ITIF
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Who's Who in Internet Politics: A Taxonomy of Information Technology Policy

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Decision-makers need to craft pragmatic solutions that respect the Internet's unique nature and that enable continued digital innovation and progress. However, as the public space in which we debate IT policy becomes more crowded with groups pressing rigid and, in many cases, ideologically-driven positions, it is becoming harder to resolve problems and craft the right solutions.

A decade ago, before the tech boom collapsed and the digital economy bubble burst, it seemed to some that issues surrounding information technology (IT) might be central to the politics of the early 21st century. But after September 11, 2001, with so much else on our minds, "digital politics" seemed a boring sideshow. Technocrats, techno-wonks, and computer engineers argued over such issues as the finer points of open source versus proprietary software, while the rest of us used the Internet in peace. Recently, however, digital politics have made a comeback, with associated issues in the media constantly and before Congress seemingly every week.

IT questions truly are crucial today, and in many ways more so than they were in the 1990s. IT and its assorted issues make for heated political discourse because they reach into every nook and cranny of our lives and economy and further complicate some longstanding socio-political quandaries. Debates have erupted over myriad IT issues such as copyright protection, privacy, open source software procurement, cybersecurity, Internet taxation, media ownership, Internet governance (e.g., Internet Corporation for Assigned Names and Numbers), electronic voting, broadband deployment and adoption, anti-trust, spectrum reform, net neutrality, Internet censorship, and equality of access. These issues raise familiar legal and political questions in some unfamiliar contexts, and have given rise to an important and lively, but increasingly shrill and political debate on digital policy. Indeed, IT issues have gained such traction that the 2008 presidential candidates each claimed to be the most Web savvy. Today, interest groups of all kinds, including a host of single-issue advocacy organizations, routinely weigh in on a range of Internet and digital economy

issues. Vexing policy conundrums arise constantly, with each new business model and Internet innovation creating a new wrinkle in the fabric of the debate.

How we resolve these new issues will have important implications for the speed and breadth of our digital transformation and by extension for economic growth and quality of life over the next several decades. Decision makers need to craft pragmatic solutions that respect the Internet's unique nature and enable continued digital innovation and progress. However, as the public space in which we debate IT policy becomes more crowded with groups pressing rigid and, in many cases, ideologically-driven positions, it is becoming harder to resolve problems and craft the right solutions.

The debate over IT policy issues does not take place in a vacuum or only in the corridors of Congress. From think tanks to trade associations to single-issue advocacy groups, a proliferation of organizations fights to shape digital policy debates. The following is a field guide to help the reader understand the politics of IT.[1] It describes the major groups of players in the IT policy debate and discusses how they differ along two key dimensions shaping policy: individual empowerment vs. societal benefit; and laissez-faire vs. government regulation. It then uses four timely and important policy cases (privacy, taxation, copyright protection, and net neutrality) to illuminate how these politics play out today in the United States. While primarily focused on American digital politics, this framework is not entirely unique to the United States.

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THE MAJOR PLAYERS

The primary players in the IT policy debate fall into eight basic groups:

Cyber-Libertarians

These "Netizens" believe that they launched the Internet revolution. Typified by groups such as the Free Software Foundation and the Electronic Frontier Foundation, and dedicated readers of *Wired* magazine, they believe "information wants to be free" and that all software should be open-source. They think technology itself can solve many problems that it might create (if users are only smart enough to program software to protect themselves), and that cyberspace should be governed by the informally enforced social mores (i.e.,"netiquette") that evolved among early users. Like John Perry Barlow in his 1996 *Declaration of Independence of Cyberspace*,[2] they deplore both government involvement in the Internet and its widespread commercialization. In their view, anyone who suggests that society, through its legitimately elected government leaders, might have a role to play in shaping the Internet, including defending copyright, "just doesn't get it." Cyber-libertarians believe the Internet should be governed by its users. Afraid your privacy is being violated? Technologically-empowered users are the best solution, as they set their Web browser to reject cookies, use anonymizer tools and encrypt their web traffic. Worried about the recording industry losing money from Internet piracy? Encourage artists to find a new business model, like selling T-shirts and putting on more concerts. Worried over lackluster IT industry competitiveness in the United States? Don't make waves; government intervention generally makes things worse. After all, Silicon Valley didn't need Washington to get where it is.

