

Broadband for All: A Networked and Prosperous Society
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Keynote on Technology and Democracy
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TECHNOLOGY AND THE SOVEREIGNTY OF THE INDIVIDUAL

Thank you, Ulf, for that kind introduction. It is an honor to be here among such a distinguished group of leaders from around the globe. Your agenda throughout this policy exchange is wonderfully rich and thought provoking.

Introduction.

As Ulf noted, I am a commissioner of the U.S. Federal Communications Commission. Many people ask me about how the FCC is structured, so I thought I'd start by describing it to you briefly. We are an independent agency. All five commissioners are appointed by the President and confirmed by the Senate, but we are not part of the Executive Branch. The President designates the Chairman, and no political party may have more than three of the five seats. However, the President cannot fire us. Congress created the FCC to be an independent regulator somewhat insulated by shifting political winds in Washington.

By some estimates, the FCC's actions have a direct effect on one-sixth of the U.S. economy, and an indirect effect on up to 40 percent, if we include the entire information technology sector. In short, what once was a sleepy backwater agency today touches the lives of every American, and millions of others around the globe, every day.

To me, the core mission of the FCC is to promote freedom, especially the freedom of speech – or the freedom to communicate. The freedom to communicate has been the singular fundamental right at the heart of every successful democracy over the centuries. Never in world history have communications technologies, and the public policy that affects them, wielded more influence than they do today over whether liberal democracies will prevail over authoritarianism. In light of this era which offers both hope and uncertainty, I believe that policymakers across the globe should tread with caution and humility.

This coming October 19th, in my native Virginia, we will celebrate the 230th anniversary of the event that secured America's independence: the battle of Yorktown. George Washington's victorious but rag-tag army was so poor that it had to borrow the British army's band for the surrender ceremony. As the defeated British troops withdrew from the field, they marched to the rhythm of the song "The World Turned Upside

Down.” And, for the British, the old world had been turned upside down. But, for the Americans, a new world of freedom and democracy had been turned right side up.

Over the past few years, with the advent of new technologies, the old world of communications has been turned upside down. The proliferation of communications technologies has helped turn a new world right side up for freedom, democracy and capitalism.

In the twilight of his life, Thomas Jefferson envisioned the benefits brought forth by the free flow of information when he wrote, “Enlighten the people . . . and tyranny and oppressions of body and mind will vanish. . . .”¹ Jefferson’s words were nearly prophetic in predicting the transformational power of the digital revolution. And this morning I propose we are in the midst of a revolution where democracy, capitalism and communications technologies are symbiotic and are converging into a virtuous cycle.

Communications Technologies Proliferate Faster After Liberalization.

Three other dates in the history of democracy are important to remember as well. The first is April 3, 1973. On that day, perhaps the most influential person almost no one has heard of placed a phone call that still has profound effects across the globe. One could call it “the phone call heard around the world.” On that spring day, an engineer from Motorola placed the first handheld cellular phone call in public. His name, by the way, is Marty Cooper.

The next dates to remember are: October 29, 1969, the date the first ARPANET link was established, giving birth to what would become the Internet;² and, lastly, April 30, 1995, the date the Internet became fully commercialized,³ moving it further away from government control.

Combining the power of the Internet with the freedom that comes from wireless mobility has created new economic and political opportunities that were unimaginable just a decade ago. The power of competition, private sector leadership and regulatory liberalization has wrought a wonderful explosion of entrepreneurial brilliance, economic growth and political change.

For instance, shortly after the liberalizing WTO accord of 1997⁴ the world’s telecom market stood at U.S. \$602 billion.⁵ By the end of last year, global telecom

¹ Letter from Thomas Jefferson to Éleuthère Irénée du Pont de Nemours (Apr. 24, 1816).

² Jessica Savio, *Browsing history: A heritage site is being set up in Boelter Hall 3420, the room the first Internet message originated in*, THE DAILY BRUIN (Apr. 1, 2011).

³ CyberTelecom, *Internet History: NSFNET* (2011).

⁴ World Trade Organization News, *Ruggiero congratulates governments on landmark telecommunications agreement* (Feb. 17, 1997) (exact date of agreement Feb. 15, 1997).

