

Regulatory Federalism in a Broadband World

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Introduction

Federalism in the United States describes a system of shared power between individual state governments and the federal government. The framers of the U.S. Constitution devised this system in order to “invigorate” a fledgling central government that many believed was in danger of fracturing due to competing and overlapping interests of the individual states (Coenen 2007, 59-60). A rebalancing was necessary in order to transition the young country from a loose confederation of territories into an interdependent union of states. The enduring “genius” of this system reflects the boldness of the U.S. constitutional experiment, one that vests citizens with “two political capacities, one state and one federal, each protected by incursion from the other” (*U.S. Term Limits v. Thornton* 1997, 838).

In practice, however, the appropriate scope of federal and state jurisdiction over a wide range of issues has been disputed ever since ratification of the U.S. Constitution and the Bill of Rights, both of which only barely sketched the outline of American federalism.¹ As a result, divergent concepts of the limits of state and

¹ The original, unamended text of the U.S. Constitution (1787) included several clauses regarding federal power: Article I, Section 8, Clause 3 (“The Congress shall have power...to regulate commerce...among the several states.”); Article I, Section 8, Clause 18 (“The Congress shall have power...to make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by [the] Constitution in the government of the United States”); and Article VI (“[The] Constitution, and the laws of the United States which shall be made in pursuance thereof...shall be the supreme law of the land; and the judges in every State shall be bound thereby, and thing in the Constitution or laws of any State to the contrary notwithstanding.”). The tenth amendment in the Bill of Rights (1791) is traditionally cited as the source of state power, reading “The powers not delegated to the United States by the Constitution or prohibited by it to the States, are reserved to the States respectively, or to the people.”

federal power have collided over myriad issues throughout the history of the United States. Recently, for example, almost half of the states have challenged the legality of federal healthcare legislation, arguing that a mandate requiring the purchase of health insurance by all citizens in the United States runs afoul of accepted limits on federal authority to regulate commerce (*Commonwealth of Virginia v. Sebelius* 2010a), while the federal government has sought to preempt an immigration law enacted by the state of Arizona, arguing that the power to implement immigration policy is exclusive to the federal government (*U.S. v. Arizona* 2010). These cases illustrate an enduring uncertainty regarding the ability of the states to regulate and police certain sectors and behaviors that may be of national importance.²

This uncertainty takes on additional salience for those industries that are on the precipice of radical transformation by broadband Internet technology. Indeed, the United States, via its Federal Communications Commission (FCC), has outlined a vision for leveraging this technology to revitalize whole sectors and reorient how citizens receive numerous critical services like healthcare, education, and electricity (FCC 2010c). In its *National Broadband Plan*, which was prepared at the behest of Congress, the FCC provided a detailed analysis of how broadband will further certain “national purposes” (American Recovery and Reinvestment Act 2009, 516; FCC 2010a). According to the *Plan*, three key aspects of this technology will facilitate sector-wide transformation: its ability to “enable[] the free and efficient exchange of information,” its power to “remove barriers of time and space,” and its facility in the “aggregation of information” (FCC 2010a, 193). These aspects reflect the borderless and inherently “national” nature of this service.³ To this end, only 34 of the over 200 recommendations included in the *National Broadband Plan* referenced the states as a key party to realizing a specific national goal (Benton 2010). Indeed, many of these recommendations call on the states to lower or eliminate barriers that the FCC identified as potential

² Coenen (2007, 60) argues that “[a]t the heart of the Constitution...was the reservation to the state of the basic “police power” to safeguard the safety, health, and welfare of the people.” The Supreme Court, however, has found that federal power to regulate interstate commerce can supersede states’ police power so long as “the means [of achieving it are] reasonably adapted to [its] attainment” (*U.S. v. Darby* 1941, 112). Indeed, in *Darby* (115), the Court underscored the “plenary power conferred on Congress by the commerce clause.” However, this power is not absolute. Even though the Court did not strike down a federal law as exceeding Congress’s authority to regulate interstate commerce between 1936 and 1995, the Court in recent years has signaled a new willingness to curb this power. *U.S. v. Lopez* (1995) provides an illustrative example.

³ While the individual states do play some role in monitoring the broadband marketplace, primary oversight of this sector is vested in several federal institutions, foremost among which is the FCC. This dynamic is discussed in more detail below.

impediments to accomplishing certain goals.⁴ These recommendations, which seek to realize the many national purposes that the FCC, Congress, and U.S. President foresee for broadband, raise important questions regarding the traditional balance of regulatory power between the states and the federal government vis-à-vis not only broadband, but also a variety of sectors and services that have historically been regulated at the state level.⁵ This article focuses on the impact of broadband on traditional notions of regulatory federalism – i.e., the ways in which federal and state government share oversight of a wide range of industries and sectors, from telecommunications to energy to healthcare – analyzes how this technology is poised to radically alter the ways in which certain services and industries are regulated, and proposes a flexible framework for addressing these emerging questions.

This article first examines the evolution of regulatory federalism in the telecommunications market and analyzes how this approach has evolved and adapted to reflect the unique characteristics of new technologies and services (e.g., mobile telephony and voice over Internet Protocol [VoIP]), and entirely new platforms like broadband. Current regulatory responsibilities of the states and the federal government are discussed, as well as recent proposals to dramatically alter the regulatory paradigm for broadband services (FCC 2010b). Understanding the dynamics of regulatory federalism in this context is essential to appreciating the scale and scope of the many issues that are likely to arise in other industries transformed by broadband.

This article then explores federal-state disputes that are likely to arise as broadband begins to inure itself into the business models of service providers in sectors that are largely regulated by the states. In particular, this section highlights several important questions regarding the appropriate balance of regulatory federalism in the healthcare and energy sectors, where innovators are increasingly using broadband to deliver a range of new services to consumers regardless of location. The potential for real-time, interstate provision of services that have long been provided largely within state borders raises critical questions that must be immediately addressed. Indeed, current notions of regulatory federalism in the broadband context are likely to collide with established notions of federalism in the regulation of non-communications services. In these instances, the federal government may be tempted to use the interstate nature of broadband as a basis for preempting inconsistent state regulations that are perceived to be impeding innovation and the realization of national purposes for broadband.

⁴ For example, Recommendation 10.2 in the *Plan* (FCC 2010a, 206) calls upon the states to “consider reducing regulatory barriers that inhibit adoption of health IT solutions.”

⁵ Teske (2007) provides an invaluable overview of state regulation across a variety of sectors, including telecommunications.

This article concludes by articulating a new approach to effectively and efficiently resolve these types of disputes. The framework outlined in this section assures sufficient flexibility to address emerging issues related to the proper balance of regulatory federalism in sectors being transformed by broadband and encourages collaboration rather than preemption whenever possible.

The Evolution of Regulatory Federalism for Telecommunications: From the Telephone to the Cellphone

This section provides an overview of how the concept of regulatory federalism in the telecommunications market has evolved over the last century. Identifying the boundary between state and federal regulatory authority over communications technologies has become increasingly complicated as these services have evolved from basic telephony to mobile telephony to broadband-enabled communications. In general, regulation, particularly at the state level, has decreased significantly as communications technologies have become more complex and “borderless” in nature.

The Origins of Federalism in the Regulation of Telecommunications

Historically, the states have played an important role in the regulation of basic telecommunications services (Teske 2007). Soon after the emergence of “plain old telephone service” (POTS), and in the absence of federal guidance, some states began to regulate POTS via existing public utility commissions (PUCs) (58). In general, jurisdictional boundaries for the states and the federal government differ depending on the activity at issue (Lyons 2010, 384). For the states, these boundaries are predicated on whether the activity has clearly identifiable intrastate aspects. Thus, POTS was heavily regulated at the state level for much of the early 20th century because the telephone network evolved out of many smaller networks that connected residents in local areas (387). However, once a single dominant firm emerged, one that was able to leverage its scale to force competitors out of business by refusing to interconnect with unaffiliated networks, the federal government intervened and enacted legislation aimed at more assertively regulating the provision of telephone service and realigning the regulatory balance between state and federal entities (387).

