

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Telecommunications Relay Services and)	
Speech-to-Speech Services for)	CG Docket No. 03-123
Individuals with Hearing and Speech)	
Disabilities)	

COMMENTS OF SORENSON COMMUNICATIONS, INC.

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Table of Contents

I.	INTRODUCTION.....	1
II.	SUMMARY	3
III.	DISCUSSION	10
A.	The Commission Is Obligated to Adopt a VRS Rate Based on the Average of Providers’ Reasonable Projections	10
1.	NECA Erred by Proposing Twenty-Four Alternative Rates	10
2.	Twenty-Three of the Proposed Rates Are Unlawful	12
3.	The Proposed Rate of \$6.77 Is Lawful and Should Be Adopted	13
B.	NECA’s Proposal to Disallow Interpreter Training Costs Is Not Appropriate	17
C.	Disallowing Reasonable Outreach and Marketing Costs Would Violate the ADA and Harm the Public Interest	19
1.	The Public Notice Appears to Have Unlawfully Predetermined that Outreach and Marketing Costs Must Be Disallowed	20
2.	Outreach and Marketing Are Essential to Fulfilling the Congressional Mandate of Universal Access to VRS	21
3.	Sorenson’s Outreach and Marketing Efforts Are Designed to Increase the Public’s Awareness of VRS. in Furtherance of the ADA’s Universal Access Mandate	22
4.	The Reasonable Outreach and Marketing Efforts of Sorenson and Other Providers Must Be Fully Funded	24
D.	NECA’s Proposals to Use Its Own Demand Forecast in Conjunction with As-Submitted or Adjusted Provider Cost Projections Are Methodologically Unsound	25
E.	NECA’s Proposals to Base the VRS Rate on Historical Allowable Costs Would Hamper Efficiency and Thwart Competition	28
F.	The Commission Is Obligated to Adopt an IP Relay Rate Based on the Average of Providers’ Projected Per-Minute Costs	30
IV.	CONCLUSION	33

Attachment: Declaration of Cheryl L. Parrino

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Sorenson Communications, Inc. (“Sorenson”) submits these Comments in response to the Public Notice’ released in the above-captioned proceeding, in which the Federal Communications Commission (“Commission” or “FCC”) seeks comment on the interstate telecommunications relay services (“TRS”) fund payment formulas and fund size estimates submitted to the FCC by the National Exchange Carrier Association (“NECA”) on May 1, 2007.

I. INTRODUCTION

NECA has proposed twenty-four possible reimbursement rates for video relay service (“VRS”). Of these, only one – the \$6.7738 per-minute rate, based on providers’ projections – is lawful, reasonable, and consistent with meeting the statutory mandate to expand access to VRS.

Before turning to the flaws in NECA’s filing, it is important to consider the context in which this rate proceeding is being conducted. Under the current regime, the costs allowed by

¹ *National Exchange Carrier Association (NECA) Submits the Payment Formula and Fund Size Estimate for the Interstate Telecommunications Relay Services (TRS) Fund for the July 2007 through June 2008 Fund Year*, Public Notice, DA 07-1978 (rel. May 2, 2007) (“Public Notice”); *Interstate Telecommunications Relay Services Fund Payment Formula and Fund Size Estimate*, attached to Letter from John Ricker, NECA, to Marlene Dortch, FCC Secretary, CG Docket 03-123 (May 1, 2007) (“NECA Filing”).

NECA and the Commission are only a subset of the legitimate costs that providers incur to provide VRS. For example, NECA excludes costs associated with the installation of videophones, the training of new users, and research and development. NECA also does not allow providers to receive reimbursement for a reasonable profit. At the present time, therefore, the reimbursement rate established by the Commission for VRS is not designed to cover all the legitimate costs that a reasonably efficient provider would incur in providing VRS.

Nonetheless, when Sorenson prepares its annual NECA projections, it adheres to the guidelines established by NECA and submits estimates only for those costs that are reimbursable under existing precedent. Sorenson's projections necessarily also take into account the plausible impact on its costs of various forces – such as rising costs of training so that interpreters achieve the skills needed to meet the Commission's service-quality mandates. Sorenson also takes into account the potential impact of various factors, including VRS competitors' success in taking minutes from existing Sorenson users away from Sorenson.

Like firms in any competitive market, Sorenson strives to be more efficient and hopes to beat its budgeted number. From a policy perspective, that competitive incentive serves the public interest by reducing the VRS rate over time – which reduces pressure on the Interstate TRS Fund. For example, providers' projected costs per minute are significantly lower this year than they were last year. As NECA-provided information confirms, Sorenson more than any other VRS provider caused this industry-wide gain in productivity. At the same time, competition encourages firms to continue to make progress in connecting all deaf Americans to VRS, as mandated by the Americans with Disabilities Act (“ADA”).

As described in the attached declaration of Commissioner Cheryl Parrino, all the trends Sorenson predicted for the 2006-07 rate year in fact did occur. First, usage among Sorenson's

users flattened out on a per-user basis. Second, wages rose. Third, Sorenson's competitors took advantage of interoperability to persuade Sorenson's existing users to transfer an increasing number of minutes away from Sorenson to its competitors.

Sorenson was able to offset these trends by expanding its number of users, thereby fulfilling the mandate of the ADA – and the goal endorsed by all the Commissioners – of connecting all deaf Americans to VRS, the first and only technology that permits ASL to be communicated over distance and guarantees a pathway from deaf Americans to hearing Americans. Even now, by Sorenson's estimate, only about ten percent of deaf Americans have VRS. This woefully low level of penetration is inconsistent with national policy goals. Accordingly, it makes no sense for NECA to recommend excluding costs for the marketing and outreach expenditures needed to increase the availability of VRS. Nor can NECA justify any of its other rate recommendations that would result in unreasonably low rates and deprive VRS providers of the funds they need to provide this valuable service in accordance with the mandates of the ADA and the wishes of all five FCC Commissioners.

11. SUMMARY

In its filing for the 2007-08 rate year, NECA was required to propose to the Commission a single rate for VRS based on the average of the reasonable cost and demand projections submitted by providers to NECA. Instead, NECA proposed *twenty-four* different VRS rates, only one of which – the per-minute rate of \$6.7738 – is lawful. The other twenty-three rates are unlawful and contrary to the need for greater predictability that the Chairman and all four Commissioners have urged in the TRS rate setting process. Sixteen of the proposed rates are not based on the average of providers' cost and demand projections. Each of those rates would, if adopted, contravene FCC precedents and prior NECA practice and deny providers compensation

for their “reasonable” costs, as required by the Commission’s rules. Of the eight remaining rates, seven exclude costs – for outreach, marketing, and interpreter training – that are reasonably necessary to advance the goals of the ADA. Adoption of any of those rates would, like the sixteen other unlawful proposals, contravene the requirement that providers receive compensation for their “reasonable” costs.²

Each of the twenty-three unlawful rates also would savage the deaf community’s ability to communicate in a “functionally equivalent” manner. For example, by denying providers compensation for reasonable outreach and marketing costs, many of NECA’s proposals would deter providers from seeking to expand the availability of VRS at a time when VRS penetration is still only about 10percent – woefully below the 100percent availability mandated by the ADA. NECA’s proposed exclusions would also thwart providers’ ability to recruit and train qualified interpreters, preventing providers from addressing the interpreter shortage. The resulting upward pressure on providers’ labor costs would more than offset the modest “savings” realized by the proposed disallowances. The concomitant inability of providers to meet the Commission’s service-quality requirements also would impose a steep human cost on deaf ASL users.

The Commission must protect the deaf community from these harms. Accordingly, the Commission should adopt the sole lawful and reasonable proposal submitted by NECA – the VRS rate of \$6.7738 per minute. Adopting any of the other proposed rates would have severe consequences for the deaf community, jeopardizing interpreter training, outreach, efforts to add new users, and the Commission’s longstanding policy of encouraging competition for VRS.

² As explained below, for example, NECA’s proposal to exclude Sorenson’s interpreter training costs would be contrary to the express goals of the ADA, hamper providers’ ability to meet the Commission’s answer-speed requirement, and result in higher VRS rates in the long run.

In the past, the Commission has set the VRS rate at the average of providers' reasonable projected costs, and in every year until this one, NECA has proposed one VRS rate to the FCC, a rate based on the weighted average of providers' reasonable projected costs. As the Commission has found, this approach emulates the incentives of a competitive market by "reward[ing] efficient providers while . . . creat[ing] incentives for providers with above average costs to reduce their costs."³ For this reason, the Commission has repeatedly directed NECA to recommend a single VRS rate based on the average of providers' projections.⁴

For the 2007-08 rate year, however, NECA inexplicably has departed from the FCC's established paradigm and its own prior practice. Instead of recommending a single rate based on provider submissions, NECA has offered twenty-four possible VRS per-minute rates ranging from \$4.3480 to \$6.7738. NECA grouped these rates into six categories, each premised upon a different methodology: (1) provider data as submitted; (2) provider data with certain cost disallowances; (3) provider historical cost data with inflation; (4) provider historical cost data without inflation; (5) provider cost data with NECA demand; and (6) adjusted cost data with NECA demand. Within each of these six categories, NECA presented four possible rates: a rate that includes both marketing and outreach costs; a rate that excludes marketing but includes outreach costs; a rate that excludes outreach but includes marketing costs; and a rate that excludes both marketing and outreach costs.

The only rationale provided by NECA for this scattershot approach is that the Commission has sought comment on a "myriad" of rate alternatives in a Further Notice of

³ *Telecommunications Services for Individuals with Hearing and Speech Disabilities; Recommended TRS Cost Recovery Guidelines*, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd 22948, ¶ 9 n.27 (2001) ("2001 TRS Cost Recovery MO&O").

⁴ See notes 12-13, *infra* (citing FCC precedents).

Proposed Rulemaking released last year.’ The Commission, however, has not adopted an order in that proceeding; accordingly, the current TRS rules and procedures remain in effect. When and if the Commission does adopt an order in the *TRS Rate Methodology* proceeding, moreover, any new rate-setting rules adopted by the Commission will have a prospective effect only, and then only after they have been published in the Federal Register and received any needed approvals from the Office of Management and Budget. Unless and until those events happen, both NECA and the Commission remain bound by the existing rate regime.

NECA’s approach is all the more troubling since there is no principled basis for adopting twenty-three of the proposed rates. Not surprisingly, the only NECA proposal that is reasonable as a matter of law and policy is the rate that is consistent with the FCC’s precedent and reflects provider projected data as submitted, including all reasonable marketing and outreach costs. Of the proposals, only that rate – which NECA calculated to be approximately \$6.77 per minute – would promote the competitive paradigm for VRS; satisfy the ADA’s mandates of 100 percent availability, functional equivalency, maximum efficiency, and technological improvement;⁶ and fulfill the stated desires of the Chairman and all four Commissioners to increase the availability of TRS and enhance the rationality, transparency, and predictability of the process by which NECA develops and recommends a rate to the Commission.

The other rates proposed by NECA would thwart or prevent these laudable goals. For example, adoption of any rate that does not compensate reasonable marketing and/or outreach costs would undercut the FCC’s obligation to ensure that 100 percent of deaf, hard-of-hearing,

⁵ NECA Filing at 9; *see also id.* at 1; *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Further Notice of Proposed Rulemaking, 21 FCC Rcd 8379 (2006) (FCC 06-106) (“*TRS Rate Methodology FNPRM*”).

⁶ *See* 47 U.S.C. § 225(a)(3), (b)(1), & (d)(2).

and speech-disabled persons have access to relay services that are “functionally equivalent” to the phone services used by hearing persons.⁷ Although VRS is the most functionally equivalent form of TRS available today, many ASL users are not even aware that the service exists, contributing to a shockingly low penetration rate of about ten percent.

Of the six NECA proposals that putatively would fully fund marketing and outreach, four would be based on either historical cost data or projections developed by NECA for demand, rather than providers’ reasonable projections of cost and demand. These proposals would run afoul of FCC precedent and unlawfully undercut the settled expectations of providers that have developed business models in reliance on those precedents and NECA’s adherence to them for well over a decade.⁸ Although the current rate regime for VRS is interim, it was adopted in rulemaking proceedings and has remained in place for years without changing.’ Providers were entitled to rely on that regime, pending the adoption of a permanent approach in the *TRS Rate Methodology* proceeding.

Of the two remaining rates proposed by NECA – the \$6.7738 rate based on providers’ projections as submitted, and the \$6.1393 rate based on providers’ projections as adjusted by NECA – only the former is lawful. Although NECA has authority to adjust providers’ projected

⁷ 47 U.S.C. § 225(a)(3) & (b)(1).

⁸ See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Memorandum Opinion and Order, 21 FCC Rcd 8063, ¶ 21 (2006) (FCC 06-88) (“*June 2006 VRS Rate Review Order*”) (under “the cost recovery mechanism that has been in place for over ten years,” NECA’s proper role is to propose TRS compensation rates “based on the providers’ own projected cost and demand data for the upcoming two-year period”) (emphasis in original).

⁹ See, e.g., *2001 TRS Cost Recovery MO&O; Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disorders*, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 19 FCC Rcd 12475, ¶¶ 14, 17-24 (2004) (FCC 04-137) (“*2004 Cost Recovery R&O*”).

costs by excluding costs that are not “reasonable,”¹⁰ NECA here exceeded its authority by excluding costs that are in fact reasonably needed to advance the goals of the ADA. For example, NECA has proposed to exclude Sorenson’s interpreter training costs; if that disallowance is ratified by the Commission, the demand for qualified interpreters will quickly outstrip supply, causing providers’ labor costs to rise precipitously, threatening the ability of providers’ to provide high quality service to all deaf callers, and putting upward pressure on the size of the Interstate TRS Fund. Those results cannot be squared with the ADA’s requirements that deaf users of TRS receive “functionally equivalent” service that is made available “in the most efficient manner” or the FCC’s minimum speed-of-answer requirement for VRS.¹¹ To avoid these unlawful results, the Commission must reject the proposed exclusion of Sorenson’s interpreter training costs, as well as any other reasonable costs submitted by any of the providers.

The twenty-three alternatives proposed by NECA are also methodologically flawed and yield VRS rates below, in some cases far below, the level needed to fund providers’ reasonable costs. As explained below and in the attached declaration by Commissioner Parrino:

- NECA’s proposal to base the VRS rate on provider cost data and NECA’s demand projection fails to adjust total provider costs upward to account for the greater demand projected by NECA.
- The proposal to base the VRS rate on provider historical cost data with an adjustment for inflation is unreasonable because historical costs are not a good predictor of future VRS costs. At this point, providers are likely to incur cost increases in excess of inflation for the foreseeable future, due to interoperability, more stringent speed-of-answer requirements, and a shortage of qualified interpreters. For the same reason, it would be even more unfair to base the VRS rate on provider historical cost data that have *not* been adjusted for inflation.

¹⁰ See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 19 FCC Rcd 12224, ¶ 40 (2004) (DA 04-1999) (“*June 2004 Rate Order*”); see also NECA Filing at 6.

¹¹ 47 U.S.C. § 225(a)(3) & (b)(1).

- The proposal to base the VRS rate on adjusted provider costs and NECA demand would doubly understate providers' reasonable costs: first, by excluding reasonable costs that should be allowed; and second, by failing to adjust those costs upward to account for the higher demand predicted by NECA.
- NECA's proposed downward adjustments to provider-submitted cost data are patently unreasonable.

If the Commission were to adopt any of the twenty-three flawed rates proposed by NECA, the consequences for the deaf community would be severe. For example, providers would be forced to consider dropping interpreter training and outreach. Depriving providers of the funds needed to attract and retain these key employees is likely to lead to a significant increase in overall costs in future years as providers scramble to find interpreters to keep up with increased demand for VRS. Lack of adequate and predictable funding also would deter providers from adding new users and making other important investments, such as developing 911 solutions. Some providers may be forced to exit the market, and prospective new providers may drop plans to enter the market. Such results would be tragic at a time when VRS penetration is still woefully inadequate. Given the statutory mandates, there is no principled basis for any of the rates proposed by NECA for VRS, except for the weighted average rate of \$6.77 based on provider submissions.

