]

Brazil

Brazil's digital divide is more pronounced than in Turkey, Albania, and Chile, likely due to the greater number of people, larger rural areas, and challenging geography. In Brazil, 48 percent of urban households have access to the internet, but only 15 percent of rural Brazilian households do.[73]

Brazil also experienced rapid internet adoption after a slow initial uptake, though its adoption was slower than Turkey, Albania, and Chile. Brazil's usage rate stood at 2.8 percent in 2000 but quickly grew to 28.2 percent in 2006 and 57.7 percent in 2014.[74]

This growth pattern is most likely due to lowered costs of access and the process of deregulation that started in 1997, which has improved competition—though not to the same degree as in Chile.

Broadband use in Brazil has accelerated rapidly, mainly due to mobile use, as in Turkey. The 1.7 million mobile broadband subscribers in 2008 grew to 20.6 million by the end of 2010. Fixed broadband growth has been slower, increasing from 10 million to 13.8 million subscribers over the same period. PricewaterhouseCoopers points to low levels of competition as a main factor in the low penetration of fixed broadband in Brazil.[75]

Brazil, like Chile but unlike Turkey, has also made working toward internet access for all a value-based priority. In April 2014, the Brazilian government enacted the Marco Civil da Internet, a civil bill of rights for the internet that made internet use a right for all Brazilian citizens.[76] The bill built upon Brazil's National Broadband Plan, which was intended to expand internet usage by some 40 million users.[77]

United States

The United States has faced some of the same challenges experienced by the four middle-income countries discussed above and at about the same time. There is a clear lag in rural-to-urban usage of the internet in the United States, though the gap has narrowed sharply in recent years, partly through the Broadband Initiatives passed as part of the American Recovery and Reinvestment Act of 2009. The Recovery Act allocated a $4 billion grant for a Broadband Technology Opportunities Program aimed at closing the digital divide in the United States by deploying broadband internet infrastructure and expanding public internet access.[78] The age gap in internet use in the United States has also narrowed.[79]

In 2000, 42 percent of people in rural areas connected to the internet, compared with 53 percent in urban areas. By 2015, 78 percent of rural residents were connected online, compared with 85 percent of urban residents. Government and private-sector efforts to expand rural broadband use have helped to reduce costs and have offered more ways to connect across the board, contributing to these high overall usage statistics, but these efforts have made a particular difference in rural areas, which had previously lagged far behind cities in access and use.[80]

The United States has also come a long way toward overcoming the age gap that is so visible in Turkey. Americans ages 18 to 29 still use the internet at far higher rates than older Americans, but seniors have seen the greatest rate of change since 2000. In 2000, 70 percent of the younger cohort used the internet. By 2015, 96 percent of young Americans used the internet. For those ages 65 and older, just 14 percent used the internet in 2000, increasing to 58 percent by 2015.[81]

This comparative analysis of the United States and three of Turkey's middle-income peers demonstrates that the Turkish government is not an outlier in its efforts to bridge its own digital divides. Indeed, many of the same problems faced by these other countries also offer up possible solutions for Turkey to consider. To do so, however, will require the ruling AKP party to directly confront those aspects of Turkey's digital divide that are unique to the nation, particularly censorship and the gender divide.

Conclusion:
Closing Turkey's digital divide

The economic and sociopolitical stakes for Turkey to close its digital divide are potentially enormous. Expanding internet access to lower-income Turks and especially to women would connect these citizens to their government and to the wider economy—allowing for more efficient and frequent interactions with government agencies and businesses while helping to develop the online literacy, connections, and markets that are essential to a dynamic modern economy. Enforcing the deregulation of the internet service provider marketplace is similarly critical to the country moving up the economic value chain in manufacturing and services and exports, a challenge at the heart of Turkey's long-term economic plan. Better internet access for all Turks will improve access to jobs—through more efficient job searches and wider commercial opportunities—which would help to decrease high levels of unemployment, particularly in rural areas.

None of these developments will be easy to achieve without concerted government efforts. But the hurdles are not insurmountable. Extending e-government services to obviate the need for some in-person interactions with state bureaucracy could entice some low-income, less tech-literate individuals to find value in internet usage. Extended relevant services could then be paired with more systematic training—beyond what nongovernmental organizations can provide—to drive higher internet adoption. To enable these sorts of interactions among low-income citizens, the Turkish state will have to expand public access points to the internet.

Yet Turkey has quite a long way to go in developing its e-government offerings. In 2013, about one-third of users described government website technical failure issues, 15 percent noted unclear or outdated information, and more than 10 percent cited lack of support in using e-government services. Nearly half of all users experienced at least one problem.[82] But these are solvable problems. Turkey's Ministry of Development, for example, has included provisions for poor residents to receive free internet service in its 2018 strategy document.

The Turkish government should also consider creative ways to diminish the effects of abiding social norms that hamper internet access for women. Public internet access points outside of the home could provide women from conservative families with opportunities to search for useful content on the web, free from strict family supervision and control in the home. If the government sees the value in more egalitarian access, it could devise other strategies to drive adoption, in particular by increasing the affordability of mobile cellular internet access and by raising the number of active mobile broadband subscribers—both of which could be achieved by increasing competition in the telecommunications sector.

It is possible, though, that the government sees no serious reasons to be concerned about social, communal, and familial restrictions to women's access. Indeed, the government might see social and political value in not intervening on such a charged issue—just one of several reasons why the current AKP government might not expend political capital to expand internet access: to maintain its control over information for large swathes of the population. Yet this would be shortsighted of the government, as is evident when looking at the ways in which other developing democracies have worked to close their own digital divides and reaped the benefits.

The ways in which Albania, Chile, and Brazil have dealt with their digital divides offer some constructive examples for Turkey to consider. First and foremost, none of these nations attempt to block citizens' access to information on the internet. This is the most serious issue Turkey must tackle, particularly for its least advantaged rural citizens and for women. Broadening competition in internet and telecommunications services in Turkey is a second major problem that—in many ways and to lesser degrees—is a problem shared with Albania, Chile, and Brazil, but there are specific lessons to be learned by examining Chile's more successful efforts in privatization and less fettered regulations.

Is Turkey's ruling party committed to overcoming these internet censorship and competitiveness hurdles? The evidence to date is not encouraging, yet the importance of bridging the digital divide is recognized by the government, seen in its e-government services push and its e-education efforts in classrooms across the country. If Turkey takes further steps toward greater privatization and deregulation of the internet and communications industries—steps accompanied by less sweeping censorship rules and regulations—then the nation would have a better chance at a more competitive economy and a more effective and responsive government.

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