

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In The Matter of	)	
	)	
Structure and Practices of the Video Relay Service Program	)	CG Docket No. 10-51
	)	
Telecommunications Relay Services and Speech- to-Speech Services for Individuals with Hearing and Speech Disabilities	)	CG Docket No. 03-123
	)	

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**I. INTRODUCTION AND EXECUTIVE SUMMARY**

Sorenson Communications, Inc. (“Sorenson”) supports and commends the efforts of the Federal Communications Commission (“FCC” or “Commission”) to re-examine its Video Relay Service (“VRS”) compensation framework through the *Further Notice of Proposed Rulemaking* (“FNPRM”).<sup>1</sup> VRS—and the point-to-point communications that its platforms enable—is breakthrough communications technology for persons with hearing and speech disabilities, allowing them to use telecommunications to communicate in American Sign Language (“ASL”). Sorenson is proud to have been at the forefront of making VRS available and accessible on a widespread basis—including by developing and distributing deaf-friendly videophones that convert televisions into video portals that enable ASL conversations, both with other ASL users via point-to-point and with hearing persons via relay. Since the launch of Sorenson VRS in 2003, VRS usage has grown from a few hundred thousand minutes per month to approximately 8.6 million industry wide—with tens of millions more minutes in point-to-point communications between ASL users. The number of VRS users has also grown accordingly.

The communications enabled by VRS providers are not a mere convenience. Rather, they are the manifestation of a civil right created by the Americans with Disabilities Act (“ADA”), which ensures and protects “the ability for an individual who is deaf, hard of hearing, deaf-blind, or who has a speech disability to engage in communication by wire or radio with one or more individuals, in a manner that is functionally equivalent to the ability of a hearing

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<sup>1</sup> *Structure and Practices of the Video Relay Service Program and Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Further Notice of Proposed Rulemaking, CG Docket Nos. 10-51 & 03-123 (rel. Dec. 15, 2011) (“FNPRM”).

individual who does not have a speech disability to communicate using voice communication services by wire or radio.”<sup>2</sup> As such, as the FNPRM recognizes, it is critical that the Commission continue to find ways to expand VRS availability—including by improving affordable access to broadband for the deaf, hard-of-hearing, deaf-blind or speech-disabled, by compensating providers for reaching out to truly unserved households (*i.e.*, “new to category” households), and by ensuring that those who want VRS can subscribe. Sorenson supports these proposals. The Commission should not, however, limit “new-to-category” incentive payments only to sub-scale providers. Such a limitation would be both self-defeating, because smaller providers are less likely to have the field staff and customer support resources necessary to assist “new-to-category” households, and wasteful, because such a limitation is equivalent to perpetuating the rate tiers that the FNPRM correctly criticizes and proposes to eliminate.

As the FNPRM also recognizes, the Commission must also ensure that VRS is available “in the most efficient manner.”<sup>3</sup> Several factors catalogued by the FNPRM have created inefficiency. First, although VRS has faced the scourge of bad actors who defrauded the TRS Fund (and who rightfully have faced criminal prosecution for their misdeeds), unscrupulous providers are not the only problem. The current compensation framework is itself inherently wasteful. The existing compensation regime subsidizes inefficiency by paying less efficient VRS providers more on average per minute of VRS than more efficient providers. As the

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<sup>2</sup> 47 U.S.C. § 225(a)(3). *See also* 47 U.S.C. § 225(b)(1) (“In order to carry out the purposes established under section 151 of this title, to make available to all individuals in the United States a rapid, efficient nationwide communication service, and to increase the utility of the telephone system of the Nation, the Commission shall ensure that interstate and intrastate telecommunications relay services are available, to the extent possible and in the most efficient manner, to hearing-impaired and speech-impaired individuals in the United States.”).

<sup>3</sup> *See* FNPRM ¶ 143.

Commission notes, if all VRS minutes were compensated at the Tier III rate applicable to 80 percent of all VRS traffic, the TRS Fund would save more than \$24 million per year.<sup>4</sup> Looked at differently, the current system creates a disincentive for sub-scale providers to grow or combine operations. Two providers currently compensated entirely at sub-scale rates could receive less total VRS compensation if they merged, as their aggregated minutes could push the joint operation into a less remunerative tier.<sup>5</sup> The inefficiency of tiers is further compounded by the fact that the primary sources of scale economies in the VRS industry—call queuing and interpreter staffing—are nearly fully realized by the time a provider serves 250,000 VRS minutes per month—far lower than the 500,000 minute Tier III threshold.<sup>6</sup> In any future system, compensation tiers need to be eliminated through a phased transition.

Second, as the FNPRM correctly diagnoses, the Telecommunications Relay Service (“TRS”) Fund today compensates providers entirely on a per-minute basis. This method creates a long-term exposure to minute-based fraud. Minute pumping opportunities vary—ranging from outright fraud (*e.g.*, paying people to make calls over a particular provider’s service) to “softer” strategies (*e.g.*, encouraging commercial call centers to employ deaf call-takers using a particular provider’s service)—but they all inflate compensation, and they all impose unsustainable and increasing burdens on the TRS Fund. Notably, even when a high percentage of costs are volume-sensitive, a per-user compensation mechanism is appropriate since all providers are expected to have roughly the same proportions of low-volume and high-volume users.

Compensating providers on a per-minute basis for activities that are not minute sensitive is a

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<sup>4</sup> *See id.* ¶ 24.

<sup>5</sup> *See* Michael L. Katz, *An Economic Analysis of VRS Policy Reform*, ¶ 18 (Mar. 9, 2012) (copy attached as App. A) (“Katz Declaration”).

<sup>6</sup> *Id.* ¶¶ 28-35.

recipe for continued abuse, and Sorenson agrees with the Commission that a careful transition to a per-user system would represent an improvement. Sorenson's support for a per-user compensation system is, however, conditional: a per-user system would need its own set of safeguards to protect consumers and to prevent waste, fraud and abuse. As discussed further below, however, the task of designing and implementing appropriate safeguards for a per-user VRS regime can be facilitated greatly by "borrowing" existing safeguards that have already been shown to work in the context of other FCC subsidy mechanisms.

Third, the historical instability and volatility in VRS compensation rates—ranging from today's low of \$5.07/minute for Tier III minutes to a high of \$17/minute in an earlier rate year, with large annual fluctuations—has effectively closed public equity markets to VRS providers and greatly increased the cost of debt. Bonds of VRS providers are currently trading at distress levels. One VRS provider went into bankruptcy in 2009, and another was delisted by the NASDAQ that same year. More recently, two large telecommunications carriers, AT&T and Sprint, declined to seek certification as facilities-based VRS providers and will no longer provide service.

As the Consumer groups representing deaf, hard-of-hearing, and speech-disabled individuals have long recognized, a healthy VRS industry is critical to maintaining and improving functionally equivalent and innovative VRS for deaf, hard-of-hearing and speech-disabled individuals and for hearing persons that seek to communicate with them.<sup>7</sup> A long-term stable system that is not subject to wide-ranging rate changes will promote efficient and innovative operation of VRS. The Commission should thus make changes gradually, rather than

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<sup>7</sup> See Consumer Groups' TRS Policy Statement—Functional Equivalency of Telecommunications Relay Services: Meeting the Mandate of the Americans with Disabilities Act, CG Docket Nos. 03-123 and 10-51 (filed Apr. 12, 2011).

abruptly, and any long-term rates should reflect the actual experience of at-scale providers delivering service in the open market, including actual capital costs.

**Per-User Compensation.** The Commission proposes to transition to a per-user compensation mechanism with compensation rates set under a price-cap system. Sorenson agrees with the Commission that a per-user approach—properly structured and with adequate safeguards—would be feasible and would eliminate the incentives for, and the TRS Fund’s exposure to, minute-based fraud. A per-user compensation system can work, however, only if accompanied by well-designed rules targeted to deterring other kinds of waste, fraud and abuse, and by clear and enforceable consumer safeguards. Moving to a per-user regime will also require an adequate transition period at each step in the process. Critical components of the change to a per-user system should include the following:

- Consumers (and/or employers, in the case of the workplace) should be able to select providers for both home and workplace, but the TRS Fund should not support the selection of more than one default provider for each setting. This is consistent with the approach the FCC took with respect to Lifeline, which allows an individual to receive only one supported service. Permitting more than one provider to supply different or overlapping categories of personal/home service to one subscriber (*e.g.*, one provider for mobile service and another for fixed service) would expose the TRS Fund to runaway growth and to inducements to subscribe to unneeded services.
- Just as with Lifeline, a VRS User Database will be needed to enforce limits on the number of supported default providers per user, to implement new-to-category incentive payments, and to deploy the proposed TRS Broadband Pilot Program.
- The Commission must strengthen and give express content to the current prohibitions against slamming, and expressly extend prohibitions against using information gained from a port request to initiate “winback” marketing. Clear rules in this area should cover processes with respect to letters of authorization, including a clear separation between promotions and letters of authorization.
- The Commission must expressly require all VRS providers to provide service to all consumers equally, without regard to call volume, and to tighten standards for average speed of answer and other aspects of service quality that would disproportionately affect high-volume VRS users.

