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**Carriers of Last Resort:
Updating a Traditional Doctrine**

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Executive Summary

The United States made a historical commitment to ensuring that virtually every resident has access to local exchange wireline telephone service. States helped achieve that goal through their “carrier of last resort” (COLR) policies. Enacted by state legislatures and state commissions, these COLR policies imposed costly duties on local exchange providers, but they produced a network that today gives nearly all customers the opportunity to purchase reliable and high-quality wireline voice service under nondiscriminatory terms.

This paper describes the history of local exchange COLR policy, including its legal sources. It then describes modern stresses on COLR policy and the sources of those stresses, especially the development of local exchange voice service competition. After summarizing the combined effects of these stresses, the paper makes several recommendations to states that wish to sustain ubiquitous and continuous service while making COLR policy more responsive to the current technological and legal environments.

COLR responsibilities were classically assigned to Public Switched Telephone Network (PSTN) providers. These were the former Bell System companies and thousands of independent local telephone companies that provided local exchange service. Under classical COLR policy, a local exchange company accepted a bundle of obligations, including providing reliable service on nondiscriminatory terms at rates set by the state commission and obtaining advance regulatory approval for any planned market exit. State and federal regulators also assigned COLRs many carrier-to-carrier duties that made the network fully interconnected, thereby allowing every PSTN telephone to call any other PSTN telephone.

COLR duties were costly, particularly when they involved providing service to high-cost areas. Yet COLRs also received compensating economic benefits. In most states, the COLR received an exclusive franchise. The state commission also had an obligation to set rates that allowed a prudently operating company to earn a reasonable return on equity. Classical COLR policy also created benefits for regulators, including the power to reduce rates charged to preferred customer classes and to increase overall cost by mandating new consumer benefits. Finally, rate designs approved by state and federal regulators also allowed COLRs to require large contributions to common cost from certain classes of customers, funds that permitted the COLR to charge lower rates to other customers. The authors characterize this overall arrangement as the “classical regulatory compact,” not because it was an explicit contract, but because it provided benefits to both COLRs and the public and was politically stable for many years.

Federal policy, with its focus on promoting competition in local exchange markets, has added new complexities to COLR policy. The Telecommunications Act of 1996 authorized the FCC to pay universal service support to multiple carriers, including non-COLRs. At the same time the Act reinforced the importance of COLR duties imposed on incumbent local exchange carriers (ILECs), and it extended ILEC carrier-to-carrier duties. In interpreting the Act, the FCC initially made several decisions that led to broad eligibility for universal service payments and rapid growth of the federal fund. More recently, however, the FCC has retreated from these

early policies and emphasized the importance of aligning COLR duties with eligibility to receive universal service support.

Technological advances, federal and state statutory changes, and regulatory reshuffling of the competition-regulation mix have destabilized, and even undermined, the classical regulatory compact. The unevenness in state and federal responses to these modern problems has produced policy gaps, asymmetries, overlaps and inconsistencies. Four particular challenges face state commissions in this context. Two relate to market entry and two relate to market exit:

1. Economic arrangements between competitive providers and the owners or managers of multi-subscriber properties (such as apartment complexes) raise the possibility that COLRs might be required to build facilities in locations where they cannot recover their marginal costs.
2. In areas where competitive carriers have built facilities in an entire exchange, there is uncertainty about when COLR duties arise for the successful new carrier and when they expire for the unsuccessful incumbent carrier.
3. Increased risk of economic failure by competitive carriers suggests a need for “mass migration” rules to manage orderly exits from local exchange markets.
4. Increased risk of economic failure by ILECs suggests a need for rules to identify a substitute provider when an ILEC is unable to continue providing satisfactory service.

If states do not act, the longevity, reliability, and affordability of carrier of last resort service is in doubt. This paper suggests a framework of recommendations under which states can clarify the duties they assign to COLRs, articulate where those duties apply, and define financial benefits that COLRs receive in return. These recommendations are conservative in the sense that they suggest reviving some traditional doctrines and adapting them to modern conditions.

This paper argues that states still need COLR policies for most geographic areas. Although federal law prohibits granting monopolies for local exchange service, the need persists for some entity to fulfill classical COLR roles. Appointing a single wireline COLR to serve each area is not inconsistent with the federal ban on monopolies, while offering several advantages, including higher economies of scale in rural areas, minimized total economic cost of providing service, limited demand for universal service support, and continuity of essential carrier-to-carrier services. In developing COLR policies, states should also consider:

1. Assigning all Eligible Telecommunications Carriers (ETCs) relatively large service areas, thereby minimizing opportunities for cream skimming by new entrants.
2. Adapting COLR duties to anticipate multi-subscriber properties, competitive overbuilds, and exit by competitive carriers and the current COLR.

3. Differentiating between duties that attach when a carrier is a COLR and when, as an ETC, it receives financial support.
4. Making wireless carriers and broadband providers eligible for a separate ETC designation.
5. Providing explicit compensation or universal service support to COLRs.

In addition, states should consider whether to expand COLR policies to apply, not merely to voice services, but also to broadband. States and the federal government seem to agree that every American citizen and every American business should have access to robust broadband services. State roles in promoting broadband can include taking a supporting role in federal programs (including grant funding), providing state funding for broadband expansion, and directly applying COLR-like policies to broadband facilities.

The move to competition as the preferred telecommunication policy does not mean that COLR policies are no longer needed, because competition by itself cannot ensure broad-based access to essential services. Competitors may avoid serving areas that are high cost or filled with subscribers of limited means, while incumbent providers may seek to discontinue service in those same areas. COLR policies give regulators the tools to assure that at least one carrier is in place to provide essential services in all areas and that necessary carrier-to-carrier services continue.

If states want to ensure that their customers continue to receive ubiquitous and reliable service, a useful approach is to modernize the regulatory compact between state law and local exchange COLRs. The new compact would impose costly responsibilities on COLRs, requiring them to serve wide areas. It would also restore an important element in the traditional regulatory compact, giving those COLRs a reasonable opportunity to recover their costs, even in the presence of competitors.

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Carriers of Last Resort: Updating a Traditional Doctrine

Introduction

The United States made a historical commitment to ensuring that virtually every resident has access to local exchange wireline telephone service. One way states achieved this goal was through their “carrier of last resort” (COLR) policies.

COLR policy first evolved before competition, before the break-up of the Bell system in the 1980s, and before the Telecommunications Act of 1996 ended monopoly franchises for local exchange service. Originally, telephone companies owned and operated the entire public switched telephone network (PSTN), including local loops,¹ switches, interoffice trunks, and telephone sets. States imposed COLR policies to protect customers from unreasonable discrimination in the availability of service, ensure that they could get service and line extensions at reasonable costs, and protect them from service abandonment. State and federal COLR policies also ensured that interconnections between carriers operated smoothly and that all telephone calls went through to the intended recipient.

In some ways these classical policies still work, but competition has created new challenges to the details—and perhaps even the necessity—of traditional COLR policy. In this new environment, state commissions are often asked to abandon COLR policy, to establish new COLR requirements, and to update their existing COLR policies to suit modern competitive markets and other legal and technological changes.

This paper suggests a framework under which states can clarify the duties they assign to COLRs, where those duties apply, and what kinds of financial or other benefits COLRs receive. It discusses how updated COLR policies can help ensure that all customers have at least one option for quality telecommunications service and that the service is not disrupted by a business failure. The paper also examines carrier-to-carrier services, which in a multi-vendor network are important “linchpin” inputs to the retail services of other carriers, and it discusses how COLR policy can protect wholesale customers, thus ultimately improving network reliability.

¹ “Loop” is the industry term for the wires that connect an end user to the telephone company’s end office.

I. The classical concept of COLR

As used in this paper, a Carrier of Last Resort (COLR)² is a local exchange carrier (LEC). A LEC is a telecommunications business that gives customers an entry point into the switched network, allowing them to originate and terminate switched telephone calls.³ Most LECs are COLRs because states have assigned them additional duties to provide service to individual customers and to geographic areas. If a customer or a geographic area lacks service, the state commission can order the COLR to provide that service.

COLRs also have carrier-to-carrier duties that make it possible for the entire PSTN to function as a single network. These duties include making physical interconnection with other networks and transporting traffic for other carriers, both to the COLR's own customers and across its service area to still another carrier. Many states have old statutes mandating this kind of interconnection between carriers.

Some states also apply the term COLR to retail interexchange or toll service. These states assign COLR-like duties to particular toll providers,⁴ a task that until 1984 was performed nationally by AT&T Long Lines. Although many of the issues in this context are similar, this paper does not consider retail toll COLR duties explicitly.

A. Which carrier is the COLR?

Historically, state and federal regulators assigned COLR duties to two kinds of LECs. Under state law, both the Bell Operating Companies and hundreds of independent telephone companies serve as COLRs. Today, the Bell Operating Companies and the independent telephone companies are called "Incumbent Local Exchange Carriers" (ILECs), a term applied in the Telecommunications Act of 1996 (TA96) to those LECs

² Some states use the term "Provider of last resort" (POLR) synonymously.

³ Federal statute distinguishes between "local exchange" service, which generally allowed flat-rated calling within a limited area, and "interexchange" service, which makes calls possible to more distant locations and often requires per-minute payments. Before 1984, this statutory distinction was mirrored in the business structure of the AT&T network, which had one company, AT&T Long Lines, for interexchange service and many local exchange companies.

⁴ See, e.g., Regulatory Commission of Alaska, *Application of SBC COMMUNICATIONS INC. for Authority to Acquire a Controlling Interest in AT&T Corp., Holding Company Parent of ALASCOM, INC.*, Docket No. U-05-16, Order No. 4, 2005 Alas. PUC LEXIS 290 (2005) (commission approved merger, noting that acquiring company would continue to serve as carrier of last resort for toll services); Mo. Rev. Stat. § 392.460; Wis. Admin. Code PSC 160.14.

that were providing local telephone service on the date the legislation was enacted.⁵ TA96 refers to LECs providing service in competition with the ILECs as “Competitive Local Exchange Carriers” (CLECs).

Some states have assigned COLR duties automatically to all ILECs.⁶ CLECs are generally exempt from COLR duties, although there are exceptions.⁷ Several states have defined a COLR-like entity known as the “Eligible Telecommunications Carrier” (ETC), a term that was first defined by federal law and that is discussed in more detail below.⁸ Some states assign COLR duties to a CLEC only if it also becomes an ETC.⁹

State law ordinarily requires a carrier to obtain a “certificate of public convenience and necessity,” or a similar certificate of authority before providing telecommunications service. COLR duties are sometimes articulated in these certificates.¹⁰ In other cases, COLR duties are created by state statutes defining the duties

⁵ 47 U.S.C. § 251(h).

⁶ According to a survey of state commissions conducted by the National Association of Regulatory Utility Commissioners (NARUC) in 2007, Arizona, California, Florida, Georgia, Kansas, Massachusetts, Michigan, Missouri, New Hampshire, North Carolina, Ohio, Oregon, Tennessee, Texas, and Washington either designated all ILECs as COLRs or designated as COLRs all ILECs that were operating on a specific date. *See, e.g.*, Ind. Code § 8-1-32.4-11; Mo. Code Regs. Ann. tit. 4 240-31.040(2)(A) (ILECs designated as COLRs until designation changed); N.C. Gen. Stat. § 62-110(f1) (ILECs serving on July 1, 1995 designated “universal service provider (carrier of last resort)”).

⁷ According to the NARUC survey cited in footnote 5, Alaska, Missouri, North Carolina, Texas, and Wisconsin allow non-ILECs to be considered COLRs, under varying circumstances. *See, e.g.*, Mo. Code Regs. Ann. tit. 4 240-31.040(2)(B) (non-ILECs may apply for designation as COLRs); N.C. Gen. Stat. § 62-110(f1)-(f3) (allowing designation of second universal service provider (carrier of last resort) in areas served by ILECs with more than 200,000 lines and not organized as a cooperative; each certificate holder becomes both COLR and “universal service provider”).

⁸ *See* 47 U.S.C. § 214(e). According to the NARUC survey, Indiana assigns COLR duties to all designated ETCs.

⁹ According to the NARUC survey, Alabama and Indiana consider some or all ETCs to be COLRs. Missouri statute also uses the terms ETC and COLR synonymously. Mo. Rev. Stat. § 392.248(5).

¹⁰ For example, in Texas the holder of the certificate of convenience and necessity must provide basic local telecommunications services. Tex. Pub. Util. Reg. Act §§ 54.251, 54.302. As in some other states, Texas uses the term “Provider of Last Resort”

of utility commissions, are found in a state commission's administrative rules,¹¹ or are mandated in state commission orders.

B. COLR duties

The primary purpose of COLR policy is to ensure that some entity, within a defined service area, provides service to all customers who request and pay for that service.¹² This core idea has important qualifications and extensions. COLR duties fall into five broad categories:

1. Duty to serve. A COLR must extend retail voice service to any potential customer within its franchise area on request, subject only to reasonable conditions, and in accord with reasonable service quality standards.
2. Line extensions. A COLR must extend its lines throughout its service territory, including unserved and newly built areas, subject to reimbursement by customers for certain construction costs.
3. Exit barriers. A COLR must continue providing service until the state commission grants permission to exit.
4. Other retail benefits. A COLR often is required to provide certain additional economic and service benefits to specified customers and former customers.
5. Carrier-to-carrier duties. A COLR must provide certain interconnection and wholesale services needed by other carriers.

The following sections describe these five duties in more detail.

(POLR) rather than COLR. *See also*, Or. Rev. Stat. §§ 759.500(a), 759.506 (statute establishes an “allocated territory” franchise system and codified common carriage concepts such as providing adequate and safe service in a nondiscriminatory manner).

¹¹ *E.g.*, Tex Admin. Code tit. 16, part 2, § 26.54 (describing duties of “dominant certificated telecommunications utilities.”).

¹² California PUC, *Rulemaking on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643; Investigation on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643*, Decision No. 96-10-066, 68 CPUC2d 524 (1996).

1. Duty to serve

The COLR's core duty is to provide service to all members of the public who reasonably request service, and without unreasonable discrimination.¹³ A COLR must serve a customer who applies for service, who is financially qualified, and who is located within the COLR's service area and near the COLR's facilities. This duty to serve is unlike that of a baker or a bookstore owner, both of whom are free to reject customers at whim.¹⁴

States often characterize the service that a COLR must provide as "basic" or "essential" retail local telecommunications service. Common elements include the following items:¹⁵

1. Voice service, defined as two-way switched voice-quality connections to the rest of the public switched network.
2. Single-line service (as opposed to party-line service)
3. Switching capabilities that include:
 - a. "Touch-tone" (dual-tone multi-frequency) dialing.
 - b. Call waiting, call forwarding, and three-way calling.

¹³ *E.g.*, 16 N.Y. Codes, R. & Regs. § 609.3(a)(1) (every telephone corporation required to provide basic local exchange service to an applicant upon oral or written request); Ohio Admin. Code § 4901:1-6-09(M)(2) (within an ILEC's traditional service territory, ILEC must provide stand-alone basic local exchange service according to the ILEC tariff, upon request from any customer); Tex. Admin. Code tit. 16, part 2 § 26.54(b)(1) (carriers must make one-party line service available to all subscribers of local exchange service upon request); Wash. Rev. Code § 80.36.090 ("Every telecommunications company shall, upon reasonable notice, furnish to all persons and corporations who may apply therefore and be reasonably entitled thereto suitable and proper facilities and connections for telephonic communication and furnish telephone service as demanded.")

¹⁴ Of course, even a baker or bookstore owner could not engage in discrimination that is prohibited by law, such as discrimination based on race.

¹⁵ *E.g.*, *See* Fla. Stat. § 364.02(1); Indiana Code § 8-1-2.6-0.1(b); Iowa Admin Code tit. 199 § 39.2(1); Mo. Code Regs. Ann. tit. 4 §§ 240-31.010(6), 240.32.100(2); N.Y. Comp. Codes, R. & Regs. § 609.3; Wis. Admin. Code PSC 160.03.

- c. "Equal access." This allows a customer to make a toll call using the network of its preferred interexchange carrier by dialing a "1" and a ten-digit telephone number.
 - d. Toll limitation. This blocks or limits the toll calls made by certain customers.
 - e. Out-of-channel signaling (such as Signaling System Number Seven)
4. A rate design that:
- a. Offers a residential local exchange rate and a single-line business rate.
 - b. Permits unlimited calling within a local exchange area (and often to "extended" local service areas or "EAS" areas) without additional charges.
5. Interconnection to or direct provision of certain ancillary telecommunications services:
- a. Interconnection to interexchange companies of the customer's choice for toll calling.
 - b. Directory assistance.
 - c. Operator services allowing customers to make specialized requests, such as for "collect" calls.
 - d. Emergency services such as "911" and "enhanced 911."
 - e. "Relay" (sometimes called "711") services providing special services for the hearing impaired.
 - f. "Toll blocking" that allows low-income customers to prevent their line from originating direct-dialed toll calls.
6. The opportunity to be listed in a written directory, with an option for non-listed and non-published service, and annual distribution of a local telephone directory.

7. The ability to transmit computer data using a modem at a specified rate.¹⁶

The duty to serve applies throughout a COLR's service area or franchise area. Historically, these service areas often comprised large areas with mixtures of urban and rural exchanges. Traditional COLR policy limits "cream skimming," the ability of an ILEC to gain a cost advantage over other ILECs, by assigning all ILECs large service areas that include high-cost and rural customers.

The duty to serve does not require a COLR to serve every person who might apply for service from its service area. A COLR can decline to serve a financially disqualified customer, such as one who still owes money from a prior period.¹⁷ States also allow COLRs to require an advance deposit from certain customers, and states sometimes require COLRs to provide service under a repayment plan, even when the customer does owe money. Finally, a carrier may decline to serve a customer whose equipment is hazardous or who interferes with service to others.¹⁸

Many states require COLRs to comply with retail service quality standards. These standards typically cover installation intervals for new service, operator-handled calls, dial tone availability, call blocking rates, unscheduled outage times, customer trouble occurrence rates, average response time for trouble calls, reporting of network downtime, and emergency service continuity plans.¹⁹

COLR carriers sometimes also must comply with consumer protection standards. These can include requirements that the COLR make certain pre-purchase disclosures to prospective customers, make certain disclosures in advertising, offer trial periods for new customers, provide clear bills, and provide specified cancellation terms.²⁰

¹⁶ *E.g.*, Tex Admin. Code tit. 16, part 2, § 26.54(b) (requiring transmission at 14,400 bits per second); Wis. Admin. Code PSC § 160.031 (requiring 9,600 bits per second).

¹⁷ *See, e.g.*, 16 N.Y. Codes, R. & Regs. § 609.3(a)(2); Tex. Admin Code tit. 16 § 26.23; Wash. Admin. Code § 480-120-061(f).