Social Engineers

These liberals believe the Internet is empowering but they worry that its growth is having unintended and sometimes dire consequences for society. They invoke the so-called "digital divide," the purported loss of privacy, net neutrality, or voice concern that corporations are controlling the use of digital content. They mistrust both government and corporations, the latter especially, particularly large telecommunications companies and Internet companies making money from the use of consumer data (Ironically, the use of this data allows them to provide free services). A large array of groups and individuals carry this mantle, including the Benton Foundation, Center for Democracy and Technology, Center for Digital Democracy, Civil Rights Forum on Communication Policy, Consumer Project on Technology, Electronic Privacy Information Center, Free Press, Media Access Project, and Public Knowledge, and scholars such as Columbia's Tim Wu, MIT Media Laboratory's David Reed, and most of those hanging their hats at Harvard's Berkman Center (among them Larry Lessig and Yochai Benkler). Social engineers tend to believe the Internet should serve mainly as an educational and communications tool. They fear that its empowering capabilities will be taken away by powerful multinational corporations and statist governments that will reshape it to serve their own narrow purposes (either to steal our privacy, limit our freedom on the Internet, spy on us, or all three). As such, they minimize the role of IT as an economic engine, and focus more on the impact of IT on social issues, such as privacy, community, access to information and content, and civil liberties.

Free Marketers

This group views the digital revolution as the great third wave of economic innovation in human history (after the agricultural and industrial revolutions). IT reduces transaction costs and facilitates the application of markets to many more areas of human activity. Free marketers envision a dramatically reduced role for government as the Internet empowers people, liberates entrepreneurs, and enables markets. Influenced by groups such as the Cato Institute, the Mercatus Center, the Pacific Research Institute, the Phoenix Center, the Progress & Freedom Foundation, and the Technology Policy Institute, they consider the emergence of the Internet as a vehicle for commerce (e.g., exchanging goods, services, and information in the marketplace) and a liberating and progressive force. They are skeptical of the need for government involvement, even government partnering with industry to more rapidly digitize the economy.

Moderates

This group is staunchly and unabashedly pro-IT, seeing it as this era's driving force for both economic growth and social progress. While they view the Internet as a unique development to which old rules and laws may not apply, they believe appropriate guidelines must be developed if it is to reach its full potential. Likewise, they argue that while rules and regulations should not favor bricks-and-mortar companies (see below) over Internet ones, neither should they favor Internet companies over bricks-and-mortars. Moreover, they argue that while government should "do no harm" to limit IT innovations, it should also "actively do good" by adopting policies to promote digital transformation in areas such as broadband, the smart electric grid, health IT, intelligent transportation systems, mobile payments, digital signatures, and others. Examples of moderates include

the Center for Advanced Studies in Science and Technology Policy, the Center for Strategic and International Studies, the Information Technology and Innovation Foundation (ITIF), and the Stilwell Center.

Moral Conservatives

This group sees the Internet as a dangerous place, a virtual den of iniquity, populated by pornographers, gamblers, child molesters, terrorists, and other degenerates. Unlike the free marketers, the moral conservatives have no qualms about enlisting government to regulate the Internet. They have been the driving force behind the Communications Decency Act and Child Online Protection Act, Internet filtering in libraries, and worked to push legislation to ban online gambling. They have also joined forces with the liberal social engineers in pushing for strong "net neutrality" regulations, fearing that Internet Service Providers (ISPs) will somehow discriminate against Christians online. This group argues that, because the Internet is a public space, some rules and laws are necessary to govern behavior. They do not believe that technology can solve all social problems—on the contrary, they believe that the Internet is generally furthering the decline of culture. Yet, in some instances they embrace the Internet as a tool, as evidenced by former Secretary of Education William Bennett's K-12 Internet-based home schooling project. In general, moral conservatives don't want individuals empowered to engage in antisocial behavior, nor do they want corporations to facilitate such behavior. Examples are groups like the Christian Coalition and Focus on the Family, and around the world with countries like Indonesia, Thailand, Saudi Arabia and other religiously conservative nations that seek to limit activity on the Internet.