- The Commission should migrate to a single per-user rate for all providers by the end of the “growth” phase. As the FNPRM recognizes, the Commission should not subsidize inefficiency.

The transition to a per-user system cannot occur overnight. The FNPRM contemplates the development and implementation of SIP-based standards for end-point compatibility (discussed further below) as one element of promoting the growth of additional “at scale” VRS providers. Sorenson supports the development of such standards to ensure that any VRS endpoint can communicate with any other endpoint, and that VRS users can get access to their contact lists in a standard format in order to port them to a new provider. By themselves, however, these standards will take approximately 30 months to develop and implement. The vast majority of VRS subscribers today receive service using the Sorenson VP-200, which today does not support SIP and lacks the onboard memory necessary to implement the full suite of standardized functionalities that the FNPRM outlines. Replacement of these VP-200s will be necessary, but it will have to occur over an extended period of time because of the time needed to manufacture replacement devices and the labor-intensive nature of installation—in the vast majority of cases, a field technician must be sent to the user’s home to configure the new device. Similarly, and concurrently, the new proposed TRS broadband support mechanism and the “new-to-category” incentives to add unserved households will have to be designed and implemented.

Even once those steps are in place, those providers not “at scale” will need time to be able to attempt to gain scale. Sorenson does not support any Commission action mandating market share reallocation, or depriving consumers of their choice of VRS provider, and Sorenson disagrees that it is the only “at scale” VRS provider in the market today—full scale economies may be achieved at 500,000 minutes per month,<sup>8</sup> and there are already other providers above that

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<sup>8</sup> See *id.* ¶ 23.

level. But Sorenson agrees that it is unreasonable to expect that genuinely sub-scale providers will be able to move quickly to scale. The “growth” phase should last five years, during which time the per-user rate for all VRS providers should be unified. Sorenson certainly intends to continue to compete for customers based on quality of service and the innovative features and offerings it can develop and bring to market, with the final choice residing with each consumer.

Furthermore, a rapid transition to per-user compensation levels based on hypothetical cost projections that ignore real costs and that have never been achieved by *any* VRS provider in the real world would slash the enterprise value of VRS providers. That would thoroughly undermine the FNPRM’s aspirations to encourage further investment in the development and deployment of SIP-based VRS access points, in innovative products (like mobile solutions) promoting functional equivalence, and in outreach to the unserved to increase subscribership. Today, Sorenson and two other providers are “at scale,” but none operates at or even near the total cost levels projected by the Commission.

Rather than focusing on hypothetical rates that are not achievable for any provider under real-world conditions, the Commission should focus first on migrating all providers to a single per-user rate equivalent to the lowest blended compensation currently paid to any provider. From there, the Commission should employ price-cap principles to adjust that rate over time by accounting for inflation, expected productivity gains (the X-factor), and exogenous costs. The Commission should review the price cap no more frequently than every five years. In setting those reductions, however, the Commission must bear in mind that today’s “allowable costs” come nowhere near capturing the full range of costs facing a standalone VRS provider (and no VRS providers today are integrated with common carriers). Current “allowable costs” ignore not only true costs of capital for VRS-related operations, but also expenditures on the intellectual

property and research and development that are necessary for continued innovations and improvements.

**Technical Standards.** Sorenson strongly supports the Commission’s proposal that the VRS industry commence discussions under the auspices of an established forum to develop standards to enhance interoperability. Sorenson further concurs that a subgroup of the SIP Forum would be an appropriate organization to facilitate such discussions, and would welcome the Commission’s participation as an active observer in the process. Sorenson applauds the Commission for identifying many functions, technologies and existing standards that may be appropriate discussion points in the development of VRS interoperability standards, and also for recognizing that the best way of proceeding with respect to rapidly evolving technologies is not to codify the standards in FCC rules.

The Commission, however, should not—at least at the outset of the transition process—pursue VRS access technology portability standards. Such standards will require massive and expensive reconfiguration of VRS providers’ back-end systems and, if implemented, will greatly reduce incentives for future investment in the development of new features. At the same time, focusing on *equipment* portability standards will be of diminishing utility in a world in which all providers have software-based products that can be downloaded to open platforms like laptops, tablets and cell phones. Indeed, “off the shelf” equipment can already be used today to obtain services—without equipment “portability” standards—simply by downloading the default provider’s software application. Multiple VRS providers, for example, have launched iPad applications. For mobile service, no VRS provider is building its own cell phone for VRS; instead, all use existing smartphones as a base platform onto which compatible VRS applications may be loaded. The FNPRM’s discussion of “off the shelf” equipment and portability standards

misses the important role of the VRS software application. In today's technological environment, what is most important is that VRS users can, with the appropriate provider's application, reach any device connected to the public switched telephone network. It is not important (and would be unreasonably difficult) to try to ensure that a VRS's provider's application can be used to reach another VRS provider's interpreters; in today's market, for example, a VRS user seeking to use a Purple interpreter can download a Purple application to do so.

One other suggestion in the FNPRM that should be rapidly discarded is the proposal to bar use of proprietary platforms in favor of all off-the-shelf products. When VRS services began, all equipment was off-the-shelf and it did not adequately serve the needs of deaf, hard-of-hearing, and speech-disabled individuals. To some extent this remains true today: no off-the-shelf product converts the consumer's home high definition television into a VRS communications portal. Excluding this avenue for developing and provisioning dedicated equipment that fulfills the needs of deaf, hard-of-hearing and speech-disabled individuals will not promote functional equivalency. To the extent that the Commission wishes to promote the utility of off-the-shelf platforms for VRS, it will, however, need to ensure that any standards development includes not only VRS providers, but also the manufacturers of off-the-shelf platforms.

**Alternative Approach.** As an alternative to a per-user system, the Commission suggests a per-minute system with sharply reduced per-minute rates. If the Commission pursues a wholly per-minute approach, the current system requires changes other than with respect to its lowest compensation rates. First, as the Commission recognizes in the FNPRM, the Commission should replace the current tiered system with a single unified rate—saving more than \$24 million per

year. Second, in setting per-minute rates, the Commission cannot simply choose to ignore important realities of today's VRS marketplace, including that: VRS is not offered on an integrated basis with any common carrier; VRS providers are mandated by the Commission to provide a communications platform that goes beyond VRS to include point-to-point communications; all VRS providers must develop endpoint technologies that enable the operations of that communications platform and VRS services; VRS providers have to pay actual local, state and federal taxes (not hypothetical taxes); and VRS providers must secure financing and returns in order to invest in and build their services. Third, the Commission should not set rates that simply disregard the lowest cost provider's actual costs, including financing. As a privately held company, Sorenson's actual borrowing costs—including its ongoing interest payments—represent the lower limit of Sorenson's actual cost of capital, and thus cannot reasonably be disregarded.

**II. WORKING TOWARD UNIVERSAL AVAILABILITY AND FUNCTIONAL EQUIVALENCE OF VRS**

Recognizing the fundamental importance of universal availability of VRS—and reflecting the mandate in the ADA to deliver functionally equivalent service to all deaf, hard-of-hearing and speech-disabled Americans—the Commission has proposed a series of forward-thinking reforms that will bring more innovative communications services to more deaf, hard-of-hearing and speech-disabled consumers without overburdening the TRS Fund. Sorenson concurs wholeheartedly that certain steps proposed in the FNPRM will advance universal service and—subject to a few important modifications—urges the Commission to adopt them as proposed.

**A. Sorenson Supports the Commission’s Proposed TRS Broadband Pilot Program.**

The Commission’s proposed TRS Broadband Pilot Program holds the promise of bringing VRS to unserved deaf, hard-of-hearing and speech-disabled consumers who today cannot use VRS because of a lack of broadband connectivity.<sup>9</sup> As the FNPRM recognizes, it is critical that the Commission and providers work collaboratively to continue to reduce barriers to VRS access. Indeed, Sorenson believes that improving affordable access to broadband for deaf, hard-of-hearing and speech-disabled individuals is a fundamental component of fulfilling the ADA’s promise of “functionally equivalent” communications services.<sup>10</sup>

Sorenson has for years been at the forefront of providing services that open a world of communications to deaf, hard-of-hearing and speech-disabled individuals who had long lacked any functional equivalent to communications services enjoyed by hearing individuals. Recognizing that most forms of TRS now require a broadband connection, Sorenson shares in the Commission’s desire to bring broadband access to currently unserved low-income individuals who are eligible for VRS. Sorenson believes that its innovative technologies; commitment to and relationships with the deaf, hard-of-hearing and speech-disabled community; nationwide field staff who are fluent in ASL (many of whom are themselves deaf, hard-of-hearing or speech-disabled); and competitive interest will enable it to continue to expand VRS subscription as currently unserved individuals obtain broadband connections.