¹⁸ *See, e.g.*, Tex. Admin Code tit. 16, part 2, § 26.23; Wash. Admin. Code § 480-120-061(b).

¹⁹ *E.g.*, Tex Admin. Code tit. 16, part 2, § 26.54. *See generally*, Perez-Chavolla, *Survey of State Retail Telephone Quality of Service Regulations for Selected Categories of Service: Metrics, Penalties and Reports*, NRRI, 2004, available at <http://nrri.org/pubs/telecommunications/04-09.pdf>.

²⁰ *E.g.*, Iowa Admin Code tit. 199 § 39.2(3)(f).

Telephone service historically could continue to operate during a power blackout, largely because many ILECs installed backup generators at their central offices and because telephone wires supplied voltage to the customers' telephones.²¹ Accordingly, some states make power backup a COLR requirement.²²

2. Line extensions

A COLR must provide facilities throughout its franchise area, at the request of a service applicant.²³ Yet line extension policy is an important limitation on this duty. Even where the COLR has a duty to serve, often the COLR requires the prospective customer to pay a one-time construction charge, sometimes called a "Contribution in Aid of Construction" (CIAC).²⁴ If a COLR is permitted to charge a large CIAC, that can effectively prevent service from being deployed to remote areas.²⁵ If a state prohibits CIAC or allows only small CIAC payments, line extensions could eventually force rates higher for other customers who already have service.

States disagree about when a COLR may demand a CIAC payment for a line extension. In other industries, notably water, courts have sometimes held that franchise terms required a utility to extend its facilities gradually over time and without collecting any CIAC.²⁶ Yet even in the water industry, courts have tended to allow CIAC payments

²¹ The average time that ILEC service can survive a power blackout has declined as ILECs have installed more remote platforms, which tend to have battery back-up, not generators. Some ILECs maintain portable generators to recharge batteries at remote sites.

²² *E.g.*, Alaska Admin. Code tit. 3 § 53.410(a)(12)(A); Iowa Admin Code tit. 199 § 39.2(3)(h).

²³ Some states include areas with no franchised COLRs and therefore no carrier with a line extension duty. Alaska, Arizona, and Maine are states that have areas without a franchised COLR.

²⁴ Where telecommunications and electric services are provided over common poles or conduits, CIAC fees are often imposed by the electric utility. The CIAC discussion here relies on cases involving telecommunications, electric, and water utilities.

²⁵ In the 1950s and 1960s, the Rural Electrification Administration made many loans to rural telephone companies. REA had a concept called "area coverage design" that required borrowers, as a condition of obtaining a loan, to agree not to charge CIAC. REA has now been renamed the Rural Utilities Service.

²⁶ *E.g.*, *Lukrawka v. Spring Valley Water Co.*, 169 Cal. 318 (Cal. Sup. Ct., 1915) (franchise accepted by municipal water company was a contract with the state of which the local inhabitants are the beneficiaries and which required utility to extend lines to all

where new lines would serve undeveloped areas,²⁷ large new residential subdivisions,²⁸ or new commercial developments.²⁹ Pennsylvania has explicitly established two classes of applicants, giving a “bona fide service applicant” greater rights than, for example, developers of planned residential developments.³⁰

The contribution requirements of ILECs are commonly expressed in state tariffs.³¹ Many of these tariffs contain simple rules of thumb, such as that the service provider will routinely install up to two new poles without requiring a customer contribution. As with utility charges generally, state law commonly authorizes the state commission to review whether line extension charges expressed in tariffs are just and reasonable.³² New Jersey uses an economic criterion; no CIAC can be required from customers where a line extension would be profitable without a CIAC.³³

parts of the city); *Board of Fire Comm'rs, Township of Piscataway*, 27 N.J. 192, (1958) (utility ordered to extend water lines where anticipated small operating loss on the extension could be absorbed without any appreciable effect upon utility's otherwise reasonable return, where incremental cost was a small portion of utility's capital budget, and where extension would not materially affect utility's financial condition).

²⁷ *E.g.*, *Van Holten Group v. Elizabethtown Water Co.*, 121 N.J. 48, 577 A.2d 829 (1990).

²⁸ *E.g.*, *Bertone v. Dept. of Public Utilities*, 411 Mass. 536, (Mass. Supr Jud.Ct. 1992) (hook-up charge upheld where applied to new customers for the connection of new electrical load to the system, and it reflected the individual service needs and location of the customer, and the incremental costs for system improvements).

²⁹ *E.g.*, *Kossmann v. Penna. Pub.Util.Comm'n*, 694 A.2d 1147 (Pa. Commw. 1997).

³⁰ 52 Pa. Code tit. 52 § 65.1.

³¹ CLECs do not always file tariffs.

³² *E.g.*, Pa. Code tit. 52 § 63.20 (a public utility must make reasonable line extensions within the territory in which it is chartered to operate and must file rules describing conditions under which it will make line extensions).

³³ *See* N.J. Stat. Ann. § 48:2-27 (allows Board of Public Utilities to order a utility to extend a utility line where the board determines that the extension is “reasonable and practicable and will furnish sufficient business to justify [its] construction and maintenance” and when the utility's financial condition “reasonably warrants” the additional capital expenditures). *See also*, *Van Holten Group v. Elizabethtown Water Co.*, 121 N.J. 48, 577 A.2d 829 (1990) (“sufficient business” requirement under the

3. Exit barriers

The exit barrier is a fundamental feature of COLR policy. As is true under general utility law, once a COLR has begun to provide service, it must continue providing service until the utility regulatory body grants permission to withdraw.³⁴

COLR exit can occur voluntarily or involuntarily. Voluntary sale to another LEC is the more common scenario. The COLR and the substitute carrier will generally petition the state commission to allow the COLR to exit and the substitute to enter the local exchange market. State commissions often grant these petitions after determining that the new company is financially and technically qualified.

Involuntary exit presents more complex issues. If a COLR is losing money on its operations and decides to abandon service, it might not be able to find a substitute carrier. Once a COLR enters bankruptcy, courts generally allow it to continue to operate for a period of time, but a bankruptcy court might not be able to find a substitute carrier. To ensure continued service over the longer term, the state commission might need to find a substitute COLR and reassign the service area. Some states claim authority to split up the service area of such a failing COLR and assign its service area to two or more neighboring COLRs.

4. Other retail duties

Some states impose additional duties on COLRs that benefit retail customers. These include the following:

1. Mandated rate designs. COLRs often are required to offer rate designs that do not require equal contributions to common cost from all customer groups. Rates for a single line to a business are often twice as high as

statute is not satisfied by a showing that the area requesting extension of facilities is a "hot market" that is likely to be developed).

For water lines, Pennsylvania applies a similar economic test. Pennsylvania water utilities must provide line extensions without a CIAC whenever the anticipated revenue from the extension will exceed the cost. The commission's regulations contain an algebraic formula for calculating profitability. *See* 52 Pa. Code tit. 52 § 65.21; *Popowsky v. Pennsylvania Public Utility Commission*, 910 A.2d 38, 53 (Pa. 2006) (upholding regulations).

³⁴ *E.g.*, Mo. Rev. Stat. §§ 392.248.5, 392.460. A separate Missouri statute defines a COLR as "any telecommunications company which is obligated to offer basic local telecommunications service to all customers who request service in a geographic area defined by the commission and cannot abandon this obligation without approval from the commission." Missouri Revised Statutes § 386.020(6).

residential rates, or more, despite similar costs. Rural rates are often the same as or lower than urban rates,³⁵ despite the higher average cost of rural service. Finally, intrastate toll and access rates are often set well above marginal cost so that local rates can be set closer to, or below, marginal cost.

2. Discounts. Some states require COLRs to provide explicit discounts to specific customer classes.
 - a. Low-income customers are a common beneficiary. Most states require COLRs to participate in the federal Lifeline program, which provides reduced monthly charges for local exchange service purchased by low-income customers.³⁶
 - b. States occasionally require additional discounts for disabled customers.³⁷
3. Soft dial tone. This service allows a disconnected customer to make calls to “911” emergency services and to the COLR’s business office.³⁸ For

³⁵ In states that have set rural rates lower than urban rates, the usual reason is “value of service” pricing. Under this method, since rural customers can reach fewer lines with local calls than urban customers, their service is deemed to have lower value and is sold at lower rates.

³⁶ Florida requires a COLR to absorb a revenue loss of \$3.50 out of a total local exchange rate discount of \$13.50 that it mandates for low-income customers who participate in the Lifeline program. Fl. Stat. § 364.10(2)(a) (applies to “eligible telecommunications carriers” as defined under federal law and may include wireless carriers). Vermont provides additional state-funded reimbursements to carriers that participate in Lifeline. Vt. Stat. Ann. tit. 30 § 7513.

³⁷ Vermont requires wireline telecommunications carriers to provide a 40% discount on intrastate services to customers who use adaptive telephone equipment for the deaf, speech impaired or hearing impaired, and Vermont also requires carriers to provide free directory assistance to customers who are blind or visually impaired. Vt PSB Rules § 7.609(A), (B), available at http://www.state.vt.us/psb/rules/OfficialAdoptedRules/7600_Standards_for_Telco_Carriers.pdf (consulted Feb. 19, 2009). These obligations apply to all wireline carriers, but not wireless carriers. *Id.* § 7.602.

³⁸ Synonyms are “enhanced 911 dial tone” and “continuous emergency access.”

reasons of practicality, this duty is often imposed only on wireline ILEC-COLRs.³⁹

5. Carrier-to-carrier services

COLRs have numerous duties to other carriers.⁴⁰ In 1990, the PSTN was characterized by limited interconnections between wireline and wireless networks, and with almost no interaction between telephone and cable companies. Today, that has all changed. The telephone system today is part of a “network of networks,” and it includes the Internet and many private networks.

Not all networks have the same characteristics. In a true peer network, carriers tend to be roughly similar in size, and each can function independently. Carriers interconnect to allow their end-user subscribers to communicate with one another, but no carrier serves a unique role that cannot be served by another carrier. Carriers interconnect more or less as equals or peers.

This does not describe the PSTN. ILECs today still have unique supporting roles on which other carriers depend. One of us has previously described this kind of network as a “linchpin network.”⁴¹ In a linchpin network, all carriers have customers, but not all carriers perform the same duties and functions. Instead, one carrier provides services that are essential to the other networks. Today the ILEC network is a linchpin network that provides a variety of interconnection services to other carriers, which those carriers use as upstream components for their own retail services.

Some linchpin duties were created by states in the early 20th century. Many state legislatures passed statutes during that period requiring telephone and telegraph companies to interconnect. This meant not only that the carriers had to physically

³⁹ Vermont, for example, requires that continuous emergency access be provided by “the local exchange carrier that owns the local loop facilities which most recently provided local service to the premise.” Vt. PSB Rule 7.102(B). For a disconnected CLEC supported by a UNE, this provision imposes the duty on the ILEC.

⁴⁰ State regulators should understand these COLR duties, regardless of their legal origin. If the duties were originally imposed by state law, state regulators may be directly responsible for continuing, modifying, or terminating them. Even duties imposed by the FCC, however, are relevant here. A COLR carrier-to-carrier duty can be an important element in network reliability, an interest that the states and the FCC share.

⁴¹ Bernt, *Regulatory Implications of Alternative Network Models for the Provision of Telecommunications Services*, NRRI, Occasional Paper #19, available at <http://nrri.org/pubs/telecommunications/94-29.pdf>.

interconnect their lines,⁴² but also that they had to transport and, if necessary, terminate traffic for other carriers. This interconnection made it possible for the customer of one carrier to telephone the customer of another carrier. For many years, AT&T Long Lines facilitated these interconnections, connecting to local exchange carriers at each end of an interconnected call. In addition, some ILECs provided “transit” services that interconnected nearby small ILECs with AT&T’s toll network.

State and federal regulators expanded the carrier-to-carrier duties of COLRs during the 1980s when the federal courts broke up the Bell system and “competitive access providers” and “interexchange carriers” (IXCs) came into existence.⁴³ State and federal regulators expanded the carrier-to-carrier duties of ILECs to make this transition possible.⁴⁴ When an IXC customer sought to make a call, the ILEC that provided the customer with local service was required to “originate” that toll call by delivering it to the IXC’s network. Similarly, when an IXC call sought to reach a customer, that customer’s ILEC was required to accept that call and “terminate” it at the subscriber’s telephone location. The ILEC was compensated for providing these services by charging the IXC “access charges.” In addition, the agreement that broke up the Bell System required ILECs to modify their switches to provide “equal access”⁴⁵ while many states required ILECs to provide “tandem transit” for toll calls passing between remote rural ILECs and the toll network.⁴⁶

COLRs also provide new kinds of interconnection services today, although often voluntarily in return for explicit compensation. Modern voice networks are

⁴² In practice, two adjacent ILECs often interconnected by maintaining a joint “meet point” trunk. Each ILEC would accept incoming calls from the other carrier and would terminate those calls at their subscribers’ telephones. Often the “meet point” was the boundary between the two adjacent ILEC service areas.

⁴³ “Interexchange carriers” (IXCs) offer retail toll or interexchange services to end users.

⁴⁴ Generally, the FCC prescribed requirements for interconnecting with IXCs for interstate toll calls, and the states mirrored these requirements for intrastate toll calls. Some issues that were not so easily divided, such as whether a particular switch would be capable of providing “equal access,” was decided by one regulatory body or the other.

⁴⁵ On an equal access local network, a customer can make a toll call using the network of its preferred interexchange carrier by dialing a “1” and the other party’s ten-digit telephone number.

⁴⁶ “Tandem” switches are used to interconnect local networks to the interexchange networks of independent IXCs. Tandem transit is a carrier-to-carrier interexchange service that passes through a tandem switch.

interconnected in complex ways. Signaling System 7 (SS7) is a telephone standard that establishes an independent path for call management signals. SS7 networks therefore interconnect not only traditional voice circuits, but also control circuits. SS7 management systems can require long signal paths, sometimes stretching from a local switch to a signal control point hundreds of miles away. Similarly, modern switches require rapid access to regional databases for number portability. These signaling features typically require some support from ILEC networks.

COLR carrier-to-carrier duties expanded again in the 1990s under TA96. The Act required ILECs to provide their retail services to competitors for resale⁴⁷ and to offer network elements on an unbundled basis (UNEs).⁴⁸

“Special access”⁴⁹ is another carrier-to-carrier service mandated by both state and federal regulators. Wireless carriers use these special access circuits for local backhaul that interconnects their cell towers.⁵⁰ CLECs also purchase special access from ILECs, both to serve their customers’ premises and to transport traffic from the ILEC central office to the CLEC’s own network.

COLRs also have important duties under state law to maintain poles and conduits. Most utility poles are owned by either energy utilities or ILEC-COLRs.

II. History of COLR policy

The current duties of COLRs were built up in layers, over several epochs. First, the common law imposed duties on common carriers and holders of franchises. Then, state utility statutes merged the common-law doctrines and state utility commissions expanded them. Finally, federal and state universal service policies modified and in some ways expanded COLR duties. This history is summarized in the following sections.

⁴⁷ Resale allows a competitive carrier to purchase local exchange service from the ILEC and sell it to the retail customer as the competitor’s own product.

⁴⁸ 47 U.S.C. § 251(c). This topic is discussed in more detail below.

⁴⁹ “Special access” is a term of art describing unswitched point-to-point circuits. A common special access circuit is a “T-1” or “DS-1” circuit. Some special access circuits are called “private lines.”

⁵⁰ “Backhaul” is the industry term for connecting wireless towers to a wireless carrier’s core network. In a few states, wireless carriers purchase special access from intrastate tariffs.

This historical narrative will interest state policymakers for several reasons. First, the early history of COLR concepts illustrates their significance today and can provide a context for public expectations about how telecommunications companies should operate. That history also suggests important differences between the ability of market forces to control prices and the ability of market forces to advance other public policy goals. Second, more recent federal statutes and regulatory policies impinge on state COLR policies. In some ways, federal laws are overlays to state COLR policies, confirming the policy judgments but arguably making state regulations redundant. In other ways, federal laws contain gaps that states might want to fill, if they are not preempted. Third, the evolution of FCC universal service policy since 1996 illustrates a shift in the approach of federal policymakers who first seemed to regard COLR policies as being in conflict with pro-competitive policies mandated by federal law, but who have more recently begun to restore COLR policy to something like its traditional importance. That history also illustrates the sturdiness of COLR concepts and their intimate connections to universal service policy.

A. Common carriers and franchises

By the fourteenth century, English law assigned unique duties to certain kinds of business enterprises. The law imposed special tort-based duties⁵¹ on “public callings,” such as innkeepers and blacksmiths.⁵² Even as more and more business relations moved to contract law principles in the 19th century, American law continued to recognize that some kinds of enterprises are “affected with a public interest.” For these kinds of businesses, some of the older tort-based duties have remained in effect.⁵³

Utility law incorporated two major strands of the common law that developed long before there were telephones or utilities. The first was the law of common carriage. State courts assigned special duties to enterprises such as inns, coaches, and ferries, so long as they held themselves out as serving the public in general. The courts called these enterprises “common carriers.”⁵⁴ Common carriers were required to serve all customers

⁵¹ Tort concepts deal with civil duties imposed by law and not those voluntarily accepted as a matter of contract.

⁵² Cherry, *The Political Realities of Telecommunications Policies in the U.S.: How the Legacy of Public Utility Regulation Constrains Adoption of New Regulatory Models*, 2003 Mich. St. DCL L. Rev. 757, 762 (2003).

⁵³ Cherry, *id.* at 763. See *Chas. Wolff Packing Co. v. Court of Industrial Relations*, 262 U.S. 522, 535-37 (1923) (public utilities and other kinds of businesses affected with the public interest may be subjected to statutory wage limitations).

⁵⁴ The principles of common carriage were first developed in England, but after the Revolutionary War, states became responsible for enforcing the common law,

without unreasonable discrimination and to comply with their own published regulations. Since common carriers had control over their passengers and packages, the courts essentially made them into insurers of consigned goods.⁵⁵ When railroads were built, they, too, became subject to common carriage principles.

The second legal strand developed from the concept of special privileges or “franchises.” At the time of colonization, the King granted franchises to companies to settle portions of what is now the United States. Later, franchises (or monopolies) were recognized for particular kinds of business, such as turnpikes, canals, and ferries.

Franchises came with duties and benefits. A franchisee often had to make a substantial investment, in coaches, ferries, and even roads, as required by the terms of the franchise. Franchisees also faced barriers to exit, being required to provide service throughout the term of the franchise, even if it proved unprofitable. On the benefit side, a franchise often held a legal monopoly for an important service, creating an opportunity for large profits.