Old Economy Regulators

This group believes that there is nothing inherently unique about the Internet and that it should be regulated in the same way that government regulates everything else, including past technologies. There is a certain sense of urgency among some elected officials, government bureaucrats, and "public interest" advocates who believe that cyberspace is in a state of near anarchy—a haven for criminals, con artists, and rapacious corporations. Examples of this group include, law enforcement officials seeking to limit use of encryption and other innovative technologies, veterans of the telecom regulatory wars that preceded the breakup of Ma Bell, legal analysts working for social engineering think tanks, as well as government officials seeking to impose restrictive regulatory frameworks on broadband. As far as old economy regulators are concerned, the 1934 Communications Act (or perhaps its 1996 update) answered all the questions that will ever arise regarding the Internet. Moreover, European, Chinese and other old economy regulators overseas fear that, absent more regulation, their nations will be bypassed by the American Internet leviathan.

Tech Companies & Trade Associations

This group encompasses a range of organizations from the politically savvy hardware, software and communications giants to Internet start-ups. These businesses, from old stalwarts like IBM, AT&T, and Hewlett Packard to "teenagers" like Cisco Systems and Microsoft, and "youngsters" like Google and Facebook, as well as trade associations like the Information Technology Industry Council and the Association for Competitive Technology, understand that trade, tax, regulatory, and other public policy issues

increasingly affect their bottom line and competitive position. While the players in this group (and in Bricks and Mortars) don't have the same level of ideological cohesion of the above groups, they share a certain set of interests which justifies their grouping. They realize that getting one's way in politics takes more than being right: It requires playing the game and making one's case persuasively. From time to time, some tech businesses may take the cyber-libertarian position that the Internet should be free. Generally, they do so only to avoid regulation that might put them at a competitive disadvantage. On the whole, tech companies tend to believe that regulation can be both advantageous and detrimental; they do not fight against all regulations and they do favor the right ones for them, (and occasionally the "wrong" ones for their competitors).[3] They also sometimes advocate policies that are good for the technology industry or the economy as a whole. While communication companies have long recognized the importance of government, most IT companies ignored government and policy issues, being too busy creating the technologies that drive the digital world. But as these companies have matured and become aware, often through painful experience, of how issues in Washington can affect their bottom line, many have evolved into political sophisticates. And while individual tech companies can have different views on different issues, these differences are largely rooted in business model interests, rather than ideological views about the market or government.

Bricks-and-Mortars

This group includes the companies, professional groups, and unions that gain their livelihood from old-economy, face-to-face business transactions. These include both producers and distributors and middlemen (such as retailers, car dealers, wine wholesalers, pharmacies, optometrists, real estate agents, or unions representing workers in these industries). Many of them fear, often correctly, that the Internet is making them obsolete, while others have worked to transform their business models to take advantage of e-commerce. In recent years, there has been a widening rift between the bricks-and-mortar producers and the distributors and middlemen (and the unions that represent their workers). Producers have begun to realize that they can use the Internet to go directly to their consumers, bypassing (or at least minimizing) the role of bricks-and-mortar middlemen. The middlemen and unions, working actively to keep this from happening or at least to forestall the day of reckoning, are not shy about enlisting the aid of government to "level the playing field." Certainly, the long running battle over taxing Internet sales represented a fight between bricks-and-mortars and tech companies. Likewise, the grocery store workers union in California has recently worked to pass legislation making it more difficult for stores to use self-service checkout systems.[4]

THE DIVIDING LINES

The above groups' attitudes about Internet policy can be placed along two axes:

Individual Empowerment vs. Societal Benefit

This line separates groups on the basis of beliefs about the Internet's overriding purpose. In some ways this is a variant on the classic tension between liberty and equality. However, it goes beyond this to represent the tension between individualism and communitarianism, with the former being a focus on individual rights, and the latter invoking community benefits like economic growth, security, and improved quality of life.