Sorenson’s state-of-the-art VRS technologies will facilitate the Commission’s efforts to provide affordable broadband access to low-income deaf, hard-of-hearing and speech-disabled individuals at the lowest cost to the TRS Fund. For instance, Sorenson is capable of providing

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<sup>9</sup> See FNPRM ¶¶ 12-13, 29-30, App. A.

<sup>10</sup> 47 U.S.C. § 225(a)(3); see also *supra* n.2 and accompanying text.

quality service to its users over Internet connections as slow as 256 kilobits per second.<sup>11</sup>

Sorenson is optimistic that its ability to provide functionally equivalent service at lower speeds will allow more consumers to be reached, even if they live in geographic areas served by a less robust broadband infrastructure. Expanding VRS penetration to such users should help to keep the per-user cost of the TRS Broadband Pilot Program lower, thereby maximizing the positive impact of the plan.

Sorenson also agrees with the Commission that to help control costs and to ensure that it is expanding connectivity to individuals who do not already have it, eligibility for the TRS Broadband Pilot Program should be limited to one connection per household, consistent with the federal Lifeline program rules.<sup>12</sup> This limitation will better control the growth of the TRS Fund and prevent waste, fraud and abuse, while still providing broadband access to the household.

Finally, Sorenson also supports limiting eligibility to individuals with a qualifying disability who are fluent in ASL and satisfy a low-income eligibility requirement.<sup>13</sup> Sorenson supports the Commission's proposal to adopt the existing eligibility thresholds from the federal Lifeline program.<sup>14</sup> Importing that standard will allow the TRS Broadband Pilot Program to allocate scarce resources judiciously by extending benefits only to unserved households that fall below the applicable income threshold or that participate in one of the designated programs.<sup>15</sup> In contrast, using various state-administered Lifeline eligibility standards would lead to

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<sup>11</sup> See Sorenson Communications, Frequently Asked Questions, *available at* <http://www.sorensonvrs.com/faq#general> (last visited Mar. 7, 2012).

<sup>12</sup> See FNPRM App. A ¶ 20.

<sup>13</sup> See *id.* ¶ 11.

<sup>14</sup> See *id.* ¶ 12.

<sup>15</sup> See *id.*

burdensome and administratively complex assessments driven by different eligibility criteria across fifty different jurisdictions.<sup>16</sup>

**B. Sorenson Supports Payments for “New-to-Category” Subscriptions, But Those Payments Should be Made to *All* Providers Without Discrimination.**

The FNPRM proposes to further expand VRS penetration by incentivizing VRS providers to pursue new users aggressively. Providers would receive a one-time incentive payment for each new-to-category user they recruit. The Commission explains that replacing the current reimbursement process for certain marketing and outreach costs with one-time incentive payments for recruitment “would align compensation with actual results and encourage VRS providers to focus . . . on finding and signing-up new-to-category customers instead of merely trying to persuade existing VRS users to switch providers.”<sup>17</sup> As discussed below, Sorenson believes that compensating providers in this manner would, indeed, advance a number of the Commission’s core goals for VRS, and Sorenson therefore supports the proposal so long as the initiative is accompanied by the critical features and safeguards described below.

In Sorenson’s experience, it has been the only provider that has consistently focused on expanding the total number of VRS users, rather than porting existing VRS users from other providers. Paying providers to sign up new users in unserved households could, as the FNPRM suggests, provide an incentive for all providers to conduct legitimate, robust recruitment efforts.

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<sup>16</sup> While there are strong policy reasons to expand access to individuals who qualify under state-administered Lifeline standards, the administrative complexity of applying them here outweighs the benefit. In particular, Sorenson notes that many broadband providers (such as cable operators) are not Eligible Telecommunications Carriers, and they therefore will not have any processes in place to assess a consumer’s qualifications under the particular requirements of a state-administered standard.

<sup>17</sup> See FNPRM ¶ 33.

But the Commission must take care to structure the new-to-category payment in a manner that actually creates that desirable incentive. Four features in particular are critical.

1. The Payment System Must Not Favor Some Providers Over Others.

The Commission should reject any new-to-category incentive payment system that would reward some providers but not others.<sup>18</sup> A new-to-category payment available only to providers that have not yet achieved “scale”—an often misapplied concept in the VRS context, as Sorenson discusses below<sup>19</sup>—would not expand sub-scale providers’ market shares but would continue to reward inefficiency, unduly discriminate against larger providers, and perpetuate the disconnect between costs and compensation. The attached Declaration of Professor Michael L. Katz—who, among other distinguished positions, previously served as the FCC’s Chief Economist—reaches the same conclusion, explaining that “[f]avoring particular providers in this way harms efficiency, availability, and consumer welfare through the same sorts of mechanisms as do declining compensation tiers.”<sup>20</sup>

As a threshold matter, Sorenson does not believe that realigning market share away from at-scale providers like Sorenson and toward sub-scale providers is a legitimate regulatory goal. As the Commission itself has often observed, its duty is to protect competition, not particular competitors.<sup>21</sup> But even if it were appropriate to attempt to shift market share away from at-scale providers, an incentive payment system that rewards only sub-scale providers for recruitment is unlikely to achieve that goal. Truly sub-scale providers are the least likely to have an ASL-fluent field staff and customer service operation capable of assisting new VRS

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<sup>18</sup> See *id.* ¶ 38.

<sup>19</sup> See *infra* Section III.A.

<sup>20</sup> See Katz Declaration ¶ 55.

<sup>21</sup> See FNPRM ¶ 66.

households with both the installation and use of VRS. They are therefore unlikely to succeed at signing up substantial numbers of new users. As Professor Katz explains, “[t]he elimination of incentive payments to those providers that have most successfully demonstrated an ability to offer attractive services to users is particularly likely to undermine making VRS meaningfully available to all eligible users.”<sup>22</sup>

Furthermore, although providing an added incentive (in the form of a one-time payment) for Sorenson’s competitors to locate new users may incentivize those providers to expand their efforts to reach the unserved, Sorenson will also continue to have an incentive to reach those potential new customers first and to recruit them with offers of superior service—thereby preventing competitors from gaining an edge in new recruitment. Because of this competitive dynamic, the proposed incentive payments likely would not actually impact scale. Rather, they would simply redistribute compensation to sub-scale providers.

In an economic sense, in other words, this system would function like a parallel to tiered rates, which the FCC recognizes as unsustainably inefficient. “In each case,” Professor Katz observes, “the policies make inefficient service providers larger by diverting share from more efficient service providers, which will raise program costs.”<sup>23</sup> By subsidizing and rewarding only inefficient providers, an incentive payment would operate to perpetuate their continued inefficiency—which is essentially the problem the FNPRM correctly identifies with tiers. Simply put, it would be logically inconsistent for the FCC to adopt “tiered” incentive payments (either zero or full incentive payment, depending on the provider’s scale), while simultaneously recognizing that rate tiers are inefficient and should be eliminated.

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<sup>22</sup> Katz Declaration ¶ 74.

<sup>23</sup> *Id.* ¶ 55.

The arbitrary and capricious impact of limiting incentive payments to sub-scale providers would be magnified if the Commission also lowered the baseline compensation rate (either per-user or per-minute) to exclude efforts to reach new-to-category users.<sup>24</sup> In that case, the excluded “at scale” provider would be denied any compensation at all for performing an activity that supports the ADA’s goals of universal TRS adoption and functional equivalence, and is a legitimate cost of doing business. There is no reasoned basis for permitting one entity to be compensated for adding new-to-category users but denying compensation to a different entity for doing the exact same thing. Instead of imposing hidden compensation tiers, an incentive payment system should provide payments to all providers—or, less ideally, it should be available to no one.

2. The Payment Should Be Available Only for Eligible Consumers Who Have Not Subscribed to VRS Before, and Whose Households Are Not Served by VRS.

To prevent payments for recruiting efforts that do not actually increase VRS penetration, Sorenson supports the Commission’s proposals to limit new-to-category payments to situations where providers recruit new subscribers who: (a) have a qualifying hearing disability; (b) have not previously subscribed to VRS; and (c) do not reside in a *household* that is already served by VRS.<sup>25</sup> The first of these criteria—a qualifying hearing disability—is necessary to prevent improper requests for incentive payments for users who are not in fact eligible VRS end users. New subscribers should be required to present the VRS provider with documentation (such as a diagnosis from a doctor or audiologist) of a hearing impairment, and the provider should be required to retain an employee’s signed certification of having viewed such documentation for as

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<sup>24</sup> See FNPRM ¶ 33.