Finally, NECA's treatment of Internet Protocol ("IP") Relay suffers from many of the legal and methodological problems that invalidate all but one of its VRS proposals. As a result, there is no sound basis for any of the sixteen rates proposed by NECA for IP Relay, except for the weighted average rate of \$1.2849 based on provider submissions.

III. DISCUSSION

As explained below, NECA has proposed twenty-four VRS rates and sixteen IP Relay rates for the 2007-08 year. In each case, the only lawful and methodologically sound proposal is the rate based on providers' as-submitted projections of cost and demand.

A, The Commission Is Obligated to Adopt a VRS Rate Based on the Average of Providers' Reasonable Projections

1. NECA Erred by Proposing Twenty-Four Alternative Rates

The Commission has tasked NECA with proposing a single rate for VRS,¹² based on the average of "the providers' own projected cost and demand data for the upcoming two-year period."¹³ The Commission has also stated that this traditional methodology is to remain in place

¹²

2001 TRS Cost Recovery MO&O ¶ 24 ("we direct the TRS administrator to establish an interim VRS cost recovery rate using the average per minute compensation methodology used for traditional TRS.") (emphasis added); *2004 Cost Recovery R&O* ¶ 20 ("In the interim, the Commission [has] directed the TRS Fund Administrator to adopt a VRS cost recovery rate using the average per minute compensation methodology used for traditional TRS.") (emphasis added); see also *Telecommunications Relay Services, and the Americans with Disabilities Act of 1990*, Third Report and Order, 8 FCC Rcd 5300, ¶ 30 (1993) ("the fund administrator shall use the data [reported by providers] to calculate a national average TRS minutes of use rate in order to distribute payments to TRS providers.") (emphasis added). The traditional TRS rate has been calculated based on the weighted average of providers' projections of reasonable costs and demand, as submitted to NECA.

¹³

June 2006 VRS Rate Review Order ¶ 21 (emphasis in original); see also *id.* ¶ 12 ("It is the fund administrator's role to request and collect the providers' cost and demand data, to review that data for compliance with the Commission's rules, and to propose compensation rates to the Commission based on that data."); *TRS Rate Methodology FNPRM* ¶ 6 ("To determine the annual per-minute compensation rates under the present cost recovery methodology, TRS providers are required to submit to the Fund administrator projected costs and minutes of use data for a two-year period. . . . Using this data, the Fund administrator determines the average per-minute compensation rate for the various forms of TRS, and submits the rates to the Commission for approval.") (emphasis in original); *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 21 FCC Rcd 7018, ¶ 2 (2006) (DA 06-1345) ("*June 2006 Rate Order*") ("As a general matter, each rate [recommended by NECA for the different types of TRS] is determined by the same methodology – the providers' total projected costs of providing each service is divided by the providers' total projected minutes of use, subject to possible adjustments to the underlying data by NECA or the Commission based on review of the providers' submissions.") (emphasis in original).

“until such time that the Commission is able to collect and assess additional data regarding what the permanent VRS compensation methodology should be.”¹⁴ Since the Commission has yet to release an order based on the record it collected in the *TRS Rate Methodology* proceeding, NECA was obligated to follow existing precedent and propose a single recommended per-minute VRS rate for 2007-08 based on projections submitted by providers in response to NECA’s Relay Services Data Request.¹⁵

Rather than follow this established procedure for 2007-08, however, NECA inexplicably has offered twenty-four possible VRS per-minute rates, ranging from \$4.3480 to \$6.7738. NECA groups its two dozen proposed rates into six categories, each premised upon a different methodology: (1) provider data as submitted; (2) provider data with certain cost disallowances; (3) provider historical cost data with inflation; (4) provider historical cost data without inflation; (5) provider cost data with NECA demand; and (6) adjusted cost data with NECA demand. Within each of these six categories, NECA presented four possible rates: a rate that includes both marketing and outreach costs; a rate that excludes marketing but includes outreach costs; a

¹⁴ 2001 *TRS Cost Recovery MO&O* ¶ 24. In the 2004 *Cost Recovery R&O*, the Commission re-affirmed that an average per-minute VRS rate would remain in effect on an interim basis until displaced by a permanent VRS rate methodology. 2004 *Cost Recovery R&O* ¶ 23. Although the Commission subsequently adopted a median rather than a national average rate for VRS, it did so only to promote the result that a weighted-average approach normally would effectuate – *i.e.*, rewarding efficient providers and encouraging inefficient providers to become more efficient. See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 20 FCC Rcd 12237, 128 & n.91 (2005) (FCC 05-135) (“June 2005 Rate Order”) (adopting VRS rate based on median of providers’ projections because doing so would, like a weighed-average in most circumstances, “result in some providers being over-compensated and some providers being under-compensated”). Broadly speaking, a single median rate is a type of national “average” rate, even if not a weighted average.

¹⁵ The Commission may direct NECA to follow a different approach once the Commission has concluded its pending proceeding on the rate methodology for TRS. Until that time, however, NECA remains bound by existing FCC rules and orders.

rate that excludes outreach but includes marketing costs; and a rate that excludes both marketing and outreach costs.

NECA's approach is replete with problems. By making twenty-four recommendations, NECA has violated the express directive of the Commission to offer only a single rate, and has unreasonably complicated the task of providers and other interested parties that face the daunting prospect of analyzing and commenting on twenty-four proposals instead of one – a task further complicated by the extremely limited timeframe in which providers must submit their comments to the Commission.¹⁶ Moreover, as explained in greater detail below, twenty-three of the proposed rates are both unlawful and methodologically unsound.

2. Twenty-Three of the Proposed Rates Are Unlawful

Sixteen of the proposed rates – those in categories (3) through (6) above – are the result of NECA's having substituted its own projections or historical data for providers' projections. Those proposals unlawfully flout FCC precedent directing NECA to propose a single VRS rate based on providers' projected data. In addition, each of those proposals would unlawfully harm providers that have developed business plans in reliance on those precedents and NECA's prior practice." And, each of the sixteen rates would, if adopted, unlawfully drive the VRS rate below levels needed to reimburse providers for their "reasonable costs," as required by the Commission's rules." For example, failing to account for a large part of the increased costs providers are likely to incur if demand were to exceed providers' projections would deny

¹⁶ NECA's decision to propose twenty-three rates that are lower than the \$6.77 average of providers' projected costs also has the misleading effect of making its sole reasonable recommendation appear to be an outlier that is excessively high. As explained below, however, all of the other rates are unreasonably low and likely would lead to great harm if they were adopted.

¹⁷ See section III.E and note 79, *infra*.

¹⁸ 47 C.F.R. § 64.604(c)(5)(iii)(E).

providers the ability to recover their “reasonable costs.” And, basing the rate on providers’ historical allowable costs is unreasonable because, as explained below, such costs are not a reliable predictor of costs for 2007-08. The Commission should summarily reject the sixteen unlawful proposals that are not based on providers’ projections.

Of the eight remaining rates proposed by NECA, seven would exclude projected costs – for outreach, marketing, and interpreter training – that are reasonably necessary to advance the goals of the ADA. Adoption of any of those rates would, like the sixteen other unlawful proposals, contravene the requirement that providers receive compensation for their “reasonable” costs. Although NECA has authority to propose the disallowance of any projected costs that are not “reasonable” under the Commission’s rules, NECA has proposed exclusions that do not meet this test. Indeed, denying reimbursement for marketing and outreach expenses would retard the penetration of VRS among ASL users. Such a result cannot be squared with the ADA’s universal-access mandate. Similarly, failing to fund interpreter training will lead to a shortage of qualified VRS interpreters, leading to poor service and high rates, in violation of the Commission’s mandatory minimum requirements and the ADA’s mandates for functional equivalency and maximum efficiency. The Commission therefore has no legal basis to adopt twenty-three of the twenty-four rates proposed by NECA.

3. The Proposed Rate of \$6.77 Is Lawful and Should Be Adopted

The ADA requires the Commission to “ensure,” “to the extent possible,” that “functionally equivalent” VRS is available to all deaf and hard-of-hearing ASL users.¹⁹ In pursuing this goal, the Commission is required, under its rules, to ensure that VRS providers are

¹⁹ 47 U.S.C. § 225(a)(3) & (b)(1).

fully compensated for the “reasonable costs” they incur in providing VRS.²⁰ In addition, the Commission has established minimum service-quality requirements that VRS providers must meet, including the requirements to provide service 24 hours a day a day, seven days a week, and to answer 80 percent of all calls within 120 seconds.²¹ As Commissioner Parrino attests, the only rate proposed by NECA that meets these mandates is the \$6.77 rate that reflects the projected data submitted by providers, including projected costs for essential outreach and marketing programs.²² If anything, a \$6.77 rate would be parsimonious. Under FCC precedent, providers are not permitted to include in their cost projections all expenses that they will incur in the provision of VRS.²³ For example, Sorenson’s projected costs submitted to NECA for 2007-08 do not account for the costs Sorenson incurs to promote VRS usage by developing and installing videophones (*i.e.*, the VP-100 or VP-200) or training deaf individuals to use such equipment, or the costs Sorenson incurs to promote functional equivalency by conducting research and development for items not currently mandated by the Commission’s rules, such as emergency access. Moreover, a rate of \$6.77 would only be a slight increase over last year’s rate and would allow for the continued promotion and expansion of VRS availability.

There is every reason to believe that a methodology that relies on providers’ projections of cost and demand would result in a “reasonable” rate for the 2007-08 year. Sorenson’s

²⁰ 47 C.F.R. § 64.604(c)(5)(iii)(E).

²¹ 47 C.F.R. § 64.604(b)(2)(iii) & (b)(4).

²² Attached Declaration of Cheryl L. Parrino, ¶¶ 12, 80 (May 16, 2007) (“Parrino Decl.”); *see also id.* ¶ 53 (“The projected allowable costs and minutes submitted by Sorenson are a reasonable estimate of the allowable costs that will be incurred in 2007, the minutes that will be generated by Sorenson videophones, and the minutes that will be retained as compensable minutes by Sorenson.”); *id.* ¶¶ 56-78 (basing the VRS rate on any of the proposed approaches other than providers’ unadjusted projections will not allow providers to recover the reasonable costs of providing VRS).

²³ *See id.* ¶¶ 5, 22.

projections, for example, have been generally accurate in recent years, in large part because Sorenson uses sophisticated, dynamic models that take into account Sorenson's recent actual costs and demand.

The introduction of interoperability during the 2006-07 rate year presented a special challenge for Sorenson's forecasting models. Although demand for any service is likely to be unpredictable in early years, as providers gain experience, demand typically becomes more predictable. Sorenson, for example, has been able to refine its ability to project total VRS demand generated by Sorenson videophones.²⁴ In the past, all such demand was captured by Sorenson. Since the advent of interoperability, however, Sorenson has captured only a portion of the demand generated by its videophones.

This change created a temporary difficulty for Sorenson's forecasting model. Specifically, for the 2006-07 rate year, Sorenson underestimated demand for its services, but only because it overestimated the impact of the interoperability regime.²⁵ Providers had no historical data from which to extrapolate in forecasting the impact of interoperability, and Sorenson therefore found it difficult to predict the speed and magnitude of any demand shifts caused by the advent of this new regime.²⁶ Since Sorenson takes into account its recent actual costs and demand in making its projections, the effects of interoperability should be more accurately reflected in Sorenson's projections for 2007-08 than they were in the prior rate year.²⁷

²⁴ See *id.* ¶¶ 16-17.

²⁵ See *id.* (explaining that Sorenson accurately forecasted demand generated by its videophones, but overestimated how much of that demand would be captured by competing providers).

²⁶ See *id.* ¶ 18.

²⁷ See *id.* ¶¶ 18, 39-40. As explained below, however, the newness of the interoperability regime will continue to hamper any provider's ability to predict its own demand (and the necessary staffing levels) for some period of time.

A rate of \$6.77 per minute would promote the public interest in other ways previously acknowledged by the Commission. In the *2001 TRS Cost Recovery MO&O*, the Commission stated that a national weighted-average rate methodology “works well, is relatively simple to apply, and promotes efficiency of operation.”²⁸ A virtue of that methodology, the Commission found, was the creation of incentives to be more efficient:

Although cost and demand data are collected on a carrier-by-carrier basis, the methodology does not rely on an individual provider’s costs alone, but on the average cost of all providers. In this way, the compensation methodology rewards efficient providers while it creates incentives for providers with above average costs to reduce their costs.²⁹

Although this paradigm is hampered by the existing cost-of-service methodology,³⁰ it has the virtue of encouraging providers to ensure that the efficiency of their operations is wedded to a high level of service quality and a commitment to outreach. Since multiple providers compete for potential users, each provider has a strong incentive to provide the best service quality in an effort to win minutes of use from other providers. This incentive is especially strong in the wake of the Commission’s decision to mandate interoperability, the effects of which are just starting to

²⁸ *2001 TRS Cost Recovery MO&O* ¶ 9.

²⁹ *Id.* ¶ 9 n.27.

³⁰ As Sorenson and other providers have explained in the pending *TRS Rate Methodology* proceeding, a price cap approach would be more appropriate than a cost-of-service approach for establishing rates for VRS and IP Relay. *See, e.g.*, Comments of Sorenson Communications, Inc. at 1-8, 27-33, 40-41 (Oct. 30, 2006) (“Sorenson Rate Methodology Comments”); Joint Comments of Communications Access Center for the Deaf and Hard of Hearing, *et al.*, at 1-4 (Oct. 30, 2006) (“Joint Provider Rate Methodology Comments”). (Unless otherwise indicated, all comments cited herein were filed in CG Docket No. 03-123.) Among other benefits, price cap regulation would provide the stability and predictability that providers need for effective long-term planning. Price cap regulation also would do a better job of simulating market incentives than a cost-of-service approach and would entail lower administrative costs and result in more effective outreach.

take hold.”³¹ Each provider also has a strong incentive to conduct outreach and advertise its service to prospective users in an effort to gain minutes of use from individuals who previously were not aware of VRS or the unique features of a particular provider’s service.³² As a result of these incentives, the VRS business has been characterized by greater and greater competition, with per-minute compensation rates that have generally declined even as providers have achieved higher service quality and become subject to an ever more rigorous array of minimum standards.³³

In order for the competitive model to continue to create the proper incentives and foster healthy competition, however, the VRS rate adopted by the Commission for a particular rate year must be set at a level that actually allows reasonably efficient providers to recover their reasonable costs. The only proposal presented by NECA that meets this criterion is the weighted-average rate of \$6.77. If the rate is set significantly below that level, providers’ ability to provide adequate service may be compromised, causing serious harm to the deaf community and imperiling the statutory goals of functional equivalency, efficient operation, improved technology, and 100 percent access to VRS.

B. NECA’s Proposal to Disallow Interpreter Training Costs Is Not Appropriate

Under one of the six broad options proposed by NECA, the per-minute VRS rate for 2007-08 would be determined by dividing provider-projected costs, as adjusted by NECA, by

³¹ See Parrino Decl. ¶ 25 (“It is likely that the full impact of interoperability will take some time to realize.”).

³² See *id.* (providers other than Sorenson “are aggressively marketing their services” and “encouraging Sorenson users to add other providers’ contact information into the speed-dial feature of the VP 100 or VP 200 to make it even easier for existing Sorenson users to choose a different provider.”).

³³ This trend toward lower rates has been halted temporarily, as providers adjust to the imposition of significant new regulatory requirements, including faster speed-of-answer and interoperability. See *id.* ¶ 23.

provider-projected minutes. One of the cost adjustments proposed by NECA is to disallow all the costs projected by Sorenson for training VRS interpreters for 2007-08. NECA claims these costs should be disallowed because they “appear to be beyond the scope of meeting the minimum requirements of providing VRS.”³⁴ As Commissioner Parrino explains, however, this claim is incorrect: Sorenson’s interpreter training program will not only promote the public interest in various ways, but is necessary to allow providers to meet the Commission’s speed-of-answer mandate and other requirements.³⁵ The Commission therefore should reject NECA’s proposed disallowance of costs associated with Sorenson’s interpreter training program.