In sum, even in antebellum America, the law provided remedies beyond those available from markets. Long before telephones, Americans had developed expectations about how certain kinds of businesses should be conducted. Some of these expectations were enforced by courts as common-law principles applied to common carriers. Others were enforced through the terms of franchise grants.

B. Utility commissions and rate regulation

Utility commissions were first chartered in the late nineteenth century, first at the national level and then by states. At the federal level, the Mann-Elkins Act of 1910 added telegraph and telephone companies to statutes that regulated railroad common carriers, making them subject to the regulatory jurisdiction of the Interstate Commerce Commission.⁵⁶ The Communications Act of 1934 transferred that jurisdiction to the newly formed FCC.

State and federal utility statutes merged the two legal strands, common carriage and franchise, into a new body of laws that applied to public utilities. From common

including the law of common carriage. Until about 1870, therefore, common carrier duties were commonly enforced by state courts, applying tort principles that originated in the common law.

⁵⁵ See *National Ass'n of Regulatory Utility Commissioners v. F.C.C.*, 525 F.2d 630, 640 (D.C. Cir. 1976), cert. denied, 425 U.S. 992 (1976).

⁵⁶ Some states still give state utility commissions the authority to regulate railroads, another form of common carriage. *E.g.* N.C. Gen. Stat. § 62-3(23) (public utilities defined to include motor carriers).

carriage came duties such as nondiscriminatory treatment of customers. From franchise law came the idea that a utility must extend service to unserved areas.

This history explains one of the odd usages within telecommunications regulation. The term “common carrier” is used as the most common descriptor of a communications service provider. This term can best be understood historically.⁵⁷ The 1934 Act assigned to communications providers many of the duties that earlier had been assigned by common law to other kinds of common carriers, such as railroads. Indeed, Title II of the 1934 Act, the portion that contains most of the relevant duties that the federal act imposed on service providers, is titled “Common Carriers.”

The 1934 Act created a new set of statutory duties for common carriers, but it left many responsibilities to the states. Today, states have primary responsibility to define most of a COLR’s duties, including the duty to serve, line extension policy, and service quality requirements.

COLR status imposes costs, and it confers benefits. For decades, telephone companies had a legal monopoly and sole access to public rights-of-way for telephone services. Even when the monopoly ended, COLRs retained networks that served most populated areas and that continue to produce economies of scale and scope. States also gave utilities the right of eminent domain within their franchise areas.

COLRs also had a constitutionally protected right to rates that were not confiscatory. A COLR traditionally can recover its costs, plus a reasonable return on its prudent investment. In this static environment, when a state commission increased a carrier’s COLR duties, the COLR could recover the incremental costs (eventually, if not immediately) by charging higher rates.

Rate designs approved in this environment allowed COLRs to require large contributions to common cost from certain classes of customers, in order to supplement the rates paid by other customers. For example, COLRs classically charged the same

⁵⁷ The definition of “common carrier” in the Communications Act is tautological. Title II defines a common carrier as “any person engaged as a common carrier for hire.” 47 U.S.C. § 153(10). The statute can be understood only if the term “common carrier” is defined by some outside source, such as common law. The courts have held that a carrier becomes a common carrier “if it will make capacity available to the public indifferently or if the public interest requires common carrier operation of the proposed facility.” *National Ass’n of Regulatory Utility Commissioners v. F.C.C.*, 525 F.2d 630, 641 (D.C. Cir. 1976) cert. denied, 425 U.S. 992 (1976); *Virgin Islands Tel. Corp. v. FCC*, 198 F.3d 921, 924 (D.C. Cir. 1999).

monthly rate to both urban customers and rural customers.⁵⁸ Urban customers often are served by relatively short “loops” of telephone wire and by efficient, large central offices. Serving a rural customer often requires a much greater investment in facilities per customer. If both customers pay an equal rate, the urban customer will make a larger contribution to a COLR’s common network costs than the rural high-cost customer. Classically, state commissions were not greatly concerned about these contribution differences between urban and rural areas. Critics later characterized this arrangement as the “urban-to-rural subsidy,” a kind of “implicit subsidy.”⁵⁹

Classical COLR policy also created benefits for the public. Regulators had the power to reduce rates charged to preferred classes of customers and to increase overall cost by mandating new services, standards, and benefits.

In sum, over a long period, this balance between COLR duties and COLR benefits provided benefits to both utilities and regulators. Regulators had the freedom to prescribe desirable rate designs and to issue new mandates, such as soft dial tone. For their part, the companies had the right to be compensated for costs that arose from those mandates. We characterize that balance here as the “classical regulatory compact.”⁶⁰

⁵⁸ In some areas, urban customers were charged more, because they were able to reach more telephones without incurring toll calling charges. This was called “value of service” pricing.

⁵⁹ The FCC found in 1997 that state rate designs contained three “implicit subsidies.” These were: 1) geographic rate averaging that benefits rural customers, 2) subsidizing residential lines via business lines, and 3) subsidizing low-usage customers through high interstate access charges. FCC, *Federal-State Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd. 8776, 8784, ¶ 12 (1997).

“Implicit support” is a more economically correct and politically neutral term. In economic terms, a subsidy occurs when the price to customer A goes up to fund service to B, and B’s service is priced below the marginal cost of that unit of service. The telecommunications industry depends heavily on sunk investment in common facilities. Once the network is in place, adding an additional service or serving an additional customer often costs little. Therefore, marginal cost is usually a small part of total cost in the telecommunications industry, and it is difficult to prove that any particular telecommunications rate design produces an economic subsidy. For that reason, this paper generally uses the term “subsidy” in quotations whenever, in context, the subsidy would be implicit.

⁶⁰ In using this term, we do not intend to suggest that there was ever an explicit contract in a legal sense. Rather, the compact was an implicit political balance created by constitutions, statutes, and the decisions of many state commissions. The compact arose

C. Federal policy - 1996 to the present

The third major epoch of COLR policy began with the passage of the Telecommunications Act of 1996 (TA96 or the Act). The central provision of the new Act was section 253, which prohibited states from creating “barriers to entry” for local exchange providers.⁶¹ Commenters have called section 253 the “market opening” provision, although several states had previously adopted similar policies. An equally important provision was section 254, which mandated a comprehensive system of federal universal service support.⁶² Each of these sections created fundamental challenges to state COLR policy. The most complex and uncertain part of modernizing state COLR policy is to harmonize it to current federal policies in these two areas of competition and universal service.

1. The Act

The 1996 Act displayed two distinct attitudes toward COLRs. On the one hand, the Act established a new regime for universal service support, and it made that support available broadly, to both COLRs and new entrants. At the same time, the Act affirmed some traditional state COLR policies, albeit in subtle ways.

a. Offering universal service support broadly

Although TA96 was the first statute to explicitly mention universal service, by 1996 the FCC had already been authorizing universal service programs for a decade. In the early 1980s, and before the widespread introduction of long-distance competition, AT&T’s long-distance revenues helped defray LEC expenses. This arrangement allowed many LECs to reduce local rates (particularly residential rates) while still recovering all of their costs, including the costs of providing local service in high-cost areas. At the time, critics called this arrangement the “toll-to-local subsidy,” another form of “implicit subsidy.”

In 1984 the courts broke apart the Bell System, making effective long distance competition the goal of federal policy. During this decade, the toll-to-local “subsidy” continued to exist, but the FCC financed it in new ways. In the first phase, the “subsidy” was implicit within “access charges,” the fees that IXCs pay to LECs for originating and terminating long-distance calls. From 1984 to 1988, the FCC imposed high per-minute interstate access charges aimed in part to recover some of the costs arising from LEC

in many states, it was politically stable for a long period, and it provided benefits to both COLRs and the public.

⁶¹ 47 U.S.C. § 253(a) prohibited states or local governments from establishing barriers to entry for local exchange services.

⁶² 47 U.S.C. § 254 obligated the FCC to provide sufficient support to ensure that local rates remain affordable and reasonably comparable to urban areas.

investment in loops, a cost that was higher in rural areas.⁶³ Later, the FCC created an explicit new “high cost fund” that gave financial support to high-cost LECs. The new fund was financed by a new charge levied on long distance companies. By 1996, the high cost fund was still sending support annually to hundreds of high-cost LECs.

TA96 opened local exchange markets to competition, but it did not abandon universal service in the process. TA96 directed the FCC to provide sufficient financial support so that all customers would have continued access to quality services at affordable rates. Even customers in rural areas were to have rates reasonably comparable to the rates in urban areas.⁶⁴

In pursuit of this new statutory goal, the Act defined a new term, “Eligible Telecommunications Carrier” (ETC). In subsection 214(e), Congress detailed the process by which ETCs would be “designated.” Only designated ETCs may receive federal high-cost universal service support.⁶⁵ The Act delegates the authority to designate ETCs to willing state commissions.⁶⁶ Where a state declines the delegation, the statute directs the FCC to conduct the designation proceedings itself.⁶⁷

The basic principle of universal service is to offer affordable service to all subscribers, regardless of their locations. To pursue this goal, one might suppose that TA96 would require ETCs to comply with a full suite of COLR duties, including serving high-cost areas. Yet TA96 included three provisions that potentially made universal service support available to carriers meeting a far less costly subset of requirements.

First, subsection 214(e) strongly encourages states to grant ETC status to multiple carriers, at least throughout large portions of the country.⁶⁸ This broke with classical

⁶³ These per-minute charges were called the “common carrier line charge.” The charge was initially developed by the National Exchange Carrier Association, which formulated a pooled rate.

⁶⁴ 47 U.S.C. § 254(b), (d).

⁶⁵ 47 U.S.C. § 214(e)(1).

⁶⁶ 47 U.S.C. § 214(e).

⁶⁷ In cases where a state declines to accept the delegation, the FCC itself conducts the designation proceedings. 47 U.S.C. § 214(e)(6). One state has declined to hear any such ETC proceedings. Several states have declined to conduct proceedings for wireless applicants.

⁶⁸ 47 U.S.C. § 241(e)(2). The Act says that, upon request, a state commission “shall” designate more than one ETC for each area served by a nonrural ILEC. In areas

state COLR policy, which assigns only one COLR to each area. This policy also increased the possible demand for universal service support. In high-cost areas, if multiple networks are sharing a fixed pool of customer revenue, they collectively will have greater costs and will need more support than a single COLR network.

Second, subsection 214(e) relaxes for ETCs the traditional COLR obligation to build facilities. The statute requires each ETC to “offer” service and advertise its service within its assigned service area.⁶⁹ At the same time, the Act allows states to designate ETCs that “offer” service using a mixture of their own facilities and resale of the ILEC’s services.⁷⁰ This provision allows a competitive carrier to be designated as a competitive ETC (CETC) while avoiding the costliest traditional COLR duty, constructing networks to serve all parts of the service area.⁷¹

Third, subsection 214(e) gives state utility commissions the discretion to define service areas.⁷² How a state decides this question can be of great economic importance to both incumbents and new entrants. The issue is a major battleground between competition and universal service.

Small service areas minimize the cost of competitive entry. A CLEC often can find financing for the costs of a new network serving a small area. But a CLEC planning to serve a larger area needs more capital, which might be hard to find. More important, a CLEC serving a larger area that includes high-cost customers is likely to have a less robust business plan, and is less likely to draw investors. Therefore CLECs often prefer to serve small, densely populated areas where costs are low and revenues are high.

Small service areas are problematic for universal service because they create opportunities for “cream skimming.” If a new entrant enters the local exchange market in a small, low-cost area, it can attain lower average costs than the COLR that must also serve high-cost areas. This can create a competitive advantage for the new entrant. Small service areas therefore can leave COLRs with the competitive analogue to skim milk: a reduced subscription rate in the low-cost area and sole responsibility for the high-cost area.

served by rural ILECs, state commissions “may” designate more than one ETC if doing so is in the public interest.

⁶⁹ 47 U.S.C. § 214(e)(1).

⁷⁰ 47 U.S.C. § 214(e)(1)(A).

⁷¹ 47 U.S.C. § 214(e)(1)(A).

⁷² 47 U.S.C. § 214(e)(1). For an area served by a “rural telephone company,” the service area must be the “study area,” a term of art from previous FCC decisions. 47 U.S.C. § 214(e)(5).

A state can limit cream skimming by assigning large service areas to COLRs and ETCs. If all new entrants must serve large service areas, and if large service areas generally include high-cost customers, then all competitors will face roughly equal costs and all “implicit subsidies” will be roughly equal.

An alternative to large service areas is to provide explicit universal service support to replace implicit support flows from competitive low-cost areas. To the COLR, that support not only ensures continued reliable service to high-cost areas, but it also allows the COLR to lower rates and be more competitive in low-cost areas. For this reason, a state where COLRs have experienced serious revenue erosion in competitive low-cost areas is likely to be a state where COLRs are asking for explicit universal service funding.

b. COLR duties confirmed and expanded

Even as TA96 created a new eligibility system that offered universal service to non-COLR carriers, it confirmed the central importance of COLRs. The Act restated and even expanded many state-imposed COLR duties.

Carrier-to-carrier duties offer the clearest example. The Act assumed that ILEC-COLRs, especially Regional Bell Operating Companies (RBOCs), would continue to serve as anchors or linchpins for the switched network, providing the full range of existing services plus several new carrier-to-carrier services.

TA96 confirmed that all local exchange carriers must continue to provide existing services required by state or federal law.⁷³ For large ILECs, this included linchpin PSTN services such as the tandem transit service that interconnected hundreds of rural ILECs to the national toll networks. COLRs were also required to continue providing special access circuits.

To facilitate competitive entry into local exchange markets, TA96 expanded the interconnection duties of all ILECs.⁷⁴ The Act required ILECs to offer “unbundled network elements” (UNEs) to competitors and to offer their retail services to competitors

⁷³ 47 U.S.C. § 251(g) (requiring each local exchange carrier, to the extent that it provides wireline services, to “provide exchange access, information access, and exchange services for such access to interexchange carriers and information service providers in accordance with the same equal access and nondiscriminatory interconnection restrictions and obligations (including receipt of compensation)” that applied when TA96 was enacted).

⁷⁴ Section 251 defined the term ILEC for the first time, making it roughly synonymous with existing local COLRs. Any carrier that on the date TA96 became law either provided telephone exchange service or was a member of an exchange carrier association automatically became an ILEC. 47 U.S.C. § 251(h)(1).

for resale.⁷⁵ The duties of RBOCs were even greater. The Act restored to RBOCs the opportunity to sell interLATA toll services, but only in return for strictly prescribed conditions. An RBOC seeking to offer interLATA toll services had to show that it complied with a 14-point “competitive checklist” of expanded carrier-to-carrier duties.⁷⁶ Only the RBOCs were in a position to provide all of these linchpin carrier-to-carrier services to their competitors, services that greatly facilitated entry by their competitors. The RBOCs’ duties appear to be of indefinite duration.⁷⁷

At the retail level, the Act confirmed and restated some traditional state-imposed COLR duties, but it omitted others. Subsection 214(e) of the Act does prescribe an orderly market procedure for ETCs to exit the local exchange market,⁷⁸ but only in areas that are served by multiple ETCs. In those cases the statute assigns additional duties to “*remaining*” ETCs,⁷⁹ including ensuring that service remains available to customers of the exiting ETC and building any necessary facilities within one year or less. Since, as a practical matter, the “*remaining*” carrier is likely to be the COLR, the Act effectively assigns a liability to COLRs that have become ETCs and accepted universal service support. This provision echoes the duties some states impose on COLRs: providing substitute service to the customers of a failing CLEC.⁸⁰

Subsubsection 214(e) does not prescribe any exit procedure for a sole ETC. As a practical matter, any area with a single ETC is usually served by an ILEC.⁸¹ In failing to make provisions for ILEC failure, Congress apparently anticipated that ILECs would

⁷⁵ 47 U.S.C. § 251(c).

⁷⁶ RBOCs had to provide pole attachments, access to UNEs, access to operator services, directory assistance, and access to their own databases and operating systems. 47 U.S.C. § 271(c)(2)(B).

⁷⁷ The Act implied that once an RBOC entered the toll markets, the competitive checklist duties became a permanent part of the RBOC’s responsibilities. *See* 47 U.S.C. § 271(d)(6)(A) (if “at any time” the FCC determines that an RBOC is not providing the services prescribed in the checklist, the RBOC can be ordered to provide the services and may face penalties for not doing so.).

⁷⁸ 47 U.S.C. § 214(e)(4). The Act’s term for exit from the local exchange service market is to “relinquish” universal service.

⁷⁹ 47 U.S.C. § 214(e)(4) (*italics added*).

⁸⁰ The fact that a COLR would remain in place after a competitive failure also may help induce more competitive entry. A competitor is more likely to enter a market from which it can exit at will.

⁸¹ In most states the ILECs were designated as ETCs upon passage of TA96.

continue to provide COLR services indefinitely.⁸² This is a potentially important gap in the structure of the federal policy.

Subsection 214(e) also establishes a procedure for assigning a carrier to serve an unserved area. Although the nominal subject of subsection 214(e) is the qualification of ETCs, this provision also creates a liability for non-ETCs. The Act directs state commissions to determine which “common carrier” is “best able to provide such service” and then order that carrier to provide intrastate service.⁸³ Unlike the provision discussed in the preceding paragraph, the additional duty in this case is imposed on a carrier that might not even have sought ETC designation. Once again, the federal statute parallels the duties of COLRs in some states.⁸⁴

2. FCC implementation

The FCC is principally responsible for implementing TA96. In the years after 1996, the FCC issued several interpretive rulings. In 1997, the FCC issued a landmark order regarding universal service (*First Order*) that defined the minimum set of services a local exchange carrier must provide to be eligible for universal service support.⁸⁵ The list was similar to traditional COLR policy, but it also included elements that had not been adopted by all states⁸⁶ or even by a minority of states.⁸⁷

⁸² The exception would be where a CETC is designated and the ILEC seeks to exit. This is possible, although unlikely in most areas. The case of competitive overbuilds is considered in more detail below.

⁸³ 47 U.S.C. § 214(e)(3). The Act also says that the FCC can order the carrier to provide interstate services. Section 214(e)(3) also purports to contain a benefit for the newly assigned carrier in the form of eligibility for universal service payments. Yet since the FCC actually provides no high cost support for the intrastate costs of many ETCs, that benefit can be small or nonexistent.

⁸⁴ The Congressional history states that section 214(e)(3) “makes explicit the implicit authority of the Commission, with respect to interstate services, and a State, with respect to intrastate services, to order a common carrier to provide [the supported services].” Joint Explanatory Statement of the Committee of the Conference (H.R. Rep. No. 458, 104th Cong., 2d Sess.) at 141.

⁸⁵ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd. 8776, ¶ 46 (1997) (*First Order*).