<sup>25</sup> See *id.* ¶ 35.

long as the provider serves the customer. (To protect consumers’ privacy and to reduce the paperwork-related barrier that might otherwise exist for new subscribers, the VRS provider should not be required to collect or retain a copy of the documentation of hearing impairment.<sup>26</sup>)

The second and third criteria would help to ensure that the incentive payment is paid only for recruitment of individuals who are truly unserved, as opposed to those who have used VRS in the past or who are part of the same household as already-registered VRS users. Incentive payments should not be made for recruitment of users who already have access to VRS or who are plainly aware of it because they have used such services in the past. Providers could, of course, still recruit and register these customers; they just would not be eligible for incentive payments for doing so.

Although it might potentially seem difficult to identify when a new VRS subscriber resides in the same household as another VRS subscriber, the Commission has already addressed this issue in its *Lifeline / Link Up Transformation Order*.<sup>27</sup> In that Order, the Commission limited Lifeline support to one per household, and defined a household as “any individual or group of individuals who are living together at the same address as one economic unit.”<sup>28</sup> The Commission also defined an “economic unit” as “all adult individuals contributing to and sharing in the income and expenses of a household.”<sup>29</sup> The Universal Service Administrative Company

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<sup>26</sup> Cf. *Lifeline and Link Up Reform and Modernization; Lifeline and Link Up; Federal-State Joint Board on Universal Service; Advancing Broadband Availability Through Digital Literacy Training*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 11-42, 03-109, 12-23 & CC Docket No. 96-45 ¶ 101 (rel. Feb. 6, 2012) (“*Lifeline / Link Up Transformation Order*”) (identifying paperwork retention requirements in the Lifeline context).

<sup>27</sup> See *id.* ¶¶ 74-75.

<sup>28</sup> *Id.* ¶ 74.

<sup>29</sup> *Id.* at App. A (presenting new 47 C.F.R. § 54.400(h)).

is currently developing a plain-English form that Lifeline subscribers will have to complete to ensure that no other person in their household is subscribing to Lifeline service. This form and process could be readily adapted to use for VRS new-to-category compensation.

The Commission should further mandate that a VRS provider can qualify for an incentive payment only if it both: (a) gathers and maintains information demonstrating that the new user meets the three new-to-category criteria listed above; and (b) identifies the name, address, date of birth and last four digits of the social security number of all new-to-category subscribers in a periodic submission to the TRS Fund Administrator.<sup>30</sup> The process for gathering and maintaining this information will of course change after the development of a VRS User Database. Before the VRS User Database is operational, providers should be required to create and retain a record demonstrating that they checked their own subscriber lists to confirm compliance with the rule, and they must also obtain and retain a certification from the customer attesting that he or she has not been served by another VRS provider in the past and does not currently reside in a household served by another provider. After the VRS User Database comes on line, the provider can ascertain compliance with these criteria electronically and can create a record of having done so.

By requiring providers to maintain records demonstrating compliance with the criteria, the FCC will ensure that there are materials available for audit. To encourage accuracy and adherence to the requirements, the Commission should impose an automatic penalty on the provider (*e.g.*, 200 percent of the incentive payment) for any incentive payment paid when the provider failed to document compliance or when the provider had reason to know the customer

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<sup>30</sup> This parallels the data that Lifeline providers are required to collect for Lifeline subscribers. *See id.* ¶¶ 101, 189.

did not meet the new-to-category criteria (*e.g.*, the customer’s name or address is among those that the provider already served).

Finally, the Commission should clarify that providers are barred from providing new-to-category consumers with any improper incentives in exchange for the customer’s new registration. Thus, while providers would be permitted to provide service, offer technical support, and supply and install VRS access technology (and accessories like jacks and wiring necessary to make it operational), they should be barred from paying consumers to register or providing them with other inducements.

3. The FCC Should Not Attempt Now to Develop an Offset to VRS Compensation Rates for New-to-Category Incentive Payments.

The FNPRM notes that “one proposal would be to cease reimbursing providers for marketing and outreach based on their individual expenses for these activities” because of the implementation of new-to-category incentive payments.<sup>31</sup> This is the wrong approach, both because it perpetuates “rate-of-return”-type regulation (as discussed further in Section III.C) and also because it would exclude from recovery costs of marketing and conducting outreach to populations other than the new-to-category users.

Since the new-to-category payment would address only one component of a provider’s overall outreach and marketing efforts, it would not be appropriate to adjust the baseline rate under the assumption that the incentive payments account for *all* of those efforts. Sorenson does not track costs in a manner that allows it to identify the cost solely of adding new-to-category users. Indeed, it would be difficult to do so. The same marketing, customer service and field support staff that support VRS users generally would be supporting the addition of “new-to-category” users as well. New-to-category incentive payments will not lead to further efforts to

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<sup>31</sup> FNPRM ¶ 33.

bring service to the unserved if they are accompanied by burdensome accounting and reporting requirements.

Moreover, the Commission does not take such a heavy handed, sweeping *ex ante* approach when incumbent local exchange carriers introduce new services.<sup>32</sup> Price-cap carriers can, for example, introduce new services with only one day's notice, and without submitting any cost support.<sup>33</sup> Instead, the companies simply set a price when they introduce the service. They are not required to make any adjustments to their price-cap indices until a subsequent tariff filing, and even then only using projections of the actual demand that has developed in the marketplace.<sup>34</sup> The Commission does not require offsetting adjustments across broad ranges of services, beyond those of the new services themselves.

The best approach here is for the Commission to set the incentive payment at a level high enough so that it will truly be an incentive to bring in new users. Given the universal service goals of the ADA, the Commission should err on the side of making this one-time payment higher, rather than lower, and it should not try to determine whether and how to adjust any other rates. Indeed, given the changes that are being made with respect to other rates, it would be

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<sup>32</sup> Although outreach and marketing to new-to-category customers is not new, because providers have never separated outreach and marketing to these potential users from all other users, it is appropriate to view the creation of this category as analogous to a new service. *See e.g. Wisconsin Public Service Comm'n*, 17 FCC Rcd. 2051, 2066 (2002) (“[T]he Commission adopted a new regulatory regime for payphone services, and we therefore required the application of the ‘new services’ test to payphone line services, whether or not BOCs consider those services to be ‘new.’”). Here, because there is no reliable demand data, this cannot be treated as a “restructure” under the price cap rules.

<sup>33</sup> *See Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Interexchange Carrier Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers; Petition of U.S. West Communications, Inc. for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA*, Fifth Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd. 14,221, 14,239-43 ¶¶ 37-43 (1999).

<sup>34</sup> *See* 47 C.F.R. § 61.42(g).

prudent to refrain from further complicating rate transitions with what would likely be a small future adjustment.

4. The Commission Should Not Cap New-to-Category Payments.

The Commission should not cap payments that promote new-to-category recruitment, and it should not set them to expire in the future.<sup>35</sup> The volume of new-to-category subscriptions should naturally go down over time as providers make inroads into currently unserved communities. Given this built-in limitation on new-to-category expenditures and the fact that such incentive payments will likely reduce TRS Fund payments in other respects (*e.g.*, by reorienting relative marketing costs away from poaching and toward identifying new-to-category subscribers), the Commission should not implement caps or deadlines that would curb efforts to expand availability as envisioned in Section 225.

**C. Sorenson Supports the Creation of an Independent Outreach Entity But Only to Educate the General Public about TRS.**

Sorenson believes that an independent outreach program to educate the general public about TRS, including VRS, would further the goal of providing functionally-equivalent VRS.<sup>36</sup> But Sorenson cautions that an independent outreach entity should focus exclusively on educating the *general public* about VRS. Providers themselves are far better situated to reach the deaf, hard-of-hearing and speech-disabled community. Sorenson therefore firmly opposes any outreach initiative under which a third-party entity would attempt to target deaf, hard-of-hearing and speech-disabled individuals.

In addition, the Commission should recognize that an independent outreach entity's activities—targeted at the general, hearing population—will likely supplement, rather than

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<sup>35</sup> See FNPRM ¶ 37.

<sup>36</sup> See *id.* ¶ 90.

replace, provider-sponsored outreach, which is particularly targeted at the deaf, hard-of-hearing and speech-disabled population. Accordingly, the creation of an independent outreach entity is unlikely to reduce providers' costs and should therefore not be a pretext for reducing provider compensation.

As the Commission stated with respect to the DTV transition, “innovations [] are dependent upon widespread consumer understanding of the benefits and mechanics” of available programs and resources.<sup>37</sup> The Commission accordingly “promote[d] a coordinated, national DTV consumer education campaign,” requiring numerous individual private sector stakeholders to engage in consumer education and outreach efforts, while also engaging in a wide range of such activities itself.<sup>38</sup> Similarly, with respect to VRS there are important roles for both FCC-sponsored outreach—*e.g.*, an FCC-funded independent outreach program aimed at the general hearing population—and direct VRS provider outreach to the deaf, hard-of-hearing and speech-disabled community. The latter will always be necessary because only VRS providers can actually connect a new user to the service.