Today, Sorenson and other providers are facing a shortage of qualified interpreters that has reached a crisis stage.³⁶ Interpreting is a highly demanding profession that requires years of specialized training. As Commissioner Parrino explains, the current supply of new interpreters is barely keeping up with demand, and a significant interpreter shortage is likely to occur unless corrective action is undertaken immediately to increase future supply.³⁷ What limited supply there is, moreover, consists largely of interpreters whose skills are not sufficient to meet the functional equivalency requirements set forth in the TRS rules.³⁸

Sorenson has already begun to take appropriate remedial measures to address these problems. For example, Sorenson will provide additional on-the-job training for newly hired interpreters throughout 2007.³⁹ Sorenson also is developing training programs designed to ensure a steady supply of qualified interpreters for the foreseeable future; this training will “fast

³⁴ NECA Filing at 20.

³⁵ Parrino Decl. ¶¶ 35, 56, 61.

³⁶ *Id.* ¶¶ 31, 56.

³⁷ *Id.* ¶ 31.

³⁸ *See id.* ¶ 33.

³⁹ *Id.*

track” interpreters to acceptable levels of VRS performance as quickly as possible.⁴⁰ These training programs are needed to forestall large wage increases for interpreters (and corresponding increases in the VRS rate) that will materialize if the demand for qualified interpreters is allowed to outstrip the supply.⁴¹ As a matter of public policy, the relatively minor costs of these programs are a “reasonable” investment, and the Commission therefore should find that those costs are “reasonable” under its TRS rules.

Sorenson’s proactive measures will also help ensure that providers can meet the Commission’s mandatory minimum requirements for VRS. Without a sufficient supply of interpreters, providers will not be able to meet the quality-of-service standards mandated by the Commission, including the speed-of-answer requirement.⁴² As Commissioner Parrino explains, Sorenson’s projected expenditures for interpreter training are the most sensible and cost-effective means of averting service quality problems.⁴³ The Commission, accordingly, should reject NECA’s proposed disallowance of Sorenson’s projected training costs for 2007-08, as well as proposed disallowances of any other reasonable costs projected by other VRS providers.

C. Disallowing Reasonable Outreach and Marketing Costs Would Violate the ADA and Harm the Public Interest

Last year, Sorenson and other commenters demonstrated that NECA’s proposal to disallow outreach and marketing expenses would violate the universal access and functional equivalency mandates of the ADA, and harm both the deaf community and the broader public.⁴⁴

⁴⁰ *Id.* ¶¶ 34, 56-60.

⁴¹ *Id.* ¶ 35.

⁴² *Id.* ¶¶ 31-32, 56, 61.

⁴³ *See id.* ¶ 56.

⁴⁴ *See, e.g.*, Comments of Sorenson Communications, Inc., at 17-25 (May 17, 2006) (“Sorenson 2006-07 Rate Comments”); Comments of CSD on Payment Formula and Fund Size Estimate for Interstate TRS Fund for July 2006 Through June 2007, at 7-9 (May 17, 2006);

Apparently oblivious to the unrebutted evidence developed in last year's proceeding, NECA has repeated its error by submitting eighteen VRS rates based on excluding outreach and/or marketing costs. No new development has arisen in the past year that could justify this result; excluding outreach and marketing costs remains as unlawful and injurious to the public interest this year as it was last year.⁴⁵ As a matter of law and policy, the Commission remains obligated to fund fully all reasonable outreach and marketing expenses incurred by providers for the 2007-08 rate year. Accordingly, the Commission should reject any rate that excludes funding for these critical functions.

1. The Public Notice Appears to Have Unlawfully Predetermined that Outreach and Marketing Costs Must Be Disallowed

For both VRS and IP Relay, the Public Notice for this proceeding appears to presume that outreach and marketing costs will be disallowed, and uses the highest rate that excludes those costs as the top of the range of possible rates.⁴⁶ The Public Notice therefore appears not to seek comment on any proposed rate that includes outreach or marketing, including the rates based on providers' projections.

This approach is unlawful. Under the APA, the proper role of a public notice is to solicit comments from interested parties. Only after those comments have been received and assessed

Comments on Proposed Fund Size and TRS Rates of Hands On Video Relay Services, Inc., at 11, 16 (May 17, 2006); Comments of Bob Segalman, Ph.D, at 1-2 (May 17, 2006); Comments of Telecommunications for the Deaf and Hard of Hearing, Inc., National Association of the Deaf, Deaf and Hard of Hearing Consumer Advocacy Network, and California Coalition of Agencies Serving the Deaf and Hard of Hearing (collectively, "Consumer Groups"), at 1 (May 17, 2006).

⁴⁵ NECA suggests that the *TRS Rate Methodology FNPRM* could justify a rate that excludes marketing and outreach. See NECA Filing at 1, 9. As explained above, however, the *TRS Rate Methodology FNPRM* was issued as part of a rulemaking proceeding; as a matter of law, any changes adopted in that proceeding will have a prospective effect only. Until any such changes become effective, the Commission is bound by its current weighted-average rate methodology.

⁴⁶ See Public Notice at 1 (stating that NECA's proposed rates for VRS ranged from \$4.3480 to \$6.4370, and the rates for IP Relay ranged from \$1.1002 to \$1.2268).

by the soliciting agency may it issue an order deciding the issues on which it sought comment. Here, the proper role of the Public Notice was to seek comment on all of the rate proposals set forth in the NECA Filing, including rates that reflect costs for marketing and outreach. By preemptively excluding certain proposed rates from consideration, the Bureau has exceeded its authority and given the appearance of having prejudged certain issues without the benefit of comments submitted by the public. The Bureau should disavow the resulting appearance of bias and clarify that its failure to seek comment on all the rates proposed by NECA was improper.

2. Outreach and Marketing Are Essential to Fulfilling the Congressional Mandate of Universal Access to VRS

Congress’s paramount goal in enacting section 225 of the Act was to ensure that all deaf, hard-of-hearing, and speech-disabled persons have access to telecommunications relay services that are functionally equivalent to the voice services available to hearing persons.⁴⁷ Nothing provides deaf ASL users with greater functional equivalency than VRS.⁴⁸ Therefore, it is critical that all deaf ASL users have access to VRS at home, at work, and in public locations – anywhere that a hearing person would be expected to have access to voice telephone services.⁴⁹

Yet, only approximately 10 percent of ASL users currently have such access.

This is far lower than the 93 percent of the hearing population that has access to

⁴⁷ See 47 U.S.C. § 225(a)(3) & (b)(1); *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Declaratory Ruling and Further Notice of Proposed Rulemaking, 21 FCC Rcd 5442, ¶ 3 (2006) (“*VRS Interoperability Order*”).

⁴⁸ As Commissioner Adelstein has noted, “VRS more vividly conveys emotions than traditional relay services” and “opens a world of new communications opportunities.” *VRS Interoperability Order*, Statement of Commissioner Jonathan S. Adelstein, 21 FCC Rcd at 5475; see also *VRS Interoperability Order* ¶ 11 (VRS “provides a degree of ‘functional equivalency’ that is not attainable with text-based TRS”).

⁴⁹ See *VRS Interoperability Order* ¶¶ 4-5 & nn.13, 17 (citing legislative history of ADA).

traditional telephone service.⁵⁰ It is also significantly lower than even the most underserved segment of the hearing population recently addressed by the FCC – the Eastern Navajo Agency, which has a 33 percent telephone penetration rate.⁵¹ In fact, the FCC has felt compelled to take action to promote deployment and increase subscribership even in communities where the penetration rate was as high as 85 percent.⁵² The Commission should not thwart similar goals where, as here, the penetration is only a fraction of the “mandated objective” of section 225.⁵³

3. Sorenson’s Outreach and Marketing Efforts Are Designed to Increase the Public’s Awareness of VRS, in Furtherance of the ADA’s Universal Access Mandate

As Commissioner Parrino testifies, the outreach and marketing costs submitted by Sorenson are reasonable and are designed to further the ADA’s goal of universal access to functionally equivalent VRS.⁵⁴ By necessity, outreach is a labor-intensive and incremental

⁵⁰ FCC, *Telephone Subscribership in the United States*, at 1 (rel. May 8, 2007) (finding a 93.4% telephone subscribership penetration rate in the United States as of November 2006), available at: <http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-272904A1.pdf>.

⁵¹ *Federal-State Joint Board On Universal Service; Smith Bagley, Inc., Petition for Waiver of Section 54.400(e) of the Commission’s Rules*, Memorandum Opinion and Order, 20 FCC Rcd 7701, ¶ 11 (2005).

⁵² *Extending Wireless Telecommunications Services to Tribal Lands*, Third Report and Order, 19 FCC Rcd 17652, ¶ 1 (2004) (raising the telephone penetration rate at which tribal lands are eligible for a bidding credit from 70 percent or less to 85 percent or less).

⁵³ *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 5140, ¶ 105 (2000) (FCC 00-56) (“2000 Improved TRS Order”); see also *Telecommunications Relay Services, the Americans with Disabilities Act of 1990, and the Telecommunications Act of 1996*, Notice of Inquiry, 12 FCC Rcd 1152, ¶ 45 (1997) (“consumer education, training and outreach are essential to the success of TRS”); *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Statement of Commissioner Michael J. Copps, 20 FCC Rcd 13195, 13208 (2005) (“There is the need always for more outreach and education” regarding TRS).

⁵⁴ Parrino Decl. ¶¶ 73, 77.

process that must be largely conducted at a local level. It is very difficult for VRS providers to identify or locate ASL users. There is no database that lists deaf people or ASL users, nor is there any other standardized means of identifying them. In order to reach out broadly to the deaf community, providers must sponsor and/or attend a number of events in different parts of the country that are reasonably likely to attract ASL users.

Unlike some providers, Sorenson spends little or nothing to market its services to other VRS providers' users.⁵⁵ Like other providers," however, Sorenson relies on appropriate marketing efforts to ensure that its outreach to the deaf community is effective.⁵⁷ Although Sorenson has separate Marketing and Outreach departments within the company, those groups work in tandem to achieve the same general purpose: to plan and execute events to promote VRS and IP Relay, to educate the public about these important services, and to recruit interpreters." Sorenson's Marketing department plans, promotes, and organizes each event, while the Outreach division staffs the events and follows up on customer requests for VRS and IP Relay services.⁵⁹ Without advertising and marketing, very few deaf and hard-of-hearing persons or interpreters would be aware of outreach events.⁶⁰ Moreover, advertising and marketing are logical expenditures under the interoperability regime, in which VRS providers are

⁵⁵ See Parrino Decl. ¶¶ 27, 48.

⁵⁶ See, e.g., Comments of Hamilton Relay, Inc. at 2-8 (May 17, 2006); Verizon's Comments on Payment Formula and Fund Size Estimate for Interstate TRS Fund at 1-9 (May 17, 2006).

⁵⁷ See Parrino Decl. ¶ 48.

⁵⁸ *Id.* ¶ 49.

⁵⁹ See *id.*

⁶⁰ See *id.* ¶ 73.

encouraged to urge ASL users to use their service instead of that of other providers.”

Advertising and marketing, therefore, are necessary complements to Sorenson’s outreach.

4. The Reasonable Outreach and Marketing Efforts of Sorenson and Other Providers Must Be Fully Funded

Both the ADA and FCC precedent require the Commission to fund all reasonable marketing and outreach expenses.⁶² The ADA requires that VRS be made available to new users “to the extent possible.”⁶³ The Commission may not substitute its judgment for that of Congress by limiting the availability of VRS in an effort to save money.

Even if the FCC had such authority, it would be wrong to deprive deaf ASL users of the life-altering benefits of VRS in order to lower the contribution factor by a few hundredths of a percentage point. Without increased outreach, many deaf and hard-of-hearing individuals will not learn about VRS and therefore will be unable to use ASL to communicate with others in a manner that comes closest to being functionally equivalent to the voice service used by hearing individuals.⁶⁴ Aggressive outreach to the hearing population also is urgently needed.⁶⁵ Many hearing people are not aware of TRS in general or VRS in particular; appropriate outreach would help ensure that hearing users accept calls from VRS users and are more willing to make calls to

⁶¹ See Parrino Decl. ¶¶ 73-75.

⁶² See 47 U.S.C. § 225(b)(1); *2004 Cost Recovery R&O* ¶ 97 (finding that providers should be reimbursed for all “costs attributable to reasonable outreach efforts”); see also *id.* ¶ 90 (citing 47 C.F.R. § 64.604(c)(5)(iii)(E)).

⁶³ 47 U.S.C. § 225(b)(1).

⁶⁴ See, e.g., *VRS Interoperability Order* ¶ 3 (quoting House Report).

⁶⁵ See Parrino Decl. ¶ 78; *2000 Improved TRS Order* ¶ 105 (“It is crucial for everyone to be aware of the availability of TRS for it to offer the functional equivalence required by the statute.”).

ASL users via VRS,⁶⁶ and that deaf individuals are not denied equal access to services that hearing people routinely transact over the telephone.⁶⁷ Outreach also affords VRS providers additional avenues to recruit interpreters – a result that is particularly welcome given the looming shortage of qualified VRS interpreters? Finally, as Commissioner Parrino explains, a decision to de-fund advertising and marketing would harm Sorenson’s outreach efforts and be difficult to enforce.⁶⁹

D. NECA’s Proposals to Use Its Own Demand Forecast in Conjunction with As-Submitted or Adjusted Provider Cost Projections Are Methodologically Unsound

NECA projects a VRS demand for 2007-08 that is significantly higher than the aggregate of the demand projected by providers. Under one of the rate methodologies proposed for 2007-08, NECA would use providers’ projections for costs but its own projection for demand. When providers’ costs are divided by NECA’s higher demand, the resulting per-minute rate is significantly lower than the rate that results when providers’ projected demand is used as the

⁶⁶ See *2004 Cost Recovery R&O* ¶ 95 (“Those who rely on TRS . . . gain little from the mandate of Title IV if persons receiving a TRS call do not understand what a relay call is and therefore do not take the call, or if persons desiring to call a person with a hearing or speech disability do not know that this can easily be accomplished through TRS”); *2000 Improved TRS Order* ¶ 104 (“Callers using a relay service experience an alarming number of hang-ups by people receiving the TRS call who are not familiar with” TRS).

⁶⁷ For example, NAD recently filed a complaint against Chase Bank for allowing hearing people to access banking services via a traditional telephone, but not extending the same access to TRS users. NAD also alleges that the only access afforded deaf users to the relevant banking services is via a TTY, and not VRS. See Press Release, National Association of the Deaf, “NAD Files Complaints Against Chase Bank for Rejecting Relay Service Calls” (April 18, 2007), available at: <<http://www.nad.org/site/pp.asp?c=foINKQMBF&b=2687445>>.

⁶⁸ See section III.B, *supra*; Parrino Decl. ¶ 73; see also Sorenson Rate Methodology Comments at 23-26; *id.* at Attachment 3, Declaration of Dr. John H. Johnson, ¶¶ 7-13, 23, 25 (“Johnson Decl.”) and Attachment 1, Declaration of Dr. Michael D. Pelcovits, ¶¶ 10, 13; Reply Comments of Sorenson Communications, Inc. (Nov. 13, 2006) (attaching an analysis by Stax Inc. documenting the increased demand for ASL interpreters and the effects of that increase, including higher wages and pressures on community interpreting) (“Stax Analysis”).

⁶⁹ Parrino Decl. ¶¶ 47-49, 73-75.

denominator. A second NECA proposal would follow the same approach, but would further reduce the rate by excluding certain projected costs submitted by providers.