Those in the individual empowerment category believe that IT's chief function is to liberate individuals from control by, or dependence on, big organizations. For them the Internet is a vast, open global communications medium designed principally to enable individuals to freely communicate and access information. When debating any issue, they examine it principally through the lens of how it affects individuals, not society as a whole. Thus, the issue of net neutrality is seen in terms of its affect on individual freedom to act in any way desired on broadband networks. Such groups want to put the little guy on the same playing field as the big boys, whether this means supporting small ISPs, small media outlets, or individual open source coders.

Those belonging in the societal benefit camp believe IT and the Internet's main job is to increase economic productivity, promote government responsiveness and efficiency, and enable the development new and better services for consumers as a whole. They tend to examine individual IT policy issues through the lens of how they affect the communitarian interest and are willing to accept tradeoffs to individual liberty or freedom if they boost overall economic or societal well being. For example, they see the actions of ISPs to manage their broadband networks as being necessary to help the majority of the users, even if it means that a few "bandwidth hogs" have to wait a minute longer to download their pirated copy of *Lord of the Rings*. They also believe that both government and corporations can serve as proxies for community interests, and that what's good for, say, Cisco, AT&T, Microsoft or Google or the federal government can be good for America as whole. Some groups fall in between the two extremes and argue that there can be tradeoffs between particular individual's benefit (or harm) and community interests.

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Cyber-libertarians and social engineers generally believe the Internet is all about individual empowerment. The former resent its commercialization and view empowerment as inevitable. The latter, as stated earlier, believe the Internet should mainly be an educational and social networking tool and fear its empowering capabilities will be taken away by powerful multinational corporations and statist governments that will reshape the Internet to serve their own narrow purposes (profit in the former, control in the latter). Both see hackers and pirates as lone champions standing tall against greedy corporate and inept government leviathans.

Bricks-and-mortars and old economy regulators see IT in instrumental terms as designed for commerce and by extension for the community benefit. They just don't like how the Internet has evolved, whether it's competition from Dot-Coms or the spread of strong encryption that frustrates government surveillance, censorship, and other control. Tech Companies also see IT in more instrumental terms, arguing that its rules should facilitate robust commerce. Moral conservatives don't want individuals empowered, since this will just enable even more antisocial behavior, and they also don't want corporations to facilitate such behavior.

Moderates and free marketers occupy the middle ground. They believe that the digitization of the economy holds great promise for boosting productivity and improving society. At the same time, they see the Internet as creating communities, boosting education, and giving people more control over their lives. Free marketers don't believe that individual

interests should necessarily trump business corporate interests-they see corporations as persons under the law, although they do see individual rights (as distinct from interests) as being paramount.

Laissez-Faire vs. Government Regulation

The groups divide along this line over the degree to which the government should impose formal rules on IT and the Internet.

Cyber-libertarians, and to a lesser degree free marketers, believe the Internet should be governed by its users. These groups lie on the laissez-faire side of the dividing line. They consider the Internet unique and capable of creating spontaneous order, a model for how the rest of society should be organized. Free marketers believe the Internet is what allows Coase's vision of a society with low transaction costs and ubiquitous markets to become a reality. (Economist Ronald Coase postulated that high transaction costs engendered large organizations.)

At the other extreme are groups on the government regulation side of the line, who see the Internet as a new "Wild West" calling for a man with a badge to protect vulnerable citizens against intrusive governments and profit-hungry corporations. Moral conservatives, social engineers, and old economy regulators tend to hold this view, arguing for an array of government actions to limit what companies can do. So do bricks-and-mortars, although less as a matter of principle than as a way of clinging to their ever-weakening economic position.