Outreach activities aimed at the unserved deaf, hard-of-hearing and speech-disabled community require specific skills and resources, and are accordingly time-intensive and expensive. VRS providers are uniquely suited to reach and educate that population; Sorenson already undertakes these kinds of efforts today. In order to attain outreach goals, the Commission must ensure that VRS providers are fully compensated for their valuable continuing outreach activities. As Sorenson has previously commented, the Commission should require providers to describe their outreach efforts in detail and to disclose the extent to which they seek

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<sup>37</sup> *DTV Consumer Education Initiative*, Report and Order, 23 FCC Rcd. 4134, 4134 ¶ 1 (2008).

<sup>38</sup> *Id.* ¶ 5; *see also id.* ¶¶ 2-3.

to locate and serve previously-unserved individuals—rather than merely seeking to capture the business of customers currently served by other providers—in order to maintain the integrity of the TRS Fund.<sup>39</sup>

As the FNPRM notes, outreach to the general public about TRS, including VRS, remains necessary despite the tremendous growth of the industry within the deaf, hard-of-hearing and speech-disabled community.<sup>40</sup> For TRS to become a truly functionally equivalent service, all Americans must be treated as potential TRS users—which supports the conclusion that outreach to the deaf, hard-of-hearing community and speech-disabled (by VRS providers) and outreach to the general public (by an independent outreach entity) are complementary efforts. As the Commission has previously noted, “TRS is intended to benefit not just persons with particular disabilities, but all persons as the availability of TRS eliminates telecommunications barriers that also prevent, for example, hearing individuals from initiating telephone calls to persons with hearing disabilities.”<sup>41</sup> Although VRS providers are best suited to continue to reach out to the deaf, hard-of-hearing and speech-disabled community, entities with specialized expertise and experience in general outreach are far better positioned to reach the hearing public.<sup>42</sup> And, as the FNPRM noted, the Commission has recently adopted a specialized approach to outreach in

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<sup>39</sup> See Sorenson VRS NOI Comments at 10, CG Docket No. 10-51 (filed Aug. 18, 2010).

<sup>40</sup> FNPRM ¶ 90.

<sup>41</sup> *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 19 FCC Rcd. 12,475, 12,479 n.15 (2004) (“2004 TRS Report and Order”).

<sup>42</sup> For instance, the Pennsylvania Public Utility Commission (“PPUC”) led a statewide consumer-education campaign in March 2004 which resulted in “awareness of 7-1-1 among the hearing public increase[ing] to 20 percent in 2006, up from 14 percent in 2005, 12 percent in 2004, and 9 percent in 2003.” PPUC Press Release, July 11, 2008, available at [http://www.puc.state.pa.us/General/press\\_releases/Press\\_Releases.aspx?ShowPR=2007](http://www.puc.state.pa.us/General/press_releases/Press_Releases.aspx?ShowPR=2007) (last visited Mar. 9, 2012).

another area, authorizing funding for third-party outreach entities to reach individuals who are deaf-blind.<sup>43</sup>

But, because these efforts would be clearly complementary, and because VRS providers are already engaging in outreach to the deaf, hard-of-hearing and speech-disabled, using a new entity for general outreach to the hearing population should have no downward impact on provider compensation. In fact, under a per-user regime, expanding outreach to the general public would increase per-user call volumes which, if anything, would counsel in favor of higher (or at least not reduced) per-user compensation.

### **III. RATE STRUCTURE AND RATE LEVEL REFORM**

The Commission's goal in reforming the VRS rate structure and regulations must be to fulfill the mandates of the ADA, including in particular 47 U.S.C. § 225. Section 225 creates a new civil right for deaf, hard-of-hearing and speech-disabled Americans—the right to obtain communications service that is “functionally equivalent” to the communications service available to hearing individuals.<sup>44</sup> Through this provision—and through its invocation of Section 1 of the Communications Act, which directs the Commission to make service “available to all individuals in the United States”—the ADA establishes a universal service program to provide functionally equivalent communications services for deaf, hard-of-hearing and speech-disabled Americans.

The bulk of the reform proposed in the FNPRM is a laudable effort to fulfill these mandates. In particular, the proposed move from a per-minute compensation structure to a per-user compensation regime should advance the goal of universal adoption by encouraging VRS

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<sup>43</sup> See FNPRM ¶ 90.

<sup>44</sup> 47 U.S.C. § 225(a)(3).

providers to serve the maximum number of deaf, hard-of-hearing and speech-disabled individuals, while simultaneously promoting efficiency by eliminating any incentive to engage in minute-pumping schemes. With some caveats addressed later in this section, Sorenson supports both the move to a per-user compensation regime and the three-step implementation process envisioned by the FNPRM. Regardless of precisely how the implementation process proceeds, however, the current reforms must—as discussed directly below—eliminate tiers from whatever rate structure the Commission adopts.

**A. The Commission Should Eliminate Tiers from Whatever Rate Structure It Adopts.**

Rate tiers are inherently wasteful because they reward inefficiency.<sup>45</sup> To use the Commission’s words, a tiered rate structure achieves little beyond “reduc[ing] the efficiency of the Fund by providing ongoing support for numerous high-cost, subscale providers.”<sup>46</sup> The current system subsidizes inefficiency by paying less efficient VRS providers more on average per minute than more efficient providers—and it thus contravenes the ADA’s mandate that VRS be made available “in the most efficient manner.”<sup>47</sup> The tiered system that exists today thus rewards inefficient operation, effectively punishes providers that offer superlative and efficient service that attracts more customers, creates affirmative disincentives against consolidation of sub-scale providers, and results in a needless burden on the TRS Fund and on the end users nationwide who contribute to it. As the Commission noted, if all VRS minutes were

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<sup>45</sup> See FNPRM ¶¶ 24-26.

<sup>46</sup> FNPRM ¶ 8 n.30; *see also id.* ¶ 64 (“[T]he current tiered rates . . . provide seemingly indefinite support for subscale providers and introduce extra complexity into the management of the program.”), ¶ 141 (“[T]he tiered rate structure supports an unnecessarily inefficient market structure, and apparently provides insufficient incentive for VRS providers to achieve minimal efficient scale.”).

<sup>47</sup> 47 U.S.C. § 225(b)(1).

compensated at the Tier III rate already applicable to 80 percent of all VRS traffic, the TRS Fund would save more than \$24 million per year.<sup>48</sup> Sorenson therefore supports the Commission’s proposed elimination of tiers.

In his attached declaration, Professor Katz demonstrates that tiered compensation rates are counterproductive. Professor Katz explains in detail that the use of tiers “distorts competition and reduces consumer welfare.”<sup>49</sup> Among other core failings, a tiered compensation system inverts incentives by “reward[ing] those firms that have been less successful at offering services that VRS users find attractive.”<sup>50</sup> Even more fundamentally, Professor Katz explains that a tiered payment system “reduces a VRS provider’s incentives to grow . . . because . . . the incremental revenue that firm earns as it becomes larger is compensated at lower rates.”<sup>51</sup> Indeed, “[o]nce a supplier crosses the 500,000-minutes-per-month threshold, the compensation for each additional minute served falls by 18.6 percent.”<sup>52</sup> For the same reason that tiers discourage growth, they also discourage efficient industry consolidation, as two small VRS providers might find that any cost savings that they might achieve by combining would be offset by the fact that many of their combined minutes would be compensated at lower rates.<sup>53</sup>

Professor Katz notes that the Commission has in the past justified VRS compensation tiers on the grounds that imposing a single rate at a level that would be sustainable for the lowest cost provider (Sorenson) “would drive other suppliers from the VRS marketplace, eliminating

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<sup>48</sup> See FNPRM ¶ 24 n.83.

<sup>49</sup> Katz Declaration ¶ 14.

<sup>50</sup> *Id.* ¶ 15.

<sup>51</sup> *Id.* ¶ 16.