Both approaches produce an unreasonably low per-minute VRS rate because they fail to increase the numerator (providers' projected costs) to reflect the higher denominator (demand) projected by NECA.⁷⁰ Unlike traditional telecommunications services, which are characterized by significant economies of scale, the costs of VRS vary with demand.⁷¹ NECA appears to have ignored this reality, treating all categories of costs as fixed costs. The vast majority of these costs are not fixed, however.⁷² Some – like interpreter costs – are highly variable.⁷³ It is axiomatic that handling more minutes requires more interpreters, and interpreter costs represent the majority of allowable VRS costs.⁷⁴ It is completely unreasonable for NECA to increase demand without increasing the costs associated with the interpreting required to handle that demand.⁷⁵

Other costs are “lumpier,” but still vary with demand. For example, as demand increases, Sorenson initially may be able to use its existing call centers more efficiently. After a certain point, however, Sorenson cannot satisfy new demand by relying on its existing call centers as they are currently staffed. Instead, Sorenson must open new call centers or expand existing call centers – and incur new costs, such as rent and utilities and interpreter salaries – to meet that demand.⁷⁶ NECA's proposal to combine provider cost data with NECA's demand forecast

⁷⁰ See *id.* ¶¶ 68-72.

⁷¹ *Id.* ¶ 68.

⁷² See *id.* ¶¶ 69-70.

⁷³ *Id.* ¶ 70.

⁷⁴ See *id.* ¶ 44.

⁷⁵ See *id.* ¶¶ 70-71.

⁷⁶ See *id.* ¶¶ 68-70.

appears to ignore these and other significant additional new costs associated with increased demand.

The resulting rate formula is thus arbitrarily skewed to understate VRS costs relative to demand, and therefore results in an artificially low per-minute VRS rate of \$6.3738 when providers' as-submitted costs are used.⁷⁷ When providers' costs as adjusted by NECA are used, the proposed rate plummets to \$5.7768 – a full dollar less than the reasonable and lawful rate of \$6.7738.⁷⁸ This rate is doubly unreasonable: not only are providers' reasonable costs unfairly understated, but that already-depressed amount is not even adjusted upward to reflect the additional costs imposed by the higher demand projected by NECA.

The methodological unsoundness of failing to increase projected costs in proportion to a projected surge in demand would be exacerbated if the Commission were to exclude all of providers' costs for marketing and outreach from the total costs projected for 2007-08. Any decision to disallow all such costs would effectively assume that VRS providers will not engage in the very activities needed to achieve the growth in VRS usage projected by NECA. As a matter of logic, NECA may not project a numerator that excludes marketing and outreach costs while at the same time projecting a denominator that *includes* the likely effect (greater minutes) of the excluded costs. Clearly, the artificially low rate produced by such an approach would not be sufficient to compensate providers for their "reasonable costs," as required by the Commission's rules.

⁷⁷ NECA Filing, Exh. 1-4b.

⁷⁸ *Id.*

E. NECA’s Proposals to Base the VRS Rate on Historical Allowable Costs Would Hamper Efficiency and Thwart Competition

The Commission should not adopt NECA’s proposals to base VRS rates on either inflation-adjusted or unadjusted historical allowable costs. As explained above, under FCC precedent NECA’s proper role is to propose TRS compensation rates based on providers’ *projected* cost and demand data for the upcoming two-year period. Substituting historical costs for providers’ projections would violate these precedents or, at a minimum, undercut the settled expectations of providers that have developed business models in reliance on those precedents and NECA’s past practice of proposing a VRS rate based on provider projections. As courts have repeatedly found, agencies are generally bound by their own prior precedents and may not impose undue hardship by suddenly changing direction, to the detriment of those who have relied on past policy.⁷⁹ Under the current rules, both NECA and the Commission are bound by the methodology currently in place for VRS.⁸⁰

If providers were to incur rising per-minute costs for the immediate future, basing rates for a particular year on the allowable costs incurred in a prior year would result in providers receiving compensation that is not sufficient to cover their reasonable expenses during that

⁷⁹

See, e.g., Am. Fed’n of Gov’t Employees v. Fed. Labor Relations Auth., 777 F.2d 751, 759 (D.C. Cir. 1985) (“administrative agencies are generally under an obligation to follow their own regulations, procedures, and precedents”); *Cities of Anaheim et al. v. FERC*, 723 F.2d 656, 659 (9th Cir. 1984) (agencies may not impose undue hardship by suddenly changing direction in a non-rulemaking proceeding, to the detriment of those who have relied on past policy).

⁸⁰

See section III.A, *supra*. As Commissioner Parrino also attests, her 22-year tenure at the Public Service Commission of Wisconsin (including seven years as Chairman) has led her to consistently support the use of projected costs for establishing rates instead of historic costs. Parrino Decl. ¶ 62. As noted above, moreover, any historical allowable costs for Sorenson do not include all costs that ought to be included (such as the costs incurred in training new users or in conducting research not tied to mandatory minimum requirements).

year.” Such under-compensation is likely to force many providers to exit the business and deter new providers from entering the business in the first place. Those results would undermine, and perhaps destroy, the competitive paradigm that has hitherto helped advance the statutory goals of full availability, functional equivalency, maximum efficiency, and technological advancement.

In the VRS business, costs are likely to rise, at least in the near term.⁸² Interpreter costs are likely to increase faster than inflation due to the constrained supply of qualified interpreters in the labor pool, and the fact that speed-of-answer requirements became more stringent on January 1, 2007.⁸³ This increase in per-minute labor costs will likely be exacerbated by the FCC’s interoperability mandate.⁸⁴ By permitting all providers to compete for each user’s minutes, the advent of interoperability introduces significant uncertainty into providers’ business models, making it more difficult for providers to predict their own demand. In this environment, providers necessarily find it more difficult to anticipate their own demand for any period of time and therefore must staff conservatively at all times – *i.e.*, providers must always have enough interpreters available to answer the unpredictable demand resulting from interoperability within the parameters dictated by the speed-of-answer rule.⁸⁵ Since such increases in demand may occur sporadically, providers may find that they have overstaffed relative to actual demand. The resulting reduction in interpreter efficiency (and corresponding increase in inflation-adjusted

⁸¹ Parrino Decl. ¶ 62. Likewise, if costs are decreasing, the use of historical costs will overestimate the costs of providing service in the rate year. *Id.*

⁸² See Parrino Decl. ¶¶ 23, 41, 65-66.

⁸³ *Id.* ¶¶ 23, 30, 41, 45, 66-67; Johnson Decl. ¶ 25; Stax Analysis at 3. As of January 1, 2007, providers are required to answer 80 percent of all VRS calls within 120 seconds. *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order, 20 FCC Rcd 13165, ¶¶ 1, 19 (2005).

⁸⁴ See Parrino Decl. ¶¶ 24, 30.

⁸⁵ *Id.* ¶ 30.

costs) is likely to last at least until providers learn more about demand in the new regulatory environment.

Non-interpreter costs will also likely increase during 2007-08. For example, to meet the expected increase in demand for its VRS, Sorenson is planning to add new relay centers or expand existing centers in locations where there is a sufficient supply of qualified interpreters.⁸⁶ In so doing, Sorenson will incur a range of non-labor costs, including the rental and utility costs for call centers.⁸⁷ Since it is unlikely that technological improvements will offset all of the increased costs that Sorenson anticipates incurring during 2007-08,⁸⁸ it would be unfair to base the VRS rate on providers' historical allowable costs, whether or not adjusted for inflation.

F. The Commission Is Obligated to Adopt an IP Relay Rate Based on the Average of Providers' Projected Per-Minute Costs

The Commission has repeatedly found that the rate for IP Relay, like the rates for VRS and traditional TRS, should be calculated "based on the [provider-submitted] cost and demand projections specific to these services."⁸⁹ In the past, NECA has hewed to that approach,

⁸⁶ See *id.* ¶ 42.

⁸⁷ See *id.* ¶¶ 42, 69.

⁸⁸ See *id.* ¶ 30 (although technological enhancements allowed Sorenson to meet the speed-of-answer requirements imposed last year without impacting efficiency, there are no additional enhancements under development this year, and therefore Sorenson reasonably anticipates a decrease in efficiency due to the more stringent speed-of-answer requirement that took effect earlier this year).

⁸⁹ *June 2005 Rate Order* ¶ 20; see also *id.* ¶ 22 (rate mandated by FCC for IP Relay "is consistent with NECA's calculation based on the providers' projected cost and demand specific to IP Relay. This rate is determined by dividing the providers' total projected costs for IP Relay . . . by the providers total projected minutes of IP Relay . . ., and applying the 1.4 percent rate of return. . .") (footnotes omitted); *June 2006 Rate Order* ¶ 2 ("As a general matter, each [TRS] rate is determined by the same methodology – the providers' total *projected* costs of providing each services is divided by the providers' total *projected* minutes of use. . .") (emphasis in original). Prior to the 2005-06 rate year, IP Relay was compensated at the same rate as traditional TRS. Under that methodology as well, the rate was "determined by dividing the

recommending only a single IP Relay rate. For the 2007-08 rate year, however, NECA has unlawfully recommended sixteen different rates for IP Relay. As with VRS, there is no sound basis for adopting any of those proposals, except for the rate based on the average of providers' projections – in this case \$1.2849 per minute.”

Any of the other fifteen proposed rates would be unlawful for various overlapping reasons. Twelve of the proposed rates are based on the exclusion of outreach and marketing costs. As explained above, disallowing those costs would violate the ADA and inflict serious harms on the deaf and hard-of-hearing community.⁹¹ Eight of the proposed rates (including six of the rates based on the exclusion of outreach and/or marketing costs) are based on providers' historical allowable costs, rather than the provider-submitted projections mandated by the Commission for IP Relay. Adoption of any of those rates would violate Commission precedent and undercut the settled expectations of providers' that relied on those precedents and the prior practice of NECA.⁹² Basing the IP Relay rate on historical allowable costs would also be methodologically unsound for the reasons explained above.⁹³ Although using inflation-adjusted historical allowable costs would in this particular instance result in an IP Relay rate that is virtually identical to the sound rate based on provider projected costs – the rate based on providers' projections is \$1.2849 per minute, while the rate based on historical allowable costs

providers' total projected costs of providing these services by the providers' total projected minutes of use”). *June 2005 Rate Order* ¶ 3.

⁹⁰

See Parrino Decl. ¶ 79.

⁹¹

See section III.C, *supra*.

⁹²

See section III.E, *supra*.

⁹³

See id.

adjusted for inflation in \$1.2863 per minute⁹⁴ – this coincidence does not justify a departure from the legally and methodologically sound rate of \$1.2849.

Finally, there is no sound basis for accepting NECA’s proposed adjustment to providers’ as-submitted IP Relay costs. Although NECA has authority to disallow projected costs that are unreasonable, in this case NECA disallowed costs that, in fact, are reasonable. In particular, NECA disallowed ten percent of Sorenson’s projected costs for communications assistants (“CAs”) because the contract related to those CAs has yet to be executed. As Commissioner Parrino explains, however, Sorenson will require the projected level of CAs to meet the FCC’s minimum requirements for IP Relay service, whether or not the particular contract in question is executed.⁹⁵ In fact, if the contract for this service is not finalized, the cost of CAs for the rate year will likely be even higher than Sorenson’s projections.⁹⁶ It is not reasonable to eliminate expenses for CAs under these circumstances.⁹⁷

⁹⁴ NECA Filing Exh. 1-2b.

⁹⁵ Parrino Decl. ¶ 79.

⁹⁶ *Id.*

⁹⁷ *Id.*

IV. CONCLUSION

For the foregoing reasons, the Commission should adopt per-minute rates based on provider-submitted projections – \$6.7738 for VRS and \$1.2849 for IP Relay.

Respectfully submitted,

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May 16,2007

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Telecommunications Relay Services and)
Speech-to-Speech Services for) CG Docket No. 03-123
Individuals with Hearing and Speech)
Disabilities)

DECLARATION OF

CHERYL L. PARRINO

I, Cheryl L. Parrino, hereby declare the following:

1. My name is Cheryl L. Parrino. I have been asked to provide an analysis of the forecasts of Video Relay Service (VRS) costs and demand for the 2007-08 rate year that were submitted by Sorenson Communications, Inc. (Sorenson) to the National Exchange Carrier Association (NECA). I am familiar with those estimates and the manner in which they were developed because I assisted Sorenson in preparing those forecasts. I have been involved in assessing the projected impact of new regulatory requirements imposed by the Federal Communications Commission (FCC or Commission) on VRS providers that will be in effect during the upcoming rate year.

Qualifications

2. I am the President of Parrino Strategic Consulting Group (PSCG), a consulting firm specializing in telecommunications and energy issues, mediation and arbitration, compliance policies and procedures, audit planning and review, and board governance issues. I received a Bachelor of Business Administration degree with a major in accounting from the University of Wisconsin. My curriculum vita is attached to this Declaration.¹

3. Previously, I served as the Chief Executive Officer of the Universal Service Administrative Company (USAC), the corporation charged by the FCC with administering the Federal Universal Service Fund for all four universal service support mechanisms: High Cost, Low Income, Schools and Libraries, and Rural Health Care.

¹ See Attachment A.

4. Prior to joining USAC I spent almost 22 years at the Public Service Commission of Wisconsin (Wisconsin Commission) and the last 7 years as Chairman. During my tenure as chairman of the Wisconsin Commission, I was elected President of the National Association of Regulatory Utility Commissioners (NARUC) and served as a member of NARUC's Executive Committee and Communications Committee. Prior to becoming a commissioner, I held various other positions in the agency including Executive Assistant to the Chairman (Chief of Staff) and Director of the Bureau of Utility Audits.

I. Introduction

5. I have been asked by Sorenson to explain how it developed the cost and demand information submitted to NECA for the 2007-08 rate year and to evaluate the filing that NECA has made with the FCC. Before proceeding to that explanation and evaluation, it is important to understand the context in which this rate proceeding is conducted. As I have previously explained, under the current system, the costs allowed by NECA and the FCC are only a subset of the legitimate costs that VRS providers incur to provide service.² For example, NECA excludes costs associated with the installation of videophones, the training of new users, and research and development. These costs are real costs, are consistent with Generally Accepted Accounting Principles (GAAP), and are included in the company's financial statements. NECA also does not allow a reasonable profit for a labor-intensive industry. At the present time, the reimbursement

² Declaration of Cheryl L. Parrino on behalf of Sorenson Communications, Inc., ¶¶ 14-31 (Oct. 30, 2006), attached to Comments of Sorenson Communications, Inc., CG Docket No. 03-123 (Oct. 30, 2006).

rate established by the FCC for VRS is not designed to cover all the legitimate costs of providing VRS.

6. Bearing in mind that the costs allowed by NECA do not include all the costs of providing VRS, I have been asked to describe Sorenson's filings, and to discuss the basis for last year's filing and the adjustments that have been made in this year's filing, based on Sorenson's experience in 2006. At the time it made its 2006 NECA filing (for the 2006-07 rate year), Sorenson knew that the Commission's interoperability mandate for VRS providers would be implemented at the beginning of the rate year, and that competing providers expected to take traffic away from Sorenson. That is, competing providers expected that Sorenson videophones would continue to generate minutes, but that instead of 100% of those minutes going to Sorenson interpreters, a significant percentage would go to the interpreters of competing providers. When Sorenson makes projections to NECA, it necessarily takes into account the plausible impact on its costs of various forces – such as rising costs of training so that interpreters achieve reasonable skill levels required; Sorenson also takes into account the potential impact on Sorenson revenue of various factors, including VRS competitors' success in taking minutes from existing Sorenson users away from Sorenson. Like firms in any competitive market, Sorenson strives to be more efficient and hopes to beat its projected number. From a policy perspective, that competitive incentive enables increasing efficiencies in the industry – which will reduce the per-minute rate and reduce pressure on the Fund. It is in the interest of the FCC to have Sorenson and other firms continue to compete so as to increase efficiencies and to succeed economically so that they can continue to connect all deaf Americans to video relay service.

7. All the trends Sorenson predicted for the 2006-07 rate year in fact did occur. First, usage among Sorenson's users did flatten out on a per-user basis. Second, wages did rise. Third, Sorenson's competitors did take advantage of interoperability to persuade Sorenson's existing users to transfer an increasing number of minutes away from Sorenson to its competitors.