⁵ World Trade Organization, *Data on Telecommunications Markets covered by the WTO Negotiations on Basic Telecommunications* (Feb. 17, 1997).

spending totaled U.S. \$4.1 trillion⁶ – a more than six-fold increase in 13 years. Some experts project global telecom spending to grow at rates in excess of 7 percent annually through 2013, followed by a 6.1 percent advance in 2014.⁷

At the same time, worldwide Internet usage grew from a mere 400 million users in 2000 to over 1.9 billion today.⁸ Similarly, world-wide mobile phone subscriptions rose from 700 million in 2000 to over 5.5 billion today.⁹

In the span of a decade, the global policy focus has shifted from whether a substantial portion of the world's 6.9 billion people would even be able to make a phone call to how soon they will be able to own their own mobile devices. No other major technology has penetrated that deeply that fast – certainly not one as disruptive as mobile connectivity.

In short, after international markets were liberalized, investment and innovation soared.

From both a geopolitical and economic perspective, it is interesting that the largest growth has been in the developing countries of Asia, Africa, Eastern Europe, Latin America and the Middle East. Mobile wireless devices are the first telecom technology in history to have more users in the developing world than in the developed world. The developing world has increased its share of mobile subscriptions from 53 percent of total worldwide mobile subscriptions at the end of 2005 to 73 percent at the end of 2010.¹⁰ Not one person, corporation or government predicted the mobile phone's phenomenal success when it debuted in 1973 – not even its inventor. Please keep that in mind the next time anyone, including government “experts,” acts as if he or she is smarter than the marketplace.

It's one thing to innovate. It is quite another, however, to wait for new technologies to become affordable to the average global consumer. Thankfully, deregulation has produced not only increased transmission capacity but falling costs as well. For instance, a single copper-based analog international phone circuit cost U.S. \$1 million in 1956.¹¹ After a competitive market was opened to allow the laying of fiber cables across oceans, however, the price fell to U.S. \$310 by 2003 – a drop of more than 99.9 percent.¹² Retail rates for consumers have followed suit to the point where the cost

⁶ Telecommunications Industry Association, 2011 ICT Market View and Forecast (May 2011), 1-3.

⁷ Telecommunications Industry Association, 2011 ICT Market View and Forecast (May 2011), 1-3.

⁸ ITU World Telecommunications/ICT Indicators Database, Internet (2009); Internet World Stats, World Internet Users and Population Stats (2010).

⁹ Informa Telecoms & Media Group, World Cellular Information Service (WCIS) (June 2011).

¹⁰ ITU, *ICT Facts and Figures, The World in 2010* (Oct. 20, 2010).

¹¹ Ambassador David A. Gross, *New Technologies and the Rise of Political Liberty*, Remarks at the 2006 Grafstein Lecture in Communications (Feb. 7, 2006), (<http://www.scoop.co.nz/stories/WO0602/S00187/new-technologies-and-the-rise-of-political-liberty.htm>).

¹² *Id.*

of a voice call to almost anywhere on the globe is virtually zero thanks to voice over Internet protocol (“VoIP”) technologies. Because governments have been relying more on competition in lieu of regulation, our world is not only smaller but flatter, in the best possible way.¹³

Communications Technologies Produced by Liberal Democracies Are Helping to Create Liberal Democracies.

As the costs of computing power and transmission decrease, more people have the opportunity to own these transforming technologies and become more empowered than at any other time in human history. This transformation is not only vital to the advancement of human rights, but to the reduction of poverty as well. Each day, new studies prove that the proliferation of communications technologies spurs efficiencies and economic growth. For example, in a typical developing country, an increase in even 10 mobile phones per 100 people can boost GDP growth by 0.7 percentage points.¹⁴ To put this “growth-boost” in context, many developing countries struggle to experience 1.5 percent growth per year.¹⁵ Keep in mind that a 1 percent growth in GDP has been shown to trigger a 25 percent per capita growth in income for the next generation.¹⁶

As incomes and living standards rise, people are more likely to own property and enter the middle class. As the ranks of the property-owning middle class expand, so do their feelings of personal empowerment – and their desire for personal freedom. This technological and freedom revolution is truly massive. Mobile technologies alone are making it far easier for subsistence farmers to find buyers for their crops, villagers to