Among many other notable aspects, the resulting legislation – the Federal Communications Act (1934) – created the FCC “[f]or the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States...a rapid, efficient, Nationwide, and world-wide wire and radio communication service”

(section 151). However, equally as important was the Act's recognition of state interests, experience, and competencies in the regulation of these services (Lyons 2010, 389). Thus, even though previous laws and court decisions had granted a predecessor federal agency – the Interstate Commerce Commission – with extensive authority to regulate telecommunications (Dixon and Weiser 2006, 326-327), the Federal Communications Act explicitly carved out two distinct sets of jurisdictional boundaries – one for the states and one for the FCC – for the regulation of these services.

Perhaps the most extraordinary aspect of the legislative response to the emergence of a monopolist in the telecommunications market was that Congress, rather than mandating interconnection among all service providers, seemed to accept that having one telephone provider was the most efficient way to ensure universal service.⁶ As a result, the regulatory approach to telecommunications for much of the 20th century centered on ensuring that the dominant firm – AT&T – provided affordable service to every consumer in the United States. This regulatory *quid pro quo* recognized that the goal of universal service required a firm that was able to deploy its network to every part of the country (Shelanski 2007, 59-62). Federal and state regulatory authorities enacted onerous rate regulations and other types of economic oversight of the dominant firm, and also collaborated on a number of policies to assure universal service, including the development of a complex series of subsidies for local and long-distance calling and rural and urban parts of the network (Nuechterlein and Weiser 2005, 47-49; McMaster 2002, 78-79).

This regulatory approach, although largely successful in spurring network deployment and increasing household penetration of POTS, prevented competitors from emerging.⁷ As a result of this carefully managed regulatory relationship, which facilitated its ability to acquire or merge with many of its competitors, AT&T was able to live a “quiet life,” undisturbed by new entrants or new technologies (Ginsburg 2006, 5). Such an environment, although

⁶ This dynamic is often attributed to the “Kingsbury Commitment.” Thierer (1994) provides a succinct summary: “Wisely realizing the government was considering action to break up the growing firm, [AT&T President] Vail decided to enter an agreement that would appease governmental concerns while providing AT&T a firm grasp on the industry. On December 19, 1913, the ‘Kingsbury Commitment’ was reached. Named after AT&T Vice President Nathan C. Kingsbury, who helped negotiate the terms, the agreement outlined a plan whereby AT&T would sell off its \$30 million in Western Union stock, agree not to acquire any other independent companies, and allow other competitors to interconnect with the Bell System.” But “[t]he government solution...was not the steamy, unsettling cohabitation that marks competition but rather a sort of competitive apartheid, characterized by segregation and quarantine. Markets were carefully carved up: one for the monopoly telegraph company; one for each of the established monopoly local telephone exchanges; one for the Bell's monopoly long-distance operations.”

⁷ McMaster (2002, 84) found that, between 1939 and 1962, the percentage of households that had telephone service increased from 42 percent to 80 percent.

superficially beneficial to consumers who were guaranteed stable rates and reliable service mostly as a result of aggressive regulation by the states, was not conducive to innovation by third-parties.⁸ But in the context of the telephone market, this regulatory approach was deemed necessary to protect the integrity and safety of the underlying network and to ensure universal service (Benjamin et al., 714).

Thus, the first stage of evolution in the regulation of telecommunications services was characterized by a relatively stable relationship between the states and the federal government, each of which operated within a clearly defined set of jurisdictional boundaries in the oversight of a technology that exhibited clearly definable intrastate and interstate characteristics (Sicker 2005, 130-133).

Regulatory Federalism & Technological Innovation

After decades of innovative stasis, it became clear in the late 1960s and early 1970s that the telecommunications landscape was finally changing (Cannon 2003; Bailey 1986, 4).⁹ The emergence of competition in the market for long distance telephone service and the development of computer technology that could be linked using the telephone network presaged a new age of innovation and convergence in the communications space (Lyons 2010, 389-390). Faced with the advent of new technologies, cheaper equipment and distribution methods, and an increasingly dynamic marketplace, policymakers responded by relaxing the rules that had insulated the telephone monopoly (Nuechterlein and Weiser 2005, 60-64). Influential proceedings at the federal level signaled a new approach to advanced services and emerging technologies, one that recognized the rapidly changing nature of communications technologies (152-153).

Despite its best efforts to retain its monopoly, AT&T, in 1984, was forced to divest various components of its business – equipment, local service, and long-distance service (*U.S. v. AT&T*). After divestiture, a period of regulatory and political tumult ensued, especially as it pertained to recalibrating regulatory federalism in a post-AT&T world (Teske 2007, 59).¹⁰ The federal-state dynamic was further complicated by the emergence of wireless telephone service in the early 1980s.

Wireless telephony, which was originally viewed as a complement to, rather than replacement of, basic telephone service, was, at the outset, heavily

⁸ Hovenkamp (2005, 13-14) has noted that innovation is generally stifled in a monopoly market, and consumers ultimately suffer as a result.

⁹ The foundation upon which many of these changes were based arose in a series of FCC decisions beginning in the mid-1950s (FCC 1955; 1968).

¹⁰ Lyons (2010, 390) notes that “The consent decree placed certain restrictions on the Baby Bells but left their core local telephone operations within the states’ purview.”

regulated at the federal level since the new service relied upon a scarce federal resource – spectrum – for its delivery (FCC 2002c, 5). The rationale behind this approach was to protect established services that also used spectrum – e.g., television – from harmful interference (Weiser and Hatfield 2008, 558-559). In addition, a significant number of states imposed traditional telecommunications regulations – e.g., rate and entry regulations – on fledgling cellular firms in an effort to ensure that all voice providers were regulated in a similar fashion (Kennedy and Purcell 2004, 498-499). This piecemeal approach to regulating a rapidly evolving and increasingly popular service, however, created a bifurcated marketplace for service providers.¹¹ Kennedy and Purcell (499) have observed that the regulatory approach of about half the states in America in the early 1990s was “clearly harmful to consumers” since it resulted in “higher prices and lower output relative to states that did not have such regulation.”

The tension between the aspirations of wireless innovators, who sought a more consistent regulatory approach to a technology that was an interstate service, and regulators at the state and federal levels was eventually resolved by Congress. The resulting framework implemented a national approach to regulating wireless telephony that barred the states from setting rates or market entry conditions (Omnibus Budget Reconciliation Act 1993). Indeed, only a very narrow role was carved out for the states – primary oversight over “terms and conditions” of wireless service (392). While this approach did provide wireless service providers with sufficient regulatory certainty to continue investing in and deploying networks (Clark and Santorelli 2009, 6), the states and the FCC have consistently clashed over the precise extent of federal jurisdiction (Kennedy and Purcell 2004; 1998). Yet this regulatory design underscores the ability of the federalist approach to accommodate and adapt to changes in the marketplace. However, recalibrating this design oftentimes requires federal legislation to authoritatively redraw the regulatory boundaries for the states and the federal government, but only after a new technology or service has emerged.

Regulatory Federalism after the 1996 Telecommunications Act

Jurisdictional tension between the states and the federal government intensified after passage of the 1996 Telecommunications Act. This piece of legislation focused primarily on creating local competition in the provision of basic telephone service (Crandall 2005). In particular, the Act sought to manufacture competition by requiring local telephone incumbents to make available certain elements of their networks to competitors at regulated prices (Federal

¹¹ The FCC (2006, Table 1) found that, between 1990 and 1993 the wireless market added an average of 3 million new subscribers per year, which represented an average annual growth of about 44 percent.

Communications Act 1934, section 251(c)(3)). In theory, such “unbundling” was thought to lower the barriers of entry into a market characterized by high sunk costs. In reality, however, competition stalled, due primarily to the FCC’s inability to provide adequate guidance to the states regarding how to monitor network unbundling requirements and how to structure corresponding rates for access to these elements. To this end, Crandall (2008, 487-489) has observed that the costs of manufacturing competition in local telephone markets far outweighed any perceived benefits that resulted from FCC policies.