⁸⁶ For example, the FCC required eligible carriers to provide “single-party service,” which means that only one customer will be served by each subscriber loop or access line. The opposite of single-party service is often called “party line” service. *First Order*, ¶ 62; 47 C.F.R. § 54.101(a)(4).

a. 1997-2000: Promoting local competition

(1) Competitive neutrality

Section 254(b) of the 1996 Act expressed six principles for universal service. The Act also allows the FCC to add additional principles that are “necessary and appropriate for the protection of the public interest, convenience, and necessity.”⁸⁸ The FCC’s *First Order* added a seventh principle, “competitive neutrality.”⁸⁹

COMPETITIVE NEUTRALITY -- Universal service support mechanisms and rules should be competitively neutral. In this context, competitive neutrality means that universal service support mechanisms and rules neither unfairly advantage nor disadvantage one provider over another, and neither unfairly favor nor disfavor one technology over another.⁹⁰

The FCC maintained that competitive neutrality would “facilitate a market-based process whereby each user comes to be served by the most efficient technology and carrier.”⁹¹ It also recognized that achieving strict competitive neutrality would be difficult, and stated that it sought only to “minimize departures from competitive neutrality.” In a key passage, the FCC asserted that there was no need to make a “false choice” between competition and universal service and that competitive neutrality applies equally in rural areas.⁹²

⁸⁷ For example, the FCC required “toll limitation,” which allows qualifying low-income consumers, at the customer's option, and at no charge, to limit their ability to make toll calls from their telephones. Toll limitation had been ordered in Pennsylvania before 1997. *First Order*, ¶¶ 82, 385; 47 C.F.R. § 54.101(a)(9).

⁸⁸ 47 U.S.C. § 254(b)(7).

⁸⁹ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd. 8776, ¶ 46 (1997) (*First Order*).

⁹⁰ *First Order* ¶ 47.

⁹¹ *First Order* ¶ 48.

⁹² *First Order* ¶ 50. As explained below, the FCC later applied the principle of competitive neutrality to the benefits of ETC status, but not to the burdens of COLR duties.

(2) Designation of eligible telecommunications carriers

The FCC applied this new principle of competitive neutrality to the question of how states should designate CETCs. Between 1997 and 2000, the FCC made three decisions that facilitated ETC designations and thereby made federal universal service support more widely available. All decisions expressed the goal of advancing competitive neutrality.

The first decision relaxed the eligibility requirements for ETC designation and federal universal service support. Under subsection 214(e), a state commission cannot designate a carrier as an ETC unless the state determines that the designation is consistent with the public interest. In the first universal service order it issued under TA96 (*First Order*), the FCC held that a state may not look at criteria beyond those explicitly listed in section 214(e), and that designation of an additional ETC in areas served by non-rural telephone companies would therefore be *per se* in the public interest.⁹³ In other words, although the statute contained a public interest test, no applicant could fail that test.

Second, the FCC encouraged competitive entry by discouraging states from assigning large service areas to ETCs. As discussed above, subsection 214(e) of the Act gave state commissions discretion in defining service areas. Small service areas lower the barriers to competitive entry and favor new entrants. Large service areas minimize cream skimming and reduce the demand for large universal service funds. The FCC's *First Order* advised state commissions not to establish "unreasonably large" service areas.⁹⁴ A large service area, said the FCC, might violate both the principle of competitive neutrality and section 253 of the Act, which prohibits states from establishing barriers to entry.⁹⁵ Under this FCC policy, if a state exercised its statutory discretion under TA96 to impose a large service area, and if that decision in fact

⁹³ *First Order*, ¶ 86; FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 05-46, 20 FCC Rcd 6371, ¶ 21, 42 (2005); see *Virginia Cellular*, ¶ 27; *Highland Cellular*, ¶¶ 4, 21.

⁹⁴ *First Order*, ¶ 184.

⁹⁵ *First Order*, ¶ 185. 47 U.S.C. § 253(a) prohibits states from creating barriers to entry. Even where a state's regulation does establish a barrier to entry, a state's rules can still survive judicial review under the so-called "safe harbor" provision. This provision allows states an affirmative defense that its rules were imposed "on a competitively neutral basis and consistent with [47 USCS § 254], requirements necessary to preserve and advance universal service, protect the public safety and welfare, ensure the continued quality of telecommunications services, and safeguard the rights of consumers." 47 U.S.C. § 253(b).

prevented a CETC from entering the market, the CETC could sue the state for violating federal law and could cite the FCC's opinion to the Court.⁹⁶

Third, in 2000 the FCC declared that states are obligated to certify a wireless carrier as an ETC even if the carrier does not yet have facilities to provide ubiquitous service in its service area. The FCC found that requiring ubiquitous service would "uniquely disadvantage[e] new entrants"⁹⁷ and would be an "obstacle" to the FCC's goal of promoting competition.⁹⁸ The FCC did not prescribe what minimum facilities would be sufficient. Instead, it explained that an applicant, by filing affidavits, should only have to "reasonably demonstrate" that it is able and willing to provide service upon designation.⁹⁹ The effect was to create ambiguity about when, if ever, a wireless carrier would have to provide ubiquitous signal coverage in its area. Several states later designated wireless carriers as CETCs even though the carriers offered only partial coverage of their designated service areas.

In sum, the FCC's post-TA96 policies reduced the capital cost to competitors seeking federal universal service support. Henceforth, a new competitor might receive federal support without complying with all COLR duties, most notably without fully building out its network. Support could be provided to carriers that had not been assigned to serve high-cost areas and even if other public interest factors counseled against granting that support. In these early decisions, the FCC reasoned that denying support to new entrants would impede competition, the major goal of TA96. In one decision the Commission even expressed its rationale as a desire to eliminate unfair discrimination against carriers that previously had "been excluded from participation in the existing universal service mechanism."¹⁰⁰

(3) Portability

Since TA96 authorized universal service support for CETCs, the FCC needed a method to calculate the amount of that support. In 1997, the FCC adopted the

⁹⁶ The question of whether states can be sued in federal court for violation of section 253 has generated much litigation. The majority view is that carriers may bring lawsuits against states and local governments alleging the creation of a barrier to entry, but they may not bring civil rights actions for damages against a state or its officers. *NextG Networks of NY, Inc. v. City of New York*, 513 F.3d 49, 53 (2d Cir. 2008).

⁹⁷ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Declaratory Ruling, 15 FCC Rcd 15168, 15177 ¶¶ 22, 23 (2000) (Wireless Preemption Ruling).

⁹⁸ *Wireless Preemption Ruling*, ¶ 27.

⁹⁹ *Wireless Preemption Ruling*, ¶ 24.

¹⁰⁰ *Wireless Preemption Ruling*, ¶ 26.

“portability” policy. When a CETC “captures” a customer from an ILEC or signs up a previously unserved customer, the CETC receives high-cost support in the same amount per line as the ILEC serving that service area.¹⁰¹ The support is “portable” in the sense that it moves with the customer when the customer migrates from an ILEC to a CETC. Moreover, the FCC decided that the support given to the CLEC would be equal, per line, to that given to the incumbent. For that reason, the rule came later to be called the “identical support rule.” The FCC explained that its primary purpose was to avoid discouraging competition in high-cost areas, and that the new policy would increase the CETC’s incentives to be successful, and thereby promote competition.¹⁰² The new policy failed to consider a number of critical universal service issues.

At the outset, there was a logical problem. While the portability policy was meant to advance competitive neutrality, the policy itself was not neutral. The FCC had previously based (and continues today to base) ILEC support on the ILEC’s own cost.¹⁰³ Yet under portability, support for CETCs is also based on the ILEC’s costs, not the CETC’s own costs. In this way, the rules for ILECs and the rules for CETCs were (and still are) fundamentally different.

Second, it was not clear that support for CETCs would, in all cases, advance universal service goals. Since a CETC’s support depends on the ILEC’s cost, support for a CETC has no predictable relation to its own cost. A CETC can receive a large support payment for a subscriber whom it serves at low cost,¹⁰⁴ and without demonstrating that the support will be used to expand or upgrade its facilities.

¹⁰¹ 47 C.F.R. § 154.307; *First Order*, ¶¶ 273, 287, 311.

¹⁰² *First Order* ¶ 287.

¹⁰³ An exception exists for nonrural ILECs. Later FCC policies based support for nonrural ILECs on the average nonrural ILEC cost of the state.

¹⁰⁴ In certain conditions wireless carriers can have much lower per-line costs than wireline carriers. A wireless CETC can receive support for a customer to whom it provides no signal whatever at home. Such customers might subscribe in order to have a portable device while traveling.

Even among wireline carriers, CETCs can have a financial advantage if their service areas are smaller and more compact areas than ILECs, with a lower average cost. Also, CETCs frequently serve customers through UNEs, which typically cost less than new construction. UNEs remain an important element of competitive networks, many of which are still highly dependent on ILEC networks. At the end of 2007, 59% of CLEC end-user switched access lines were either purchased from ILECs as unbundled network elements or purchased at wholesale from ILECs and resold. FCC, Industry Analysis and

Third, the FCC seems to have overlooked the possibility that the portability policy could actually *harm* universal service by making local exchange service uneconomic for ILEC-COLRs. As mentioned above, when Congress opened the local exchange market, it also created a formal universal service mechanism in Section 254, which required the FCC to provide “sufficient” support¹⁰⁵ to all ETCs. When a competitor takes a customer from an ILEC, the ILEC loses the subscriber’s revenue. Since most telecommunications investment is fixed investment in cables, poles, and conduits used for distribution systems, when an ILEC loses subscribers, its costs do not generally decrease in proportion. If an ILEC loses half its subscribers, it does not generally reduce its costs by one-half.

Such an ILEC might actually need more universal service support, not less, to continue serving the same area. Yet under portability, support is reduced when the ILEC loses a customer. More successful competition therefore reduces the ILEC’s revenues in two ways, not one, compounding the loss of subscriber revenues with loss of universal service support. Even for an ILEC that had excess profits when competition began, there is a point at which the ILEC cannot meet its costs.

Fourth, the portability policy created the risk of increasing total societal cost by encouraging needless facilities duplication. If support is available to new entrants, that support can tip a potential competitor’s business case toward entry. During this early period, FCC policy sought to tip that business decision toward entry, and the FCC viewed any contrary policy as violating competitive entry or constituting a possible illegal barrier to entry. Yet by too vigorously tipping business decisions toward entry, the FCC ran the risk of creating an inducement for uneconomic market entry, thereby increasing total societal cost.¹⁰⁶

Finally, the FCC did not anticipate that portability might significantly increase the demand for federal universal service support. Portability created the possibility that a low-cost CETC could receive high levels of universal service support. It also created the possibility of support going to carriers that had entered markets in which they could not survive without that support. As a result, claims for support grew rapidly, and the FCC eventually imposed funding caps.

Technology Division, *Local Telephone Competition: Status as of December 31, 2007*, Table 3.

¹⁰⁵ 47 U.S.C. § 254(b)(5), (d).

¹⁰⁶ The Supreme Court fully understands the possibility for economic waste. In its 1999 decision reviewing the FCC order, the Court said that finding the right policy about competition is a “difficult empirical question” that requires determining when local competition is possible without creating “wasteful duplication of facilities.” *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 416 (1999).

b. 2004-2008: Limiting support growth

TA96 and the FCC's early universal service policies created a perfect storm for the federal universal service fund. The policies led many new carriers to become designated as CETCs, and support to those new entrants doubled for four years in a row.¹⁰⁷ By 2007, competitive carriers were drawing \$1 billion per year from the federal fund.¹⁰⁸

A high percentage of the new money went to wireless CETCs. One cause of that growth was certainly the remarkable and largely unforeseen growth of the wireless industry. Another was the proliferation of telephones at each location. Many customers after 1997 adopted wireless telephones as supplements to (not substitutes for) their landline phones, greatly increasing the total number of lines that could generate support. Finally, there was the effect of FCC policy itself. Increases in ETC designations occurred particularly in states that had high per-line levels of federal USF support and therefore the promise of generating the greatest financial gain from ETC designation.

Beginning in 2004, FCC policy turned away from promoting local exchange entry and competition and toward policies that constrained fund growth.

(1) Service areas and line extension requirements

In 2004 the FCC changed its policy regarding CETC designations. In that year the FCC directly decided two ETC designation cases,¹⁰⁹ showing that its primary policy

¹⁰⁷ From 2002 through 2006, support to CETCs increased at an annual growth rate of more than 100 percent. Source: USAC data and author's calculation.

¹⁰⁸ FCC, *High Cost Universal Service Support*, WC Docket No. 05-337, Recommended Decision, FCC 07J-4, 22 FCC Rcd 20477, rel. Nov. 20, 2007 (*Joint Board 2007 Recommended Decision*), Statement of Chairman Martin.

¹⁰⁹ Both cases arose in Virginia, a state that declined the offered delegation to hear such matters before the state commission. In *Virginia Cellular*, a wireless carrier sought ETC designation throughout the entire area of its wireless license. FCC, *Virginia Cellular, LLC Petition for Designation as an Eligible Telecommunications Carrier for the Commonwealth of Virginia*, CC Docket No. 96-45, Memorandum Opinion and Order, 19 FCC Rcd 1563 (2004) ("*Virginia Cellular*"). The FCC granted the *Virginia Cellular* petition.

In *Highland Cellular*, the FCC denied ETC designation in some exchanges served by two rural ILECs. FCC, *Federal-State Joint Board on Universal Service; Highland Cellular, Inc. Petition for Designation as an Eligible Telecommunications Carrier for the Commonwealth of Virginia*, CC Docket No. 96-45, Memorandum Opinion and Order, 19 FCC Rcd 6422 (2004) ("*Highland Cellular*").

interest was no longer to promote competition but to restrain the growth of federal universal service funding. The decisions greatly increased the rigor of the qualification standards. In 2005, the FCC codified these new policies in rules for cases that it would hear directly, and it suggested that states follow the same rules when hearing federal ETC designation cases.¹¹⁰ The primary legal change was to reverse the 1997 *First Order* and to authorize a broad public-interest analysis of all future ETC applications.¹¹¹ That analysis should, said the FCC, be fact-specific and should cover several broad issues:¹¹²

1. Whether the benefits of an additional ETC outweigh any potential harms;
2. The benefits of increased consumer choice;
3. The impact of multiple designations on the universal service fund;
4. Any unique advantages and disadvantages of the competitor's service offering;
5. Any commitments made regarding the quality of telephone service provided by the applicant;
6. The applicant's ability to provide the supported services throughout the designated service area within a reasonable time frame; and
7. Whether designating an additional CETC would lead to cream skimming.¹¹³

¹¹⁰ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 20 FCC Rcd 6371, ¶ 58 (2005) (“*ETC Designation Order*”).

¹¹¹ For unexplained reasons, the FCC did not extend the new policy to areas served by larger, so-called “nonrural” carriers. However, subsection 214(e) allows states to apply a public-interest test to all ETC applications, and states are free to apply the same standards to applications for CETC status in areas served by nonrural carriers.

¹¹² See 47 C.F.R. § 54.202(c); *Virginia Cellular*, ¶ 28; *Highland Cellular*, ¶ 22.

¹¹³ See 47 C.F.R. § 54.202; *Virginia Cellular*, ¶¶ 42. Cream-skimming analysis is required only in cases where an eligible telecommunications carrier applicant seeks designation below the study area level of a rural telephone company. However, cream-skimming analysis is still a possible factor in all cases requiring a public-interest finding, at a state's discretion.

In its own cream skimming analysis, the FCC defined cream skimming as the practice of serving only the low-cost, high-revenue customers in a rural telephone

Under the new policy, applicants could be required to submit detailed construction plans for serving their entire service area.¹¹⁴

In several ways, these new federal policies converged on classical state COLR policies. In future ETC cases, states might inquire about and impose conditions regarding an applicant's plans to build out its network, much as a state commission traditionally required COLRs to serve their entire service areas. States might also inquire about and impose conditions regarding service quality, once again paralleling state COLR policies. Finally, the FCC allowed states to consider the economic effects of competition on the incumbents, by authorizing an examination of cream skimming and the effects on the demand for universal service funding.

The *Virginia Cellular* and *Highland Cellular* cases revealed that individual FCC commissioners had made an even larger conceptual shift away from the earlier policies and toward traditional COLR-like policies. Several FCC commissioners said outright that compliance with state COLR obligations should be a precondition of ETC designation.¹¹⁵ The commissioners also criticized the effects of earlier FCC policy. Commissioner Martin mentioned the hazard of uneconomic entry,¹¹⁶ needless subsidies,¹¹⁷ and the harmful effect on ILECs.¹¹⁸ Commissioner Copps expressed concern about “the consequences that flow from using the fund to support multiple

company's study area. The FCC analyzed population densities within the proposed service area, and it used low population density as a proxy for high costs.

¹¹⁴ 47 C.F.R. § 54.202 (a)(1)(B).

¹¹⁵ *Virginia Cellular*, Separate statement of Chairman Michael K. Powell; Separate statement of Commissioner Kathleen Q. Abernathy (wireless networks must be “ready, willing, and able” to serve as carriers of last resort); *Highland Cellular*, Separate statement of Commissioner Kevin J. Martin (CETCs should have the same COLR obligations as incumbent service providers).

¹¹⁶ *Highland Cellular*, Separate statement of Commissioner Kevin J. Martin (the FCC had artificially created competition in high-cost areas).

¹¹⁷ *Virginia Cellular*, Dissenting statement of Commissioner Kevin J. Martin (policies had induced “multiple competitors to serve areas in which costs are prohibitively expensive for even one carrier”).

¹¹⁸ *Virginia Cellular*, Dissenting statement of Commissioner Kevin J. Martin (policies had actually inhibited universal service by making it difficult for any one carrier to achieve the economies of scale necessary to serve all of the customers in rural areas).

competitors in truly rural areas,”¹¹⁹ and he predicted that the long-term viability of universal service “depends on a more rigorous review process for ETC applications.”¹²⁰

(2) Portability

After 2004, the FCC came to regard the “identical support rule” as increasingly untenable. In 2007, the Joint Board recommended outright abolition of the rule. The Joint Board’s unanimous decision concluded that it was “no longer in the public interest to use federal universal service support to subsidize competition and build duplicate networks in high-cost areas.”¹²¹ At this writing, the FCC has not abolished the portability rule, although it did impose an “interim emergency cap” on CETC support.¹²²

3. Discussion

TA96 and FCC policy under it was ambivalent about the importance of COLRs in a competitive market. For purposes of distributing benefits, the Act seemed to view local exchange carriers as largely interchangeable. The Act allowed the FCC to grant universal service support to carriers that provide only a subset of traditional COLR duties and that could have lower average costs than COLRs.