Moderates and tech companies occupy the middle ground. They believe the Internet is unique and generally requires a light regulatory touch if IT innovation is to thrive. But in some key areas such as cybersecurity and copyright protection, they believe that the Internet needs stronger rules, especially to enable law enforcement to go after bad actors. In still other areas, such as the privacy of non-sensitive data and net neutrality, they believe that self-regulating government-business partnerships are the best way to protect consumers while giving companies needed flexibility.

ITIF was formed to advance a set of pragmatic solutions to the growing number of technology-related policy problems. We believe the growth of the digital economy and society depends on a synthesis of these views: the correct position will tend to lie at the intersection of the two axes. The dichotomy between individual empowerment and institutional efficiency is not a zero-sum game. Individuals benefit both socially and economically when governments and corporations work more efficiently and effectively, and institutions benefit when individuals are informed and able to make choices. A light touch on regulation is important to maintain the flexibility required to operate in this high-speed economy, but government action is also necessary to give businesses and consumers confidence that the Internet is not a den of thieves or a market tilted against fair competition, and to help speed digital transformation (e.g., the ubiquitous use of IT throughout the economy and society).

ONGOING POLICY DEBATES

Of course, the above typology is imperfect—with many individuals and organizations falling into more than one group or no group at all. But as one looks at the central political fights about the future of information technology, the influence of these competing factions is clear. As case studies, we consider the recent debates over four key issues: privacy, taxation, copyright protection, and net neutrality.

Privacy

While the flaps this year over Facebook and Google Street View are the most visible examples, the collection and use of personal information about Internet users by corporations and government is the source of many heated and emotional debates. Old economy regulators and social engineers want to impose sweeping regulations that would give individuals control over "their" personal data. And while they tolerate, grudgingly, advertising as the one true business model for Internet content and services (they oppose ISPs allowing content or application companies to voluntarily pay for prioritized service) they want to limit the effectiveness of online advertising, and the revenue it can raise, because of privacy fears.

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Many tech companies want complete freedom to collect personal data, provided they comply with privacy policies they write themselves. And while some tech companies have supported moderate "notice and choice" legislation, most companies remain wary of any federal regulation of privacy, even as they recognize the need for federal laws to preempt increasingly antsy state legislators from passing a patchwork of different Internet privacy bills.

Cyber-libertarians expect technology to solve the problem. As far as they're concerned, users should take responsibility for their own privacy and apply the tools available to protect their personal data.

Free marketers reject the need for privacy legislation, asserting that the harms from regulation would far outweigh the benefits, and that government regulation is likely to be an imposition on individual liberty and choice, including basic rights of free speech. While moderates worry that overly strict privacy laws would stifle innovation and increase costs for consumers, they also believe that, absent any rules users will not develop the trust needed for the digital economy and society to flourish.

The furor over Facebook is a perfect example of how these issues play out. This social network company announced two new features this year: instant personalization, which allows users to share data from their Facebook profile with partner websites, and social plug-ins for third party websites, which allow users to more easily share web pages they like with their social network outside of Facebook.[5]

Social engineers howled in protest, demanding restrictive government regulations to bar such practices. Some, like Danah Boyd, a fellow at Harvard's Berkman Center for Internet and Society, went so far as to claim that Facebook functioned as a public utility and should be regulated like one.[6]

Facebook was slow to react, initially focusing more on promoting its innovative new tools. However, it then responded more appropriately, rolling out a much more user-friendly and transparent system of user privacy controls.

ITIF and other moderates as well as free marketers argue that government control over the privacy policies of social networks is not necessary to protect consumers and moreover, would be harmful to future innovation. In the heated political environment of the privacy debate, government intervention would probably become regulatory overkill. At the same time, moderates argue that legitimate privacy concerns about personally identifiable data and sensitive data (financial or medical information, for example) need to be addressed through comprehensive industry-wide codes of self-regulation, enforceable by government action (e.g., FTC action against companies that do not live up to self regulatory codes they agree for unfair and deceptive trade practices).