The 1996 Act was also notable for the continuation of the “silo” approach to regulating communications technologies that was set forth in the original Communications Act (Blevins 2009, 590-595). Indeed, the Act’s various titles specified a wide range of detailed regulations for discrete services – traditional telephone service, broadcast, and cable, among others – but largely failed to build in sufficient flexibility for new technologies. For example, the Internet was mentioned only in a small number of clauses in the Act, outlining a preference for a deregulatory approach to the then-emerging service. This regulatory design, while drawing helpful bright lines between state and federal authority for a number of services, proved to be too inflexible to accommodate new communications platforms like broadband. Epstein (2005, 320), for example, has noted that “[t]he drafters of the 1996 Act systematically underestimated the rate of technological innovation in the industry.” As a result, assumptions regarding the balance of regulatory federalism for new services have been challenged by the emergence broadband Internet access and the many services that it enables.

Regulatory Federalism & Broadband: The Paradigm Begins to Shift

Several commentators have observed that regulation of telecommunications generally and state regulation of it specifically has decreased significantly over the last several years (Lyons 2010; Clark and Santorelli 2009; Teske 2007; Dixon and Weiser 2006). This dynamic is a direct result of the rapid emergence and enormous consumption of broadband Internet access in the United States. As previously discussed, the policy of the U.S. vis-à-vis the Internet and access to it has been largely deregulatory in nature. In practice, this has meant that, while the federal government retains some regulatory authority over broadband, the states have no direct jurisdiction over it. The states do, however, have the authority to indirectly influence a number of aspects related to broadband deployment, and have been recently called upon by the FCC to assist in spurring adoption and utilization of this technology. This section analyzes the current balance of federalism in the regulation of broadband in the United States.

Overview of the Federal Approach to Broadband Regulation

Even though the 1996 Telecommunications Act barely mentioned the Internet, most agree that Congress's intention was to "limit the [FCC's] authority" over it (Werbach 2010, 558). Congress, however, did delegate several important powers to the FCC for monitoring and reacting to new communications services, including the authority to ensure that advanced telecommunications technologies were universally available to all Americans (FCC 2002a). In carrying out this mandate, the Commission has recognized that a limited federal role is essential to a robust and innovative Internet market and broadband service sector (FCC 2010a, 5). As a result, state-level authority to regulate Internet access has been severely restricted. Indeed, Nuechterlein & Weiser (2005, 205) have noted that myriad decisions at the federal level over the last several decades reflect a "critical policy judgment" that a national regulatory framework for Internet-related services is the most efficient approach to regulating this borderless technology. Moreover, the authors observed that:

"[b]alkanizing Internet-related services into 50 different schemes of state-level common carrier regulation would be deeply inconsistent with several of the Internet's defining characteristics. Among these...are the geographical indeterminacy of Internet transmissions; the Internet's traditional freedom from regulatory intrusion; and, more generally, the Internet's celebrated tendency to obliterate political boundaries of all kinds."

A primary tool for regulating broadband exclusively at the national level, rather than in tandem with the states, was the classification of the technology as an "information service" under the 1996 Telecommunications Act. Classifying broadband Internet access as such allowed the FCC to shield the technology from inconsistent and overly burdensome state-level regulation while also intentionally limiting its own ability to regulate it.¹² Indeed, information services are largely unregulated (Cannon 2003, 183) and subject only to the FCC's ancillary regulatory authority under Title I of the Communications Act (FCC 2002a, 3028).

The information service designation was important not only for regulatory purposes but also for signaling how the FCC viewed broadband from a technological standpoint. Indeed, the information service classification reflected an affirmative decision by the Commission to recognize the hybrid nature of

¹² The Federal Communications Act (section 153(20)) defines "information service" as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications."

broadband Internet access service, which “fuse[s] communications power with powerful computer capabilities and content” (3027). In other words, the various components of broadband Internet access – including underlying “basic” components like transport and more “enhanced” services that allow customers to “manipulate” data – provide consumers with a “comprehensive” user experience that allows them to “run a variety of applications” via an “integrated service” offering (FCC 2002b, 4822-4823). Moreover, even though information services by definition include a telecommunications component, which are traditionally regulated in tandem with the states, the FCC has noted that “transmission is not necessarily a separate ‘telecommunications service’” for the purposes of regulating it as a common carrier (4823). This observation bolstered an FCC determination that “information services” are primarily interstate in nature and thus under its exclusive purview (4832).

Over much of the last decade, the FCC has designated every major broadband access service as an information service, ensuring a consistently deregulatory approach to broadband Internet access (FCC 2007a). This classification has withstood judicial scrutiny, including a U.S. Supreme Court case from 2005 that upheld the FCC’s classification of broadband access via cable modem as an information service and found that the FCC’s interpretation of what constitutes an information service was reasonable under controlling law (*NCTA v. Brand X*, 997).

Carving out a Role for the States

Even though the states lack formal regulatory authority over broadband, they do possess oversight responsibility for a number of important inputs that are essential to broadband deployment. In addition, the federal government has engaged the states in a number of joint policymaking efforts in order to ensure that state core competencies inform critical rulemakings. This section describes three areas where state actions impact broadband policymaking.

The States as Policy Resources

The states, by virtue of their proximity to residents, possess unique policy expertise that has been recognized by Congress and the FCC as a valuable resource during federal policymaking efforts. As a result, several federal-state joint boards and a joint conference have been convened over the last decade to explore a number of issues.¹³

¹³ The Communications Act (1934, Section 410) explicitly delegates to the FCC the authority to “refer any matter arising in the administration of this Act to a joint board to be composed of a member, or of an equal number of members, as determined by the Commission, from each of the

Established by Congressional mandate (Federal Communications Act 1934, section 254), the Joint Board on Universal Service, which is comprised of four members of state PUCs and three members of the FCC, was convened in March of 1996 to “make recommendations to implement the universal service provisions of the Act.”¹⁴ Over the last decade, the Joint Board has issued a number of recommended decisions on issues ranging from implementing the E-rate components of the 1996 Act (FCC 1996) to long-term structural reforms of the fund (FCC 2007b). In follow up to the FCC’s recently released *National Broadband Plan*, the Commission has referred several broadband-related matters to the Joint Board for consideration.¹⁵ Recommendations of the Joint Board, however, are non-binding and can be disregarded by the FCC.

Also established by Congressional mandate (Federal Communications Act 1934, section 410), the Joint Board on Separations was convened to assist in the “process of apportioning regulated costs between the interstate and intrastate jurisdiction” of basic telephone service.¹⁶ Over the last decade, the Joint Board has attempted to update the separations framework to adequately reflect rapidly changing network infrastructure, which has been impacted by the deployment of broadband and the transition towards an IP-based network (FCC 2000). To this end, the FCC in 2009 asked the Joint Board to “consider comprehensive jurisdictional separations reform” in order to “to develop an efficient system for the jurisdictional separation of regulated costs in light of the dynamic nature of the telecommunications market place and the dramatic changes to the telecommunications industry” (2009a).

Finally, the Joint Conference on Advanced Telecommunications Services, which was convened in 1999, “provide[s] a forum for an ongoing dialogue between [the FCC], the states, and local and regional entities regarding the deployment of advanced telecommunications capabilities” (FCC 1999, 17623). The Joint Conference has been tasked with “facilitating the cooperative development of federal, state, and local mechanisms and policies to promote the widespread deployment of advanced services” (17623). In furtherance of these goals, the Joint Conference recently launched a “Broadband Best Practices” web resource that seeks to aggregate a national inventory of best practices for spurring the deployment of broadband to unserved and under-served parts of the country.¹⁷ The state members of the Conference, however, do not formally participate in the

States in which the wire or radio communication affected by or involved in the proceeding takes place or is proposed.”

¹⁴ http://www.fcc.gov/wcb/tapd/universal_service/JointBoard.

¹⁵ FCC Broadband Plan Action Agenda, <http://www.broadband.gov/plan/broadband-action-agenda.html>.

¹⁶ <http://www.fcc.gov/wcb/tapd/sep/welcome.html>.

¹⁷ <http://broadbandbestpractices.org>.

preparation or issuance of the FCC's annual *Report on Advanced Telecommunications Services*, which assesses whether these services are being made available on a reasonable and timely basis.

