



National Regulatory
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**Evaluating Telecommunications Service
Quality: Can Consumers Really "Vote With
Their Feet" Or Do We Need Regulatory
Oversight?**

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Executive Summary

Many states have reduced or eliminated quality-of-service oversight for the wireline services provided by incumbent telecommunications carriers as the number of companies offering voice services has increased. In these states, the incumbents have stated that the increased availability of service from multiple providers, as well as the many types of products from which consumers may choose, has made oversight unnecessary. These companies argue that the "bundles" of voice, data, and often video services they sell no longer constitute "basic" dial tone service or are not provided via the traditional circuit-switched landline network, and thus are outside the state commission's regulatory mandate in any case. Finally, they postulate that consumers dissatisfied with the quality of service they receive will simply "vote with their feet" and move to another carrier, forcing the incumbent to improve service in order to win back their business.

This short paper recommends a process for examining the results of this reduced oversight in order to evaluate the need for strengthening or even reintroducing service quality regulation. It poses three key questions regulators should ask in order to determine whether "regulation by competition" has been successful.

1. Is there a problem? Has service quality deteriorated as a result of reduced regulatory attention?
2. Are traditional quality-of-service measures such as installation time, billing accuracy, outage rates, and "mean time to repair" still valid given the changes in telecommunications services and products?
3. Is the level of competition among telecommunications providers (including ILECs, CLECs, VoIP providers, and wireless companies) sufficient to allow customers to "vote with their feet"? Are there barriers to changing providers and services that limit customers' ability to take advantage of competitive offers? Or are customers simply expecting less from their providers?

This paper is directed toward regulators and legislators who have responsibility for evaluating service quality and ensuring that customers receive telecommunications services sufficient to meet their needs. It recommends a methodology for evaluating quality of service to determine whether there is a problem, including a cross-jurisdictional study comparing service quality over time. It also proposes non-traditional processes for assessing and reporting on quality of service and for assisting consumers in choosing and changing providers based on service quality.

After reading this paper, regulators will be able to analyze the level of effective competition in their states, compare carrier performance over time, and determine how customer expectations affect carrier performance.

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I. Introduction

Many states have reduced or eliminated quality-of-service oversight for the wireline services provided by incumbent local exchange carriers (ILECs). In these states, the ILECs have based their requests for more limited regulation on the increased availability of service from multiple providers, as well as the number of competing products and services from which consumers may choose. The ILECs argue that the ability to choose among multiple suppliers has made oversight unnecessary as a means of ensuring quality of service. They state that the "bundles" of voice, data, and often video services they sell no longer constitute "basic" dial tone service¹ or are not provided via the traditional circuit-switched landline network, and thus are outside the state commission's regulatory authority in any case. Finally, they argue that consumers dissatisfied with the quality of service they receive will simply "vote with their feet" and move to another carrier, forcing the incumbent to improve service in order to win back their business.

This short paper poses three key questions regulators should ask in order to determine whether "regulation by competition" has been successful:

1. Is there a problem? Has service quality deteriorated as a result of reduced regulatory attention?
2. Are traditional quality-of-service measures such as installation time, billing accuracy, outage rates, and "mean time to repair" still valid, given the changes in telecommunications services and products? Are other measures more useful?
3. Is the level of competition among telecommunications providers (including ILECs, CLECs, VoIP providers, and wireless companies) sufficient to allow customers to "vote with their feet" when service quality is an issue? Are there barriers to changing providers and services that limit customers' ability to take advantage of competitive offers? Or are customers simply expecting less from their providers?

In order to answer these questions, this paper (a) recommends that regulators evaluate the results of this reduced oversight and (b) proposes procedures for conducting that evaluation. The outcome of these evaluations will help states determine the need for strengthening or even reinstating service-quality regulation.