When it comes to the collection and use of data by government, the coalitions reconfigure. Here the cyber-libertarians, social engineers, and free marketers make common cause in their crusade against "Big Brother." It largely does not matter whether the goal is to crack down on deadbeat dads, catch red light runners, or prevent terrorist attacks: if it involves the government collecting more information or using existing information for new purposes, these groups will generally oppose it. In protesting against the growing practice of cities installing red light cameras, former Republican House majority leader Dick Armey railed: "This is a full-scale surveillance system. Do we really want a society where one cannot walk down the street without Big Brother tracking our every move?"[7]

High-tech companies have engaged in the debate over government use of and access to data based in large part on their business interests. Technology companies with direct business interests in providing government technologies to collect information (e.g., smart card and biometrics companies) have been strong supporters of particular initiatives. Other technology companies, worrying that government access to data can restrict commerce or reduce consumer trust in the Internet (e.g., in cloud computing applications where consumer data is remotely stored) have called for limitations on government access to data.

Whether a middle position in the debate over government privacy can be found remains an open question. Moderates support the adoption of new technologies by government, if it is clearly demonstrated that they fulfill an important public mission and if potential privacy problems are effectively addressed, especially by designing privacy protections into systems. At the same time, they support putting into place adequate rules and protections governing the access to that data by government.

Internet Sales Taxes

Tax policy is controversial in any setting, but perhaps particularly so with regard to the Internet. The collection of state and local sales taxes for Internet transactions is so controversial that 15 years after it was first raised, the issue continues to be debated. Old economy regulators want sales taxes to be collected on Internet purchases and want high taxes on telecommunications services to maintain their revenue. The state of Colorado has gone so far as to require Internet retailers to share the names and purchase information of

Colorado residents with the state government (so the state can collect a "use" tax from Internet shoppers). Bricks and mortar companies want sales taxes imposed to maintain their competitive position against pure-play Internet retailers. Some social engineers favor not only sales tax collection, but also special taxes on broadband use to subsidize access for low-income and rural households.

By contrast, the tech companies involved in selling over the Internet do not want the burden of collecting taxes over thousands of jurisdictions, and they do not want to lose their price advantage. Likewise, they do not want broadband or telephone service unfairly taxed at higher rates. Others—like many free marketers and cyber-libertarians—oppose Internet sales taxes on principle. They believe "the fewer taxes the better," especially when it comes to promoting the new digital economy.

Cyber-libertarians, tech companies, and free marketers will likely continue to oppose giving the states the right to tax Internet sales to their residents from companies outside their borders. State governments will press hard for the right, citing their large budget shortfalls. And moderates will likely favor state sales taxes, particularly if they are tied to a quid pro quo deal forcing states to rescind laws and regulations that discriminate against e-commerce sellers, and if taxation is administered in ways that minimize administrative burden. For now, however, the debate continues, with states legally unable to collect sales taxes and most states imposing high, discriminatory taxes on telecommunications services.

Cyber-libertarians argue that the Internet Age marks the end of intellectual property rights because enforcing copyright protections on digital media is too difficult (hence their mantra "information wants to be free").

Copyright Protection

As virtually all media have become digital, protecting copyrights has become a nightmare. The controversy over the music copying system Napster almost a decade ago was just the beginning. The ubiquity of file-sharing technologies, coupled with computers that can rip digital files from CDs or DVDs, and high-speed broadband networks that can quickly transfer large files, has meant that "digital piracy" has grown like wildfire. Cyber-libertarians argue that the Internet Age marks the end of intellectual property rights because enforcing copyright protections on digital media is too difficult (hence their mantra "information wants to be free"). These advocates claim that non-commercial file "sharing" of copyrighted media is a form of fair use, which they assert is legal under copyright law. For example, the Electronic Freedom Forum's "Let the Music Play" campaign protests the music and film industries' prosecution of file copiers. In their ideal world, some rich dot-com entrepreneur would establish a separate country on a desert island, linked to the rest of the world by high speed fiber-optic cable and hosting a massive computer with a cornucopia of pirated digital content, all beyond the reach of national copyright laws.