The States as Consultants to National Broadband Deployment Efforts

A number of individual states have launched broadband projects over the last few years in an effort to investigate and bolster current levels of broadband availability and adoption within their borders (FCC 2010a, 182). Notable examples have included: the California Broadband Task Force, which issued a report and recommendations several years ago (2008); the ConnectME Authority in Maine, which was created by the legislature “with the goal of expanding broadband access in the most rural, unserved areas of the state that have little prospect of service from a traditional provider;”¹⁸ and the Massachusetts Broadband Institute, which was created to “extend affordable high-speed Internet access to all homes, businesses, schools, libraries, medical facilities, government offices and other public places across our state.”¹⁹ The FCC considers such state-level efforts to be valuable vehicles for “achiev[ing] national broadband objectives by relying on [them] to be local advocates for national programs that boost awareness about broadband” (FCC 2010a, 182).

In an effort to bolster national broadband deployment efforts, several federal agencies have leveraged these existing resources by tasking each state with helping to allocate the over \$7 billion in federal stimulus funding available for a variety of broadband projects (Committee on Energy & Commerce 2009). To this end, the U.S. Department of Commerce's National Telecommunications & Information Administration (NTIA) and the U.S. Department of Agriculture's Rural Utilities Service have recognized that the states can play an invaluable role “in identifying unserved and underserved areas within their borders and in allocating grant funds for projects in or affecting their jurisdictions” (NTIA 2009b, 33107). However, these federal entities articulated only a limited, consultative role for the states. In particular, the states were allowed to review grant applications and make non-binding recommendations regarding the viability of certain projects. Federal entities retained exclusive authority to approve or deny grant applications.

The states have also been tasked with assisting the federal government in the completion of a national broadband map that will be used to identify areas of the country that remain unserved by traditional broadband service providers. To this end, federal stimulus dollars were allocated to fund the Broadband Data Improvement Act (2008), which requires the NTIA to develop a grant program

¹⁸ Maine.gov, ConnectME Authority, <http://www.maine.gov/connectme>.

¹⁹ Massachusetts Broadband Institute, About, <http://www.massbroadband.org/about/about.html>.

for distribution of funds to states in order to encourage initiatives focused on enhancing broadband access. In implementing this program, the NTIA indicated that its allocations to states would be targeted at “funding projects that collect comprehensive and accurate State-level broadband mapping data, develop State-level broadband maps, aid in the development and maintenance of a national broadband map, and fund statewide initiatives directed at broadband planning” (NTIA 2009a, 32545). These maps and other efforts have positioned the states as important resources in a national effort centered on enhancing broadband availability (Maynard et al. 2010, 7-8).

The States as Indirect Regulators of Broadband

The states do possess a wide range of powers to implement policies that impact broadband service providers. For example, states and municipalities retain primary authority over the zoning of land within their borders and how local rights-of-way are managed (Federal Communications Act 1934, section 332(c)(7)). In the broadband context, “operators must generally obtain State and local zoning approvals before” deploying network infrastructure components (FCC 2009b). An example of a “structure” critical to network build-out is a telephone pole, which serves as a hub for various broadband service providers. However, such a piecemeal approach to securing necessary approvals has proven to be slow and costly. As a result, the FCC has begun to streamline these processes in order to ensure that bureaucracy does not unnecessarily slow network upgrades. To this end, in November 2009 the FCC implemented a “shot clock” that requires local zoning authorities to process siting requests in a reasonable and timely manner (paragraph 4). In its *National Broadband Plan*, the FCC (2010a) makes clear that further streamlining of land use decisions at the local and state level is necessary to speed the deployment of broadband network infrastructure to unserved and under-served parts of the country. In particular, the FCC has called on Congress to amend the Communications Act to ensure a “harmonized” process (112-113).

Each state and many municipalities also have the ability to levy taxes on a wide array of items related to the provision of broadband services. Perhaps the clearest example of how these taxes impact communications services is in the wireless space. According to MyWireless.org, “Wireless costs have dropped nearly 80 percent over the last 10 years, but the typical wireless consumer now faces more than 15 percent on average in taxes, fees and surcharges on his or her wireless service, more than twice the average tax rate for other goods and services in this country.”²⁰ Over forty states impose double-digit taxes and fees on wireless

²⁰ <http://www.mywireless.org/issues/view/cell-tax-fairness-act-of-2009>.

service, and many municipalities have begun charging consumers flat per-line monthly fees.²¹ In general, these taxes are typically not technology-neutral, can be overly regressive, and create a patchwork of taxes on interstate services that are rapidly converging.

The Current Balance of Regulatory Federalism for Broadband

Despite a seemingly coherent federalist design for the oversight of broadband Internet access services – one that has empowered the FCC with exclusive but limited authority over it – several attempts have been made to recalibrate this balance. Indeed, over the last few years, courts have rebuked attempts by both federal and state government entities to widen the scope of regulation for broadband.

The most notable recent example came in April 2010 when the federal Court of Appeals for the D.C. Circuit vacated an attempt by the FCC to enforce its network management policy for broadband service providers (*Comcast v. FCC* 2010). The FCC had censured a broadband provider, which was accused of violating the Commission’s network management policy by throttling web traffic originating from a peer-to-peer video service (FCC 2005). The service provider appealed, arguing that the FCC lacked the authority to enforce its policy under the existing legal framework for broadband. The D.C. Circuit agreed and overturned the FCC censure, holding that the Commission had failed to demonstrate that its authority to enforce its policy was “reasonably ancillary to the...effective performance of its statutorily mandated responsibilities” (*FCC v. Comcast* 2010, 644). In other words, the court determined that the FCC failed to ground its authority to regulate the network management practices of broadband service providers in the Communications Act. As the court observed, “administrative agencies may [act] only pursuant to authority delegated to them by Congress” (654). Since the FCC has classified broadband as an information service to be regulated under Title I of the Communications Act, the FCC can only regulate this service if its regulations are reasonably grounded in specifically delegated powers under the Act, i.e., those included in other Titles of the Act (654-655). The D.C. Circuit found that the FCC’s justification for enforcing its network management policies was insufficient.²²

In response, the FCC initiated a rulemaking proceeding in June 2010 to reclassify broadband Internet access service as a “telecommunications service”

²¹ Id.

²² Werbach (2010, 555), for example, has observed that “The central problem with the FCC’s argument in the *Comcast* [censure] is that it involves an inaccurate reading of section 230 (b),” which the FCC claimed as the primary basis for its authority to regulate network management practices.

subject to Title II of the Communications Act (FCC 2010b). The goal of this proceeding was to clarify whether the existing regulatory framework “adequately supports the [FCC’s]...stated policy goals for broadband,” as set forth in its *National Broadband Plan* (paragraph 28). In particular, the FCC sought to change the underlying assumption upon which all existing broadband policy had been founded by viewing broadband Internet access services as nothing more than basic telecommunications services used only to transport data to consumers (paragraph 64-65).²³ This dramatic overhaul of established FCC precedent would not only undo nearly a decade’s worth of FCC policy, it would also inject uncertainty into a marketplace that has thrived under the current framework.

States, for instance, could seize upon this regulatory overhaul as a way to assert jurisdiction over broadband services. While reclassification as a Title II service would not automatically confer regulatory authority to the states (FCC 2010b, paragraph 109-110), individual state entities could make a persuasive case for doing so by seeking to overturn legal precedent based on the Title I approach to broadband (NARUC 2010b). For example, cases that have struck down attempts by individual states to regulate broadband-enabled VoIP services could be nullified. These cases rested on an “impossibility exception,” which insulates many broadband-enabled services from state regulation because they “cannot be separated into interstate and intrastate communications for compliance with [a state’s] requirements without negating valid federal policies and rules” (FCC 2004).²⁴ This approach to preempting state regulation of broadband-enabled services has been upheld several times in recent years and has become a cornerstone of federalist jurisprudence in the broadband context (*New Mexico PRC v. Vonage* 2009; *Vonage v. Nebraska PUC* 2009).

These recent actions suggest that regulatory federalism for broadband services is in flux. Uncertainty regarding the authority of federal and state entities to regulate broadband has important impacts not only on the investment decisions of broadband service providers (Crandall and Singer 2010), but also on the pace and scope of innovation throughout the entire broadband ecosystem (Sidak and Teece 2010). Moreover, an unbalanced system of federalism in the regulation of current-generation broadband services raises a number of key questions regarding the ability of this regulatory approach to accommodate the next generation of broadband-enabled services. Indeed, as discussed in the next section, broadband will serve as an innovation platform in sectors beyond the communications market, presaging several likely challenges to existing notions of regulatory federalism.