Part I of this paper is this introduction. **Part II** recommends methods for determining whether there is a quality-of-service problem. This part discusses the efficacy of current quality-of-service measures such as installation intervals and mean time to repair in light of the changing

¹ Basic service is generally defined as a single dial tone line with no features. *See Ohio Rev. Code Ann.* § 4927.03, available at <http://codes.ohio.gov/orc/4927.03>

telecommunications landscape, including the entry of new providers and the availability of new types of services. **Part III** explores whether competition is sufficient to allow customers to "vote with their feet." **Part IV** recommends ways to influence quality of service despite a lack of direct regulatory authority.

II. Is There a Problem? Has Service Quality Deteriorated as a Result of Reduced Regulatory Attention?

As non-wireline competitors such as cable companies and nomadic VoIP providers have entered the local market, the ILECs have shifted their focus from traditional circuit-switched voice service toward unregulated offerings like VoIP and fiber-based bundles. Some commenters theorize that this changed focus, coupled with reduced regulatory attention, has caused the ILECs to neglect the embedded wireline plant, reducing quality of service and ultimately endangering the quality of the network as a whole.² Others postulate that customer behavior dictates quality of service and that providers will improve their network infrastructure when customers demand the services it supports.

Which of these opposing viewpoints is true? How can regulators use traditional and non-traditional quality-of-service metrics to determine whether there is a problem, assess its severity, and develop solutions that will work in a less regulated environment? Can these metrics also help regulators assess the quality of unregulated, non-wireline services?

This section proposes a method for designing such an investigation.

A. Retail quality metrics focus on traditional voice services

Traditional retail quality-of-service measures focus on ensuring that the circuit-switched voice network is available 99.999% of the time³, that service is installed without delay, that problems are diagnosed and corrective action taken within set time periods, and that customers can reach ILEC support agents rapidly. These measures generally include:⁴

1. Average installation interval in days
2. % of installation commitments met
3. Out-of-service repair intervals in hours
4. Repeat out-of-service calls
5. Total number of trouble reports per month per 100 lines
6. Number of consumer complaints
7. Average time to reach an operator
8. Billing accuracy

² See DPUC Docket 10-04-12, available at <http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/5e9a0580e4e95b6385257704005990b3>

³ The Bell System referred to this service level as "5 9s"

⁴ The first six of these measures are reported in the FCC ARMIS reports available at <http://fjallfoss.fcc.gov/eafs7/PresetMenu.cfm>. Not all carriers are required to file ARMIS data.

Because these measures were developed in a monopoly environment, in which a single company provided a single service, providers argue that they are no longer accurate indicators of the service levels that today's customers want and that the company is actually providing. Based on these arguments, many states have already dropped requirements for holding providers accountable for meeting these measures, reduced the number of customers to which they apply, or reduced the frequency with which they must be reported.⁵

State regulators are generally precluded from applying traditional quality-of-service metrics to VoIP or other broadband voice services. However, because products such as digital subscriber loop (DSL) service use the same wireline circuits as traditional voice services, a close review of existing metrics can provide a method for assessing quality of service even without specific measures. We recommend a method for making these comparisons in Section IV.

B. Wholesale quality-of-service measurements can provide insight into retail performance

Although many states have reduced their oversight of retail quality of service, they have continued to measure the service the ILEC provides to its competitors. Wholesale metrics generally include installation intervals, repair intervals, repeat out-of-service calls, and other critical quality measures that affect both wholesale and retail end users.⁶

Where wholesale quality-of-service measurements include a retail parity component, states can use this information to provide insight into overall provider performance. Indeed, because these metrics often include information on network quality (for example, the number of orders held for no facilities), they may even be useful in assessing how well the incumbent is maintaining its network, since facilities-based competitors depend on the incumbent to provide last-mile interconnection.

C. Customer satisfaction surveys, complaint logs, and other non-traditional tools reveal how customers define service quality.