Yet in other ways, TA96 recognized that ILEC-COLRs serve unique linchpin and retail functions that are essential to continued service. On the carrier-to-carrier level, the Act assumed that new entrants could rely on the existing ILEC network for interconnection, rights-of-way, unbundled network elements, and, in the case of the RBOCs, access to other necessities like directory assistance and operating systems. At the retail level, the Act confirmed some duties traditionally imposed by state COLR policies. The Act provided no exit mechanism for the last ETC left standing, suggesting that Congress assumed that, notwithstanding competition, there will still be a COLR—in most instances the ILEC—to provide service when all else fails.

FCC policy reflected a wide swing from an initial period in which it promoted competition to a more conservative policy that reduced the rapidly growing demand for universal service funding. Initially, the FCC discounted the costs of the duties assigned to COLRs, the social benefits derived from COLRs, and the likely effects of its policy on COLRs. Later, motivated largely by a desire to reduce the cost of its own support obligations, the FCC returned to a more traditional policy that made the duties of ETCs

¹¹⁹ *Virginia Cellular*, Separate statement of Commissioner Michael J. Copps.

¹²⁰ *Highland Cellular*, Separate statement of Commissioner Michael J. Copps.

¹²¹ *Joint Board 2007 Recommended Decision*, ¶ 35.

¹²² FCC, *High-Cost Universal Service Support*, WC Docket No. 05-337, Order, FCC 08-122, 23 FCC Rcd 8834 (rel. May 1, 2008).

much more like the traditional duties of COLRs under state law. Indeed, three of five FCC commissioners eventually said that meeting state-imposed COLR duties should be a prerequisite to federal support.

These inconsistencies regarding COLRs were possible only because the United States in 1996 had a switched network that had existed for decades and that appeared financially secure. Congress assumed that multiple ETCs would emerge to compete with ILECs, the existing providers at the time.¹²³ But competition depended on other providers—in most instances the ILEC—remaining in service. Congress and the FCC assumed that the PSTN, and COLRs in particular, could and would continue to provide the good things that existed at the time, even though the Act and FCC policy had fundamentally changed the rules.

D. State actions after 1996

After 1996, several states revised their COLR policies, adopted comprehensive universal service policies, or both. In some states this was done through legislative action; in others it was done through commission decisions.

Post-1996 state actions frequently drew policy and even language from TA96 and FCC policy. Use of TA96 terminology, such as “eligible telecommunications carrier,” has been common. Some states have also followed substantive federal policies, particularly when defining eligibility for state universal service support.¹²⁴ Other states, however, have departed substantially from the federal model, adopting their own approaches to state universal service funding.¹²⁵ As the history related above illustrates, pitfalls await any state that uncritically copies language from TA96 or certain universal service policies from the FCC.

Even where a state takes an independent view of the policy issues, TA96 made the task more complex. In creating a new class of federal ETCs, Congress created numerous preemption and boundary issues. One question is how the availability of federal ETC designations affects state-imposed COLR duties. Because the federal ETC designation standards are so comprehensive, a state might overlook the fact that it has

¹²³ Indeed, the Act made CETC entry even more likely because CETCs could exit at will.

¹²⁴ For example, Wisconsin designates a second ETC without considering public interest issues if the area is served by a telephone company that is not a “rural telephone company.” Wis. Admin. Code PSC 160.13(3). Wisconsin also requires toll blocking by every local exchange service provider. Wis. Admin. Code PSC 160.04(1).

¹²⁵ For example, Maine uses rate-of-return methods to determine high cost support amounts, and several states have used state high cost funds to replace revenues lost during rate rebalancing reforms.

continuing authority under state law to prescribe the obligations of COLRs. If a carrier does not seek federal ETC status, a state might erroneously conclude that it cannot require the carrier to perform COLR obligations. Similarly, if a carrier has become a federal ETC, a state might conclude that it cannot require the carrier to accept duties beyond those imposed by federal law. In both cases, we think such a state would be needlessly limiting its range of action.

TA96 also created some definitional complexities. Where states have enacted post-1996 laws, a carrier can have three possible designations or attributes: 1) classical COLR; 2) federal ETC; and 3) state ETC. Harmonizing all the combinations can be a difficult task. One approach is to use all the terms synonymously.¹²⁶ At the other extreme, a state might treat all three terms separately.¹²⁷ At least one state reserves the right to provide state universal service support only to carriers that qualify as a federal ETC and also meet state ETC requirements.¹²⁸

III. Modern challenges to classical COLR policy

The previous section discussed the challenge of coordinating COLR policy with federal universal service statutes and policies. This section discusses four additional challenges to COLR policy, all of which also originated with the arrival of competition for local exchange service. The first two, multi-subscriber properties and competitive carrier overbuilds, are concerned with the effects of competitive entry into local exchange markets. The latter two, competitive carrier failures and ILEC-COLR failures, are concerned with carrier exits from that market.

¹²⁶ *E.g.*, Oregon automatically qualifies federal ETCs as eligible for state support. Source: Responses to 2009 NRRI survey on universal service. *See also* N.C. Gen. Stat. Ann § 62-110 (f)(1) (“[E]ach local exchange company shall be the universal service provider (carrier of last resort) in the area in which it is certificated to operate on July 1, 1995.”).

¹²⁷ Missouri requires that high-cost funding recipients offer “essential local telecommunications services,” the elements of which are defined by rule. Mo. Code Regs. Ann. tit. 4 §§ 240-31.040(1); 240-31.010(6). A Missouri carrier can be designated as an ETC only if it has accepted COLR obligations within its ETC service area. Mo. Rev. Stat. § 392.248.4(1)(a); Mo. Code Regs. Ann. tit. 4 § 240-31.040(1)(B). Missouri does not yet in fact have a high-cost support program, but its rules were designed so that changes could be minimal if and when the commission does decide to expand the Missouri USF to include high-cost assistance.

¹²⁸ Kan. Stat. Ann. § 66-2008(b). The Kansas Corporation Commission’s website reports, however, that the commission has not established any additional criteria beyond those required for federal ETCs.

A. Multi-subscriber properties

Many customers now have a choice of local exchange providers. Yet there is often an intermediary between the subscriber and the carrier. Carriers often need cooperation from landlords who control multi-tenant buildings and from corporations and associations that control housing developments and industrial parks. Where such a landowner or land-controller has made a commitment to a competitive carrier, the economic prospects of an ILEC-COLR can be dramatically reduced. The issue is when, if ever, the obligation of a COLR to build facilities to such locations should be abated.

Florida is one of several states to have considered COLR rules in this new context. The Florida legislature enacted a statute that in specific cases eliminated the COLR's duty to build line extensions into a multitenant business or residential property, such as apartments and condominiums. The legislation automatically relieved COLRs of the duty to extend lines whenever the owner or developer had done any of the following:

1. Excluded the COLR from the construction site.¹²⁹
2. Accepted compensation from another carrier contingent upon excluding the COLR from providing voice service or having access to the property.
3. Collected rents, fees, or dues from the occupants or residents of the property to be paid to another carrier.¹³⁰

The latter two of these statutory cases anticipated competition between a COLR and a competitive voice carrier. Cases soon arose, however, involving competition from broadband providers that had made similar arrangements. The Florida statute allowed the state commission to grant waivers from COLR build-out obligations on a case-by-case basis, using a more general "good cause" standard.¹³¹ In a series of dockets, the Florida commission granted waivers in cases where cable and broadband franchises had received similar preferences. Under the principles developed in Florida, a COLR would not have to extend its lines into an area where the owner or developer had:

1. Granted another provider exclusive access for video and data services over which the other provider planned to offer VoIP services, and where a

¹²⁹ *See also*, N.C. Gen. Stat. § 62-110 (f4) (agreements restricting access to rights-of-way shifts COLR duties to carrier with agreement).

¹³⁰ Fl. Stat. § 364.025(6)(b) (repealed effective Jan. 1, 2009).

¹³¹ Fl. Stat. § 364.025(6)(d) (repealed effective Jan. 1, 2009).

COLR was unlikely to recover its incremental investment within a reasonable time.¹³²

2. Arranged through rent payments or homeowners' dues to collect fees for another provider of data and video/cable services, where that other provider would also offer voice service and where a COLR would need more than ten years to recover its investment.¹³³

A key factual finding in all the Florida waiver cases was that the party controlling the land had given rights to a broadband provider that intended to offer VoIP services that would compete with the COLR's voice service. The Florida commission found that these actions would greatly reduce the proportion of customers willing to subscribe to the COLR's service and would lengthen the recovery period for the COLR's incremental line extension investment.¹³⁴

B. Competitive carrier overbuilds

When the Telecommunications Act of 1996 was enacted, many industry and government observers expected facilities-based wireline competition to arrive quickly after a brief transitional period requiring the availability of UNEs and resale. In reality, facilities-based wireline competition has arrived much more slowly, and in many places not at all. Nevertheless, there are a few areas where a facilities-based competitor has become dominant and the traditional ILEC has lost most of its subscribers. These cases

¹³² Fl. Pub. Serv. Comm. *Petition for Relief from Carrier-of-Last-Resort (COLR) Obligations for Villages of Avalon, Phase II*, Docket No. 070126-TL, Order No. PSC-07-1008-PAA-TL, Dec. 19, 2007; Fl. Pub. Serv. Comm., *Petition for Relief from Carrier-of-Last-Resort (COLR) Obligations for Nocatee Development*, Docket No. 060822-TL, Order No. PSC-07-0862-FOF-TL, October 26, 2007.

¹³³ Fl. Pub. Serv. Comm., *Petition for Relief from Carrier-of-Last-Resort (COLR) Obligations for Cabana South Beach Apartments, Phase II*, Docket No. 070357-TL, Order No. PSC-07-0785-PAA-TL, Sept. 26, 2007; Fl. Pub. Serv. Comm., *Petition by Embarq Florida for relief from its carrier of last resort obligations at the Greater Lakes/Sawgrass Bay subdivisions*, Docket No. 070678-TL, Order No. PSC-08-0111-PAA-TL, Feb. 19, 2008.

¹³⁴ Other states have statutes addressing similar questions. For example, Indiana abates COLR duties where a competitor enters an arrangement to become the "exclusive provider of basic telecommunications service in a particular geographic area, building, or group of residences and businesses." Ind. Code § 8-1-32.4-16(a). Texas statute allows the state commission to abate "Provider of Last Resort" duties when the ILEC does not have facilities in an area but another carrier does have facilities. Tex. Pub. Util. Reg. Act § 54.302. Kansas has a statute similar to Florida's. Kan. Stat. Ann. § 66-2009.

arise frequently enough to justify consideration within state COLR policies. An FCC case suggests some of the possible factors that state commissions might consider.

In the Terry, Montana exchange, Qwest served as an ILEC and COLR. The Mid-Rivers Telephone Cooperative, a neighboring ILEC, then overbuilt almost the entire Terry exchange with its own network and then began selling voice, broadband, and Internet services. Within the first year, 90 percent of Qwest customers had switched their service to Mid-Rivers.

Mid-Rivers then asked the FCC to sort out some of the federal regulatory implications. In one proceeding the FCC determined that Mid-Rivers had become an ILEC for purposes of defining the relatively rigorous interconnection duties that 47 U.S.C. § 251(c) applies only to ILECs.¹³⁵ Federal statute is unusually specific on the standards for deciding this kind of case, and the FCC found that Mid-Rivers satisfied all three of the specific statutory criteria. First, Mid-Rivers occupied a position in the market for ILEC service in the exchange that was “comparable to the position occupied by” an ILEC.¹³⁶ Second, the FCC held that Mid-Rivers had substantially replaced Qwest. Third, the FCC found that the public interest favored treating Mid-Rivers as an incumbent. After this FCC decision, the Terry exchange essentially had two ILECs, each of which was required to provide section 251(c) expanded interconnection.¹³⁷

In a subsequent proceeding the FCC addressed the mirror question of whether to reduce Qwest’s ILEC interconnection obligations in Terry. Using its “forbearance” authority,¹³⁸ the FCC granted this request, finding that: 1) Qwest was subject to a sufficient level of facilities-based competition in the Terry exchange; and 2) there were no competitors in the Terry exchange that relied on Qwest’s interconnection, wholesale, or UNE services.¹³⁹

¹³⁵ FCC, *Petition of Mid-Rivers Telephone Cooperative, Inc.*, WC Docket No. 02-78, Report and Order, 21 FCC Rcd 11506 (2006).

¹³⁶ Mid-Rivers achieved this by serving between 85 and 93 percent of the access lines in the Terry exchange, in most cases over its own facilities and by having facilities that were technically superior to those of Qwest. *Id.* ¶ 12.

¹³⁷ The FCC’s decision did not in fact immediately obligate Mid-Rivers to provide all section 251(c) interconnection services (such as UNEs), because the federal statute also contained other exemptions for rural small carriers such as Mid-Rivers.

¹³⁸ *See* 47 U.S.C. § 160(a).

¹³⁹ FCC, *Qwest Petition for Forbearance Under 47 U.S.C. § 160(c) from Resale, Unbundling and Other Incumbent Local Exchange Requirements Contained in Sections 251 and 271 of the Telecommunications Act of 1996 in the Terry, Montana Exchange*,

The facts in Terry, Montana are unusual but not unique. The question of overbuilt exchanges can appear again and can be anticipated in COLR policy. The FCC decisions apply only to the narrow question of interconnection duties under federal law. Yet those decisions suggest factors that a state commission might consider when deciding when to assign COLR duties to a new entrant and when to abate the COLR duties of an existing ILEC.

C. CLEC business failures

COLR policy aims to produce ubiquitous and reliable service. Before local exchange competition, most telephone service failures were caused by physical events such as power failures¹⁴⁰ and cable cuts.¹⁴¹ The arrival of local exchange competition

WC Docket No. 07-9, Memorandum Opinion and Order, 23 FCC Rcd 7257, 7264, ¶ 12 (2008).

The FCC has also granted similar forbearance from section 251(c) interconnection obligations for some exchanges in Omaha where a cable television company had built facilities and some exchanges in the Anchorage area where a facilities-based CLEC had constructed facilities. *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area*, WC Docket No. 04-223, Memorandum Opinion and Order, 20 FCC Rcd 19415, 19417-22 (2005); FCC, *Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as Amended, for Forbearance from Sections 251(c)(3) and 252(d)(1) in the Anchorage Study Area*, WC Docket No. 05-281, Memorandum Opinion and Order, 22 FCC Rcd 1958 (2007).

In a third case, the FCC denied similar forbearance to Verizon relating to several large cities, finding that Verizon did not have facilities-based competition sufficient to justify eliminating its interconnection duties. *Petition of Verizon Telephone Companies for Forbearance Pursuant to 47 U.S.C. § 160(C) in the Boston, New York, Philadelphia, Pittsburgh, Providence and Virginia Beach Metropolitan Statistical Areas, Inc.*, WC Docket No. 172, Memorandum Opinion and Order, 22 FCC Rcd 21293, 21294-95, paras. 1-2 (2007) (*Verizon 6 MSA Order*).

¹⁴⁰ Most ILECs have to operate from backup power for days following a power outage, using diesel generators. However, backup power in the central office is no longer sufficient to maintain service. Many customers today are served by remote platforms that do not have permanent generators. Platforms typically have backup batteries and can operate without grid power for only a few hours.

¹⁴¹ ILECs have evolved network features that reduce this risk. As carriers installed fiber transmission between central offices, spare network capacity increased enormously. Newer fiber protocols use that spare capacity to establish redundant interoffice paths and “self-healing” networks. Today, a PSTN central office that is

created new possibilities. Thousands of customers, including some major institutions such as universities and hospitals, subscribed to CLEC service. In 2000 and later, only a few years after competitive local exchange service became the law of the land, the “Internet bubble” burst and many CLECs suffered sudden financial failures. State commissions faced the unexpected prospect of service interruptions for many thousands of local exchange customers. In dealing with these crises, state commissions found themselves relying on services and facilities provided by COLRs.

To manage the risks from CLEC exit, several states have adopted “mass migration” rules.¹⁴² The rules vary from state to state in their scope and applicability. Some rules apply narrowly, such as only to resellers, only to CLECs, or only to CETCs.¹⁴³ Other state rules nominally apply to all local service providers.¹⁴⁴ Pennsylvania’s rules also apply where an ILEC seeks to terminate a wholesale service.¹⁴⁵

Mass migration rules create duties for the carrier seeking to exit the local exchange market, for the ILEC-COLR,¹⁴⁶ and for any carrier that acquires customers.

interconnected by fiber trunks using diverse routes to two other central offices can be virtually immune from failures arising from cable cuts. Moreover, many states have implemented “dig safe” procedures that reduce the frequency of such cable cuts.

¹⁴² New York adopted mass migration guidelines in 2001 and revised them in 2003. N.Y.P.S.C., *Proceeding on Motion of the Commission to Examine the Migration of Customers Between Local Carriers*, Case No. 00-C-0188, Order Adopting Mass Migration Guidelines, 214 P.U.R.4th 266 (Dec. 4, 2001); N.Y.P.S.C., *Proceeding on Motion of the Commission to Examine the Migration of Customers Between Local Carriers*, Case No. 00-C-0188, Order Adopting Revised Mass Migration Guidelines, 223 P.U.R.4th 71 (Jan. 2, 2003) (*New York Revised Guidelines*). See also, Massachusetts Department of Telecommunications and Energy, *Mass Migrations of Telecommunications Service*, Docket No. D.T.E. 02-28, Opinion, 219 P.U.R.4th 517 (2002); Pa. Code tit. 66, Subchapter N § 63.301 et. seq. (adopted 2005) (*Pennsylvania LSP Abandonment Rules*).

¹⁴³ Missouri applies its “snap-back” rules only to resellers. Mo. Code Regs. Ann. tit. 4 § 240-32.120. The *New York Revised Guidelines* apply to CLECs. *New York Revised Guidelines* § I. The Pennsylvania Rules apply to all “local service providers.” *Pennsylvania LSP Abandonment Rules* § 63.301.

¹⁴⁴ E.g., Ind. Code § 8-1-32.4-12 (applies to all providers that hold a “certificate of territorial authority”).

¹⁴⁵ *Pennsylvania LSP Abandonment Rules* §§ 63.301(b)(2), 63.303-304.

¹⁴⁶ State rules sometimes refer to the ILEC-COLR as the network service provider or underlying carrier.

The fundamental duty is notice. The rules typically require the exiting carrier to notify regulators, other carriers, and customers. Regulators usually receive the first notice, in some cases as many as 90 days before service ceases.¹⁴⁷ States often allow an exiting carrier to designate an “acquiring carrier” that has agreed to provide service to all of the exiting carrier’s current customers who do not make a contrary choice.¹⁴⁸ An acquiring carrier can get an automatic waiver of normally applicable rules regarding service quality and slamming.¹⁴⁹

From a retail customer’s point of view, a mass migration process typically begins with arrival of a written notice from the exiting local exchange carrier announcing its plan to cease providing service on a specified date. States frequently prescribe the details of this notice and the length of the notice period. A customer then might be given 20 days or more to shop for a new local carrier and to cast a ballot for a preferred new local exchange carrier. If the customer does not vote, a second notice might be required, and ultimately a default carrier will usually be assigned to provide service. After the balloting closes and before voice service terminates, some states prescribe a blackout period during which the customer’s right to switch carriers is temporarily suspended. After the exiting carrier’s service has terminated, some states require the exiting carrier to make customer service representatives available to discuss billing errors and delinquencies.