²³ Crawford (2009) provides a comprehensive argument in favor of this approach.

²⁴This determination was affirmed by *Minnesota PUC v. FCC* 2007.

Regulatory Federalism 2.0: Emerging Challenges to the Federal-State Dynamic as Broadband is Used to Realize National Purposes

Broadband has a unifying power. It eliminates physical and geographic borders by providing people and institutions with high-speed connections to the global Internet. Thus, the Internet, and broadband connections to it, has transformed historical notions of commerce, trade, and knowledge production, and has created a “global grid” of interconnected businesses, consumers, and governments, each of which now use digital technologies to participate in an ever increasing array of activities that had, up until a few decades ago, been conducted exclusively in the analog world (Bisson, Stephenson, and Viguerie 2010).

That broadband and broadband-enabled technologies are transforming the way business is conducted is not a new phenomenon. Businesses have typically been on the cutting-edge in terms of adopting new information and communications technologies to enhance efficiency, expand footprints, and embrace trends in globalization. However, the disruptive power of broadband is new to industries that have resisted or ignored the potential for this technology to radically alter traditional business models. Indeed, as discussed in this section, broadband is poised to fundamentally alter how a range of healthcare and energy services are delivered and consumed. As stakeholders in these sectors use broadband to innovate and deliver new services, a number of issues of first impression are likely to arise regarding the appropriate balance of regulation for these new services.

Previous sections demonstrated that federalism in the regulation of communications services has been continuously disrupted by the emergence of new technologies. Each time a new communications service has emerged, the borders of state regulatory jurisdiction have narrowed in response to a fairly consistent deregulatory approach to regulating new technologies in the United States. Understanding the mechanics of recalibrating regulatory federalism in this context is essential to appreciating the myriad novel questions and issues that are likely to emerge as broadband embeds itself within sectors that have historically operated in and been regulated by individual states.

This section begins with an overview of the FCC’s vision for broadband in America, which was captured in its *National Broadband Plan*. The *Plan* set forth an ambitious and bold strategy for ensuring that the full power of broadband is harnessed by innovators across every sector of the economy. This section then describes how broadband is being used to transform two discrete sectors – healthcare and energy – and how these transformations will give rise to novel questions regarding the appropriate federal-state regulatory balance going forward. Indeed, since broadband, which is inherently “interstate” in nature, will be the driving force behind these transformations, the likelihood of federal

preemption increases as the nation attempts to realize myriad national purposes for this technology. The key question in these scenarios is whether and to what extent the states will challenge this drastic recalibration of regulatory federalism.

The Road Ahead: Broadband, Innovation & Regulatory Federalism Beyond the Communications Sector

Historical notions of federalism have evolved rapidly over the last six decades. Older, more traditional conceptions, which “created enclaves of state authority in which distinctive social practices could flourish” and where states “formed distinctive communities of value,” have given way to a modern federal-state design where “a broad national consensus on certain fundamental issues” exists, imbuing the federal government with a “duty” to realize certain goals of national importance (Schapiro 2009, 47-55). Thus, federal policymakers have proposed and implemented a variety of reforms for institutions and industries that had traditionally been monitored and regulated by the states. These efforts, which have been based on a “muscular reading of the Commerce Clause,” include national healthcare, education, and family law reforms, among many others (Issacharoff and Sharkey 2006, 1365). As a result, the once bright lines separating federal and state jurisdiction over certain issues have been “blurred...to render them of little conceptual use” (Schapiro 103).

Broadband is poised to further cloud the federalist paradigm in the United States by providing a platform for “nationalizing” a variety of sectors that have typically operated at the local and state level. In the communications realm, new technologies like the Internet have already “rendered state boundaries less significant” than in the past (10). As discussed below, this dynamic is no longer unique to the communications sector.

National Purposes for Broadband

According to the U.S. Congress, broadband Internet access will be used to realize a range of national purposes, including the modernization and transformation of key sectors of the American economy. In its plan for achieving these goals, the FCC observed that broadband is a “platform to create today’s high-performance America – an America of universal opportunity and unceasing innovation, an America that can continue to lead the global economy, an America with world-leading, broadband-enabled health care, education, energy, job training, civic engagement, government performance and public safety” (FCC 2010a, 3). The emergence of a broadband “ecosystem” has made many of these goals possible. Indeed, the ecosystem concept is important to understanding the FCC’s full vision for broadband in America. The ecosystem describes a “virtuous cycle” of

innovation where improvements at the network level spur experimentation and improvements at the edges of the network, which in turn spur the production of new devices to access advanced networks and content (15). The ecosystem has driven innovation and fundamentally altered how people communicate with one another, how consumers buy and sell goods and services, and how citizens interact with government in modern society. At the core of these advances is the broadband network, which has quickly become more than just a series of fiber-optic cables and routers. Indeed, the broadband network has become an inseparable element of the ecosystem, the backbone upon which an “Internet of things” has emerged, connecting people and machines in a vast web of data and services that is poised to undergird the national economy going forward (Chui, Löffler, and Roberts 2010).

The FCC’s *National Broadband Plan* sought to ensure that the innovative power of the ecosystem is successfully integrated into all sectors of the U.S. economy. Recognizing that many of these sectors are resistant to change due to the absence of properly structured incentives to “motivate the use of broadband,” the FCC’s *Plan* articulated a wide variety of recommendations for overcoming “entrenched interests and even deeper entrenched ways of thought” that have impeded robust utilization of the technology (FCC 2010a, 193). According to the *Plan*, a primary means for overcoming these barriers will be close collaboration amongst federal, state, and local government, private sector companies, and other institutions (194). However, the principal force behind the realization of these goals will be the way in which the FCC and other federal entities view and craft their regulatory roles going forward. To this end, the *Plan* seems to indicate that, since its core goals are in fact national purposes “vital to the nation’s prosperity,” the FCC has endorsed a wholesale rebalancing of the federal-state dynamic beyond the communications sector (194). Indeed, by issuing such a bold and sweeping *Plan*, the FCC has asserted the full power of the federal government to regulate broadband-related activities of central importance to the nation regardless of existing state authority, legal structures, and interests.

The effects of this rebalancing – and the questions it raises – will likely be seen most immediately in two sectors that have long been subject to extensive state-level regulation: healthcare and energy. While the federal government does regulate and monitor the interstate aspects of each of these industries, the regulations that have the greatest impact on stakeholders in these sectors generally originate within the states. The following sections (1) briefly detail how states have traditionally regulated healthcare and energy services, (2) discuss how broadband will transform each of these industries, and (3) highlight questions arising from the imminent recalibration of regulatory federalism in each sector.

Broadband & Healthcare

The states possess extensive authority to regulate the provision of healthcare services within their borders. For example, up until the federal government enacted national healthcare reform, the states possessed almost exclusive authority to regulate how health insurance was provided to its residents (New 2005). The states also possess the ability to implement tort laws, which give rise to medical malpractice claims for health-related harms that occur within the state. In addition, states also monitor the physicians practicing medicine within their borders by, among other things, administering licenses, credentials, examinations, and other permissions associated with the practice of medicine.²⁵ Of course, the federal government also plays a significant role in U.S. healthcare. For example, the federal government has created national health insurance programs – e.g., Medicare and Medicaid – that provide coverage for a variety of vulnerable populations.²⁶ However, the states play a significant role in administering these programs and ensuring that qualifying residents are able to avail themselves of them.

This federal-state approach to regulating healthcare was predicated on the highly localized nature of healthcare. Patients have historically visited doctors and used hospitals in the immediate vicinity of their homes. On the rare occasion when a particular doctor was not locally available, patients have always had the ability to see doctors in other states. This decentralized approach to healthcare in the United States was championed as a valuable way of bolstering innovation and experimentation, allowing individual states to tailor healthcare laws and regulations to meet the needs of their residents (Zelinsky 2003, 444).