Regulators have traditionally focused their attention on the quality of wireline service and the traditional measurements discussed in Part II.A, but have market changes and the adoption of new communications technologies changed customer expectations about service quality? Are customers increasingly willing to accept what traditional quality measures would rank as less than "perfect" service or to move from one technology to another depending on the reason they are using the service? For example, do customers want immediate repair of their

⁵ See *Ohio Rev. Code Ann.* § 4927.03, available at <http://codes.ohio.gov/orc/4927.03>. See also VA HB 2367/SB 1386, available at <http://lis.virginia.gov/cgi-bin/legp604.exe?111+sum+HB2367>

⁶ See the New York Carrier to Carrier Metrics available at http://www.dps.state.ny.us/VZ_C2C_Oct_2006_Guidelines.pdf for examples of these items.

wireline service when they use it to reach an emergency service provider but accept longer repair times if they are simply calling to make a dinner reservation or chatting with a friend? And if the availability of multiple communications services (wireline, wireless, cable, nomadic VoIP) has raised customer's tolerance for reduced quality of service, how can we use that information to determine whether there is a quality-of-service problem?

A number of traditional and non-traditional tools can help regulators determine how consumers define quality of service and assess the ways in which consumer perceptions have changed as a result of changing technology. For example, non-traditional evaluation tools such as national customer satisfaction surveys like the J.D. Powers rankings, internal provider customer surveys, and commission reviews of customer complaints can reveal gaps between current quality-of-service measurements and what we should measure in the future. In addition to customer quality evaluations, commissions can use ILEC network change notifications filed with the FCC and information on ILEC infrastructure spending to assess network maintenance levels.

III. Do Customers Influence Quality of Service by "Voting with Their Feet"?

The ILECs and others have argued that "competition supplants the need for regulation."⁷ These commenters state that customers who are dissatisfied with their current provider can easily change to another company or select a different type of service. In order to test the accuracy of this statement, regulators must determine whether there is "effective competition" for telecommunications services and how easily customers can "vote with their feet." This part examines that question.

A. What is "effective competition?"

In his book *The Economics of Industrial Organization*, William C. Shepherd defines effective competition as "requiring at least five strong competitors, with none holding dominance and entry conditions reasonably free."⁸ A bill in the New Mexico Senate specifies another way of assessing whether competition is sufficient to allow regulatory relief. Senate Bill 4 instructs the New Mexico Public Regulatory Commission (PRC) to consider the following information in determining whether a service is competitive:

(1) whether a comparable service or facility is available from a supplier other than an incumbent telecommunications company, and (2) whether market forces are sufficient to assure just and reasonable rates without regulation. The commission should consider the presence of wireless service providers, cable telephony providers, and voice-over-Internet-protocol providers, as well as the extent to which the incumbent carrier has lost access lines to other carriers.⁹

Based on these definitions, the majority of non-rural local markets appear to meet the definition of "competitive."¹⁰ Customers can choose among the ILEC, their cable provider, a nomadic VoIP provider such as Vonage or Skype, and usually two or more wireless carriers, but can customers really change service providers easily enough to respond to poor service quality?¹¹

⁷ FCC Commissioner Robert McDowell, Free State Foundation speech, National Press Club, February 4, 2011.

⁸ William C. Shepherd, *The Economics of Industrial Organization*, Prentice Hall, 1997, p. 76.

⁹ New Mexico Senate Bill 4, available at <http://www.nmlegis.gov/Sessions/11%20Regular/bills/senate/SB0004.pdf>

¹⁰ The answer is not clear in rural markets with fewer competitors.

¹¹ Commissions may also want to analyze how bad service must be for customers actually to change providers. Indeed, it appears that some customers have become so inured to poor quality that they simply put up with it: "I've been a customer of Verizon Wireless for six

Unless consumers can easily "vote with their feet," regulation by market forces is only a nice idea, not a reality.

B. Do barriers to change limit the ability of competition to regulate quality?

Yet effective competition requires not only that products be substitutable for each other but that customers can actually take advantage of a second choice when the first proves to be inadequate or unacceptable. In order to determine whether customers can influence service quality by moving from one provider to another, regulators must determine whether there are barriers to competition and work with the providers to overcome those roadblocks.