Mass migration rules also prescribe detailed carrier-to-carrier procedures. State rules prescribe information transfers on such subjects as enhanced-911 data, numbering resource administration, “soft dial tone” information, handling of preferred interexchange carrier freezes, and exchange of customer service record layouts. Often the rules require the exiting company to work closely with commission staff on the details of customer notices and migration plans.

An impending CLEC business failure can cause the state commission to impose additional duties on the ILEC-COLRs serving the affected area. Some states require the ILEC-COLR to provide “default service” to customers when another carrier has not volunteered. For example, the California Public Utilities Commission has said that it

¹⁴⁷ *E.g.*, *New York Revised Guidelines* § III; Ind. Code § 8-1-32.4-12(a) (60 days); *Pennsylvania LSP Abandonment Rules* § 63.306(b) (35 days).

¹⁴⁸ For customers served by resale, the only possible acquiring carrier is the facilities-based carrier.

¹⁴⁹ “Slamming” is the practice of switching a customer’s toll service carrier without proper authorization.

anticipates appointing ILEC-COLRs to serve as default carriers if no other carrier volunteers, but only if the COLR has sufficient facilities.¹⁵⁰

A COLR that provides default service can incur capital and conversion costs. Capital costs can be particularly large when the failing carrier serves most of its customers with its own facilities (such as with cable television-based systems) or when the failing carrier serves a niche market with specialized telecommunications needs. If the default service customer obtains service from the COLR, the COLR might incur incremental costs. If the customer then switches its subscription to a new CLEC, the COLR might be unable to recover those incremental costs. Also, the FCC prohibits carriers from assessing nonrecurring carrier change charges to end users for involuntary transfers, including mass migrations.¹⁵¹

Another possibility is to try to recover the COLR's capital and conversion costs from the exiting carrier. The California commission announced an intention to pursue this option, but recognized that the exiting carrier might not have sufficient funds.¹⁵² If capital and conversion costs cannot be recovered from the exiting carrier or its customers, the costs of providing default service will fall on the acquiring COLR and its customers.

A default service obligation can create other problems for COLRs. COLR personnel can be diverted, threatening existing service quality. Also, the customers who are acquired through default service migrations might produce below-average revenues because they buy fewer add-on services, make fewer or shorter toll calls, or default more frequently.

A CLEC failure can also increase a COLR's line extension duties. As described in Part III.A, ILEC-COLRs are sometimes relieved of normal line extension duties in multi-subscriber areas. Even where a COLR has no duty to provide facilities, exit by a CLEC might cause the state commission to order the COLR to build new facilities. North Carolina, for example, expressly recognizes that an ILEC might be required to

¹⁵⁰ California PUC, *Order Instituting Rulemaking to Establish Rules Governing the Transfer of Customers from Competitive Local Carriers Exiting the Local Telecommunications Market*, Decision 06-10-021, Rulemaking 03-06-020 at 12-16 (dated Oct. 5, 2006) (*California Mass Migration Order*); see also, Mo. Code Regs. Ann. tit. 4 § 240-32.120(3)-(4) (requires ILECs to accept the customers of a failing reseller for at least 30 days).

¹⁵¹ FCC, *2000 Biennial Review - Review of Policies and Rules Concerning Unauthorized Changes of Consumers' Long Distance Carriers*, CC Docket No. 00-257, First Order on Reconsideration and Fourth Order on Reconsideration, 19 FCC Rcd 13432, ¶ 9 (2004).

¹⁵² *California Mass Migration Order* at 21-22.

provide such service, and state law allows the state commission to re-designate the ILEC as COLR.¹⁵³ Indiana recognizes that a COLR might already have facilities on the property or might decide to purchase the exiting provider's facilities. If neither event occurs, however, Indiana statute gives the COLR twelve months to establish service with its own facilities.¹⁵⁴

In sum, when a state policy requires COLRs to provide default service, the COLR's costs could increase dramatically, particularly where the failing carrier has an independent distribution network. If the COLR is under financial stress as well, the COLR might not be able to meet these additional obligations.

D. ILEC business failures

1. The changing regulatory compact

Though long delayed, local exchange competition is flourishing in new ways and changing the balance of benefits and burdens under the regulatory compact. Competition from CLECs has been around for more than a decade, but independent CLECs today provide only about one wireline access line in five, a small and relatively stable number.¹⁵⁵ More recently, many large cable television companies have entered the voice market, and these companies are a powerful new force.¹⁵⁶ Many customers now have two wires to their homes that can provide telephone service, one from the telephone company and one from the cable company. In addition, wireless substitution is gradually reducing the number of wireline subscribers. Approximately 20% of U.S. homes now report using only wireless phones.¹⁵⁷

¹⁵³ N.C. Gen. Stat. § 62-110(f5).

¹⁵⁴ Ind. Code § 8-1-32.4-16(b).

¹⁵⁵ CLECs reported 28.7 million (or 18.1%) of the approximately 158.4 million nationwide end-user switched access lines in service at the end of December 2007. FCC Wireline Competition Bureau, Industry Analysis and Technology Division, *Local Telephone Competition: Status as of December 31, 2007* (Sept. 2008).

¹⁵⁶ The National Cable and Telecommunications Association reports 18.7 million cable phone customers in the country in September of 2008. <http://www.ncta.com/Statistics.aspx> (consulted Feb. 24, 2008).

¹⁵⁷ Centers for Disease Control and Prevention, *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2008*, available at <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200905.htm> (consulted May 18, 2009).

The overall effect has been a dramatic reduction in ILEC lines and ILEC revenues from switched services. Over the period 1999 through 2007, ILECs nationally lost 28 percent of their switched lines.¹⁵⁸ In some urban and suburban areas the ILEC can have a foreseeable market share of 50% or less. In sum, a financial and operational failure by an ILEC-COLR is no longer a highly implausible event that can safely be ignored by state COLR policies.

Competition has also changed ILEC costs. ILECs still have many economic advantages over competitors, including economies of scale and scope. Yet competitors have some advantages also. Competitors are free to serve only low-cost areas, and some competitors have minimal or no local network facilities. Competition in many cities is intense in a high-density competitive “hotspot” that generates a high proportion of total revenue. Surrounding the hotspot is a “donut” where only the ILEC has wireline facilities and where loops are long and costs are high. As the ILEC loses customers in a hotspot, its average cost for serving its other customers increases.

Competition also limits the ILEC’s ability to raise subscriber rates. Even where a state commission grants a rate increase to an ILEC, increased revenues can no longer be assumed. Demand elasticity for local exchange service can be high in a multivendor environment, and rate increases can actually reduce a COLR’s subscriber revenue.

In short, TA96 authorized competition, and competition has dramatically changed the regulatory compact regarding local exchange service. The Act thus created a potential asymmetry for ILECs. It confirmed and extended their COLR duties, but it did not impose those same duties on all carriers. The Act’s universal service policies increased the asymmetry by permitting low-cost competitive carriers to receive high levels of universal service support. The effects are beginning to fall heavily on ILECs as they lose market share to non-COLR competitors.

The FCC could fill this financial gap with universal service funding, but it has not been able or willing to do so in all cases. In the past the FCC criticized states for creating “implicit subsidies” between rural and urban areas. But making these subsidies explicit between rural and urban exchange areas would require an additional \$2 billion per year of universal service funding for nonrural ILECs alone, clearly an implausible figure.¹⁵⁹ The

¹⁵⁸ FCC, Industry Analysis and Technology Division, *Local Telephone Competition: Status as of December 31, 2007*, Table 4 (December 1999 line count was 181 million; December 2007 line count was 130 million).

¹⁵⁹ Source: USAC data, author’s calculation. The calculation uses the support algorithm for nonrural carriers, but applies it to cost for individual exchanges rather than states.

FCC has not been willing to provide funding at that level.¹⁶⁰ Moreover, the FCC's portability rule has actually eroded ILECs' universal service support streams as they have lost customers.

If ILECs continue to lose customers and are constrained by competition from raising prices to restore lost revenues, universal service funding is the only remaining tool that can ensure continued ubiquitous service. If federal universal service funding proves insufficient, the problem of maintaining ubiquitous and reliable voice service from COLRs falls on the states.

2. The harm from an ILEC business failure

Loss of an ILEC-COLR would have wide-reaching effects. The harm would be most obvious at the retail level, where subscribers would no longer be assured that they could receive service regardless of location.

An ILEC-COLR business failure would have equally significant effects at the carrier-to-carrier level. Many rural ILECs are interconnected with larger ILEC networks in order to provide toll service and extended area local calling services to their subscribers. ILECs also provide linchpin carrier-to-carrier services, including unbundled network elements, collocation, special access, and tandem transit that are key upstream inputs for competitive carriers.

An ILEC failure could therefore create cascading secondary service failures by other carriers that depend on the ILEC's wholesale services. The risk of such cascading failures recently came to the attention of the Hawaii commission when Hawaiian Telecom entered bankruptcy. The chair of the state commission offered a statement to the bankruptcy court that aptly describes the risk from a possible liquidation:

While numerous competitors have entered the telecommunications market in the state, [Hawaiian Telecom's] facilities and services remain necessary for competitive carriers to continue to provide telecommunications services in the State. Without the ability to interconnect with Hawaiian Telecom's facilities and purchase its services, these competitors would

¹⁶⁰ In 2005, a federal court held that the FCC had acted arbitrarily in providing support to areas served by nonrural ILECs. The court remanded the FCC's current support mechanism rules in part because those rules "ensured that significant variance between rural and urban rates will continue unabated." *Qwest Communications International Inc. v. FCC*, 398 F.3d 1222, 1237 (10th Cir. 2005). At this writing, the FCC has failed to take substantive action on that order.

need to recreate the company's existing infrastructure, or large portions of it, at great expense, to continue to provide services to their customers.¹⁶¹

3. Strategies to manage or avoid ILEC exits

An ILEC with operating losses has a few possible strategies. One option is to cut costs. Over time, this strategy can degrade service quality and eventually lead the state commission to revoke the ILEC's certificate to operate. A cost-cutting strategy therefore can postpone the effects of an operating loss problem, but it can make the problem harder to solve later.

A second strategy is to sell the business. ILEC sales historically have occurred at prices that were multiples of the book value of net investment, implying that buyers believed the ILECs had a strong future. More recently, however, the margin of sale price over book value has declined and some recent sales have produced subsequent financial distress for the buyers. If an ILEC projects only financial losses in the future, a rational buyer might not be interested at any price.

A failing ILEC's third and final option is to enter bankruptcy or to otherwise abandon service. This extreme scenario presents the most difficult case for a state commission. A bankruptcy court is unlikely to allow service to be interrupted while the ILEC is in bankruptcy, but the commission might have to become involved in finding and approving a substitute carrier.

Finding a substitute carrier can be a relatively simple task if the exiting carrier is small and its neighboring ILECs are healthy. A business failure by a large ILEC, on the other hand, can present unprecedented difficulties. Not only would it be more difficult to find a substitute carrier or carriers, but a disruption of linchpin carrier-to-carrier services could have far wider consequences.

Federal law and some state laws suggest that the last remaining COLR will simply not be permitted to exit if that exit would eliminate service for any customer.¹⁶² This kind of prohibition makes sense in the context of a classical regulatory compact where rates are approved by regulators and where franchises have economic value. It

¹⁶¹ Statement of Hawaii Public Utilities Commission Chairman Carlito Caliboso to United States Bankruptcy Court for the District of Hawaii, January 8, 2009.

¹⁶² *E.g.*, *Pennsylvania LSP Abandonment Rules* § 6.306(b)(3) (exiting carrier must "demonstrate that the abandonment will not deprive the public of necessary telecommunications services"); Mo. Rev. Stat. § 392.248(5) (COLR may exit only where there is at least one COLR will continue to serve that area). Federal universal service law makes the same assumption; 47 U.S.C. § 214(e)(4) (setting conditions for relinquishment of federal ETC status).

might not be enforceable against a failing ILEC that is losing customers, operating at a loss, and unable to increase revenues by raising rates.

A state might decide to apply its mass migration rules to ILEC failures. Experience has largely validated these mass migration rules as tools for CLEC exits. ILEC failures present additional complications, however. For example, these rules sometimes presuppose that a COLR exists to conduct customer polling and to provide default service to customers who have not responded to preference polls. This assumption would clearly be invalid if the COLR itself is exiting.

An auction is one way to find a substitute carrier that can provide COLR service with the smallest subsidy. The California commission has said that it would use auctions to replace a single COLR seeking to exit.¹⁶³ Wisconsin also has said that if a mass migration produces no contenders to provide substitute service, it might conduct an auction.¹⁶⁴ At this writing, neither state has announced the details for such auctions.

Auctions are potentially useful if the goal is not to identify a substitute carrier but to establish the smallest possible subsidy amount for COLR service to a specific area. For these reasons, COLR auctions are sometimes called “reverse auctions” or “universal service auctions.” Auctions can potentially identify the most efficient technology to serve an area, and auctions can potentially estimate the total stream of non-governmental revenues (regulated and unregulated) that would be available to the winning bidder.

A complex problem for any COLR auction arises from the interdependence of the bidder’s network and the incumbent’s network and services.¹⁶⁵ A non-ILEC bidder would typically propose relying on some ILEC carrier-to-carrier services, ranging from collocation and switching to UNE loops and special access circuits.¹⁶⁶ This non-ILEC

¹⁶³ See California Public Utilities Commission, Decision 07-09-202, issued in Rulemaking 06-06-028, p. 116, Sept. 13, 2007. California allows any COLR in a multi-COLR area to file a letter opting out of its COLR obligations within a geographic study area. However, the last COLR remaining may withdraw only upon approval of an application by the commission or a new COLR has been designated as a result of an auction. NARUC 2007 survey.

¹⁶⁴ Wis. Admin. Code PSC 160.13, 160.14(3).

¹⁶⁵ Valter Sorana notes that “one should consider implicitly the effects of incumbency.” See “Auctions for Universal Service Subsidies,” *Journal of Regulatory Economics*, 18(1), 2000, p. 57.

¹⁶⁶ In the U.S., the availability of UNEs has been cited as a complicating factor for reverse auctions. See Sorana, p. 57, and Dennis Weller, “Auctions for Universal Service Obligations,” *Telecommunications Policy*, 23 (1999), 645-674. Wireless carriers often depend on ILECs for backhaul from their cell towers.

bidder might be uncertain about what facilities it would have to build and what facilities it could buy or rent from the ILEC, and at what prices. Moreover, if a non-ILEC wins the auction, that fact could generate an ILEC business failure. Such a failure could create additional costs for the winning non-ILEC bidder, including the need to construct additional facilities and to acquire some ILEC facilities through condemnation or bankruptcy.

The goal of a reverse auction is to find the lowest amount of subsidy that is needed. Yet an auction held to replace an ILEC-COLR may produce a winning bid that increases, not decreases, the existing subsidy. Support is likely to “ratchet up” if the winning bidder anticipates investing in extensive new facilities, if the ILEC’s facilities are highly depreciated, or if non-ILEC bidders face uncertainty about the probabilities and consequences of a post-auction ILEC failure.

For the same reasons, an auction might produce only one bidder, the ILEC. This was the experience of Australia when it conducted a reverse auction. Telstra, the incumbent provider, was the only bidder. It is perhaps no accident that Australia is the only developed country that has turned to reverse auctions for COLR-like services.¹⁶⁷ To date, there appear to be no cases of a successful reverse auction that allocated universal service subsidies or COLR obligations in a developed nation with established telecommunication services.

In contrast, most successful reverse auctions have taken place in developing nations like India and Nepal and in South American countries, and they generally involve “greenfield” construction of new networks or services that are currently unserved. For example, India has used reverse auctions to assign the right to build new mobile networks or to begin to provide mobile service. Yet these successful auctions have limited applicability to COLR auctions in the U.S.

In conclusion, none of the policy options for ILEC failure is appealing, particularly when finding a replacement carrier is difficult because the ILEC is large or because potential buyers see no reasonable prospect of future profits. Auctions of COLR duties appear to be difficult to arrange and could even increase the amount of public support provided for COLR service. The best solution of the lot may be to find ways to avoid such ILEC failures by providing financial support to COLRs, a topic considered in more detail in Section V.F. below.

¹⁶⁷ Scott Wallsten (April 2008). *Reverse Auctions and Universal Telecommunications Service: Lessons from Global Experience*. Washington, D.C.: Technology Policy Institute.

IV. Broadband

Federal and state policy makers are increasingly regarding broadband as an essential service that should be available to everyone. The subject of broadband is too important to ignore in any discussion of COLR policy. A state that is updating its COLR policies might want to take any of a number of steps regarding broadband, steps that are discussed in this section.

In the American Recovery and Reinvestment Act of 2009, Congress provided over \$7 billion in funds for broadband deployment projects. Perhaps even more significantly, it tasked the FCC with developing a national broadband plan.¹⁶⁸ In seeking input on that plan, the FCC asserted that “Our goal must be for every American citizen and every American business to have access to robust broadband services.”¹⁶⁹ The FCC further noted that, “By February 17, 2010, the Commission must and will deliver to Congress a national broadband plan that seeks to ensure that every American has access to broadband capability.”¹⁷⁰ Ensuring access for all to specific communication services has been a cornerstone of state and federal COLR policies.

States are moving in the same direction. Many states have included broadband deployment goals in incentive regulation plans they have applied to ILECs. Some states also have begun broadband mapping, and some have created agencies or quasi-governmental authorities to promote ubiquitous broadband. At least one state is considering whether to add broadband to its COLR policies and universal service support mechanisms.

The following sections consider three possible roles for states: supporting federal policy, providing direct funding for broadband deployment, and expanding existing voice COLR policies to include broadband. The final section considers whether federal preemption has limited state authority to promote broadband.

A. Supporting federal programs

The FCC will need state involvement in implementing any national broadband plan. Currently the states play a critical role in federal universal service policy. Because of their local knowledge, TA96 offered states authority to designate ETCs, thereby making the ETCs eligible for federal universal service support. In 1996, the FCC had neither the staffing nor the local knowledge to designate ETCs for every service area in

¹⁶⁸ Pub. L. No. 111-5, 123 Stat.115 (2009)

¹⁶⁹ FCC, *A National Broadband Plan for Our Future*,” GN Docket No. 09-51, Notice of Inquiry, FCC 09-31 (April 8, 2009), at 5. (*National Broadband Plan*)

¹⁷⁰ *National Broadband Plan*, at 6.

the country. That remains true today. No matter how the federal government seeks to promote broadband access, states are likely to play an important role in applying local knowledge and targeting any support funds to appropriate providers.