Broadband is disrupting this traditional paradigm by fundamentally altering how healthcare is delivered and consumed in the United States. Among many other benefits, broadband-enabled healthcare, which is commonly referred to as telemedicine or telehealth service, is eliminating the geographic barriers that have been used to justify the existence of purely state-level oversight of medical care (Davidson and Santorelli 2009b). These tools are being used to deliver increasingly sophisticated healthcare services to patients regardless of location. The FCC has observed that, while “broadband is not a panacea,” emerging telemedicine tools that leverage broadband “offer the potential to improve health care outcomes while simultaneously controlling costs and extending the reach of

²⁵ American Medical Association, Physician Education, Licensure, and Certification, <http://www.ama-assn.org/aps/physcred.html>.

²⁶ Medicare “is the nation’s health insurance program for Americans age 65 and older and for younger adults with permanent disabilities” (Kaiser Family Foundation 2010b). Medicaid is “the nation’s publicly financed health and long-term care coverage program for low-income people” (2010a).

the limited pool of health care professionals” (FCC 2010a, 199). These are certainly pressing national priorities for a country where healthcare costs represented over 17 percent of Gross Domestic Product in 2009 (Truffer et al.) and where over 46 million people were without health insurance in 2009 (Reinberg 2010).

The FCC and many other stakeholders predict that broadband-enabled healthcare tools will play a significant role in reversing these trends. These include:

- *Electronic health records (EHRs)*. EHRs are digital storage facilities for a patient’s health information. These tools allow doctors to aggregate all of a patient’s relevant medical data – history, allergies, reports from specialists, x-rays, test results, etc. – in one online file that is readily accessible by the patient and the attending physician. These tools promise to transform individual health data into a portable file that can be managed and accessed by a patient or doctor regardless of location.
- *Remote monitoring of health metrics*. A variety of broadband-enabled tools have been designed to remotely monitor a patient’s vital signs and other key health metrics in real-time. Indeed, the FCC envisions a future where a “patient’s heart rhythm can be monitored continuously, regardless of her whereabouts, and diabetics can receive continuous, flexible insulin delivery through real-time glucose monitoring sensors that transmit data to wearable insulin pumps” (Genachowski 2010). Wireless sensors are a key component of many of these monitoring systems, as are cellphones, which are quickly becoming the hub for a variety of health monitoring tools.
- *Real-time in-home medical care*. In addition to becoming much more mobile, healthcare services are increasingly being pushed into a patient’s home in an effort to decrease costly institutionalizations of people with certain chronic diseases (FCC 2010a, 201). Hospitalizations, for example, could be dramatically decreased by leveraging broadband-enabled services to deliver necessary services to the home (201). Equally as important, these services could be provided by companies located anywhere in the United States or around the world.
- *Remote consultations*. Broadband is also being used to link patients and doctors via web-cam. These consultations are being used for routine check-ups and for accessing specialists that are not located near a patient (201; Davidson and Santorelli 2009b). Again, these

services could link patients and doctors separated by hundreds or thousands of miles.

Realizing the full potential of broadband-enabled telemedicine will require the elimination of a wide array of legal and policy barriers at the state level (Davidson and Santorelli 2009a). The FCC's strategy for doing so centers on nudging states to modernize a variety of laws and regulations that are impeding further progress. These include rules related to physician licensure and e-prescribing, both of which are primarily regulated at the state level (FCC 2010a, 206). Restrictive rules for licensure, for example, limit the geographic area within which a doctor can provide medical services (Davidson and Santorelli 2009a, 42). In the "borderless" world of broadband-enabled healthcare, these restrictions appear to be inapposite. In order to eliminate these barriers, the FCC emphasizes that the states "should revise licensing requirements to enable e-care" and "should consider lifting restrictions that limit broader acceptance of electronic prescribing" (FCC 2010a, 206). Since the FCC lacks the authority to follow through on many of the recommendations included in its *Plan*, the Commission must rely on Congress to intervene in the event that the states do not heed its call for reform, or if progress is fractured or sluggish.²⁷ Thus, the national imperative for realizing the full potential of broadband-enabled telemedicine could conflict with existing state authority to regulate an array of healthcare functions.

These potential conflicts raise important questions regarding the proper balance of federal and state authority over healthcare in a broadband world. For example, since broadband is inherently an "interstate" technology that has been regulated as such for the last decade, the federal government, via Congress or the appropriately empowered federal agency, could use this reasoning to justify the preemption of inconsistent state behavior in the rapidly expanding field of telemedicine. Would Congress seek to preempt the states in this way? Recent history suggests that it would as part of a broader effort to radically alter the healthcare paradigm in the United States.²⁸ Doing so would not only recalibrate the existing balance of regulatory federalism in this sector, it would also raise a number of novel legal questions that will likely need to be resolved in court. This would create a Catch-22 situation for the federal government, which would ostensibly resort to preemption in an effort to more quickly follow through on

²⁷ There is evidence that some of the telemedicine-related goals set by Congress and the FCC are difficult to attain in the short term. For example, Congress created a series of financial incentives for doctors and hospitals to more rapidly adopt and use EHRs. However, stakeholders have recently complained that the requirements for receiving these payments are "unachievable" as originally devised (Pear 2010).

²⁸ One of the primary arguments made by the United States in defense of recently enacted federal healthcare reform legislation is that the legislation's constitutionality rests on the ability of Congress to regulate interstate commerce (*Commonwealth of Virginia v. Sebelius* 2010b).

implementing the healthcare provisions included in the FCC's *National Broadband Plan*.

In addition to raising many questions regarding regulatory federalism vis-à-vis broadband-enabled healthcare, imposing a federal vision for these services could encroach upon commonly held values in certain states. For example, abortion services in Iowa are provided via broadband-enabled videoconferencing, mostly in an effort to make these services available to rural residents in the sparsely populated and largely rural state (Davey 2010). During these broadband-facilitated consultations, a doctor asks the patient a series of questions before remotely dispensing the abortion drug mifepristone. In the United States, even though the Supreme Court has upheld abortion rights in most instances over the last four decades, individual states retain the authority to regulate nearly every aspect of it. According to existing legal precedent, states can implement a wide array of abortion regulations so long as they do not unduly interfere with a woman's right to choose to have an abortion before viability (*Planned Parenthood v. Casey* 1992).²⁹ This authority, however, could be challenged if the federal government moved forward with preemption for broadband-enabled healthcare services.

An alternative approach would be for the federal government to create a series of financial incentives for states to adopt certain standards in furtherance of the national purposes for broadband-enabled healthcare. However, while these incentive schemes have proven to be successful in other contexts,³⁰ there is no certainty that they will work in the healthcare arena, especially at a time when nearly half of the states in the country are challenging the authority of the federal government to implement its nationally-focused healthcare legislation (Schwartz

²⁹ In *Planned Parenthood v. Casey*, the Court underscored three components of abortion rights: "First is a recognition of the right of the woman to choose to have an abortion before viability and to obtain it without undue interference from the State. Before viability, the State's interests are not strong enough to support a prohibition of abortion or the imposition of a substantial obstacle to the woman's effective right to elect the procedure. Second is a confirmation of the State's power to restrict abortions after fetal viability, if the law contains exceptions for pregnancies which endanger a woman's life or health. And third is the principle that the State has legitimate interests from the outset of the pregnancy in protecting the health of the woman and the life of the fetus that may become a child" (846).

³⁰ For example, the federal government in 1984 enacted the National Minimum Drinking Age Act, which "required all states to raise their minimum purchase and public possession of alcohol age to 21. States that did not comply faced a reduction in highway funds under the Federal Highway Aid Act" (U.S. Dept. of Transportation 1999). South Dakota challenged the constitutionality of the law, arguing that it encroached upon the sovereignty of the states. The Supreme Court, however, found that the federal law was constitutional, noting that, incident to its powers to "lay and collect taxes...Congress may attach conditions on the receipt of federal funds" (*South Dakota v. Dole* 1987).

2010). Thus, preemption could be a viable option for the federal government going forward.