<sup>52</sup> *Id.*

<sup>53</sup> See *id.* ¶ 18.

quality competition.”<sup>54</sup> While that rationale was premised on the belief that the VRS industry exhibits substantial economies of scale, Professor Katz concludes that “the nature of economies of scale in this VRS industry does not justify a multi-tiered compensation scheme”<sup>55</sup> because “economies of scale are largely exhausted at a scale that is a small fraction of the overall industry output.”<sup>56</sup> Recognizing that interpreter costs constitute approximately 50 percent of total costs for VRS providers, Professor Katz analyzes staffing and queuing efficiencies in detail and finds that “a provider operating at 250,000 minutes per month can achieve 95.4 percent of the maximal feasible VRS efficiency.”<sup>57</sup> Accordingly, a provider operating at that level can “lower its costs due to the realization of interpreter economies of scale . . . by at most two to three percent.”<sup>58</sup> And Professor Katz concludes that “implied economies of scale related to queuing efficiency are just one percent once providers reach the scale achieved by Purple and ZVRS,”<sup>59</sup> who far exceed 250,000 minutes per month. At or above 500,000 minutes per month, operators “achieve the vast majority of the benefits of scale.”<sup>60</sup>

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<sup>54</sup> *Id.* ¶ 19.

<sup>55</sup> *Id.* ¶ 50; *see also id.* ¶ 46 (“[T]he most successful firms may well have the lowest costs, but this does not imply that their costs are lower because the firms are large. Indeed, there is reason to believe that causality runs in the reverse direction: those firms that are most successful in attaining low costs can be expected to gain market share.”).

<sup>56</sup> *Id.* ¶ 2. Dr. Michael Pelcovits reached the same conclusions in a Declaration filed in 2010. *See Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Reply Comments of Sorenson Communications, Inc. attached Declaration of Dr. Michael D. Pelcovits ¶¶ 9-21, CG Docket No. 10-51 (filed May 21, 2010).

<sup>57</sup> Katz Declaration ¶ 35.

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> *Id.* ¶ 23.

**B. The Commission Should Implement a Per-User Compensation System Gradually Over the Course of Three Distinct Phases.**

Sorenson agrees that moving to a per-user compensation system will require a carefully calibrated phase-in process long enough to avoid disruptions for consumers and providers alike.<sup>61</sup> Sorenson also agrees that a three-phased strategy is appropriate, and that the complexities and challenges associated with the preliminary phase—particularly developing and implementing suitable interoperability standards—will require ongoing assessments to determine precisely when subsequent phases can begin. The final result should be a single rate (no tiers) that is sufficient for a reasonably efficient company to provide functionally equivalent VRS to deaf, hard-of-hearing and speech-disabled Americans. As proposed in the FNPRM, the rate should be adjusted annually by means of a price-cap mechanism.

1. Implementation Phase

As the Commission suggested in the FNPRM, the reform process should commence with an “implementation” phase during which the FCC and the industry build the foundation for a reformed industry. Sorenson further agrees with the Commission’s proposal that the existing interim rates remain in effect during the implementation phase.<sup>62</sup>

The interoperability standards development process, discussed in detail in Section IV.A below, is a critical component of that foundation; indeed, as the FCC recognized, workable and implemented standards are key inputs for achieving the Commission’s broader VRS reform goals.<sup>63</sup> A collaborative effort undertaken by VRS providers to design SIP-based solutions and

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<sup>61</sup> See FNPRM ¶¶ 109-136.

<sup>62</sup> See *id.* ¶ 111.

<sup>63</sup> See *id.* ¶ 109.

the industry's transition to SIP will take anywhere from six to twelve months (and perhaps longer) from the date that the effort commences.

Due to the large embedded base of older model videophones that have been supplied by several providers, it will likely take an additional 12 to 24 months to fully implement the standards with respect to all of the VRS access technologies in use, as VRS has developed under the H.323 protocol. Most existing VRS subscribers receive service via the Sorenson VP-200, which today does not support SIP and lacks the memory capacity to house and perform many of the standardized functionalities that the FNPRM outlines. These VP-200s will need to be replaced, as will any non-SIP-compatible equipment supplied by other providers. This replacement will of course take time—both because of the time needed to produce new devices, but also because of the frequent need to send a field technician to the user's home to configure the new device.

In short, the standards development and implementation process will likely take anywhere from 18 to 36 months in total (and perhaps more), but Sorenson agrees that it should be completed before the subsequent phase commences. Accordingly, Sorenson proposes that the Commission set a 30-month goal for the conclusion of the "implementation" phase, but it should also commit to assessing the status of the implementation phase tasks every six months and to actually ending the phase three months after the Commission finds in one of its assessments that the necessary tasks (including standards implementation) have been substantially completed. (The additional three months will allow providers time to convert systems in preparation for the actual cut to per-user rates.)

Sorenson also concurs that the Commission should take steps to establish a VRS User Database and launch the TRS Broadband Pilot Program during the implementation phase.<sup>64</sup> With respect to the VRS User Database, Sorenson anticipates that the full process will take substantially longer than the six weeks the FCC envisions, due to the need to locate a vendor (perhaps via competitive bidding), assess costs, gather data from providers, compile the data in a single repository, and then work out the kinks and complexities that the initial data import will almost surely produce. That said, there is every reason to believe that the VRS User Database will be fully operational before interoperability standards are in place, which means that building, populating, and debugging the database are tasks that should be slated for completion during the implementation phase. Likewise, it may take time to craft the details of the TRS Broadband Pilot Program and bring it to full operation, but Sorenson is confident that it could be accomplished within the time frames driven by the standards process. The new-to-category payment system (see II.B above), which will provide an incentive for VRS providers to reach all ASL users, should also be in place by the end of the implementation period.

In sum, the implementation phase will include a variety of critical tasks that should be completed before the crux of the reform takes effect. While many of the implementation phase tasks might be completed in a comparatively short time, the foundational project of developing and implementing interoperability standards is likely to take approximately 30 months and perhaps longer. Accordingly, Sorenson proposes that the Commission aim to close the implementation phase 30 months after it starts, but that it issue periodic assessments of progress during the phase and that it actually close the phase three months after it concludes in such an assessment that the requisite implementation phase work is substantially complete.

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<sup>64</sup> See *id.* ¶¶ 112-115; see also *supra* Section II.A.

2. Growth Phase

With interoperability standards in place, the TRS Broadband Pilot Program in operation, the VRS User Database fully populated, and the new-to-category payment system implemented, the Commission will have advanced the ADA’s goal of universal availability by putting providers in a position to expand service to currently unserved consumers during the subsequent growth phase. In this phase, the Commission should convert the per-minute compensation into a per-user rate, and then gradually move to unify all compensation rates at a per-user level equivalent to today’s effective rate of \$5.14 per minute that the TRS Fund pays Sorenson, which is the lowest blended average per-minute compensation of any provider.<sup>65</sup>

The Commission should set the per-user rates for providers at the start of the growth phase, based on establishing a VRS User Database prior to that time, to ensure approximate revenue neutrality at the moment the per-user rates take effect. This will ensure that the transition to per-user rates itself will not cause financial disruption. From that point, the higher per-user rates should be transitioned downward until they reach the lowest per user-rate at the end of the growth phase.<sup>66</sup> Thus, at the end of the growth phase, all tiered rates would be eliminated, but through an orderly process that provides subscale providers with a reasonable opportunity to grow, but with a very clear expectation as to the trajectory of compensation rates by the end of the growth phase.

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<sup>65</sup> The Tier III rate is \$5.07, but Sorenson currently receives an average of \$5.14 per minute because some of its minutes of service are paid at the higher Tier I and Tier II rates. Professor Katz concludes that the industry-wide weighted average—\$5.31 per minute—would be the appropriate starting point. *See* Katz Declaration ¶ 17 (identifying the industry-wide weighted average), ¶ 66 (concluding that it “provides a sensible basis for an initial single rate going forward.”).

<sup>66</sup> *See id.* ¶ 55 (“[T]he Commission should lower the high-cost tiers first in order to preserve incentives at the margin.”).

Sorenson would prefer the immediate elimination of tiered rates, which both burden ratepayers and put Sorenson at a competitive disadvantage. But Sorenson recognizes that the Commission’s plan is to ensure that other VRS providers have the ability to obtain new customers through the TRS Broadband Pilot Program and to accomplish interoperability reform before bringing all rates down to Sorenson’s level. Sorenson submits that a transition period of five years after the implementation phase is complete would be sufficient to allow other providers to have a reasonable opportunity to become sufficiently efficient to survive at the per-user equivalent of today’s \$5.14-per-minute rate level.

### 3. Scale Phase

In the final phase of the reform effort, the Commission should employ the per-user rate in place at the end of the growth phase, and it should implement price-cap principles to adjust the rate going forward. The Commission should not, however, attempt to set an arbitrary lower “rate target” for the start of the scale phase. Such a target would appear to have a single inappropriate goal—to force the already lowest cost provider, Sorenson, into bankruptcy so that its existing debt could be restructured to enable compensation rates to move lower than the lowest rate that *any* VRS provider has found sustainable to date. As Professor Katz points out, this in no way approximates acceptable outcomes in which price would reflect the N+1<sup>st</sup> provider’s costs.<sup>67</sup> Engaging in long-term rate regulation based on hypothetical costs of a non-existent hypothetical VRS provider is a recipe for destroying, not improving, VRS for consumers.