The FCC has current legal authority to expand the definition of universal service to include broadband access.¹⁷¹ In its broader consideration of a national broadband policy, the FCC is examining this question, as well as how such a decision would affect the size of the federal universal service fund.¹⁷² If the FCC were to fund broadband as an element of universal service, that decision would have implications for the states. In the more likely case, the FCC would create a separate broadband ETC designation and a separate broadband support mechanism.¹⁷³ As with voice services, subsection 214(e) would still offer states the opportunity to conduct designation proceedings for those providers.¹⁷⁴

B. State funding for broadband

TA96 gives the states the authority to implement and maintain their own state universal service plans, so long as they are consistent with Commission universal service rules and do not “burden” federal support mechanisms.¹⁷⁵ Notwithstanding the FCC’s

¹⁷¹ The 1996 Act allows the FCC to define the components of the federally-supported service. 47 U.S.C. § 254(c)(1). The Federal-State Joint Board on Universal Service recommended in 2007 that broadband be included in the definition of supported services for universal service. FCC, *In the Matter of High-Cost Universal Service Support*, WC Docket No. 05-337, Recommended Decision, 22 FCC Rcd 20477 (*Joint Board 2007 Recommended Decision*), ¶ 56 (Nov. 20, 2007).

¹⁷² *National Broadband Plan*, at 41.

¹⁷³ See FCC, *High Cost Universal Service Support*, WC Docket No. 05-337, Recommended Decision, FCC 07J-4, 22 FCC Rcd 20477, ¶ 68 (2007) (*Joint Board 2007 Recommended Decision*) (recommending a different set of ETC requirements for carriers seeking support from a proposed Broadband Fund).

¹⁷⁴ If the FCC were to solely expand the list of supported services without creating a separate ETC designation, current ETCs that do not provide broadband might be prospectively disqualified from receiving support. The unintended effect might be to reduce support for and availability of voice services. A strong state COLR policy for voice service, supplemented by a state universal service program, could provide insurance against that eventuality.

¹⁷⁵ States may “adopt regulations not inconsistent with the Commission’s rules to preserve and advance universal service,” and they may “adopt regulations to provide for additional definitions and standards to preserve and advance universal service within that State only to the extent that such regulations adopt additional specific, predictable, and

broad preemption of broadband Internet service, this statute suggests that states can fund broadband enhancements through their state universal service funds.¹⁷⁶

As a condition of funding, states can also require that carriers meet minimum qualifications, analogous to the requirements for federal ETC designation under the federal act and recent FCC orders. One such qualification might be a COLR-like condition requiring a supported broadband provider to offer service throughout a large service area and establish a reasonable line extension policy. As described above in Section II.C.2, states are free to impose such requirements as a condition of federal ETC designations. It is hard to imagine how a similar condition to state funding could be held to be a “burden” on federal universal service programs.

The history of federal universal service policy offers some lessons to states that would supply state universal service funding for broadband providers. Providing broadband to currently unserved and under-served areas can be costly. To maintain a reasonable expenditure, a state might want to explore different methods of supporting broadband, such as through construction grants rather than operating subsidies.¹⁷⁷

Competitive neutrality is likely to be an issue for any state funding. The FCC defined competitive neutrality as avoiding classifications that “unfairly” advantage or disadvantage one provider or one technology over another.¹⁷⁸ Under this standard, the question for states would be when a classification that conditions support is unfair. In the authors’ opinion, economic efficiency alone can make it fair to assign the benefits of public support to a single broadband provider. As former Chairman of the FCC Martin said, universal service policy need not subsidize multiple competitors to serve areas in which costs are prohibitively expensive for even one carrier, nor should it make it more

sufficient mechanisms to support such definitions or standards that do not rely on or burden Federal universal service support mechanisms.” *See* 47 U.S.C. § 254(f).

¹⁷⁶ Similarly, some states with their own state universal service funds have provided subsidies to wireless providers, despite federal preemption of the terms of entry and rates for wireless service. For example, Nebraska uses part of its state universal service fund to make grants to wireless providers so they will establish service in unserved areas.

¹⁷⁷ The Federal-State Joint Board on Universal Service recommended in 2007 that federal universal service support for broadband take the form of construction grants. *Joint Board 2007 Recommended Decision*, ¶ 12.

¹⁷⁸ *First Order* ¶ 47.

difficult for a single carrier to achieve the economies of scale necessary to serve all of the customers in rural areas.¹⁷⁹

C. Applying COLR policies to broadband

The most direct issue about broadband is whether states should expand their COLR policies to mandate carriers to provide broadband, in the same way the carriers are mandated to provide voice services. At least one state is considering this step.

In the authors' opinion, the time is not yet ripe to apply COLR policy to broadband service, at least without substantial modifications. At some point broadband may become so widespread that, like water lines, extending service to unserved areas becomes less costly and less controversial. At present, however, most states have large areas without broadband service, and the per-customer cost in these areas tends to be high. Despite the growing importance of broadband, regulators are justifiably cautious about raising voice rates to finance costly expansions of broadband service.

For these reasons, expanding existing COLR policy to include broadband can be a costly and controversial approach, much more costly, for example, than providing grants for broadband construction. The authors recommend that a state commission expand COLR policy to broadband only under the umbrella of a broad consensus that includes the state legislature.

The situation could change quickly if the FCC were to declare broadband as a component of federal universal service programs. In that event, federal funding would be available for broadband upgrades and to support broadband access. State-funded costs would be reduced, and there would be less impact on rates and state universal service surcharges. Under those circumstances, expanding COLR duties to include broadband might be justifiable.

D. Preemption

The FCC has made broad jurisdictional claims over broadband services. These decisions raise basic questions about the extent of state legal authority over broadband services and facilities.

In a series of decisions issued from 1998 through 2007, the FCC asserted broad authority over all common forms of providing broadband Internet service, eventually declaring them "information services" and not "telecommunications services."¹⁸⁰

¹⁷⁹ FCC, *Virginia Cellular, LLC Petition for Designation as an Eligible Telecommunications Carrier for the Commonwealth of Virginia*, CC Docket No. 96-45, Memorandum Opinion and Order, 19 FCC Rcd 1563 (2004), Dissenting statement of Commissioner Kevin J. Martin.

1. In 1998, the FCC held that DSL service—the telephone network’s version of broadband—was an interstate service.¹⁸¹ In 2005, the FCC held DSL service to be an information service.¹⁸² However, the FCC never clarified the effects on state regulations. Instead, the 2005 Wireline Broadband Order asked a series of questions about E911, privacy and consumer protection issues.¹⁸³ Many of the 2005 questions remain unanswered.
2. For cable modem service, the FCC also stated that the service is “properly classified” as an *interstate* service.¹⁸⁴ The FCC explained that this broad assertion of federal authority was intended to reduce regulatory uncertainty,¹⁸⁵ and it asked a series of questions about what specific state regulatory policies would be preempted.¹⁸⁶

These and later decisions make clear that the FCC considers all broadband services to be information services rather than telecommunications services. Moreover, in most cases the FCC has explicitly declared these information services to be “interstate.”

The FCC repeatedly said that it acted to expand its own jurisdiction in order to remove regulatory uncertainty. Yet uncertainty remains. The FCC’s rulings have not clarified which kinds of state policies are preempted and which remain in place to promote broadband ubiquity and reliability. To the extent that states are preempted,

¹⁸⁰ See *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, WT Docket No. 07-53, Declaratory Ruling, 22 FCC Rcd 5901 (2007) (broadband over wireless networks is an interstate information service as well and prior decisions regarding cable modem and wireless broadband are discussed at notes 4 through 7).

¹⁸¹ FCC, *GTE Telephone Operating Cos. GTOC Tariff No. 1, GTOC Transmittal No. 1148*, 13 FCC Rcd 22466, ¶ 1 (1998), *recon.*, 17 FCC Rcd 27409 (1999).

¹⁸² FCC, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853 (2005) (*Wireline Broadband Order*); *aff’d Time Warner Telecomms. v. FCC*, 507 F.3d 205 (3rd Cir. 2007).

¹⁸³ *Wireline Broadband Order* ¶ 158-59.

¹⁸⁴ FCC, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798, 4801, ¶ 4 (2002) (*Cable Modem Declaratory Ruling*) (italics added); *aff’d Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 125 S. Ct. 2688 (2005).

¹⁸⁵ *Cable Modem Declaratory Ruling*, ¶¶ 5, 73.

¹⁸⁶ *Cable Modem Declaratory Ruling*, ¶¶ 96-108.

current FCC policy has not imposed a set of duties on broadband providers that is analogous to state COLR policies.

This paper cannot fully resolve these uncertainties. Nevertheless, the authors do not believe that states are meaningfully preempted from promoting broadband. The context of state action is a crucial distinction. States should examine possible regulatory actions in light of the severity of the problem presented to the public, the ability of markets to solve the problem, and the likelihood that the FCC will solve the problem under its broad claims of authority.

The state action most likely to be challenged would be imposing COLR-like obligations regarding broadband facilities. The authors conclude that such a challenge of broadband-COLR policy would be unlikely to succeed. The FCC has jurisdiction over voice services that cross state boundaries. Yet states historically adopted voice-COLR policies under the theory that COLR duties apply to local service, which is intrastate. When a state COLR policy requires a company to extend a telephone line, the fact that the line will be used for interstate calling has not been any basis to object to the state's jurisdiction over the facilities. Similarly, if a state broadband-COLR policy requires a company to extend a broadband line, the fact that the line will then support interstate information services should not be any basis on which to object to the state's jurisdiction. Arguments for continued state jurisdiction are especially strong if the new broadband lines can also be used to provide other non-preempted services, such as intrastate special access, carrier-to-carrier services, and intrastate retail voice services. Thus a duty to serve and a line extension requirement seem quite legitimate areas for state COLR policies.¹⁸⁷

V. Establishing a new COLR policy

A state that decides to update its COLR policies faces an array of challenging questions. In this section, the authors make specific recommendations for state COLR policies. Although the issues are discussed separately, a decision in one area can influence, even dictate, the options available in other areas. We begin with the most basic questions.

A. The need for COLRs

The most basic question is whether a state should have a COLR policy. Many state legislatures have now passed laws largely deregulating the rates of large and small ILECs, often on the grounds that competition provides adequate protection to consumers. The premise for regulation is that some kind of market breakdown prevents private

¹⁸⁷ State jurisdiction over service quality may be more limited, since many broadband service quality metrics would relate to the quality of the Internet service rather than the physical capacity of the facilities.

behavior from aligning with the public interest. Government regulation should have current justification, and today's regulation cannot be justified solely on the basis that it existed yesterday. Indeed, a state might conclude that local exchange competition has advanced so far that a COLR policy is no longer needed. The Florida legislature apparently reached that conclusion when it allowed that state's COLR statutes to lapse in 2009.¹⁸⁸

Yet where markets are not performing, regulatory intervention is the only way to achieve a public good. The United States has a historic commitment to ensuring that every resident has access to local exchange wireline telephone service. The authors contend that absent state action to maintain COLR duties in some form, the longevity, reliability, and affordability of that local exchange wireline service is in doubt.

A modern state COLR policy can be useful for four reasons:

1. *Ubiquity* - State COLR policy can ensure that all parts of the state have voice service available at reasonable rates. Except in limited geographic areas, competitive local exchange markets have not ensured ubiquity. Seeking ubiquity is compatible with federal universal service law that directs states, along with the FCC, to preserve and advance universal service.¹⁸⁹ State COLR policy can also ensure that line extensions are available to all customers and that required Contributions in Aid of Construction are not excessive.
2. *Nondiscrimination* - State COLR policy can ensure that telecommunications services are available upon application and without unreasonable discrimination.
3. *Adequate quality* - State COLR policy can ensure that at least one carrier meets minimal standards for routine retail service, including circuit reliability and responsiveness to customers.
4. *Reliability* - State COLR policy can help ensure continuity and quality in linchpin carrier-to-carrier services that are essential inputs to the services offered by other carriers. State COLR policy can also manage episodic events, such as carrier exits, that might disrupt service. COLR policies

¹⁸⁸ Until January 1, 2009, Florida obligated each local exchange telecommunications company to furnish "basic local exchange telecommunications service within a reasonable time period to any person requesting such service within the company's service territory." Fla. Stat. § 364.025(1).

¹⁸⁹ 47 U.S.C. § 254(b)(5) (stating principle that there should be specific, predictable, and sufficient federal and state mechanisms to preserve and advance universal service).

might include elements requiring advance notice before exit and establishing procedures so that retail customers have a realistic opportunity to choose a replacement carrier, if one exists.

The history of COLR policy shows that some of these goals have deep legal roots. Both English and American common law assigned special duties to common carriers long before there were such things as utilities and state commissions. The common law rules established legal remedies for citizens when common carriers discriminated against them or otherwise provided poor service. Even in highly competitive areas, states should move cautiously before concluding that market forces are now so strong that government-imposed duties can safely be reduced below the level that existed in 1850.

The more recent history of TA96 and the FCC's universal service decisions also show a continuing need for state COLRs. Although the COLR provisions in TA96 are not prominent, the Act nevertheless maintained and relied on the major COLR duties of ILECs; indeed, it expanded carrier-to-carrier duties. FCC policy after 1996 also (eventually) confirmed the strong connection between state COLR policy and eligibility for federal universal service support. The majority of the FCC Commissioners eventually expressed the view that support should be available only to COLRs and that providing support more broadly produced pernicious consequences, including wasting support funds, causing uneconomic entry, and preventing dominant carriers from achieving the economies of scale needed to serve all subscribers in an area.

In modern competitive markets, a state might want to reduce some COLR duties, at least in areas with active local exchange competition. Many urban customers can get service from an ILEC, one or more CLECs, a cable-voice provider and several wireless services. Those areas might not need government-imposed price regulation or even government-imposed duties to serve. Yet even in such competitive areas COLR policies impose other important duties on COLRs. For example, even in highly competitive areas, a state might want a COLR to be available to provide default service in the event of a CLEC business failure, or it might want a COLR to provide special access service or tandem service to other carriers.

The authors conclude that states still need COLR policies in most geographic areas. This is due in part to the limited geographic scope of competitive investment and the continuing dominance of COLR services in less densely populated areas. The continuing dependence of the PSTN and even competitive carriers on COLR-provided "linchpin" carrier-to-carrier services is another key fact. Finally, we conclude that, except in highly competitive areas, at least one COLR should be required to provide service that meets minimal service quality standards and provides service without undue discrimination.

1. Single COLRs

A fundamental issue is whether to identify one COLR or multiple COLRs. The argument for multiple COLRs is usually cast as a question of competitive neutrality. As reported above (Part II.C), TA96 and the FCC originally made several decisions that allowed the benefits of federal universal service support to flow to competitive local exchange carriers that are not COLRs. Later, the FCC modified its policies to more closely align ETC eligibility (and hence funding eligibility) with the duties involved in COLR status; and some FCC commissioners suggested that universal service benefits should be tied to COLR duties.

COLR policy aims at ubiquitous, reliable, and high-quality service. In the authors' view, this requires appointing a single wireline COLR for each geographic area of the state.¹⁹⁰ A single wireline COLR is desirable for three reasons:

1. *Total Cost.* A single COLR minimizes the total cost of serving high-cost areas. A single COLR is more likely to generate economies of scale that promote ubiquitous and reliable service in rural areas at affordable rates. Limiting universal service funding to a single COLR also avoids the hazard of inducing otherwise uneconomic entry by competitors.
2. *Fund size.* A single COLR avoids unreasonable growth in universal service fund demand. A single COLR minimizes support to carriers that do not significantly advance the objectives of COLR policies. A single COLR also reduces the need to use universal service funds to replace COLR subscriber revenues that have been lost to subsidized competitors.
3. *Carrier-to-carrier services.* A single COLR recognizes the importance of linchpin carrier-to-carrier services currently provided by COLRs and therefore reduces the risk of cascading service failures resulting from a business failure by a COLR.

The authors also recommend two exceptions to the one-COLR-per-area rule. First, a state should reserve the option of designating multiple COLRs in exceptional cases. For example, an exchange might be overbuilt by a second wireline carrier, with neither carrier gaining a clearly dominant market share. In that event, the state might assign COLR duties to both carriers and provide any associated financial benefits to both carriers, but only for a time and until one carrier becomes clearly dominant.

Second, consistent with the previous section, states should also consider whether some competitive areas need either no COLR at all or a reduced set of COLR obligations. In an area served by both an ILEC and a voice-over-cable-modem provider, for example,

¹⁹⁰ States with extremely rural areas, such as Alaska, may not want to designate a COLR in those areas.

the COLR might be exempted from its duty-to-serve and line extension obligations, but still be required to avoid unreasonable discrimination and to meet consumer protection requirements.

2. Wireless and broadband COLRs

Wireline and wireless services have different service characteristics, and a state might decide that it has an interest in a ubiquitous and reliable wireless network as well as a wireline network. In that event, the state should consider creating a separate wireless-ETC designation.¹⁹¹ A given customer might then reside in the service area of carrier A, a wireline-COLR and carrier B, a wireless carrier. Both A and B would then have to comply with a version of COLR duties and potentially be eligible for state universal service support. The Federal-State Joint Board on Universal Service made a similar recommendation in 2007 regarding restructuring the federal universal service fund.¹⁹² While having two COLRs and two networks is generally more costly than a single network, a state should decide whether the added functionality of a wireless network is worth the added cost.

If a state decides that it wants to support broadband through a universal service mechanism, it should consider designating a separate class of “Broadband ETC.”¹⁹³ A single carrier might be designated as a “Voice ETC” in one service area and a “Broadband ETC” in another, smaller, area. Under each designation the ETC would have a duty to serve within its defined franchise area. By creating a separate broadband designation and a separate broadband funding program, states can avoid several problems. First, the state can avoid inadvertently disqualifying voice-only networks for continued funding. Second, the state can more easily tailor service areas to suit economic conditions and carrier networks. A state might decide, for example, that certain very sparsely populated areas will have voice COLRs but not broadband ETCs. While it is difficult for a state commission to assert that state policy does not promote broadband in any part of the state, funding limits might require it to focus public and private resources on areas with lower unit costs. Third, the state can more easily define separate service quality standards and consumer protection standards. This could reduce the probability of a preemption challenge to state policies.

¹⁹¹ The term ETC is used here rather than COLR because the ETC designation would solely indicate eligibility for state funding.