Broadband & Energy

Much like with healthcare, regulation of energy services in the United States is conducted primarily at the state level. State PUCs typically retain primary jurisdiction over the energy utilities operating within its borders. PUCs regulate these companies in much the same way the FCC and PUCs regulated AT&T in the early part of the 20th century – as monopoly providers.³¹ To this end, PUCs engage in exacting rate regulation of energy providers, including the review and approval of an energy company’s rate structure (Mendiola 2008). Innovation is thus tightly controlled by state PUCs, which must approve all expenditures by energy providers (Davidson and Santorelli 2009a, 59). The U.S. government, via its Federal Energy Regulatory Commission (FERC), regulates the interstate aspects of energy service and reviews applications for a variety of large-scale multi-state energy projects. The U.S. Department of Energy monitors all aspects of the nation’s energy industry in an effort to “advance the national, economic, and energy security of the United States.”³²

The emergence of broadband as a viable platform for innovation in the energy space has been hailed by policymakers at every level of government as a way to quickly modernize a sector that has evolved very slowly over the last century. In particular, broadband promises to be the backbone for a number of new services and programs targeted at making energy delivery and consumption more efficient and less carbon-intensive throughout the United States. Policymakers foresee broadband as being used to:

- *Modernize the nation’s electrical grid.* Broadband will be the foundation for a national “smart” energy grid, which will be used to bolster the reliability of energy distribution and to realize a variety of cost-savings in the transmission, distribution, and consumption of electricity throughout the United States (Davidson and Santorelli 2009a, 51-55). In addition, the smart grid will allow utilities to more rapidly incorporate renewable fuel sources (e.g., wind power) into their supply by providing them with the necessary tools to dynamically manage, in real-time, the composition of their fuel supply.

³¹ Many states in the U.S. have deregulated various aspects of intrastate energy service. However, as Spence (2008, 776) notes, the results to date have been uneven as “regulators have struggled with the problem of cultivating energy markets that will promote healthy competition in energy sales, reduce prices for all customers, and control the exercise of market power by incumbents.”

³² U.S. Dept. of Energy, About Us, <http://www.energy.gov/about/index.htm>.

- *Empower consumers.* A broadband-enabled smart energy grid will provide consumers with a wealth of new information about their consumption patterns and about utility pricing patterns. For example, an astute consumer could shift certain types of consumption (e.g., using the washing machine) to off-peak hours in an effort to save money. Broadband-enabled tools are being developed by utility companies and third-parties to facilitate these uses.
- *Enable a range of new smart technologies.* Broadband will also serve as an enabler of a wide range of innovative products that leverage the flexibility and robustness of the smart grid. For example, plug-in hybrid vehicles will benefit from the broadband-enabled smart grid by leveraging the technology's ability to automatically and efficiently monitor recharging.

One of the chief impediments to realizing the full range of benefits enabled by broadband in the energy sector is the antiquated way in which state PUCs regulate energy providers. Though relatively stable, the existing regulatory approach has been criticized by a number of stakeholders who argue that it has suffocated innovation and eliminated any incentive to implement new technologies that might lower energy consumption by customers (Moynihan 2010, 45-46; Davidson and Santorelli 2009a, 59). Indeed, the U.S. Department of Energy (2009, 28) has observed that the traditional regulatory paradigm in the energy sector “can discourage [investments in] energy efficiency, demand reduction, demand response, distributed generation, and asset optimization.” In addition, the FCC has noted that state PUCs “must ensure that utilities’ incentives do not lead them to make suboptimal communications and technology decisions” (FCC 2010a, 252). However, the states have consistently and vociferously asserted jurisdiction over many items implicated by the deployment of the broadband-enabled smart grid and other services enabled by it (NARUC 2010a). Given the inherently national nature of a broadband-enabled smart energy grid, disputes over the proper balance of regulatory federalism in this context are likely to emerge in the short term.

For example, even though the United States has identified the deployment of a national smart grid as a top policy priority, and even though Congress has allocated billions of dollars to fund initial deployments, the actual construction of new infrastructure will be monitored by state PUCs (Johnston and Runningen 2009). Thus, the speed with which these new networks are built will be determined by the review and approval of utilities’ plans by individual state PUCs. Clashes between the federal government’s desire to quickly achieve its policy priorities and states’ prerogative to review these projects have already emerged. In June of 2010, a major smart grid project, which had received

significant financial backing from the federal government, hit a roadblock at the state level. This proposed project was initially rejected by the Maryland PUC because the regulator, applying regulatory and legal precedent, determined that a core element of the utility's proposal was unreasonable since it asked "ratepayers to take significant financial and technological risks and adapt to categorical changes in rate design" (Kay and Cho 2010). While the PUC has agreed to review an amended proposal, the categorical dismissal of the original plan reflected the antiquated state-level approach to regulating energy utilities, which does not reward companies for innovating and taking risks.

Additional clashes between federal smart energy goals and state regulatory processes are likely as the federal government moves forward with a variety of additional smart grid-related efforts. For example, the development of a single set of interoperability standards for the smart grid could presage an erosion of state regulatory authority over the smart grid. These standards are being developed by a federal government entity that has solicited input from state government and private sector stakeholders (NIST 2010). However, final determination of the standards rests solely with the federal entity (Energy Independence and Security Act 2007, section 1305). Moreover, FERC has interpreted federal smart grid legislation to "mean that [it] has the authority to adopt...standard[s] that will be applicable to all electric power facilities and devices with smart grid features, including those at the local distribution level and those used directly by retail customers so long as the standard is necessary" to further federal smart grid priorities (FERC 2009, 14). Further, the FCC, its *National Broadband Plan*, suggested a model of federal leadership on many of these issues, whereby the FCC, FERC or other appropriate federal agency would "develop best practices" to serve as a model for the states to follow (FCC 2010a, 256-257).

While explicit preemption on many of these issues appears unlikely in the near term, a number of federal government entities have interpreted U.S. smart grid policy as largely national in nature, tipping the balance of regulatory federalism in their favor. Legal disputes regarding the efficacy of these interpretations are likely as the states attempt to cling to the existing regulatory framework for energy services.

Conclusions

This section highlighted many emerging issues implicated by expanded use of broadband beyond the communications sector. Broadband allows businesses in industries as diverse as healthcare and energy to radically transform the ways in which services are delivered and consumed. Increasingly, these services will be delivered regardless of geographic location, eliminating the state borders that

were used as the basis upon which regulatory roles for individual states and the federal government have been designed.

A new generation of broadband-enabled services is poised to serve as the basis for a fundamental recalibration of regulatory federalism in an array of sectors across the U.S. economy. This trend follows a larger movement towards a more assertive national role in a number of industries where the states have historically retained primary regulatory authority.³³ Whether and the extent to which these trends might erode state authority over those aspects of a sector dominated by broadband (e.g., telemedicine in the healthcare sector; the smart grid in the energy sector) remains to be seen. Indeed, federal preemption in these contexts is not a *fait accompli*. As discussed above, federal government entities have signaled a desire to work with the states on many of these issues. However, the glacial pace of realizing national goals via the fragmented review and regulatory processes of fifty individual states could serve as a catalyst for preemption on issues of immediate importance to the federal government. The inherently interstate nature of broadband could be used in support of federal preemption in these instances.

Recalibrating Regulatory Federalism for a Broadband World

The emergence of broadband as a platform for innovation beyond the communications sector will further disrupt an already muddled understanding of the proper regulatory balance between the states and the federal government in the digital age. With the power to eliminate the geographic boundaries that have traditionally separated state and federal authority in a number of contexts, broadband is rapidly becoming a vehicle through which local services are globalized. In a world where a patient can use a web-cam to consult with a doctor located in the next state and where energy providers will be linked together via a national smart grid, novel questions regarding the proper regulatory role for the states and the federal government will likely arise with a velocity that will overwhelm even the most nimble policymaking body. This section outlines a framework for recalibrating regulatory federalism in order to ensure that these issues are efficiently and effectively addressed.

³³ One example is the education space, where a series of federal laws (e.g., the No Child Left Behind Act of 2001) and initiatives (e.g., the U.S. Department of Education's Race to the Top program) have been deployed in recent years to coerce local education reform by, among other things, identifying failing schools via national standardized tests and providing resources to those schools that are willing to implement reforms that conform to federal guidelines.

A Framework for Addressing Novel Federal-State Disputes in the Regulation of Broadband-Enabled Services

In order to ensure that new broadband-enabled services and business models are deployed in a timely manner, any lingering uncertainty regarding who regulates what must be eliminated. Going forward, federal and state government entities should adhere to the following set of principles when addressing challenges to the existing model of regulatory federalism arising from broadband-enabled services in sectors beyond the communications market.