¹³ Leaps in computing power and decreases in its cost have spurred the most advancement. For example, in 1965, MIT had its own computer – a big deal for a university back then. It cost U.S. \$11 million in today’s dollars. See Ray Kurzweil, *Making the World A Billion Times Better*, WASH. POST, Apr. 13, 2008, at B4. Today, the microprocessor in your cell phone is one million times smaller, one million times less expensive and a thousand times more powerful. See Michael Green, *Ray Kurtzweil on ‘The Singularity’ Future*, Information Week (July 3, 2010). That equates to a billion-fold increase in the amount of computing power you can buy per dollar. *Id.* Within the next 25 years, experts estimate that we will enjoy yet another billion-fold increase in processing power for the same dollar. Kurtzweil, *supra*.

Exponential increases in capacity and decreases in costs have resulted in not only increased spectral efficiency, but more information being shared with more people as well. In recently released figures, Cisco Systems, Inc. estimates that by 2014, the Internet will be nearly four times larger than it is now. See Cisco Visual Networking Index: Forecast and Methodology, 2009 – 2015 (Jun. 2, 2011) at 2. According to Cisco’s new networking index, it would take more than five years for one person to watch the amount of video that will cross global IP networks every second in 2015. *Id.* Put another way, during each of those seconds in 2015, one million minutes of video content will travel through the networks. *Id.* This is bad news for authoritarian regimes, and good news for freedom. These developments are all the more astounding when you consider that the first use of the strange word “Internet” in the *Washington Post* was on September 26, 1988 ... in the far back of the financial section in an advertisement. How far we have come, and how fast.

¹⁴ Andrianaivo Mihasonirina and Kangni Kpodar, *ICT, Financial Inclusion, and Growth: Evidence from African Countries*, International Monetary Fund Working Paper (Apr. 2011) at 16.

¹⁵ The World Bank, GDP growth (annual percentages), <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/countries> (last visited Jun. 1, 2011).

¹⁶ Allan H. Meltzer, *A Welfare State or a Start-Up Nation?*, WALL ST. J., June 15, 2011, at A15.

locate drinkable water, the poor to open bank accounts for the first time and parents to find medical treatments for sick children. Or, as an article from *The Economist* stated, “[i]n places with bad roads, few trains and parlous land lines, mobile phones substitute for travel”¹⁷ In fact, the *Washington Post* reported that mobile phones have become so valuable to citizens of developing countries that many would rather have the freedom that comes from a cell phone than access to sanitary facilities.¹⁸

But what do these oceans of statistics mean for the millions of people across the world who yearn to breathe free? Freedom is on the rise unlike any other time in world history. In the early 1970s, the world had fewer than 40 electoral democracies. Today, there are 116,¹⁹ with perhaps more on the way soon. That’s phenomenal growth. And the proliferation of communications technologies is not following the spread of liberty, it is *pushing* it. Communications technologies are now the tip of the spear in the fight for freedom across the globe.

We all have seen the same basic scenario play out repeatedly in just a few short years. For example:

In Indonesia, President Suharto was ousted by a student movement that “had no identifiable leader and no apparent structure.”²⁰ Yet the student movement succeeded because the students “were able to organize over the internet” by using social media.²¹

Mobile devices were also credited with the success of the famous “Orange Revolution” that took place in the Ukraine in 2004. Kiev’s college students used their mobile phones to organize their protests, dubbed “smart mobbing,” in Independence Square.²²

During the 2005 Saudi Arabian “Jeddah” election cycle, women were allowed to run for office for the first time in that country.²³ It was mobile phones that enabled them to campaign without violating traditional social restrictions that limit women’s access to audiences.²⁴

¹⁷ *The Limits of Leapfrogging*, THE ECONOMIST, Feb. 13, 2008.

¹⁸ Joel Garreau, *Our Cells, Ourselves*, WASH. POST, Feb. 12, 2008.

¹⁹ Freedom House, *Freedom in the World 2010: Electoral Democracies*, available at <http://www.freedomhouse.org/uploads/fiw10/ElectoralDemocraciesFIW2010.pdf>.

²⁰ Laura Lambert *et. al.*, *The Internet: A Historical Encyclopedia*, 216 (2011).