Again, then, the starting point for compensation at the outset of the scale phase should be the per-user rate in place at the end of the growth phase. As the Commission proposed, that initial rate should then be adjusted annually in light of an inflation factor, an efficiency factor

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<sup>67</sup> See *id.* ¶ 70.

(also known as an “X Factor”), and exogenous costs.<sup>68</sup> Sorenson further agrees with the Commission’s proposal to use the Gross Domestic Product-Price Index (“GDP-PI”) as the inflation factor and 0.5 percent as the X Factor.<sup>69</sup>

Professor Katz demonstrates in his attached declaration that the Commission’s choice of price-cap regulation rather than rate-of-return regulation is economically sound. He also notes that, while periodic reviews are appropriate under a price-cap system, the shorter the review period, the more the system approximates rate-of-return regulation, which discourages providers from becoming efficient, lest regulators punish them for doing so. Accordingly, periodic review should take place no more frequently than once every five years.<sup>70</sup>

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<sup>68</sup> See FNPRM ¶ 134.

<sup>69</sup> *Id.*

<sup>70</sup> See Katz Declaration ¶ 81 (“[A]ny period shorter than three years would be harmful, and a period longer than three years, say five, would strike a sensible balance.”). As a practical matter, the FCC has not had a strong record in successfully implementing successive triennial reviews. Triennial reviews have led to near-constant legal uncertainty, as appeals can barely be finished before the triennial review starts. In addition, the triennial review itself, including appeals, frequently takes more than three years to become final. The 1997 LEC price cap performance review (the second such review), for example, was never completed after the initial order was reversed and remanded, but instead was resolved as part of the FCC’s *CALLS Order* in 2000 (which itself then had a multiyear period of appeals, remands and further appeals). See *Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Low-volume Long-Distance Users; Federal-State Joint Board on Universal Service*, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, 15 FCC Rcd. 12962, 13018-13020 (2000) (describing history of LEC price cap triennial reviews and appeals) (“*CALLS Order*”); *Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Low-volume Long-Distance Users; Federal-State Joint Board on Universal Service*, Order on Remand, 18 FCC Rcd. 14976, 14997-15000 (describing history of FCC X-factor orders and court review). Similarly, the triennial review of network element unbundling was conducted only once, and took years to be completed, including all appeals. See *Implementation of Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Report and Order, 11 FCC Rcd. 15499 (1996); *Iowa Utilities Board v. FCC*, 120 F.3d 753 (8th Cir. 1997); *AT&T v. Iowa Utilities Board*, 119 S. Ct. 721, 733, 738 (1999); *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order and Fourth Further Notice of

Sorenson recognizes that the FNPRM appears to envision bringing rates substantially below the rate currently paid to Sorenson. However, there is no basis in the record for doing so.<sup>71</sup> Sorenson’s average weighted compensation rate is currently \$5.14 per minute. Every other VRS provider contends that it needs a higher rate to cover its actual costs of providing service, and each currently receives \$6.23 for the vast bulk of the minutes of service it provides. The Commission’s suggestion that the per-user rate could be equivalent to a \$4 per-minute rate<sup>72</sup> is premised on calculations that appear to ignore the fact that VRS providers must borrow money, pay all of their taxes, conduct research and development for equipment, manufacture and test equipment, port telephone numbers, and earn a reasonable profit, among other defects in the Commission’s list of “allowable costs.” The fact that no VRS provider is able to cover its actual costs of providing service at a rate that is substantially less than \$5.14 per minute is powerful evidence that the list of allowable costs is substantially under-inclusive.

Moreover, the effects of the 2010 rate cut show that no further cut is warranted. Effective July 1, 2010, the Commission reduced the Tier III rate from \$6.23 to \$5.07, while reducing the

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Proposed Rulemaking, 15 FCC Rcd. 3696 (1999); *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd. 19020 (2003), *corrected by Errata*, 18 FCC Rcd. 19020 (2003), *vacated and remanded in part, affirmed in part, United States v. Telecom Ass’n v. FCC*, 359 F.3d 554 (D.C. Cir. 2004); The Commission adopted these mass market local circuit switching rules as part of the *Triennial Review Remand Order. Unbundled Access to Network Elements, Review of Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Order on Remand, 20 FCC Rcd. 2533 (2005), *aff’d Covad Communications Co. v. FCC*, 450 F.3d 528 (D.C. Cir. 2006). This history counsels for a longer period of stability between price cap reviews.

<sup>71</sup> See Katz Declaration ¶ 70 (“[I]t would be a mistake to set the compensation rate equal to marginal cost of the lowest-cost provider. Such a rate could drive all other firms out of the market.”).

<sup>72</sup> See FNPRM App. C ¶ 17.

Tier I and Tier II rates by lesser amounts.<sup>73</sup> This resulted in a substantial reduction in payments to Sorenson. Sorenson could not respond by refusing to pay all its taxes or the interest due on its loans. Sorenson was forced to terminate **\*\*\*BEGIN CONFIDENTIAL\*\*\*** [REDACTED] **\*\*\*END CONFIDENTIAL\*\*\*** employees, who were selected for termination so as to minimize any effect on VRS users—both because Sorenson prides itself on providing superior service and because Sorenson must compete against other providers. Nevertheless, Sorenson’s average speed of answer **\*\*\*BEGIN CONFIDENTIAL\*\*\*** [REDACTED] **\*\*\*END CONFIDENTIAL\*\*\*** in the 18 months following the rate cut.<sup>74</sup> As the Commission has recognized, a deaf person reaching a VRS interpreter is analogous to a hearing person obtaining a dial tone, which happens almost instantaneously. Thus, although Sorenson’s speed of answer remained within the requirements of the applicable regulation, the result of the rate cut was that Sorenson’s service moved farther from the statutory requirement of functional equivalence when the Commission should be attempting to move VRS closer to that standard.

The FNPRM appears to posit that total costs of the lowest cost provider—Sorenson—could be brought even lower by ignoring or disregarding a portion of Sorenson’s actual interest costs. But the FNPRM lays out no basis for such a conclusion. Debt cannot be erased even over a medium term number of years—save through bankruptcy—except through generating sufficient earnings to retire the debt. That cannot be done if compensation rates are cut. Moreover, providers cannot unilaterally decide to reduce debt payments. As demonstrated above, when the FCC cuts the rate, it is operating costs—not debt service—that must be reduced.

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<sup>73</sup> See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 25 FCC Rcd. 8689 ¶ 8 (2010).

<sup>74</sup> See Katz Declaration ¶ 67 (generally highlighting that increasing the number of interpreters will increase quality).

Furthermore, there is no basis for concluding that Sorenson has “excessive” debt—especially when Sorenson’s total costs including debt appear to be below all other providers’ costs. Debt is simply one form of raising capital, along with issuing equity. When a company is privately held, as Sorenson is, it is extremely difficult to raise capital by issuing equity because there is no public market for the company’s shares. In addition, converting equity into debt—such as by borrowing funds while paying dividends—simply shifts the company’s mix of financing from capital to debt. Although debt commits the company to making a future stream of payments, that future stream merely serves to make explicit what had been an implicit cost of capital. If anything, converting equity to debt reduces a firm’s overall weighted average cost of capital because equity generally costs more than debt.<sup>75</sup> There is no basis for disallowing compensation for debt service and other financing costs, whether in setting scale-phase target rates or for any other ratemaking purpose.

Simply put, if the Commission were to reduce the VRS compensation rate significantly below \$5.14, or change to a per-user model with a rate significantly below the equivalent of \$5.14 per minute, every existing VRS provider would either go out of business or go through bankruptcy, even if it could terminate a significant number of employees without destroying its labor-intensive business. Choosing to terminate employees, however, would necessarily either increase the amount of delay before a caller reaches an interpreter or otherwise degrade the quality of service provided. None of these alternatives is consistent with Congress’s mandate that all deaf, hard-of-hearing and speech-disabled Americans should have the opportunity to obtain functionally equivalent communications services.

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<sup>75</sup> See, e.g., *Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers*, Order, 5 FCC Rcd. 7507 (1990) (“*Rate Represcription Order*”) (costs of equity in the record exceeded the overall rates-of-return including the cost of debt).

**C. Setting Scale-Phase VRS Compensation Levels Based on “Allowable Cost” Rate-of-Return Regulation Utilizing the 11.25 Percent Local Exchange Carrier Prescribed Rate-of-Return Would be Arbitrary and Capricious.**

The Commission cannot set scale-phase (or any other) VRS compensation rates based on a rate-of-return methodology because doing so would be arbitrary and capricious. Rate-of-return regulation—which is outmoded, and which the Commission is abandoning in every other context proposes to eliminate in this context as well—cannot be a reasonable basis for setting VRS compensation levels, as it would “stifle[] innovation and promote[] inefficiency.”<sup>76</sup> A rate-of-return approach is fundamentally ill-suited to determining rates for a labor-intensive service business in which the product is primarily the result of human labor rather than investment capital. Moreover, a rate-of-return approach ignores reasonable and necessary costs of a VRS provider, including actual taxes, cash working capital and financing. In addition, the prescribed rate-of-return of 11.25 percent is based on Regional Bell Company capital costs and structures from 1990, when those carriers had regional local service monopolies, year-over-year growth in access minutes and no significant competition from wireless services.