8. Sorenson was able to offset these trends by expanding its number of users. That was perfectly consistent with FCC policy, as I understand it, because more users means more inroads against the unfulfilled statutory goal of connecting all deaf Americans to VRS. Even now, by Sorenson's estimate only approximately ten percent of deaf Americans have VRS. By any standards this level of penetration is inconsistent with national policy goals. By increasing users, Sorenson was able to continue its industry-leading effort to drive down the per-minute costs of VRS. From my analysis of NECA-provided information, Sorenson more than any VRS firm caused this industry-wide gain in productivity.

9. In the next year, however, the trends that Sorenson has identified will certainly continue, and there is no assurance that Sorenson can offset them again by continuing to obtain more new users, although of course Sorenson intends to try to do so. Sorenson has provided NECA with reasonable projections of the impact of rising costs and increasing competition.

10. In the next year, Sorenson has well-founded concerns that increased competition from other providers will reduce its share of total VRS minutes. One indicator that this is already occurring is the flattening Sorenson has seen in its minutes per user – new minutes are generated by installation of new videophones, not by

increased usage from existing users. Sorenson asked economist Dr. Gregory Rosston to analyze trends and offer his views of potential competition to assist Sorenson in developing the projections for this filing. He worked with Sorenson during the rate filing process and provided the final report to Sorenson on January 24, 2007. That report has been updated and modified to delete competitively sensitive information and his updated reported is attached to this declaration.³

11. These expectations with respect to the 2007-08 rate year are incorporated into the Sorenson filing with NECA, and are discussed in detail below.

11. Summary

12. In this declaration, I describe the way in which Sorenson's 2007 annual filing was developed, and I analyze the various rate methodologies included in the NECA filing. In Section III, below, I show that Sorenson used a sound approach in its annual filing to report historical data and to develop reasonable cost and demand projections for 2007 and 2008. In Section IV, I analyze the various rate methodologies proposed by NECA and explain why all but one of the 24 specific rates proposed for VRS – the rate of \$6.7738 – are inappropriate. Finally, I show that it would not be reasonable to eliminate certain of Sorenson's estimated costs for IP Relay, as proposed by NECA.

III. Sorenson's 2007 Annual NECA TRS Filing

13. In this section of my declaration, I show that Sorenson used a sound approach and relied on reasonable assumptions to develop its annual filing. First, I describe the analysis Sorenson conducted comparing its projected minutes and allowable

³ See Attachment B.

costs for 2006 to its actual compensable minutes and allowable costs for 2006, and I show that Sorenson appropriately adjusted its projections for 2007-2008 based on that analysis. I then compare the actual costs of providing VRS in 2006 to the actual allowable costs reported, and discuss the factors, other than inflation, that are likely to put upward pressure on the cost of providing VRS in the funding year. Finally I show that Sorenson used a sound approach in its annual filing to report historical 2006 data and to develop reasonable cost and demand projections for 2007 and 2008.

14. I worked with Sorenson's controller and regulatory accountant to develop the 2007 annual filing. The annual filing is based on: Sorenson's financial statements and accounting systems, which are in compliance with GAAP; an analysis of Sorenson's historical allowable costs; and consideration of regulatory and other factors that will impact the provision of VRS through the next funding year. Historical allowable costs are derived from the company's financial statements and accounting systems. Financial systems and controls are in place, and those systems and controls, as well as Sorenson's financial statements, have been audited by an independent accounting firm each year. Sorenson has received clean opinions every year. Projections are based on an analysis of historical costs and of factors and changes, including inflation, which will impact the delivery of VRS in the funding year. The projections are developed consistent with the financial systems in place.

A. Analysis of projections for 2006 in comparison to historical allowable costs and reported compensable minutes for 2006

15. In developing projections for 2007, Sorenson managers relied on past experience and looked at data and operating results for 2006. The analysis involved reviewing actual minutes, expenses and capital expenditures in detail for each financial

line item and reviewing historical allowable costs and historical compensable minutes for 2006. Sorenson analyzed the differences between the projections for 2006 included in Sorenson's 2006 Annual NECA TRS Filing and the historical allowed costs for the year to determine the reason for the differences. These analyses were taken into consideration in preparing the 2007 projections. In developing projections for 2008, the 2007 cost estimates were increased upward by 10%, consistent with past years. The only exception to this approach for 2008 was the treatment of expenditures for interpreter training, as discussed below.

A.1. *Analysis of Demand*

16. In projecting its demand for 2007, Sorenson took into account its experience in 2006. As part of the process, Sorenson looked at its demand projections for 2006 and how they compared to actual demand. The analysis revealed that Sorenson's 2006 minute projections were in line with the total industry demand as filed by NECA in May 2006, indicating that Sorenson's projection of 2006 minutes was based on reasonable assumptions. The minutes that Sorenson projected its videophones would generate were greater than Sorenson's actual reported compensable minutes. Based on an analysis of publicly available information, it is likely that a good portion of the difference is the result of implementing interoperability on July 1, 2006. This analysis is consistent with the January 10, 2007 *ex parte* letter filed by Hands On.⁴ Taking into account the impact of interoperability, Sorenson's minute projections for 2006 for its videophones were very close to the actual reported compensable minutes, which indicates

⁴ Letter to Jay Keithley, Federal Communications Commission, from George L. Lyon, Jr., Counsel to Hands On Video Relay Services, Inc., CG Docket No. 03-123 (Jan. 10, 2007) ("Hands On *ex parte*").

that Sorenson did a very good job of projecting the number of minutes that would be generated over its videophones.

17. Sorenson projected that the implementation of VRS interoperability on July 1, 2006 would reduce Sorenson's share of the compensable VRS minutes generated by Sorenson videophones and that deaf users of Sorenson equipment would select the interpreters of other VRS providers for a portion of their VRS usage. Sorenson did not project an offsetting increase in the usage of its interpreters by the deaf users of other providers since most other VRS providers already allowed deaf users to select the interpreters of other VRS providers. Historically, Sorenson has had the largest share of VRS usage and, consequently, it expected to experience a significant reduction in that share. Based on a comparison of the projected impact of interoperability with publicly available information regarding actual minutes and the Hands On *ex parte*, it appears that Sorenson overestimated the impact of interoperability for 2006. Thus, although Sorenson did a very good job of projecting the number of minutes that would be generated over its videophones, it underestimated how many of those minutes would go to Sorenson interpreters.

18. The impact of interoperability is very difficult to estimate given the lack of historical experience. In the absence of actual experience, Sorenson decided that a review of other competitive telecommunications markets would be instructive, and based its projections on that review. Sorenson also made adjustments to take into account the ease with which deaf VRS users can switch from one provider to another on a call-by-call basis. I understand that Sorenson's competitors are aggressively working to enter or get their IP addresses or domain names entered into the speed dial feature of the Sorenson

VP 100 or 200, thereby making it even easier for deaf users of Sorenson videophones to use a competitor's service. Nonetheless, based on actual experience from 2006, Sorenson has reduced its projections of the number of minutes generated by Sorenson videophones that will go to other providers' interpreters in 2007 and 2008.

A.2. *Analysis of Costs*

19. Sorenson projected that the more stringent answer speed requirements that became effective on July 1, 2006 (requiring providers to pick up a call from a VRS deaf user 80% of the time within 150 seconds) would decrease interpreter efficiency. However, as a result of new software and technology developed over the last two years and implemented by Sorenson in 2006, Sorenson was able to meet the answer speed requirements without a decrease in operating efficiency.

20. 2006 historical outreach expenses were less than originally projected because Sorenson scaled back planned outreach efforts following the FCC's decision to freeze the reimbursement rate at \$6.64, rather than adopting a rate of \$7.11 based on providers' projections. The frozen rate was significantly below Sorenson's projected per-minute costs. Sorenson was also cognizant of the fact that NECA had recommended disallowing a significant portion of Sorenson's projected outreach expenses. Separate and apart from the general exclusion of marketing and outreach expenses, NECA specifically excluded a major portion of VRS outreach as "being beyond what is necessary to achieve the mandatory minimum standards required by the Commission's rules." Sorenson's 2006 historical outreach expenditures were approximately 18% over Sorenson's revised 2006 projections, after adjusting for the projected costs that were specifically excluded by NECA.

21. For all other expenses, historical allowed costs were approximately 30% higher than what Sorenson projected in its 2006 NECA filing.

B. Comparison of actual cost of providing service to historical allowable costs

22. The costs allowed by NECA do not include all of the costs of providing VRS. For example, NECA does not use the actual working capital requirements or capital costs of Sorenson but instead uses the return set by the FCC in 1990 for rate-of-return telecommunications carriers. Unlike the telecommunications industry, which is capital intensive, the VRS business is labor intensive. NECA's current treatment of interest expense, profit and other capital costs does not reasonably compensate VRS providers for the cost of providing service. NECA also does not include the cost of videophones, the installation of those phones or the costs of training deaf users on how to use VRS. In addition to the information required by NECA, Sorenson provided the additional actual and projected costs of providing VRS with its 2007 rate filing.

C. Analysis of potential factors likely to affect the costs of providing VRS for 2007 and 2008

23. In addition to analyzing actual experience, data and operating results in the development of projections for 2007, Sorenson management also took into consideration inflation and other factors that are likely to directly and indirectly impact the cost of providing of VRS. There are several factors that will cause the allowable costs of providing VRS in 2007 to increase over the historical allowable costs incurred in 2006, including: a full year's impact of interoperability; the effects of new and aggressive marketing by other providers seeking to take minutes away from Sorenson; a more stringent answer speed requirement; and a shortage of qualified interpreters. Sorenson projects that these changed conditions will increase the cost of providing VRS over and

above the impact of general inflation. Sorenson projects that there will not be any major changes that will reduce the cost of providing service.

C.1. *Interoperability*

24. One of the factors that will impact the projection of costs and compensable minutes for 2007 is the ability of deaf users to use Sorenson videophones to access other providers' interpreters (interoperability). Although it is difficult to predict the exact impact that interoperability will have on Sorenson's compensable minutes, Sorenson estimates that competitors will take a greater share of the minutes generated by Sorenson videophones in 2007 than they did in 2006. As noted above, based on six months of actual experience, Sorenson has adjusted the projected impact downward from the impact projected in 2006.

25. Experience in other markets indicates that the erosion of market share for the largest provider occurs over time. It is likely that the full impact of interoperability will take some time to realize. However, it is also likely that the VRS business will experience change much faster than other communications businesses because of the ease with which deaf users can choose another provider either for a single call or for all calls. Other providers are aggressively marketing their services and promoting the ability of deaf users to use Sorenson videophones to access competitors' service. In addition, other providers are encouraging Sorenson users to add other providers' contact information into the speed-dial feature of the VP 100 or VP 200 to make it even easier for existing Sorenson users to choose a different provider. These conclusions are supported by the attached paper prepared by Dr. Gregory Rosston.

26. An analysis of the information provided by NECA regarding the percentage of total expenses that each provider intends to spend on each category of expenses, including marketing and outreach, confirms that other providers are, and will be, aggressively marketing their services and trying to convince Sorenson end users to use competitors' services rather than Sorenson's. It is significant to note that NECA has changed the definition of marketing and outreach for this filing. NECA now defines marketing as "the expenditures by the provider to persuade users to choose their particular relay service over that of other relay service providers." By contrast, NECA defines outreach as "educational outreach via the following methods: newspapers, TV, internet, community forums, etc. to inform the general community of the availability of TRS service in its various forms and future forms as technology evolves. Outreach is more generic, teaching and educating the community at large about relay, how to use it, how to call and receive calls from deaf and hard of hearing people."

27. The data indicate that most providers intend to spend significant dollars to persuade users to choose their particular relay service over the services of other providers. In fact, one provider is projecting that 6.5% of its allowable costs will be spent on capturing minutes from other providers' deaf users. Sorenson, on the other hand, intends to spend significant dollars teaching and educating the community at large about VES, training people how to use the service, and connecting new deaf users (*i.e.*, outreach), and relatively little on marketing and little or nothing on marketing dollars to convince users of other providers' services to switch to Sorenson.

28. The specific projected expenditures on marketing included in the each of the filings is as follows:

Provider Filed Projections	% Marketing
A	<0.5
B	6.5
C	0.5
D	2.5
E	3.0
F	0.5
G	1.0
H	1.5
I	5.5
Weighted Average	1.0
Simple Average	2.3
Range	.5 - 6.5
Median	1.5

Source: NECA Bar Chart - VRS Cost Composition-Provider Projected 2007-2008

29. The expenditures on marketing range from less than .5% to 6.5%, and on average providers are projecting to spend 2.3% of allowable expenses to capture other providers' end users. Sorenson's marketing expenditures are near the bottom of the range. Sorenson's major focus is on reaching out to those deaf users who have not already experienced the life-changing benefits of VRS rather than simply promoting Sorenson's services over those of other providers. As a result of this, and based on other analyses, Sorenson is estimating that the impact of interoperability will be greater than that experienced in the last six months of 2006, but less than projected in last year's filing.

C.2. *Answer Speed Requirements*

30. More stringent answer speed requirements are likely to have an impact on Sorenson's interpreter efficiency, which will have an impact on interpreter costs. Sorenson takes its answer speed obligations very seriously and, as such, management must allocate the appropriate resources throughout 2007 and 2008 so that the company will be able to meet the requirement. A provider cannot afford to miss the answer speed requirement. The penalty for not meeting the requirements is very significant – potentially a loss of one full month's revenue; therefore, Sorenson must ensure that it has an adequate number of interpreters in its call centers to meet the more stringent answer speed requirement. Sorenson was able to meet the more stringent requirements imposed last year without impacting efficiency because of significant improvements in scheduling interpreters as a result of developing and implementing software and technology improvements in 2006. There are no additional enhancements currently under development, and therefore the projections for 2007 and 2008 reflect lower efficiency due to the new answer speed requirement. In fact, the combination of the answer speed requirement and the anticipated effects of interoperability and increased marketing by competitors creates a great deal of uncertainty for Sorenson. Given the potential penalties for falling short on speed-of-answer, Sorenson must staff conservatively to ensure it can accommodate all minutes generated by its videophones and answer calls within the time allotted by the FCC.

C.3. *Interpreter Shortage*

31. The shortage of VRS interpreters is reaching a crisis stage due to the depletion of the available pool of highly qualified interpreters combined with anticipated

increases in VRS demand. Sorenson's ability to meet FCC and user requirements for interpreting services is directly dependent on there being an adequate supply of high-quality interpreters with the training and skills needed to provide VRS interpreting. Interpreting in certain fields, such as VRS, requires even more specialized training and education than ASL interpretation in general. Recently, Sorenson has found it increasingly difficult to hire a sufficient number of qualified interpreters to meet the rapidly growing demand for its services. The current supply of new interpreters is barely keeping up with demand because the limited influx of new interpreters per year is counteracted by the normal attrition of interpreters due to retirement. The increased demand for interpreting services is expected to be largely unmet unless corrective action is undertaken immediately to reduce the current shortage and increase future supply.

32. There are a variety of factors that influence whether a sufficient supply of interpreters is available to meet the current demand. Sorenson cannot address all of those factors. However, as the largest VRS provider, it is incumbent on Sorenson to take some action to ensure that an adequate supply of qualified VRS interpreters is available to meet its increasing demand and to maintain the quality of service standards mandated by the FCC and expected by deaf users.

33. Sorenson is finding it necessary to hire less qualified interpreters who must be trained to have the skill set needed to meet the functional equivalency requirements set forth in the TRS rules. Sorenson will provide additional on-the-job training for these new hires throughout 2007. As a result, management reasonably anticipates that operating efficiency will decline.