¹⁹² The Joint Board recommended three funds: a broadband fund; a mobility fund; and a provider of last resort fund. FCC, *High Cost Universal Service Support*, WC Docket No. 05-337, Recommended Decision, FCC 07J-4, 22 FCC Rcd 20477, rel. Nov. 20, 2007 (*Joint Board 2007 Recommended Decision*) ¶ 11.

¹⁹³ The term ETC is used here rather than COLR because the designation would solely indicate eligibility for state funding.

To the extent that the service area for broadband is currently unserved, a reverse auction for a “greenfield” construction of new facilities might be effective in finding the least cost method of extending service for the first time to new areas.¹⁹⁴ If a state decides to designate broadband-ETCs, it should also develop an upgrade path through which a voice-COLR can upgrade its designation to become a broadband provider, either in addition to or in lieu of the traditional switched voice designation.

Having suggested several possible COLR and ETC designations, we recognize the potential for category confusion. We recommend that states keep track of each provider’s designations. Designations would generally be cumulative, and the carrier would be expected to comply with all duties imposed by any designation. This method simplifies the task of deciding which COLR and ETC duties apply to which carriers, a topic explained more fully below in subsection F.

Finally, states should consider clarifying any existing ambiguities about the relationships between federal-ETC, state-COLR, and state-ETC designations. Specifically, states should clarify whether the issuance of a federal-ETC designation abates any duties imposed under state law. States should also identify the extent to which state COLR or ETC designations augment federal ETC duties, such as in providing subsidies for low-income or hearing-impaired customers, providing “soft dial tone,” or participating in E-911 programs.

3. Size of service areas

Each COLR or ETC should be assigned a clearly mapped franchise area. The franchise map avoids subsequent disputes about which COLR or ETC has the duty to serve a particular customer. It also provides a baseline for measuring service quality.

As explained above, both large and small service areas have advantages and disadvantages. States will need to strike a balance. We recommend that states adopt relatively large COLR service areas that include some rural high-cost territory. Service areas need not be congruent with those of large ILECs, but larger service areas that include some high-cost territory are likely to continue to benefit from rate averaging between high-cost and low-cost areas, reducing the demand on state universal service funds.

If a state decides to assign small service areas and also to provide high-cost universal service support to wireline ETCs, the state might want to take additional steps to limit the twin hazards of promoting uneconomic entry and subsidizing multiple networks. This can be accomplished by designating only one COLR or ETC per area. Somewhat less effectively, if the state designates multiple ETCs, it should use each

¹⁹⁴ As discussed above, reverse auctions are less successful when the bidders must rely on an incumbent’s network to provide the required service.

carrier's own cost within the service area as the input for determining that carrier's support.¹⁹⁵

B. Adjusting COLR duties for market developments

As discussed above in Section III, several market changes might justify increasing or reducing the COLR duties of particular carriers.

1. Multi-subscriber properties

States should consider developing a procedure for adjusting COLR duties at multi-subscriber properties where the landowner or property manager has denied access to the COLR or has given an economic preference to other non-COLR providers. As discussed in section III.A above, such preferences can greatly reduce the percentage of homes passed by the COLR's facilities that will take its service, thereby increasing the probability that a new line extension will require a subsidy from existing customers.

States should consider abating a COLR's duty if legal or economic arrangements seriously impair the ability of the COLR to recover its investment. Specifically, the state commission should abate the COLR's duty to provide line extensions if the party controlling the property has: 1) denied the COLR access to the property, or 2) given a special advantage to another telecommunications provider that leaves the COLR unlikely to recover the incremental cost of its line extension within a reasonable time.

2. Overbuilds

As discussed in section III.B above, state COLR policy should also address the more general question of how a state commission should adjust or reassign COLR duties when a new carrier overbuilds an existing exchange and becomes dominant. In the Terry, Montana case the exchange was served by two networks, one that was new and attracted subscribers, and one that was old and was losing subscribers. Factual variations can also arise, such as where one carrier has the official designation but no facilities, and another carrier has facilities but no designation.¹⁹⁶ A state should consider prescribing in advance the standard for when a new carrier becomes a COLR and when an existing COLR can be relieved of its duty.

¹⁹⁵ An own-cost support model will not prevent a state from subsidizing multiple networks. Even in an average-cost area, if two networks share a market, each can generate a high per-line cost and make a large claim for support.

¹⁹⁶ See Ind. Code § 8-1-32.4-13 (Commission may relieve carrier of COLR duty on showing that petitioner has no facilities in area but competitive carrier does have facilities).

3. Loss of the current COLR

States should consider developing a process to find a substitute where an incumbent COLR has a business failure or otherwise seeks to exit, particularly when no obvious replacement operator is available. There are no clearly successful strategies available in the worst case where a large ILEC fails and there are no other carriers of comparable scope and complexity in the state.

As discussed in section III.D above, some states have considered using reverse auctions in that circumstance. There are no examples where a successful auction has been held to allocate universal service subsidies and COLR obligations in a developed nation with established and extensive telecommunication services. States considering such an auction should be aware of the legal and administrative difficulties involved. They should also be aware that to have a successful auction, they would need to provide non-ILEC bidders with detailed information on the costs to use or acquire any necessary ILEC facilities. Since those costs could involve condemnation, which is itself a complex procedure, state commissions might not be able to provide that information in advance of the auction.

C. Defining COLR and ETC duties

States might designate carriers for two purposes. A “COLR” designation would assign duties but not necessarily create eligibility for explicit compensation. Consistent with federal usage, a state “ETC” designation would confer eligibility for state-generated financial benefits, and it might also generate additional duties.

There is no single correct way to assign duties to COLRs and ETCs. The authors suggest Table 1 as a starting point.¹⁹⁷ Table 1 assumes that a state has decided to create three state designations: COLR, State ETC and State Broadband ETC.¹⁹⁸ As used here, a Broadband ETC is a carrier that accepts COLR-like duties relating to broadband and that receives support for that purpose.

¹⁹⁷ States deciding to create a wireless ETC designation would need to determine associated duties for those carriers.

¹⁹⁸ A broadband COLR category is a separate logical possibility that is omitted here because the benefits would be minimal. Many voice COLRs receive no explicit compensation for their COLR duties, but there is currently no broadband analogue to the voice COLR.

Table 1. Suggested assignment of COLR and ETC duties

Duty	Details	Carriers assigned
Duty to serve #1: voice-grade switched services to all qualified customers in the service area	<p>Accurate voice reproduction from 300 to 3,000 hertz</p> <p>Independent switching of every line (no party lines)</p> <p>Touch tone dialing, call waiting, call forwarding, 3-way calling, equal access</p> <p>Support modem transmission at 28,800 bps or digital equivalent</p> <p>Must offer service to all qualified customers</p>	COLR and ETC
Duty to serve #2: point-to-point services to all qualified customers in the service area	<p>Includes T-carrier and optical circuits.</p> <p>May include Ethernet.</p> <p>Must offer service to all qualified customers</p>	COLR and ETC
Duty to serve #3: broadband services to all qualified customers in the service area	<p>State-specified speed standards, such as 1.5 mbps upstream and downstream</p> <p>Must offer service to all qualified customers</p>	Broadband ETC
Duty to serve #4: unserved geographic areas	Whenever so ordered by state commission	All
Duty to serve #5: line extensions	Reasonable construction costs for line extensions greater than 2 pole spans	All
Retail service quality standards	<p>Intervals for new service installation, call blocking rates, unscheduled outage times, customer trouble occurrence rates, average response time for trouble calls, reporting of network downtime, and emergency service continuity plans</p>	All, except Broadband ETC where preempted
Ancillary services	<p>Interconnection to independent IXCs</p> <p>Directory assistance</p> <p>Operator services allowing customers to make specialized requests, such as “collect” calls</p> <p>Emergency (“911” and “enhanced 911”) services</p> <p>“Relay” (“711”) services providing special services for the hearing impaired</p>	COLR and ETC

Duty	Details	Carriers assigned
Soft dial tone	Access to 911 service on disconnected telephones	COLR and ETC
Services for low-income customers	Lifeline and LinkUp programs, using state-defined parameters for eligibility and benefits “Toll blocking” that allows low-income customers to prevent their line from originating direct-dialed toll calls	ETC
Rate designs	Offer flat-rated calling within a local area at an affordable rate Offer a plan with flat-rated toll calling within the entire U.S. at an affordable rate	ETC
Carrier-to-carrier services	Interconnection, colocation, UNEs, and resale, special access	COLR
Regional wholesale transport	Tandem transit	Large COLR
Mass migration	Adequate notice to customers and commission, joint planning of exit	All local exchange providers, except where federally preempted
Duty to replace failing COLR	Whenever so ordered by state commission	COLR, ETC, Broadband ETC
Public interest pay phones	Either own the pay telephones or provide wholesale services for third-party owners ¹⁹⁹	ETC

As Table 1 suggests, COLRs and ETCs share many of the same duties, but they are somewhat different in kind. ETC duties are focused mainly on providing specific services to retail customers; COLR duties are focused primarily on facilities, providing services to other carriers, and providing retail service when other providers are unwilling.

1. The duty to serve

The core element of a COLR’s duty is to provide retail telecommunications service upon reasonable request, and without unreasonable discrimination. State commissions should explicitly set forth the principal elements of this service—what states often call a “basic” or “essential” service.

¹⁹⁹ See Wis. Admin. Code PSC § 160.13(d).

Customers should continue to be able to originate calls to, and receive calls that come from, anywhere in the world. The COLR should also allow use of industry-standard customer equipment and use industry-standard switching protocols. Because of advances in technology, it might no longer be necessary to specify that switches must recognize “touch-tone” signals and offer call waiting, call forwarding, and three-way calling. Similarly, it might be unnecessary to specify that the COLR must offer each customer a single line, as opposed to a party line.

A state might wish to specify voice transmission quality. The FCC’s universal service rules apply a simple standard based upon requiring the network to transmit a range of voice frequencies, from 300 to 3,000 Hertz.²⁰⁰ To the extent that customers are still relying on “dial-up” Internet access, it might be useful to require that the COLR’s network support reasonable modem speeds, such as 28.8 kilobits per second.

A COLR should be required to provide some ancillary services that benefit only some customers or all customers occasionally. These include emergency services such as “911” (and “Enhanced 911” where available), as well as “relay” or “711” services. Operator services and directory assistance should be available from COLRs and ETCs. Toll blocking should also be required of ETCs. To further enhance public safety, the state might want to impose a “soft dial tone” obligation for disconnected lines.

Some traditional COLR requirements are likely to exclude some carriers from competing for COLR status. State commissions should add such exclusionary requirements only when essential to the public safety or welfare. Examples include direct-dialed access to interexchange carriers. Wireless and cable voice providers generally do not offer this service, which has been required of most wireline ILECs since the 1980s.

Many states require COLRs to comply with retail service quality standards. States might prescribe installation intervals for new service as well as standards for operator-handled calls, dial tone availability, call blocking rates, unscheduled outage times, customer trouble occurrence rates, average response time for trouble calls, reporting of network downtime, and emergency service continuity plans.²⁰¹ A state might also wish to impose standards for surviving power blackouts.

²⁰⁰ 47 C.F.R. § 54.101(a)(1).

²⁰¹ E.g., Tex Admin. Code tit. 16, part 2, § 26.54. *See generally*, Perez-Chavolla, *Survey of State Retail Telephone Quality of Service Regulations for Selected Categories of Service: Metrics, Penalties and Reports*, NRRI, 2004, available at <http://nrri.org/pubs/telecommunications/04-09.pdf>.

States should avoid unnecessary references to obsolete (or potentially obsolete) technology and to weakening legal distinctions. Because packet-based networks are poised to replace traditional switched circuits, states should avoid imposing standards that inadvertently might mandate continued use of traditional technology. Similarly, a policy that uses the concept of “local calling” in a COLR definition can create complications, for example, because wireless phones use different calling areas.

COLR policy can also include economic mandates. A state should require ETCs to provide a certain set of “basic” or “essential” services at a price not exceeding a particular benchmark rate that the state deems affordable. The state might specify one price cap for simple local service and another for a bundle of services that includes a specified amount of intrastate toll calling. The state might also want to mandate additional economic benefits for handicapped or disabled customers and for low-income customers.

States should identify when an applicant for telephone service is not financially qualified to receive service. Common standards in this area relate to the applicant’s debts from prior service and intended dangerous uses of the network. The state might want to specify circumstances under which COLRs can require advance financial deposits from customers.

2. Line extensions

A COLR policy should also include a clear line extension policy that specifies a uniform rule for Contributions in Aid of Construction or that specifies upper and lower allowed limits for COLR policies or tariffs. One option is a per-se rule such as requiring utilities to provide one or two poles to any applying customer without requiring a CIAC.²⁰² Another option is an economic profitability criterion under which CIAC is prohibited if the incremental cost of the line extension is likely to be recovered within a reasonable period.²⁰³

D. Exit procedures and mass migrations

States should adopt mass migration rules, even if they do not otherwise adjust their COLR policies. The policy should apply, at minimum, to CLEC failures. States

²⁰² A state may wish to differentiate (as Pennsylvania has done for “bona fide applicants” for water line extensions) between cases where a line extension would serve already developed areas with established customer bases and cases where the extension would serve a large development where the costs might more fairly be allocated to the developer.

²⁰³ A state following this second option should publish a formula for calculating return periods and should require COLRs to file tariffs clarifying the parameters they will use for such calculations.

should consider broadening these mass migration policies to cover cases where one carrier is planning to disconnect wholesale services to another carrier, an event that can also produce a mass service outage.

States should articulate the duties that are specially assigned to COLRs in the event of a non-COLR failure. These duties might include: participating in customer polling; providing default retail service for a stated period of time to customers who do not select another provider; and constructing facilities within a prescribed time.

E. Carrier-to-carrier duties

A state should identify linchpin wholesale services that COLRs provide to other carriers. Some linchpin duties, such as interconnection and UNEs, are already required under federal law, in some cases preemptively. Other linchpin services are less obvious, such as the transmission and generation of SS7 data.

A state should identify as many of these services as possible and consider for each the possible methods of providing that service in the event of a COLR business failure. The inventory should include, at least, intrastate special access circuits, tandem transit for intrastate toll calls (and possibly for extended areas service calls), E-911 and 711 call routing and transport, database management services for number portability, and transport for SS7 data.

F. Compensation

This paper identifies numerous duties that states should or might uniquely assign to COLRs. In some cases these duties generate transactional revenue and do not suggest a need for separate compensation streams. Tandem transit, for example, is compensated on a per-minute basis as it occurs. State commissions should understand the nature of such services, in case of a COLR failure, but on a routine basis the services operate quietly and without any need for additional subsidy.

Other COLR duties are costly but not explicitly compensated. In the past, the regulatory compact created a rough balance between COLR duties and the opportunity to recover associated costs. Competition (and to some extent federal universal service policy) has eroded this balance, potentially leaving the COLR with an asymmetry between high costs and duties and little or no compensating benefit. Where such an asymmetry exists for the ILEC, there can also be a competitive inequality that increases the risk of COLR failure, a risk that once seemed small. Therefore, in the final stage of COLR policy development, states should consider providing COLRs explicit compensation or support.

1. Collecting funds

One financing option is to impose a periodic selective surcharge on customers who rely on the benefits of COLR services but who do not directly subscribe to COLR

service themselves. For example, Florida statute recently authorized a CLEC customer charge, but the charge was never actually imposed, and the authorizing statute expired in 2009.²⁰⁴ Similarly, some states that have unbundled their gas utility services have imposed stranded capacity charges on customers who buy “transport” service from the local distribution company but purchase another supplier’s gas.²⁰⁵

A selective surcharge on non-COLR customers is economically efficient because funds flow only from the indirect beneficiaries of COLR service to the COLR that provides the benefits. A selective surcharge would be complicated to administer in telecommunications because of the technical difficulty in identifying customers who are buying service from the COLR’s competitors. Moreover, a selective surcharge might face a challenge under federal law on grounds that it is a barrier to entry²⁰⁶ or not “equitable and nondiscriminatory.”²⁰⁷

The obvious option is the most popular. Most states that support COLRs do so using state universal service funding. Such programs ordinarily impose surcharges on the intrastate revenues of carriers operating in the states.²⁰⁸

²⁰⁴ The Florida legislature authorized an “interim mechanism” for COLR support that expired in January of 2009. The interim mechanism was intended to ensure “that each competitive local exchange telecommunications company contributes its fair share to the support of universal service and carrier-of-last-resort obligations. The interim mechanism applied to each competitive local exchange telecommunications company shall reflect a fair share of the local exchange telecommunications company’s recovery of investments made in fulfilling its carrier-of-last-resort obligations, and the maintenance of universal service objectives.” Fl. Stat. § 364.025.

²⁰⁵ For example, South Dakota gas customers who elect to purchase only transport service from the local distribution company may be required to pay for stranded pipeline capacity until it is utilized by others. When switching back to a retail “sales” service, a customer may be required to wait until sales capacity becomes available. NRRI informal email survey conducted in April, 2009.

²⁰⁶ 47 U.S.C. § 253(a). Another basis would be that the charge is a universal service charge that violates 47 U.S.C. § 254(f) because it is not “equitable and nondiscriminatory” or because it relies on or burdens federal support mechanisms.

²⁰⁷ 47 U.S.C. § 254(f).

²⁰⁸ In South Carolina and Vermont, universal service surcharges are imposed on all telecommunications revenues.

2. Disbursing funds

One disbursement option is to pay for COLR services on the basis of individual duties. A COLR could be compensated, for example, for enlarging its distribution network with reserve capacity to enable it to provide default service in the event of a failure by a large CLEC. Compensation in this case would be based on the marginal cost of the COLR maintaining a larger network.

An alternative approach is to look more globally at COLR costs, providing a subsidy that is sufficient to keep the COLR in business but that recognizes the COLR's efficiencies of scale as well as revenue from other sources. Any such program should recognize that carriers have a variety of other revenue sources, including federal universal service, revenues from industry pools, and revenues from ancillary services.

VI. Conclusion

The move to competition as the preferred telecommunications policy does not mean that COLR policies are no longer needed. TA96, though it focused on competition, also affirmed the traditional regulatory responsibility to assure that all subscribers have access to essential services. Competition by itself cannot ensure such broad-based access. Competitors may avoid serving areas that are high cost, sparsely populated, or filled with subscribers of limited means, while incumbent providers may seek to discontinue service in those same areas.

COLR policies give regulators the tools to assure that at least one carrier is in place to provide essential services in all areas and that necessary carrier-to-carrier services continue. Competition has changed the traditional regulatory compact underlying COLR duties; COLRs are no longer rewarded with an exclusive franchise in return for carrying out their duties. States, however, should consider striking a new version of the regulatory compact with COLRs, a bargain in which COLRs once again carry costly responsibilities over wide areas, but where those COLRs have a reasonable opportunity to cover their costs, even in the presence of competitors.