²¹ *Id.*

²² Kevin Anderson, *Breaking Down the Great Firewall*, BBC, April 20, 2005.

²³ Agence France Presse, *Saudi Businesswomen Run for Office*, THE DAILY STAR, Nov. 30, 2005.

²⁴ Kevin Sullivan, *How Cell Phones Changed Courting in Saudi Arabia*, WASH. POST, Aug. 13, 2006.

Mobile phones helped get the word out that polling places were safe to reluctant potential voters fearing election violence during the historic Iraqi elections of 2005. A larger than anticipated turn-out resulted.²⁵

As the *Financial Times* reported, “The proliferation of mobile phones has combined with ... the advent of the [I]nternet to make it more difficult to rig [elections], while increasing scrutiny of what officials do once they are elected.”²⁶

And in Libya, some of Moammar Gadhafi’s former aides allegedly have advised him to submit his resignation through Twitter.²⁷

Thankfully, the number of success stories such as these keeps growing despite some countries’ attempts to increase their control over the inner workings of the Internet. The recent events in Egypt’s role in the “Arab Spring” offer a stark example of the excesses of government involvement into the Internet’s affairs.²⁸ The Egyptian government attempted to shut off all Internet communications on January 27 using what it thought was centralized control over networks. But its efforts were foiled by the Egyptian people’s unquenchable thirst for freedom. Mysteriously, one ISP never shut down.²⁹ Daring technologists worked around government-imposed roadblocks by using satellite connections, dial-up modems and land lines to call Internet service providers in other countries to get online.³⁰ By February 2, the Internet in Egypt was fully functional again.³¹ In sum, because of the power of new technologies, not even the threat of deadly force could isolate and suffocate freedom’s spirit.

Perhaps the most important lesson here is that as we look across the globe, it is state interference with the ’Net that has been undermining liberty, not private sector mischief. Government control of the Internet is antithetical to the entire notion and architecture of the Internet itself. By definition, the Internet is decentralized and defies authoritarian top-down control – be that technical control, political control or both. In fact, its very structure is helping to shape governments *in its image*.

²⁵ R.J. Rummel, *Telecommunications and the Rise of Political Liberty*, DEMOCRATIC PEACE, Feb. 27, 2006.

²⁶ William Wallis, *Dodging the Ballot: Stolen Votes Test Africa’s Faith in Democracy*, FINANCIAL TIMES, Jan. 14, 2008.

²⁷ See Philip N. Howard, *The Arab Spring’s Cascading Effects*, MILLER-MCCUNE, (Feb 23, 2011). <http://www.miller-mccune.com/politics/the-cascading-effects-of-the-arab-spring-28575/>

²⁸ See *Egypt ‘Kill Switch’ Easy Target in Europe*, CBC NEWS, (Feb. 16, 2011), <http://www.cbc.ca/news/world/story/2011/02/16/internet-kill-switch.html>.

²⁹ Christopher Williams, *How Egypt shut down the internet*, THE TELEGRAPH (Jan, 28, 2011), <http://www.telegraph.co.uk/news/worldnews/africaandindianocean/egypt/8288163/How-Egypt-shut-down-the-internet.html>.

³⁰ *Id.*

³¹ Shereen El Gazzar, *Egypt Restores Internet Service After A Weeklong Shutdown*, THE WALL STREET JOURNAL, Feb. 2, 2011, <http://online.wsj.com/article/SB10001424052748703960804576119690514692446.html>.

Furthermore, countries that regulate the 'Net more tend to be less free. But we live in an exciting new era where attempts to maintain “walled information gardens” – be they state-sponsored or not – are doomed to fail. Explosive growth of telecom innovation is dissolving authoritarian regimes by strengthening the sovereignty of the individual. As Italian thinker Bruno Leoni wrote, “Individual liberty is antithetical to the power of the State.” A *mobile* Internet liberates individuals as never before. Not surprisingly, the purveyors of overwhelming state authority are threatened by this paradigm shift.

Regimes that have locked their societies closed are desperately trying to buy more time for themselves by cracking down on grassroots uprisings made easier by these new technological “keys.” Libya, Syria and Iran come to mind. But their leaders should look at Egypt and Tunisia if they want to understand their fate.