34. In addition, management reasonably anticipates that it will need to take additional steps to address the pending interpreter shortage and has included additional training dollars in the 2007 and 2008 projections in order to ensure an adequate supply of qualified interpreters to meet the demand for Sorenson's video relay service. Sorenson is developing a number of training options for meeting these needs. In 2007, Sorenson will be developing these training programs and will begin implementation as soon as possible. The training plan incorporated in the projections is targeted at producing a steady supply of interpreters capable of meeting the company's needs. The training is being designed to fast-track interpreters to acceptable levels of VRS performance as quickly as possible.

35. Absent significant action to address this shortage immediately, the shortage of labor will not only have an impact on providers' ability to meet FCC and statutory requirements, but will also result in significantly higher wages for qualified interpreters. Sorenson has not projected an above-average wage increase for interpreters in 2007, although that is a risk.

D. Details regarding the reporting of 2006 minutes and costs and the development of the projections for 2007 and 2008

D.1. *Reporting of 2006 compensable minutes and allowable costs*

36. Sorenson's NECA filing included actual 2006 minutes from Sorenson's automated reporting system. The filing also included actual allowable 2006 cost information generated from the Sorenson financial system and formatted into NECA-required accounts. Sorenson has not sought reimbursement for equipment, installation, or the training of deaf users, and those expenditures are not included in the actual or projected costs.

37. Sorenson reclassified marketing and outreach expenses to be consistent with the new definitions for those costs provided in the filing instructions.

38. Cost structures and reporting are in place for all functions and departments. Costs are recorded and tracked by department and cost center, and costs are directly recorded to cost centers, to the extent possible. Overhead costs, or costs that are general to the company, are allocated by revenue. Approximately 90% of costs are directly assigned. Sorenson's employees use cost center codes to record time based on the cost structures in place as discussed above. Sorenson maintains a detailed list of accounts that is used for all departments and cost centers. Actual and projected costs are recorded in a consistent manner.

D.2. Projecting 2007 and 2008 compensable minutes and allowable costs

39. Forecasted minutes are determined by reviewing historical data, forecasted number of installations, minutes per install, and major known changes, such as implementation of interoperability and speed-of-answer requirements, opening of new interpreting centers, and new approaches to outreach. The projections include only allowable costs and do not reflect the total projected cost of providing VRS.

40. The Sorenson filing estimated that compensable VRS minutes generated by Sorenson videophones in calendar 2007 would increase by more than 50% over the VRS minutes reported in calendar 2006. In developing this projection, Sorenson analyzed the trend in Sorenson's growth in overall VRS minutes since 2003, the annual rate of new installations since 2003, and the historic pattern of minutes of use per videophone. This analysis showed that Sorenson's annual growth in VRS minutes has been attributable almost entirely to the addition of new installations rather than increased

use from existing installations. In addition, as discussed above, Sorenson examined its 2006 projections of minutes generated by its videophones and found that those projections were very close to Sorenson's actual reported compensable minutes. Sorenson's projection of minutes for the 2007-08 rate year is in line with its past growth and the NECA demand included in its filing.

41. Forecasted 2007 costs are based on the projections developed by each department to meet demand and other requirements. VRS providers will face both new and ongoing challenges in providing quality service to deaf Americans in the upcoming rate year, dealing with the interpreter shortage crisis, attracting and retaining qualified interpreters, meeting the FCC's more stringent answer speed requirements, attracting and retaining qualified interpreters for ASL-to-Spanish VRS, and expanding the penetration of VRS to more of the deaf community. In my opinion, these requirements and the interpreter shortage will significantly impact operations and increase costs in the rate year. The incremental costs associated with these additional requirements were built into Sorenson's projections.

42. Sorenson included the costs of rental space for call centers and the utility costs for call centers in this category of expense. These costs are primarily driven by growth in demand, which drives the need for additional interpreters and interpreter seats.

43. Utility costs are based on the rates charged by the utility and the lines needed to provide service for each call center and to meet overall demand.

44. Total interpreter costs constitute over 50% of the total cost of providing VRS. Sorenson's assessment of its anticipated interpreting costs during the rate year

includes an analysis of the continued effects of interoperability, the provision of ASL-to-Spanish VRS, and the effect of more stringent speed-of-answer requirements on its costs.

45. In addition, Sorenson's submission to NECA estimated the impact of the cost to bring new hires to the necessary skill level. This on-the-job training will increase the costs of Sorenson's video relay service during the 2007-08 rate year, and that impact is reflected in the Sorenson submission to NECA.

46. The filing includes depreciation expense on capital investments reported on Sorenson financial statements and forecasted capital investments, with the exception of those investments that are not allowed, such as videophones.

47. The projections for marketing and outreach reflect the new definitions for those costs provided in the filing instructions. Sorenson's projections reflect its commitment to reach and connect additional deaf users in 2007 and 2008 and to provide quality service for those consumers.

48. Marketing expense includes only those functions and activities associated with marketing. Advertising, as now defined by NECA, was included in the marketing expense line. The Sorenson marketing department is responsible for several activities in addition to traditional advertising, and almost all of the marketing department's budget is focused on planning, promoting, and organizing outreach events to recruit VRS interpreters and educate and sign up new VRS users.

49. Although Marketing and Outreach are separate departments, they work in tandem to plan and execute events for VRS outreach activities. The events have multiple purposes, including recruiting interpreters for VRS and educating and signing up new deaf users. The Marketing Department plans, promotes, and organizes each outreach

event while the Outreach Department managers and trainers staff events and follow up on deaf user requests for VRS and IPR service. All costs associated with outreach events were projected as part of Outreach this year.

50. The 2007 demand and cost estimates were then increased upward by 10% for calendar 2008. This approach was used because of the difficulty of projecting more than one year out in a business that has significant growth, has been offering service for only a few years, and is subject to continuing changes in regulatory requirements affecting the provision of VRS. The 2008 training program targeted at increasing the pool of qualified interpreters is an exception to this approach. Sorenson projected more than a 10% increase in training costs between 2007 and 2008. In 2007 Sorenson will be developing these training programs and will begin implementation as soon as possible. Sorenson projects that these programs will be operational for the entire year in 2008.

IV. NECA May 1,2007 Interstate Telecommunications Relay Services Fund Filing

51. In Section III, I have discussed the process by which Sorenson developed its NECA filing. That filing is based on the consideration of past experience, lessons learned in projecting minutes and costs, and the factors that will likely impact the cost of providing VRS service in 2007 and 2008. In this section, I analyze and comment on the various rates proposed by NECA in its filing.

52. Unlike in previous years, NECA has not recommended a single per-minute rate for VRS, but instead has provided a number of rates for the FCC's consideration using varying rate methodologies. The methodology in place today uses providers' projected costs and establishes a single rate for VRS. My declaration will

discuss each of the proposed methodologies and resulting rates and my view of the reasonableness of each approach.

A. Option (1) Provider projected costs divided by provider projected minutes

53. The projected allowable costs and minutes submitted by Sorenson are a reasonable estimate of the allowable costs that will be incurred in 2007, the minutes that will be generated by Sorenson videophones, and the minutes that will be retained as compensable minutes by Sorenson. As discussed above, in developing projections for 2007, Sorenson analyzed actual experience, data and operating results and also considered inflation and other factors that are likely to directly and indirectly impact the cost of providing of VRS. There are several factors that will cause the allowable costs of providing TRS in 2007 to increase over the historical allowable costs incurred in 2006, and there will not be any major changes that will reduce the cost of providing service.

54. In addition to the more stringent FCC mandatory answer speed requirements mentioned above, there are a number of open proceedings that may cause the cost of providing VRS to go up in 2007. For example, establishing a national numbering database or implementing 911 requirements and the necessary training to go along with it would raise the cost of providing services. Sorenson has not included a contingency for the costs associated with these potential requirements currently being considered by the FCC in pending proceedings.

55. Consistent with previous filings and direction, Sorenson increased 2007 projections by 10% to develop the 2008 projections. The one exception to this approach was with regard to interpreter training discussed in paragraphs 34 and 35 above. Since the training programs will not be fully operational at the beginning of 2007, Sorenson

added the estimated 2008 cost of the training programs rather than simply increasing the 2007 projections by 10%.

B. Option (2) Provider projected costs adjusted by NECA disallowances divided by provider projected minutes

56. NECA disallowed the interpreter training program discussed in paragraphs 34 and 35 above as being beyond the scope of meeting the minimum requirements of providing VRS. NECA's assessment does not consider the fact that these programs are not only critically important, but necessary, if providers are going to meet the mandatory answer speed and other requirements established by the Commission. The interpreter shortage has reached a crisis stage. The approach that Sorenson included in its projections is the most cost-effective approach to deal with this crisis. The training is being designed to fast-track interpreters to acceptable levels of VRS performance as quickly as possible. The training plan is targeted at producing a steady supply of interpreters capable of meeting the company's needs.

57. One aspect of the planned training would provide specialized education for persons who are already fluent in sign language and deaf cultural interactions. Such people may include those who have deaf family members or friends and others who have studied sign language and are fluent in ASL. This track would provide 10 months of intensive training (4–5 days per week).

58. A second aspect of the planned training would provide training specifically tailored to pre-certified interpreters who have basic ASL interpreting skills. These interpreters would follow a one-week intensive training track (40 hours) with on-site individualized mentoring tailored to their needs, with the goal of becoming nationally

certified. At the completion of this track, participants would be prepared to enter the certification process.

59. Another aspect of the planned training would provide students in interpreter education programs with internship opportunities that allow them to experience the work associated with VRS interpreting so that they may be better prepared to enter the workforce.

60. In addition, Sorenson is planning a fast-track course for returning interpreters who have high-level skills but who have not been working or have let their certifications lapse, or for qualified interpreters who need VRS training. This fast-track course would provide training for qualified ASL interpreters who need VRS-specific training. The duration of this course is projected to be 40 hours (one week). Sorenson is also evaluating and considering other options. Those listed above, however, are the first steps at addressing the immediate need for additional qualified interpreters.

61. The disallowance of these training costs is not appropriate because Sorenson's ability to meet FCC requirements is directly dependent on there being an adequate supply of high-quality interpreters with the training and skills needed to provide VRS interpreting.

C. Option (3) Provider historical allowable costs per minute

62. I have consistently supported and advocated the use of projected costs for establishing rates. In fact, the Public Service Commission of Wisconsin has used some form of projected costs consistently since 1958.⁵ It is more appropriate to use projected costs rather than historical costs for a number of reasons. For example, using historical

⁵ See *Wisconsin Telephone Co.*, No. 2-U-4904, Order (Wis. PSC Apr. 18, 1958).

costs to establish rates does not allow providers the opportunity to recover the reasonable costs of providing VRS and IP Relay services. Nor does using historical costs reduce the administrative burden of the rate setting process. In addition, the use of historical costs will not reflect reasonable costs if costs are either increasing or decreasing. If costs are increasing due to inflation, new regulatory requirements, or rising input costs, the use of historical costs will underestimate the actual costs of providing VRS during the rate period and deny providers the opportunity to recover legitimate costs and, in some instances, deny recovery of new costs imposed by regulators. If costs are decreasing due to efficiencies or deflation, the use of historical costs will overestimate the costs of providing service in the rate year.

63. The use of historical costs not only denies providers an opportunity to recover the actual allowable costs of providing service during the rate year, but it does little to decrease the administrative cost for the FCC or NECA. The use of historical costs does not diminish the need to carefully scrutinize and review the costs that are submitted by the providers. Just as with projected costs, the regulator and administrator must scrutinize the information submitted to determine which costs are reasonable, which costs are likely to be ongoing, which costs are unusually high or low, and which costs should be included for establishing rates. The use of historical costs only marginally decreases the cost of regulation while denying providers an opportunity to recover the reasonable costs of providing VRS and IP Relay service.

64. Under a cost-of-service approach, only a projected cost approach provides a fair opportunity for a reasonably efficient provider to recover the costs of providing

service. Absent this opportunity, providers will be reluctant to provide this service or to connect new users.

65. For a service like VRS, where there are significant factors that will cause the future costs to be higher than historical costs, a rate based on historical costs does not “compensate TRS providers for reasonable costs of providing interstate TRS” nor does it “appropriately compensate interstate providers for the provision of VRS” consistent with 47 C.F.R. § 64.604.

66. There are significant regulatory and other factors that will cause the cost of providing VRS to increase in addition to normal inflationary pressures, including: a more stringent answer speed requirement; the shortage of qualified interpreters, which will tend to require wage increases that exceed inflation, as well as additional training dollars; and the impact of interoperability. The use of historical costs will underestimate the actual allowable costs of providing VRS during the rate period and deny providers the opportunity to recover legitimate costs, and may deny recovery of new costs imposed by regulators.

D. Option (4) Provider historical allowable costs per minute increased by inflation

67. Adjusting historical allowable costs for inflation may be a reasonable approach in a stable industry where regulatory requirements are not changing and where the costs of providing service are estimated to increase in line with general inflation. That is not the case in the provision of VRS, however. More stringent answer speed requirements took effect on January 1, 2007, and the FCC is considering a number of other changes that will cause costs to increase and likely cause increases greater than inflation. In addition to increased regulatory requirements, the industry is facing a

serious shortage of qualified interpreters. This shortage will put upward pressure on the wage rates for qualified interpreters and, absent additional expenditures to train and bring more qualified interpreters into the workforce, providers may not be able to meet current regulatory requirements. Using historical allowable costs adjusted for inflation will not yield a reasonable estimate of the cost of providing VRS during the rate year.

Consequently, this method will not “compensate TRS providers for reasonable costs of providing interstate TRS.” Nor will it “appropriately compensate interstate providers for the provision of VRS” consistent with 47 C.F.R. § 64.604.

E. Option (5) Provider-projected costs divided by NECA-projected minutes

68. VRS is a very labor-intensive business, and the majority of the costs vary directly with change in demand. If demand increases, interpreter costs and other costs will increase to meet that increased demand. It is important to recognize that if demand increases, costs will increase directly or indirectly in proportion to the increase in demand.

69. In its May 1, 2006 filing with the FCC, NECA proposed a rate based on providers’ submitted costs adjusted for NECA disallowances and NECA-forecasted demand. Sorenson agreed that the NECA-estimated industry demand appeared reasonable. In fact, Sorenson’s projection was in line with that NECA projection. However, Sorenson took exception to the approach that NECA used for estimating expenses, holding essentially all costs other than the costs associated with non-management interpreters (employees and contractors) constant despite the increase in demand. Sorenson argued that although other costs may not vary as directly as interpreter expenses, other costs will increase with increased demand. For example, the

costs for renting relay facilities and purchasing telecommunications and other utility services will increase with increased demand; likewise, the growth in relay center management as well as miscellaneous supplies and expenses related to the relay centers will increase proportionally with the increase in demand.

70. In its May 1, 2007 filing with the FCC, NECA proposed one rate option based on providers' submitted costs and NECA forecasted demand. Unlike last year, NECA did not propose to increase even interpreter expenses with this increase in demand. Interpreter costs are directly related to the number of interpreting minutes of demand and as such will increase with increased demand. As I argued last year, if demand is increased, some amount of increase should also be included in the calculation of the rate for other expenses, especially given the significant new challenges confronting providers in 2007 and 2008. Any significant increase in demand must be accompanied by a corresponding increase in costs – particularly in a labor-intensive industry such as VRS, where the majority of costs are variable.

F. Option (6) Provider-projected costs adjusted by NECA disallowances, divided by NECA-projected minutes

71. As discussed in paragraphs 68 through 70 above, using provider-filed costs without any increase to reflect an increase in demand will result in a rate that fails to reflect the reasonable costs of providing VRS during the rate year.

72. In addition, the disallowance of training costs will jeopardize the company's ability to have an adequate supply of quality interpreters to meet FCC and other requirements. As discussed in paragraphs 56 through 61 above, the training costs that were disallowed by NECA are necessary because Sorenson's ability to meet FCC

requirements is directly dependent on there being an adequate supply of high-quality interpreters with the training and skills needed to provide VRS interpreting.