First, policymakers and regulators should appreciate the positive impact that regulatory certainty has had on broadband-enabled innovation over the last decade and commit to providing a stable regulatory environment going forward. The success of the current regulatory framework for broadband Internet access provides a compelling example of how a consistent approach to regulating a dynamic market can produce a vibrant ecosystem of innovation. Any attempt to recalibrate regulatory models in order to facilitate innovation must balance potential positive outcomes against the negative impacts associated with injecting regulatory uncertainty into the marketplace. To this end, the introduction of sweeping new regulations for broadband Internet access service providers would likely have discernibly negative impacts on broadband innovation going forward (Crandall and Singer 2010; Sidak and Teece 2010; Yoo 2008). As a result, such proposals should be rescinded in order to provide a consistent signal to innovators within and beyond the communications sector that the core element of many new products and business models will continue to be lightly regulated at the federal level.

Second, in their pursuance of national purposes for broadband beyond the communications sector, federal policymakers should not use the interstate nature of broadband as a basis for automatically preempting potentially inconsistent regulation at the state level. As discussed above, the likelihood of widespread federal preemption in the regulation of new broadband-enabled services in the healthcare and energy sectors is real. However, before moving forward with preemption, federal entities should first attempt to affect any necessary state-level reforms in a less combative manner.

One alternative approach involves the creation of incentives to adopt standards set by federal authorities. An illustrative example is the Race to the Top program administered by the U.S. Department of Education. This program will allocate some \$4 billion by the end of 2010 to spur reform in schools across the country.³⁴ In particular, this program seeks to accomplish these reforms “by using college- and career-ready standards and assessments, building a workforce of

³⁴ U.S. Department of Education, Race to the Top Fund, <http://www2.ed.gov/programs/racetothetop/index.html>.

highly effective educators, creating educational data systems to support student achievement, and turning around their lowest-performing schools” (U.S. Dept. of Education 2009). In other words, Race to the Top will reward those schools that model reforms on predetermined federal criteria. Despite some resistance from states that are opposed to federal intervention in such a local matter, the vast majority of states have applied for these funds in an effort to bolster current educational services.³⁵ In order to improve their chances of winning a grant, many states have fundamentally reformed how they regulate the provision of education services within their borders. Indeed, 23 states have reformed existing education laws and regulations as a result of Race to the Top (Paulson 2010). These have included: lifting the caps on the number of charter schools allowed in a state; adopting nationally-approved academic standards for students; and altering the ways in which teacher performance is tracked and rewarded (Dillon 2010b).

Another approach would be for the federal government to encourage and support attempts at national reforms undertaken by state actors. For example, a set of national education standards was recently developed and released by state governors and school education officials. These standards set forth a framework for ensuring that every student in the United States has a basic understanding of core concepts. The federal government has endorsed these standards and has incentivized adoption by linking adherence to a more favorable review of Race to the Top applications (2010c).

These types of approaches provide the federal government with a range of less aggressive means for realizing national purposes for broadband. Foregoing preemption whenever possible lowers the risk of legal challenges by the states and positions the federal government as a partner rather than an adversary. However, many of these alternative approaches hinge on increased funding from the federal government. At a time when increases in federal allocations are subject to intense political scrutiny, constructing financial incentive programs to nudge along state-level reforms aimed at eliminating barriers to broadband innovation in sectors like healthcare and energy may be difficult. Nonetheless, federal entities should experiment with a range of incentive programs in lieu of outright preemption.

Third, if the alternative approaches described above prove impossible to implement due to financial or political pressures, then the federal government should attempt to collaborate directly with the states in affecting necessary reforms. Indeed, the states possess a number of important core competencies that could inform federal efforts aimed at realizing the many national purposes for broadband. Viewing the states as partners rather than as obstacles will enable the federal government to work within the existing model for regulatory federalism rather than having to fundamentally alter it.

³⁵ Texas was the first state to indicate that it would not apply for Race to the Top funds, citing concerns over federal intrusion into state oversight of education (Dillon 2010a).

To date, federal-state collaboration on broadband-related issues has positioned the states solely as consultants on discrete issues. As discussed above, Congress carved out a series of such arrangements in the telecommunications context, relegating the states to passive roles on issues like universal service reform and the deployment of advanced telecommunications services. Similarly, Congress created a mechanism for ensuring that the states and other stakeholders had the ability to contribute to the standard-setting process for smart grid interoperability, but this input was not binding on the federal entity responsible for the standards. However, the alternative approach, where the states have the ability to offer binding suggestions on federal policies, seems untenable. Coming to a national consensus on issues that have been historically resolved at the state level (e.g., physician licensure or rate regulation of energy providers) would involve lengthy negotiations among dozens of stakeholders.

A possible middle ground would involve the creation of federal-state joint boards for discrete issues like broadband-enabled telemedicine and smart grid deployment. Clark and Santorelli (2009) proposed such an approach for addressing consumer complaints in the wireless telephone context. Of particular relevance in this context is the proposal to create a federal-state vehicle that “allow states a meaningful role in the formulation of wireless consumer standards” and that somehow compels the federal entity to “take...seriously its obligation to act in concert with the state representatives” (18). One way to compel such behavior would be for the federal government to defer to the states implementation of whatever policy or reform that result from the collaborative process. For example, a mutually agreed upon national framework for modernizing physician licensure rules such that they encourage more robust utilization of broadband-enabled telemedicine tools could create a policy “floor” and “ceiling” within which individual states would be responsible for implementing reforms.³⁶ If the states were unable or unwilling to implement these changes in a timely manner, then the federal government could reserve the right to preempt the states and move forward with an assertive national approach. Attempting to preempt first would eliminate these types of possible collaborations.

Fourth, regulators at both the federal and state levels should defer to Congress for policy guidance if pervasive uncertainty exists regarding the proper balance of regulatory federalism for a specific issue. Congressional action has already outlined the parameters for realizing a number of national purposes for broadband and delegated specific responsibilities to certain federal entities. Moreover, Congress has, in the past, carved out specific regulatory roles for the states. Thus, Congressional guidance on many of the issues discussed herein

³⁶ Buzbee (2007) discusses myriad possible ways in which to design “floor” and “ceiling” approaches in a number of contexts.

would be beneficial. However, since enacting federal legislation is a laborious and time-consuming process, federal and state entities should pursue the myriad approaches described above whenever possible. Indeed, Congressional action should not be viewed as a panacea since federal legislation could result in rigid policy frameworks that might handcuff innovation in dynamic sectors. Deference to Congress should be reserved for clarification of federal goals (e.g., the ability of the FCC to implement its *National Broadband Plan* under the existing legal framework) and for resolution of fundamental questions that go beyond the existing mandate of federal regulatory agencies (e.g., modernizing the regulatory paradigm for energy services).

Conclusion

Technological innovation in the United States has been consistently encouraged and bolstered by the adaptation of existing regulatory structures to accommodate new companies, new services, and new ways of conducting business. This dynamic is seen most clearly in the communications space, where the balance of regulatory federalism has tipped in favor of a largely national-centric framework as a new class of “borderless” technologies like broadband has emerged and begun to supplant basic telecommunication services. The states continue to play a role in the regulation of these services, but the interstate nature of broadband augurs in favor of a federal regulatory approach.

As broadband seeps into the business models of service providers across the country, novel questions regarding the proper balance of regulatory federalism in these instances will arise and will defy easy resolution. Indeed, the adaptive model of regulatory federalism for underlying the broadband infrastructure, while relevant, will not be dispositive when addressing the proper regulatory approach for new telemedicine and smart energy grid services. Moreover, the federal imperative to leverage broadband for national purposes – e.g., transforming healthcare, enhancing energy efficiency, and bolstering education services – will soon collide with existing state regulations for doctors, utilities, and educators. In the wake of these collisions, federal regulators will have two options: preempt inconsistent state regulations in order to realize national goals or work collaboratively with the states towards mutually beneficial results. This article has outlined a framework for effectively pursuing the latter approach. Implementing a consistent yet flexible approach to new business models and broadband-enabled services will assure that the full measure of resources at the state and federal levels are focused on supporting innovation rather than on squabbling over regulatory minutia.

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