Many social engineers side with the cyber-libertarians, though for very different reasons. They fear that technology will let copyright holders exact such strict control on content that traditional notions of fair use will become obsolete. And they fear that digital rights management (DRM) technologies will become so stringent that activities consumers have long enjoyed (like the ability to play music files on more than one device) will be prohibited. Both argue strongly against any efforts to better control digital copyright theft that may impinge on individual liberty or individual rights like free speech (e.g., permitting

ISPs to filter for illegal content, blocking websites that illegally infringe on copyrights, or crafting international treaties like ACTA to strengthen and harmonize anti- piracy efforts). And both would love to see the Digital Millennium Copyright Act (DMCA) enter the dust bin of IT policy history, particularly the academics and engineers who feel the DMCA restricts their ability to hack DRM technology in the name of research.

Because of their emphasis on property rights, most free marketers tend to strongly support efforts to limit digital copyright theft. But with their focus on freedom, a few come all the way around to the left, arguing that because liberty trumps property, the grant of intellectual property rights by government amounts to the provision of a state sanctioned monopoly.[8] In their view, individuals should be free to use digital content in ways they want and content owners—not others such as digital intermediaries-should be responsible for policing the use of their content.

Social engineers are the most passionate about net neutrality, but they make common cause with the veterans of the old economy regulator group and cyber-libertarians.

Moderates also support efforts to limit digital copyright theft, believing that such theft is wrong, and that a robust digital ecosystem requires incentives to produce often expensive digital content. At the same time, however, they are not absolutists, and in particular seek to balance the costs and benefits of copyright defense, especially through fair use.

The bricks and mortar companies—including the Recording Industry Association of America—initially worked to block the development of new technologies that facilitate playing downloaded and possibly pirated music. But more than a decade later the content industries are not so much fighting against the technologies as they are working to develop and use technologies that can counter copyright theft, and going after organizations that enable widespread digital content theft (e.g., like the Swedish website The Pirate Bay). And even as they have struggled to cope with music and movie piracy, content producers have largely come to terms with the realities of the digital era. They have begun providing legal, affordable, and consumer-friendly means for consumers to buy or view copyright-protected digital content, with Apple's iTunes music store and Hulu being the most prominent examples.

Although generally sympathetic to the content providers' copyright concerns, many high-tech companies (e.g., ISPs, search engines, social networks) fear that the federal government will require them to adjust their businesses to become copyright enforcers, either by having to take action against their customers or by building in expensive content protection technologies. Once again, the question is whether a compromise can be found, ensuring that content holders have the legal protections and economic incentives they need to continue producing copyrighted materials without imposing overly large burdens on technology companies, and by extension their customers.

Net Neutrality

What has become a highly contentious issue, net neutrality, refers to the idea that the individual networks collectively forming the Internet be controlled by users rather than by their owners and operators. While network operators are in a unique position to manage their resources, proponents of net neutrality believe they cannot be trusted to utilize their knowledge for the good of the Internet user community.

Social engineers are the most passionate about net neutrality, but they make common cause with veterans of the old economy regulator group and cyber-libertarians. Indeed, social engineer Tim Wu coined the still mystifying term "net neutrality." These groups fear that the Internet's unique nature is under threat by the forces of incumbent telecommunications and cable companies providing broadband service. If "Big Broadband" gets its way, neutralists fear the Internet will go the way of cable TV, the "vast wasteland" where elitist programming such as The Wire competes with advertising-supported, populist programming such as American Idol.

Free marketers see net neutrality as one more attack by big government regulators on the Internet, the last bastion of freedom from regulation. They argue that market forces and consumer choice will always discipline any anti-consumer violations of net neutrality, while tort law will serve as a handy tool to remedy any anti-business violations.