G. Treatment of Marketing / Advertising Expenses

73. NECA provided the Commission with specific marketing cost information under each scenario in the event the Commission determined it was appropriate to eliminate all marketing and advertising expenses for all VRS providers. Advertising and marketing expenses are reasonable business expenses that are incurred in the normal course of business, and Sorenson's projected marketing expenses are reasonable. It is common business practice for companies to advertise the services they offer and the benefits of using a particular brand over another. Without advertising and marketing, very few deaf and hard-of-hearing users, interpreters, or Communication Assistants would be aware of VRS and IP Relay services, frustrating the mandate to provide all deaf and hard-of-hearing users with functionally equivalent telecommunications relay services. In light of the FCC mandate on interoperability and the benefits provided to users, all reasonable advertising and marketing should be allowed.

74. Some parties commented during the last rate setting process that the FCC should disallow all branded ads. Although on its face it may appear reasonable and easy to implement, this approach is in fact fraught with issues and would create obstacles to accomplishing the FCC's goal of reaching all eligible deaf and hard-of-hearing users and to hiring qualified interpreters and communication assistants. This recommendation would also negatively impact deaf and hard-of-hearing users of VRS and IP Relay. Unless the FCC established an absolute prohibition on the use of a provider's name or logo on any website, notice, sign, document, or other material viewed by the public,

implementation and enforcement would be very subjective, time consuming, and complicated. Although the absolute prohibition of the use of a provider's name or logo may make it easier to administer restrictions on marketing and advertising, it would hamper the ability of providers to reach deaf and hard-of-hearing users, and it would make it more difficult for those users to sign up for VRS and IP Relay services, thereby frustrating the ADA's goal of increased access to those services. For example, Sorenson's outreach events are specifically designed to reach and target not only new deaf and hard-of-hearing users who are not aware of the TRS options available, but also qualified interpreters and communications assistants. If Sorenson were not allowed to use its name on printed materials or on the business cards of Sorenson employees, it would make it extremely difficult if not impossible for both users and interpreters to reach Sorenson after the event either to sign up for service or to apply for a position. If Sorenson were not allowed to feature links to its website in the materials provided so that users could obtain additional information and sign up for service, it would make it even more difficult than it already is for these users to get service, thereby frustrating the Commission's goal of reaching all eligible deaf and hard-of-hearing users. It is not reasonable to expect that all users can or will sign up for service at the event, so providing detailed contact information is critical to ensuring that deaf users have the information they need to sign up for the service. The contact information and referrals are key to promoting the service and are required to reach eligible deaf and hard-of-hearing users. As important, TRS users, just like other users, want to know who they are dealing with and they have a right to know who is hosting the event. Deaf and hard-of-hearing users, like other consumers, want to be able to check the reputation of the

company and the quality of its product before they sign up for service; if the provider's name is not included on any of the materials, users will demand to know who is hosting the event. Absent a bright line rule, the FCC would have to specify each and every document where a provider's name and logo was appropriate as well as under what specific conditions the use of those documents was appropriate. Branding should not be a factor in determining whether advertising should be allowed.

75. Some parties also suggested that the FCC should disallow advertising that simply promotes one provider over another. Since the FCC rules require interoperability, it is reasonable for providers to advertise the availability of their services in order to keep current deaf and hard-of-hearing users and to attract deaf and hard-of-hearing users from other providers.

H. Treatment of Outreach Expenses

76. NECA provided the Commission with specific outreach cost information under each scenario in the event the Commission determined it was appropriate to eliminate all outreach expenses for all VRS providers. Outreach is absolutely essential for informing deaf users of the availability of VRS and for recruiting and hiring additional interpreters to meet the growing demand for VRS.

77. Sorenson's projected outreach expenses are reasonable. The majority of the increase in the outreach projections for 2007 is due to the reallocation of outreach expenses previously included in the marketing line. Sorenson's outreach expenditures are used to hold events to educate users about VRS, to sign up new VRS users, and to recruit interpreters, communications assistants, and rural outreach managers. Many deaf users are not aware of VRS, so basic education about the service, its capabilities and

advantages is an important first step and is included in each outreach event. In addition, deaf users are provided with more detailed information about the service, Internet access requirements and the sign-up process. In the first two-plus years, Sorenson's outreach managers focused their efforts on – and attended events in – major cities with large populations of deaf individuals. Sorenson is now also reaching out to rural communities that have access to high-speed Internet. Events are also planned in the locations of new VRS interpreting centers to facilitate Sorenson's ability to recruit and hire interpreters and reach new deaf users.

78. There is agreement across the industry that outreach not only should be allowed, but is necessary both for connecting more deaf users to VRS and for educating the hearing community about VRS. Outreach is necessary for the FCC to reach its goal of providing all deaf users with access to functionally equivalent telecommunications relay services.

I. IP Relay Service

79. The discussion regarding VRS also applies to the provision of IP Relay service with the exception of the discussion regarding VRS interpreters. As with VRS, one of the options included in the NECA filing for IP Relay proposed specific disallowances to provider-submitted costs. NECA disallowed 10% of Sorenson's estimated costs for communications assistants expenses because the contract related to those assistants has yet to be executed. Sorenson will require the projected level of communication assistants to meet the FCC's minimum requirements for IP Relay service whether or not this particular contract is executed. In fact, if the contract for this service is not finalized, the cost of communications assistants for the rate year will likely be even

higher than Sorenson's projections included in the filing. It is not reasonable to eliminate expenses for communications assistants simply because a specific contract has not been executed.

V. Conclusion

80. The most reasonable alternative rate proposed by NECA is a per-minute rate for VRS that is based on providers' projected costs, including costs related to outreach, marketing, and interpreter training. The other methods proposed by NECA fail to provide reasonable recovery of the cost of providing VRS as discussed above. Any adjustments to projected demand should be combined with a corresponding increase in projected costs.

Declaration

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge and belief.

Executed on May 16,2007.

Cheryl L. Parrino

Cheryl L. Parrino

Attachment A

Official Biography

Cheryl L. Parrino
Parrino Strategic Consulting Group
17 Chautauqua Trail
Madison, WI 53719
Phone: (608) 829-3470
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Email: cparrino@charter.net

Education

B.B.A. – University of Wisconsin-Madison, 1976. Major: Accounting.

Professional Positions

President, Parrino Strategic Consulting Group, 2/04 – Present

PSCG is a private consulting firm specializing in telecommunications and energy issues, compliance policies and procedures, audit planning and review.

Chief Executive Officer - Universal Service Administrative Company, 6/98 – 1/04

USAC is an independent, non-profit subsidiary created by the Federal Communication Commission in 1997 to administer, temporarily, the universal service support mechanisms for high cost areas and low-income consumers, and the billing, collection, and disbursement functions for the universal service programs for schools, libraries, and rural health care providers.

As CEO, I have responsibility for overall management and financing. As the first CEO of this company, I am responsible for setting up the corporation.

Chairman – Wisconsin Public Service Commission, 1/92 – 5/98

Commissioner – Wisconsin Public Service Commission, 2/91 – 5/98 and 2/89 – 6/89

Appointed Chairman by the Governor and confirmed unanimously in 1989, 1991, and 1997. As a commissioner, I was responsible for ensuring that all citizens of the state were provided with reliable and safe utility service at reasonable rates. As the chairman, I had the responsibility for all administrative matters including personnel and budget.

Executive Assistant to Chairman Charles H. Thompson – Wisconsin Public Service Commission, 5/87 – 2/89 and 7/89 – 2/91

Executive Assistant to Chairperson Mary Lou Muntz – Wisconsin Public Service Commission, 5/86 – 5/87

As Executive Assistant, I was responsible for managing the agency on behalf of the Chairman and for providing technical assistance on policy issues. In 1990, I developed a major reorganization plan for the agency and developed a strategic planning process. The reorganization was completed and a strategic plan was developed. Strategic and organizational planning continues to date.

Director – Bureau of Utility Audits – Wisconsin Public Service Commission, 9/82 – 5/86

As Bureau Director, I was responsible for supervising three energy audit teams, a special fuel audit team, and a holding company audit team.

Auditor 5 – Wisconsin Public Service Commission, 6/82 – 9/82

Auditor 4 – Wisconsin Public Service Commission, 11/81 – 6/82

As an Auditor 4 and 5, I was the lead auditor in charge of the audits of all 100 telephone utilities in Wisconsin along with their affiliated interests.

Current Activities

Member of New Mexico State University, Center for Public Utilities, Board of Directors

Member of TEMPO

Member of the University of Wisconsin-Madison, School of Business, Dean's Advisory Board

Member of the Board of Directors of the Wisconsin Public Utility Institute (WPUI)

Director and Officer of Greenbush Heritage Foundation

Past Activities

President of the National Association of Regulatory Utility Commissioners (NARUC)

Member of SAFO, the top management committee of NARUC

Member of NARUC's Executive Committee

Member of NARUC's Committee on Communications

Member of NARUC's Committee on Communications Ad Hoc Legislative Team

President of the Great Lakes Conference of Public Utilities Commissioners

Member of Bellcore Advisory Council

Member of the Federal/State Joint Board on Separations

Chairman of the Board of Directors of the Wisconsin Public Utility Institute (WPUI)

Member of the Ameritech Regional Regulatory Committee (ARRC)

Member of the Governor's Blue Ribbon Panel on Telecommunications Infrastructure

Member of the Governor's Task Force on Clean Air

Member of the Governor's Alternate Fuels Task Force

Attachment B

An Analysis of VRS Industry Structure and Interoperability

Prepared for Sorenson Communications, Inc.

By Dr. Gregory Rosston

May 16, 2007¹

I. Introduction

You asked me to analyze on a confidential basis the business risks that Sorenson faces, given the structure of the Video Relay Services business in light of the recent introduction of interoperability. In particular, this paper examines Sorenson's vulnerability to attack by new entrants and expansion by existing providers.

The paper first describes the VRS business, including the cost structure, number of providers, and business strategies of Sorenson and its competitors. The analysis shows that there are no significant barriers to entry – entry is easy and can be accomplished in a short period of time. Based on experience in other industries and economic theory, entry and expansion by firms occur when barriers are low and it is possible to enter and expand profitably. Moreover, while the data are very preliminary and incomplete, anecdotal evidence and the available data suggest that entry and expansion have started to occur even in the relatively short time period since interoperability. Although Sorenson has done a very good job of developing the market for VRS and has the largest share of VRS minutes at this point in time, there are a number of reasons why this position might not be sustainable.

¹ This paper was originally prepared for Sorenson in January 2007. I have made some revisions to update it for this filing and to remove proprietary and competitively sensitive information.

In summary, VRS is relatively homogeneous and the technology to provide the service is not very complicated. Currently, Sorenson provides and installs by far the most end-user equipment that is capable of being used for interoperable VRS.² Sorenson bears the upfront cost of these installations. However, because Sorenson's videophones are interoperable, other companies can get users while avoiding the upfront costs incurred by Sorenson.

This paper examines these issues in more detail: Section II examines the cost structure of VRS; Section III looks at the VRS marketplace; Section IV examines the ability for entry and expansion; Section V looks at the impacts of entry and expansion on costs; and Section VI provides conclusions.

II. VRS Cost Structure

VRS is relatively homogeneous today – there is little differentiation between providers. The costs of providing VRS include setup and equipment costs to enable users to make VRS calls, and telecommunications and interpreter costs to handle the calls. There are few economies of scale at the call center level, but some economies of scale at the firm level.

A. VRS is relatively homogeneous

Although VRS minutes might not be perfectly homogeneous right now – there may be differences in interpreter quality and differences in hold times for users – it is

² Snap Communications certified that its equipment was interoperable in March 2007. Snap does not appear to be installing equipment yet, however. See [http://WMrV\(:.snapvrs.com/](http://WMrV(:.snapvrs.com/). HOVRS and CSD both appear to be installing some end-user equipment. See <https://secure.hovrs.com/equipment/requestform.aspx> and <http://www.csdvrs.com/vrs/freevp.aspx>.

relatively homogenous: Firms cannot compete on price, and the product is well-defined. Providers have to compete or market in other dimensions to attract users. There may be some ways to differentiate the product, such as guaranteeing an interpreter of the same (or opposite) gender, guaranteeing answer speeds faster than others, having specially trained operators for certain types of calls – for example, for calls to Social Security or T-Mobile – partnering with deaf organizations, etc. However, in the end, the prime component of the product is a minute interpreted between ASL and English or ASL and Spanish. Since there is no price difference to the end user, there is unlikely to be a persistent, significant difference in quality – if there were, users would gravitate to the highest quality provider and all other providers would be forced to upgrade quality or go out of business. Given these alternatives, I would not expect firms to allow any large differentials to remain. Therefore, VRS is not likely to be highly differentiable.

With a homogeneous product, it becomes much harder for a company to protect itself against market share loss to competitors. Although it may be more difficult for competitors to get users to switch if products and prices are homogeneous, there is also substantially less user loyalty.

B. costs

The economic costs to provide VRS are relatively straightforward: there are setup and equipment costs to enable video users to make VRS calls; and there are telecommunications and interpreter costs to handle the calls.

To have the capability to make a VRS call, a video user needs to have a broadband connection, a video screen or TV and a camera capable of transmitting a sufficiently high-resolution image. Sorenson has been bearing the end user equipment

and setup costs. It provides videophones (the VP-100 or VP-200) to video users free of charge and sends deaf installers to the users' homes to set up the systems and provide training on how to use VRS. The combination of costs is significant. Video users provide their own broadband services to carry the calls to Sorenson for routing.

1. Per-minute costs

Once a video user has a videophone installed and set up, the major cost driver is interpreter time. Historically, the majority of Sorenson's costs as defined by NECA for purposes of rate submissions have been interpreter costs. For additional (incremental) minutes, a substantially higher share of costs would be interpreter costs, as some of the other submitted costs are not as sensitive to minute volume.

Labor costs are a function of the wage rate and the efficiency (defined here as the total VRS compensable time divided by the total time worked). Efficiency is far less than 100% for a number of reasons: break time, call set up and tear down time, time waiting between calls, administrative time, and other factors.³

Wage rates depend on the demand and supply of interpreters. Sorenson has set up video relay interpreting centers in a variety of areas across the country to take advantage of the available supply of interpreters. Because the cost of transporting calls to various locations is a relatively small part of the overall cost, it makes sense to take advantage of areas with relatively lower wage rates.

³ Sorenson personnel have stated that, absent a major change in technology, they believe Sorenson is operating at, or close to, the maximum level of efficiency, because of worker safety limitations.

Increasing demand for VRS minutes directly translates into increased demand for VRS interpreters. There is currently a limited supply of VRS interpreters and it will take time to increase the supply, as training takes several years. There is some elasticity of supply as some possible interpreters are not working as interpreters, or are not working full time, and may respond to higher wage rates. As VRS becomes a bigger part of the overall demand for ASL interpreters, there is a good possibility that VRS wages (and overall ASL interpreter wages) will increase significantly – particularly given the rapid growth of VRS.⁴

In addition, in order to meet the immediate demand as more people are hired to be VRS interpreters, it is quite possible that new hires will need more training because they are less qualified at VRS interpreting. Sorenson is beginning to experience this effect in hiring interpreters. Additional training reduces efficiency because of the additional time spent training the new VRS interpreters and because of the increased time spent by the experienced VRS interpreters training the new hires.

Increased labor costs due to higher wages and decreased efficiency are industry problems that will occur regardless of the source of growth. One solution to this problem is to encourage more investment in the training necessary to produce certified ASL interpreters (and the additional training needed to produce VRS interpreters).

⁴ Declaration of Dr. John H. Johnson, paras. 2, 14-15, 18, 20-25 (October 30, 2006), filed with Comments of Sorenson Communications, Inc., CG Docket No. 03-123 (October 30, 2006).