This examination should include the following questions:

1. Are customers bound by contracts regardless of the quality of service their vendor provides?
2. If the quality of one part of a product bundle is poor, can customers demand a replacement for that part of the bundle or must they discontinue the entire bundle?
3. How difficult is it for customers to switch from one provider to another? For example, can customers reuse existing wiring in switching from a wireline or VoIP provider to another carrier? How long does the process take? Are there additional costs that would cause a customer to accept poor service rather than change providers?

years. I still can't make or receive a call in my house. I have to go outside and face southwest. Don't get me started on the transmission quality of the calls that do not get dropped."

http://voices.washingtonpost.com/fasterforward/2011/01/report_verizon_unlimited_30.html?hpid=news-col-blog

IV. Recommendations

In Part I of this paper, we posed three questions that regulators must answer in determining the effect of reduced regulation on quality of service:

1. Has the quality of voice telecommunications service deteriorated as a result of reduced regulatory oversight and increased competition?
2. Are traditional quality-of-service measures still valid given the changes in telecommunications services and products? Are other measures more useful?
3. Is the level of competition among telecommunications providers sufficient to allow customers to "vote with their feet" when service quality is an issue?

In Part II, we recommended a number of data sources for answering these questions, including reviewing existing quality-of-service measurements over time, using wholesale parity measures as surrogates for retail performance where applicable, and examining customer satisfaction data from non-traditional sources.

In this Part III, we provide the outline for gathering the data necessary to study quality of service across states and ILEC regions. We also discuss non-traditional ways in which regulators can influence telecommunications quality despite reductions in regulatory authority.

A. Combine traditional and non-traditional metrics to create a more complete picture of service quality across states and ILEC regions

As more states legislatures move to reduce telecommunications regulation, identifying the effect of this reduced oversight becomes increasingly important. Using non-traditional as well as traditional data to evaluate service quality will create a more complete picture of how service quality has changed over time, how customers perceive quality, and what new measures are required to ensure that all carriers continue to provide adequate service to their subscribers. This paper recommends that regulators work together to collect and analyze this data over time and across ILEC regions.

Regulators can use the methodology described below to combine traditional and non-traditional quality data to create this picture.

1. Add wholesale metrics and non-traditional evaluation measures like customer satisfaction surveys to the data provided by traditional quality-of-service studies. Using these non-traditional sources will allow regulators to evaluate the effect of new and/or changed customer expectations regarding quality on traditional quality requirements.
2. Compare service quality over time to evaluate the effect of competition and reduced regulation on providers.

3. Compare service quality in areas where the ILEC offers fiber- or DSL-based services like FiOS or U-Verse with quality in areas where only wireline services are available.
 4. Compare customer complaint data with quality results in order to identify specific problem areas.
 5. Compare quality of service across states and provider territories to determine whether location affects quality.
- B. Use non-traditional reporting mechanisms to inform customers of service quality.**

As traditional oversight is reduced, regulators can use social media, quality surveys, and other non-traditional reporting mechanisms to inform customers of the quality of service they should expect from their provider. Regulators can also use these mechanisms to ensure that customers have the opportunity to "vote with their feet" and change providers if the quality of service they receive deteriorates. Regulators can influence quality of service by:

1. Creating new reporting mechanisms for competitive services. For example, encourage consumers to evaluate provider performance and publish the results.
2. Working with the consumer advocate and other organizations to educate customers regarding provider performance and customer choice.
3. Working with providers and customers to evaluate and resolve customer complaints. Publish logs of persistent complaints similar to the rankings provided by consumer data bases such as Angie's List, Yelp, and others.
4. Involving state legislatures, other agencies, and the FCC in developing joint processes for monitoring provider performance and ensuring that service quality meets customer and company expectations.

V. Conclusion

By implementing the service quality study recommended in this brief paper, regulators can determine whether reduced regulatory oversight has indeed reduced quality of service. We recommend studying this issue across state and ILEC boundaries in order to determine whether the problems customers and others perceive are real, and, if so, whether they are provider- or service-specific, and encourage commissions to volunteer to undertake this important task. Once regulators collect the data necessary to identify the key problems, they can work together to resolve the problem and make sure that competition among carriers and products will ensure that customers receive the service for which they have contracted or that they expect.