And let's not forget about China. The home of the Internet's most infamous “Great Firewall” for years has been experiencing popular unrest that is only now making the top of the news. The lead headline in the *Wall Street Journal* of June 14 declared “Wave of Unrest Rocks China; Threats to Social Order Increasingly Hit Cities, Bringing Iron-Fist Response.”³² The article stated that “[s]ocial unrest has been rising steadily in recent years: In 2007, China had more than 80,000 ‘mass incidents,’ up from above 60,000 in 2006, according to the Chinese Academy of Social Sciences [L]eaked official figures put such incidents at 127,000 in 2008.”³³ Apparently, this increase in protests, which have included at least five major incidents just since mid-May, has “unnerved” Chinese government officials as they watch over their shoulders at the consequences of the Arab Spring.³⁴ Last February, dissidents started calling for a “Jasmine Revolution” in China . . . online.³⁵

Since February, President Hu Jintao and his possible successor, Zhou Yongkang, have called for more “social management” through tighter restrictions on the Internet.³⁶ In a country that prefers to take the long view, however, the long-term prospects for such power grabs are doomed. China is blessed with an energetic and technically trained workforce containing nearly a half billion Internet users who can – and will – work around the government's technical clampdowns in the pursuit of freedom.

According to last Tuesday's *Wall Street Journal*, “[n]ow microblogging sites [in China] such as Sina Weibo are further speeding up communication, allowing celebrity ‘thought leaders’ to broadcast their ideas to tens of millions before the censors can respond. As of March of last year, Sina's service had only five million users. In the first quarter of 2011, the number passed 140 million and is still climbing.”³⁷ For me, that

³² Jeremy Page, *Wave of Unrest Rocks China: Threats to Social Order Increasingly Hit Cities, Bringing Iron-Fist Response*, THE WALL STREET JOURNAL, June 14, 2011 at A1.

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.*

³⁷ *The Chinese Awakening*, THE WALL STREET JOURNAL, June 21, 2011 at A14.

demonstration of human drive recalls the image of the man stopping the tank in Tianamen Square in 1989. That same spirit and that same yearning have only grown stronger. Combine that undaunted courage with the power of today's communications technologies, and it will be only a matter of time before China becomes a democratic and capitalistic society. One way or another, China's "Great Firewall" will be torn down.

To Promote Freedom and Prosperity, Governments Should Preserve Liberalized Telecoms Policies.

To propel freedom's momentum, policy makers should remember that, since their inception, the Internet and mobile connectivity have migrated further away from government control. As the result of longstanding international consensus, the Internet itself has become the greatest deregulatory success story of all time. To continue to promote freedom and prosperity, regulators should continue to rely on the "bottom up" nongovernmental Internet governance bodies that have a perfect record of keeping the 'Net working and open. We must heed the advice of leaders like Neelie Kroes, who has consistently called on regulators to "avoid over-hasty regulatory intervention," and steer clear of "unnecessary measures which may hinder new efficient business models from emerging."³⁸ I couldn't agree more. Changing course now could not only trigger an avalanche of international regulation, but it could halt the progress of freedom's march as well.

With these pragmatic principles in mind, freedom-loving governments everywhere should resist the temptation to regulate in the absence of pervasive market failure. Needless government intrusion into the Internet's affairs provides nefarious authoritarian regimes with the political cover they desire to justify their interference with the 'Net. To prevent an escalation of international regulation, we should encourage the kind of positive and constructive chaos that only unfettered competition can produce. We should adopt spectrum policies that promote flexible uses, spectrum allocation through fair auction processes and, when appropriate, unlicensed use of the airwaves to spur innovation and adoption. Fueling freedom in this way will turn the world upside down for the better.

Thank you for inviting me to be here. It has been an honor to speak to you this morning, and I look forward to your questions and participating later on the panel discussion.

³⁸ Remarks of Neelie Kroes, *Net Neutrality in Europe*, ARCEP Conference (Apr. 13, 2011); *see also* Remarks of Neelie Kroes, *Net Neutrality, the Way Forward*, European Commission and European Parliament Summit on The Open Internet and Net Neutrality in Europe (Nov. 11, 2010).