C. Economies of scale

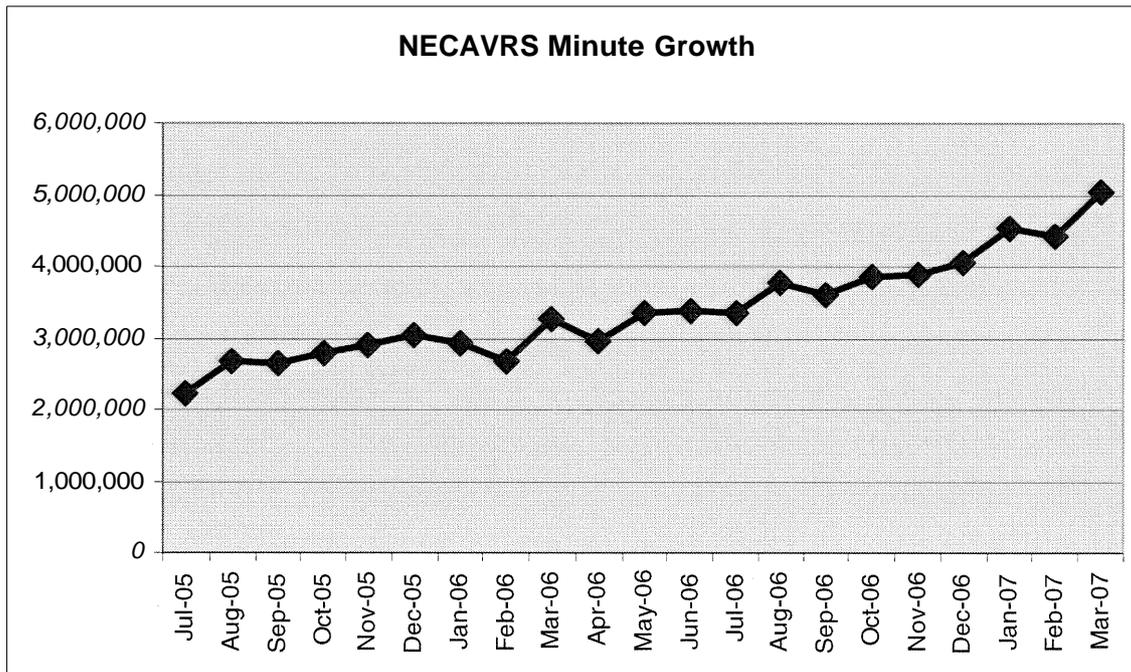
The VRS cost structure shows that few economies of scale exist at the call center level. Sorenson does not find costs to be substantially different at its smaller and larger call centers. There is a minimum size for a call center due to safety concerns, but beyond that, location is more important than size. Most of the costs are the variable costs of the interpreters, not the rental cost or the telecommunications costs. In addition, Sorenson has a model in which supervisor costs are minimized and small call centers can operate efficiently.

Some economies of scale appear to exist at the firm level. Although it is difficult to determine how significant these economies of scale are, it is likely that firms will be able to predict traffic more accurately as they gain experience in the business and as their volume increases. Because Sorenson has the ability to route calls to any call center, this is a firm level efficiency rather than a call center efficiency. A second factor is management and systems that enable better control over calls and more efficient deployment and monitoring of employees. Since these can be used across call centers and are generally insensitive to the number of call centers, they also help achieve economies of scale at the firm level. However, these economies of scale can be created and captured by other firms as those other firms gain volume, which they are likely to do given the current low penetration of VRS.

III. VRS Marketplace

A. Number of providers, overall market and brief description

VRS has grown rapidly since its inception. Figure 1 shows that VRS volume has been growing rapidly over the past 21 months.



Sorenson currently serves the most VRS minutes of any provider. Much of the growth in the overall market and in Sorenson's share is due to Sorenson's provision and installation of end-user equipment, Sorenson has the most interpreters and call centers so that it can handle the call volume efficiently. Sorenson bears the costs of installation, yet other competitors have increased their minute volumes relying primarily on Sorenson's upfront investment.

⌘ **Sorenson**

Sorenson entered the VRS business in April 2003. It started planning to enter the business in June 2002 and was able to set up systems, hire interpreters and begin service

in 10 months. Sorenson had to develop its business strategy, and based on that strategy – which included proprietary videophones – contract for the manufacture of customized videophones. It hired teams of installers to go to users’ homes and set up the videophones, connect them to the users’ broadband service: and to provide instruction to the users.

For a period of time, users could not use the Sorenson videophone to connect to any other VRS provider. In May, 2006, the FCC declared that for providers to be compensated for VRS, equipment would have to be “interoperable” as of July 31, 2006. This meant that Sorenson’s videophones would have to be capable of connecting to other VRS providers. Sorenson introduced interoperability one month early – July 1, 2006 – although it took some time to make the necessary changes, some video users were able to dial other providers as early as the last week in June.

Prior to interoperability, Sorenson’s market share grew nearly every month as it installed new videophones. Since the introduction of interoperability, Sorenson’s market share has remained essentially flat. Sorenson has lost minutes per existing user to its rivals, but has offset that loss by obtaining new users.

■ Sorenson’s key advantages are no longer proprietary

To date, Sorenson has apparently outperformed the other VRS companies with respect to a number of metrics: call volume and efficiency being the two most important. However, the key factors that led to Sorenson’s performance can now be shared by other VRS providers. Sorenson’s key advantages were the fact that it installed the videophone and that it had a commitment that the video user would use Sorenson VRS exclusively. In addition: Sorenson had the initial relationship with the end user, had contracts with

interpreters and had sufficiently high call volume that it could predict traffic and interpreter needs more accurately and thus achieve higher efficiency. Sorenson also has developed the VP-200, instituted state-of-the-art call routing software, and managed its personnel in a highly professional manner.

All of these factors are replicable by other VRS providers, and with interoperability other providers can leverage off of Sorenson's investment and capture video users and volume to achieve the other Sorenson advantages. With the introduction of more advanced management and profit-seeking motives at VRS competitors, it is likely that they will take strides to match or exceed Sorenson's performance on these metrics to attract interpreters and end users.

While the VP-200 is very good end user equipment, it does not seem to be substantially better than other equipment that competitors could develop and deploy rapidly. SNAP, for example, has introduced a new videophone that it claims provides "[t]he highest quality video calling experience."⁵ In addition, the VP-200 can be used directly by competitors due to interoperability. Thus equipment does not appear to confer sustainable advantages to Sorenson.

C. Competitors

Currently, there are ten other VRS providers that receive compensation and provide service and one application for certification pending (Hawk Relay). This section highlights the actions of a few providers to give an indication of the possible mechanisms for competition in the near future.

⁵ See <http://www.snapvrs.com/phones/features> (visited on May 11, 2007).

1. Hands On

Hands On VRS has instituted a number of different mechanisms to try to get users to make VRS calls using HOVRS. Before interoperability was required, HOVRS offered free broadband service. HOVRS also installed and configured routers that prevented users from calling other VRS providers. Post-interoperability, HOVRS introduced a marketing program to get video users to make 6 calls in a week in return for a reward of a \$10 Starbucks card. At the end of 2006, HOVRS also promised GPS devices to installers who put HOVRS.tv and espanol.hovrs.tv on the speed-dials of 100 users generating 100 HOVRS minutes.

HOVRS also provides a “widget” for Mac users to install on their systems. This allows Mac users with built-in cameras to connect easily to HOVRS without the need for any videophone installation. HOVRS also has an online address book to facilitate usage.

2. CSD/Sprint

CSD, which operates in partnership with Sprint, is the oldest VRS provider. In December 2006, the CSD VRS business was spun off into CSDVRS, a new for-profit company. Sprint has been active at conventions. Much of its activity has been geared toward instructing users how to add Sprint VRS to the Sorenson speed-dial list. It is not clear how its strategy might change with the new CSD management and investors, but it is unlikely that this shift will cause CSD and Sprint to scale back operations. If anything, the combination of CSDVRS and Sprint is likely to be more aggressive now in their marketing efforts.

3. SNAP – Ojo

SNAP has introduced its own videophone, the Ojo. Originally, the Ojo was not interoperable with other providers' services, but SNAP recently informed the FCC that the Ojo is now interoperable.'

SNAP would be different from the other providers in that it appears to want also to install its own videophones. While it will incur many of the additional costs that Sorenson has been incurring to complete installations, every video user with an Ojo phone, while potentially a Sorenson user through interoperability, is less likely to be a Sorenson user than one that goes through the Sorenson installation process.

4. Other

There are several different competitors and a large number of different ways to attract users. Other VRS providers have two mechanisms to increase their minutes – (1) investing in the business by adding videophones and increasing awareness of the service; and (2) taking minutes from other providers. Competitors appear to be undertaking efforts in both directions. The second directly hurts Sorenson; the first could also affect Sorenson by making it harder for Sorenson to sign up new users directly.

6

Letter from Francis Buono, Counsel for Snap, to Marlene Dortch, Federal Communications Commission, CG Docket No. 03-123 (March 6, 2007).

IV. Entry and Expansion

A. No significant barriers to entry

With the introduction of interoperability, the marketplace is very open for competitors to gain share. There are a number of features of the marketplace that make it possible for competitors to gain share rapidly.

There are little or no “network effects.” It makes no difference to any individual VRS user what provider any other VRS user connects to. The only possible network effect would come from increased quality and faster answer speeds that may come from being part of a larger network. However, if the other providers gain sufficient scale as discussed above, they should be able to achieve these benefits as well, so there are no real network effects that would disadvantage competitors.

Users also have little or no lock-in. It is easy for users to try different providers and come back without losing anything. Users do not pay for the service, do not build up any loyalty rewards, and gain no benefit from staying with a single provider. This makes it very easy for a new provider to enter – there is a very low cost for users to try the new provider. In order for competitors to take traffic away from Sorenson, they simply need to get users and to have sufficient capacity to meet the speed-of-answer requirements.

B. Entry may happen quickly

Sorenson’s own expansion over the past two years provides a roadmap for other providers. The main things that competitors need to do are to set up systems and hire interpreters. With interoperability, new competitors are not required to invest in end-user equipment or any other costs associated with adding new users to the network, and

therefore expansion by competitors is not limited by the ability to install new videophones. While Sorenson's growth has been directly related to the ability to find users and install videophones, competitors can expand more rapidly since their growth need not be limited by installations. Competitors can benefit from all of Sorenson's past installations and piggyback on the new ones. Competitors do not need to bear any of the installation costs because of interoperability. Some competitors may also invest in their own installations or increasing the usability of PCs.

Competitors may also be able to target high volume users. The VRS industry is relatively new and interoperability has been a part of the industry for only a short time. It has only been ten months since interoperability took effect. Already, competitors appear to be taking actions to increase their volume and to take traffic and/or users from Sorenson. With the speed-of-answer requirements, all providers need to ensure they have sufficient interpreting capacity before undertaking vigorous marketing/outreach efforts.

C. Entry generally occurs in industries with low entry barriers

Interoperability may have big effects. In other industries, there are numerous examples of big market share shifts. While there are "first mover advantages" in many cases, there are also situations where "the second mouse gets the cheese." Even in markets where users do not pay for service, there are examples in which the initial provider had a large share and was overtaken. For example, Google became the market share leader in search even though Yahoo! had a big share and brand recognition. Music downloading systems went from Napster to Kazaa to eDonkey to BitTorrent. AMD has taken substantial share of semiconductor chips sales from Intel. All of these examples show that even while a firm may appear to have a strong position, competitors have the

potential to take share away. Entry is especially attractive when investment costs are not large, sunk or irreversible. The biggest sunk costs associated with VRS would be in setting up systems and in a marketing program. These are not large compared to the potential gains from expanding service in this business, nor compared to the cost of the installations that Sorenson is bearing. In VRS, all of the forces point to the ability of firms to compete for end-user traffic on an even playing field.

During the ten months of interoperability, Sorenson has expanded the addressable market for itself and also for the other providers. In fact, the number of Sorenson installations has increased significantly since the introduction of interoperability. If users initially start using Sorenson due to the installation and instruction from the installer, and try competitors over the next several months rather than right away, then one might expect to see an impact from interoperability only over time. But the pathway for a market share shift would have been established, and as the installed base of users with more than a few months of experience grows, the ability of competitors to increase share may increase as well.

D. Data suggest a shift in minutes is in fact occurring after interoperability

As discussed above in the section on VRS providers, there are a number of different initiatives that portend more vigorous competition for users in the near future. HOVRS has instituted several different marketing campaigns and is providing incentives for its sales force to sign up new users. CSDVRS now has a profit motive and the capital to invest to build its business. SNAP's Ojo is now interoperable. There are likely many other avenues for competitors to take share as time passes and firms have had time to respond to the opportunities created by interoperability.

As explained above, Sorenson's share of minutes has remained relatively flat since the introduction of interoperability in July 2006. From February of 2005 until July of 2006, Sorenson steadily gained market share because of its marketing, outreach, and investment in the installation of videophones. As a result, its share of videophones increased and resulted in more calls using Sorenson's VRS service. Since July 1, 2006, Sorenson has continued to install videophones and has increased further its share of installed videophones. Despite the increase in share of videophones, Sorenson's share of minutes has remained flat since then. This implies increased use of Sorenson videophones for calls to competing VRS providers. It also indicates that minutes per user for Sorenson is decreasing.

In addition, overall aggregate VRS minute volume has increased, meaning that because Sorenson's share has not increased, the minute volume for competitors must have increased. The most likely way for competitors to increase minute volume in the current marketplace is to increase minutes using Sorenson equipment.

Finally, Sorenson's average minutes of use per videophone has decreased since the introduction of interoperability. This is consistent with VRS users directing more of their minutes to competitors and away from Sorenson. It is also consistent with a recent filing by HOVRS at the FCC, in which HOVRS stated that it had understated demand for 2006 by a "modest" 12 percent, because it did not know interoperability would be implemented in mid-2006. This suggests HOVRS' demand increased 12% in 2006

because of interoperability. In addition, HOVRS stated that it will take several years for the effects of interoperability to play out.⁷

V. Effect of changes on costs

The final issue is the manner in which these market expansion efforts and interoperability will affect providers' costs. The key issues to think about for variable costs are the effects on interpreter wages and efficiency.

The rapid increase in demand for interpreters due to increasing call volume is likely to lead to an increase in the wage rates for interpreters, especially in the short run when supply response will likely be small and will not immediately respond to demand. The more aggressively competitors market their services, the higher the increase in total minutes. This in turn will lead to upward pressure on interpreter wage rates.

If firms compete on service quality, such as speed-of-answer, efficiency for all firms will decrease because they will have to have a greater interpreting capacity available at any point in time and more of that time will be spent waiting for the next call.

In addition, interoperability will likely decrease predictability for Sorenson. To the extent that predictability decreases, Sorenson will not be able to maintain current efficiency levels because it will be less able to predict minutes, making it much more difficult to plan interpreter resources effectively while still meeting the mandatory answer speed requirements. Sorenson and other providers cannot afford to miss the mandatory answer speed requirements and thus must ensure that there are adequate resources under all circumstances, thereby decreasing efficiency.

⁷ Letter from George Lyon, Counsel, Hands On Video Relay Services, Inc., to Jay Keithley, FCC, CG Docket No. 03-123 (January 10,2007).

VI. Conclusion

It is too early to be able to predict with precision how interoperability in the VRS marketplace will ultimately impact market share, efficiency and labor costs. However, the competitive landscape shows that the product is homogeneous, entry is easy, and market share shifts could be rapid. The ability for rivals to enter and attract users who have Sorenson equipment makes it less attractive for Sorenson to install the equipment, but the address book and initial contact with video users are helping Sorenson attract and retain users at this point in time. However, the competitive threats from companies like HOVRS, CSDVRS and SNAP could change that situation rapidly.

Substantial growth in VRS demand could lead to large increases in wage costs, the primary cost driver for VRS. This is likely to occur if Sorenson continues to install videophones aggressively and if rivals market service aggressively. Also, rivals taking traffic from users with Sorenson videophones could reduce Sorenson's ability to predict traffic loads and therefore reduce its efficiency. In addition, competition from other sources such as SNAP and HOVRS with Macintosh computers that bypass the Sorenson videophone completely can also make Sorenson's traffic less predictable and decrease efficiency. Both increased wages and reduced efficiency lead to higher costs of service.