Tech companies are split on the issue, largely around which side of the network they are on. Those tech companies providing network services (e.g., ISPs and major equipment makers) are generally against strong regulations in support of network neutrality (at least with regard to the network itself) while companies whose business model depends on using the network to gain access to customers (e.g., content & service providers like Google) are either neutral or in favor of a stronger regulatory regime (at least with regard to the infrastructure layers, as opposed to other parts of the Internet "stack", such as applications.) However, these differences have begun to blur somewhat, as evidenced by the recent joint statement on net neutrality issued by Google and Verizon.

The public policy issues surrounding the IT revolution are no longer sideshows or mere theoretical discussions for a handful of technologically savvy people, nor are they the royal road to a utopia of untold wealth and perfect freedom.

Moderates generally see the Internet as a work-in-progress. Moderates believe it is good that network equipment producers are improving the Internet and see that operators alone as possessing the highly specialized knowledge needed to provide equitable access to the Internet's pool of resources. But moderates realize that competition doesn't operate as efficiently in some network markets as it does in the markets for general-purpose consumer goods and services. In other words, some network markets are under-competitive (because network effects create market power), so markets alone aren't sufficient to guarantee an open Internet for everyone.[9] The role of government in Internet regulation is to ensure that all consumers enjoy the fruits of investment and innovation, but only in ways that don't limit continued investment and innovation.

As these and other issues continue to be fought in legislatures and communities around the country, government officials should seek solutions that balance the needs of individuals with those of society, and that offer the security of codified laws when necessary and the flexibility of informal rules when appropriate. As the technology policy debates go on and the various factions push for the solutions that fit their ideologies and interests, the policies that promote the growth and vitality of the digital economy will not be found at the extremes, but instead in the vital center.

THE FUTURE OF DIGITAL POLITICS

Some might argue that these issues are transitory and will recede in importance as the digital economy matures. But there is good reason to believe otherwise: The debates that

pit online consumers against resistant middlemen are likely to continue as new forms of online distribution evolve. The emergence of much faster and ubiquitous wired and wireless broadband networks will mean more Americans using these networks and more business models developing to take advantage of them. Data generated by emerging new technologies such as wireless location systems, digital signature systems, intelligent transportation systems, the smart electric grid, health IT, and radio frequency identification devices—some used by government, others by the private sector—will drive new privacy concerns among social engineers and their fellow travelers. In some ways, the digital revolution has been so successful that many previously analog political issues have become digital issues; on the other hand, the political issues of the future remain unformed, precisely because the technologies are changing so quickly.

The public policy issues surrounding the IT revolution are no longer sideshows or mere theoretical discussions for a handful of technologically savvy people, nor are they the royal road to a utopia of untold wealth and perfect freedom. The battle lines have been drawn, and the issues are both serious and complex. Digital politics, while if not the great issue of our age, will be central to the life of our nation in the years ahead.

ENDNOTES

1. For other useful attempts at creating Internet policy typologies see, "Cyber-Libertarianism: The Case for Real Internet Freedom" http://techliberation.com/2009/08/12/cyber-libertarianism-the-case-for-real-internet-freedom/; and "Are You an Internet Optimist or Pessimist? The Great Debate over Technology's Impact on Society" http://techliberation.com/2010/01/31/are-you-an-internet-optimist-or-pessimist-the-great-debate-over-technology%E2%80%99s-impact-on-society.
2. "Declaration of the Independence of Cyberspace", https://projects.eff.org/~barlow/Declaration-Final.html
3. For a discussion of how technology companies view public policy see ACT's "Understanding the IT Lobby: An Insider's Guide", (Washington, DC: ACT), 2008, http://actonline.org/publications/2008/08/05/understanding-the-it-lobby-an-insiders-guide/.
4. Robert D. Atkinson, "Innovation and Its Army of Opponents," *Businessweek*, September 23, 2010, http://search.businessweek.com/Search?searchTerm=innovation+and+its+army+of+opponents&resultsPerPage=20.
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