1. Rate-of-Return Regulation Rewards High-Cost Service and Produces Revenue Volatility, While a Price-Cap Approach Encourages Cost Efficiencies and Leads to Revenue Stability.

The Commission should reject rate-of-return regulation for VRS and employ an efficiency-promoting price-cap mechanism instead. As Professor Katz explains in his attached declaration, classic rate-of-return regulation “reduces firms’ incentives to lower costs because it limits the extent to which firms can benefit from becoming more efficient.”<sup>77</sup> In other words, because a rate-of-return approach rewards firms by applying a fixed percentage return to the costs included in rate-setting process, firms have little incentive to improve efficiency and lower

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<sup>76</sup> See Katz Declaration ¶ 2.

<sup>77</sup> *Id.*

costs. “This is so because the provider will be unable to capture all of the benefits of achieving lower costs: if firms achieved lower costs, this would lead to lower reimbursement rates in future fund years.”<sup>78</sup>

Price-cap ratemaking, by contrast, “encourage[s] service providers to reduce their costs and improve their product quality.”<sup>79</sup> By allowing providers to “retain the gains from achieving cost efficiencies,” a price-cap approach “generates incentives for firms to become more efficient.”<sup>80</sup> As a result, “[a] firm that is able to attain superior performance is allowed to retain some or all of the resulting profits as a reward for its innovation and efficiency,” which, of course, “gives firms incentives to engage in innovation to improve its offerings to consumers.”<sup>81</sup>

In addition, the standard price-cap formula allows for far greater predictability with respect to future rate years. This encourages greater efficiency because providers have more confidence in the margins they may realize in the future and, for the same reason, it encourages the investments that are necessary for further service innovations and improvements. The extreme volatility of VRS rates in recent years—ranging from just over \$5 per minute to as much as \$17 per minute—has had precisely the opposite effect on the availability of financing. Indeed, the dramatic rate swings largely closed public equity markets for VRS providers and ratcheted up the cost of debt. As a result, bonds of VRS providers trade at distress levels today, one VRS provider went into bankruptcy in 2009, and another was delisted by the NASDAQ that same year. Even more recently, the only two common carriers to offer VRS—AT&T and Sprint—declined to seek certification as facilities-based VRS providers and will no longer provide

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<sup>78</sup> *Id.* ¶ 58.

<sup>79</sup> *Id.* ¶ 2.

<sup>80</sup> *Id.* ¶ 56.

<sup>81</sup> *Id.* ¶ 61.

service. Adopting the more stable and predictable price-cap rate mechanism, and setting the rate at a level that permits sustainability and growth, would eliminate much of the revenue volatility that has caused such turmoil.

2. Classic Rate-of-Return Regulation Ignores Returns on Labor, Which Are a Significant Part of a Service Industry Such as VRS.

The classic rate-of-return formula cannot be reasonably applied to a labor-intensive industry such as VRS because it makes no provision for returns on labor. The classic rate-of-return formula is to set rates based on “Revenue Requirement” divided by “Demand,” with “Revenue Requirement” defined as “(Ratebase \* Rate of Return) + Expenses.”<sup>82</sup> In this equation, investment in capital stock (such as a telecommunications plant for a regulated telephone company) goes into “Ratebase,” but labor is simply an expense. As the Revenue Requirement equation makes clear, it does not contemplate that a firm will earn a margin on the labor of its employees, but solely on the money invested in capital stock.

That assumption makes no sense in the context of an industry in which the primary input and product is labor.<sup>83</sup> As Professor Katz has explained, “It is vital to recognize that the return on investment should account for the full range of investments by the firm—not just investment in physical capital.”<sup>84</sup> In a service industry, the firm doesn’t just pass through its labor costs; it earns a margin on those costs to reward it for assembling the labor pool and organizing it into a productive unit. If the rate-of-return regulation formula were applied to a plumbing service, for example, the owner could only earn a return on the value of trucks and tools, but not on the skills

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<sup>82</sup> *Amendment of Parts 65 and 69 of the Commission’s Rules to Reform the Interstate Rate of Return Represcription and Enforcement Processes*, Report and Order, 10 FCC Rcd. 6788 ¶ 7 (1995) (“*Rate of Return Rules Order*”).

<sup>83</sup> *See Comments of Sorenson Communications, Inc.*, CG Docket No. 03-123, App. A, Attachment 2, Declaration of Cheryl L. Parrino, ¶ 28 (filed Oct. 30, 2006).

<sup>84</sup> *See Katz Declaration* ¶ 78.

of the plumbers hired and dispatched. Similarly, legal, accounting and engineering services firms all earn a margin on the labor provided by their employees, not just on the value of desks and computers.

Here, it would be just as arbitrary to limit VRS providers' profits to a return on capital stock such as desks, chairs, and information technology equipment as it would to place a similar limit on plumbers, lawyers, accountants and engineers.<sup>85</sup> The fundamental product of VRS is ASL interpreting, performed by the video interpreters. The Commission has never explained why it makes sense to apply the rate-of-return formula to a labor-intensive service industry such as VRS that has little capital stock. Without such an explanation, it would be arbitrary and capricious to apply the rate-of-return formula in setting VRS compensation levels because the Commission would be ignoring returns on labor.

3. Calculating Compensation Based on "Allowable Costs" is Arbitrary and Capricious Because it Ignores Real Costs Necessary for VRS Operations.

Calculating compensation using the rate-of-return formula based on so-called "allowable costs" is also arbitrary and capricious because these "allowable" costs do not include all the costs that a VRS provider needs to incur in order to provide VRS. Among the excluded costs are:

- (i) costs to research and develop technical solutions to allow providers to meet mandatory minimum TRS standards temporarily waived by the FCC;
- (ii) costs to develop, manufacture, install, and test videophones for use by deaf, hard-of-hearing and speech-disabled customers;
- (iii) costs to teach customers how to use videophones and VRS;
- (iv) costs of porting ten-digit numbers;

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<sup>85</sup> *Cf. id.* ("If the effective overall rate of return on investment is set too low—whether because the allowed rate of return is itself set too low or because the investment base on which the return is allowed is defined too narrowly—firms will find it unprofitable to continue to offer high-quality VRS services and will very likely degrade the quality of their services in the short run and exit the industry in the long run.").

- (v) costs associated with raising and servicing capital;
- (vi) actual working capital requirements due to the time it takes for the TRS Fund Administrator to pay compensation; and
- (vii) most state, federal, foreign, and gross receipts taxes.

Many of these costs are necessary to provide functions mandated by the FCC, such as number porting and testing videophone interoperability. In other cases, they are part of providing customer service, or of creating the platforms that consumers use to access VRS services. And, in the case of taxes, they are the actual taxes that providers are required to pay. Accordingly, even if the Commission were inclined to try to set or initialize scale-phase per-user rates based on “allowable costs,” it should not do so.<sup>86</sup> Such costs are incomplete and do not reflect the actual costs of providing and supporting VRS.

4. There Is No Rational Basis for Applying the 1990 Local Exchange Carrier Prescribed Rate-of-Return to VRS Ratemaking.

There is another reason why the Commission could not apply rate-of-return regulation to initialize scale-phase per-user compensation rates or to set a “target” rate: the Commission has no rational basis for adopting for VRS the 11.25-percent rate-of-return that was applied to local exchange carriers more than twenty years ago, and it has not conducted any proceeding to set an appropriate rate-of-return for VRS.

- a. The Commission Has Never Provided a Rational Basis for Applying the 11.25-Percent Rate, Which Was Developed for Non-Analogous Industries.*

The FNPRM suggests that the Commission could apply an 11.25-percent rate-of-return to VRS<sup>87</sup>—but it has never provided a rational basis for doing so. The Commission first took this

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<sup>86</sup> *Cf. id.* ¶ 72 (“[S]hould the Commission choose [to develop a rate based on costs], it must take into account all costs involved in providing VRS service.”).

<sup>87</sup> *See* FNPRM ¶ 13 n.8.

approach in a June 2003 Order issued by the Consumer and Governmental Affairs Bureau (“CGB”).<sup>88</sup> There, CGB chastised VRS providers for the “profits and tax allowances claimed by all VRS providers,” and observed that the “Commission has established a rate of return of 11.25% for return on investment only.”<sup>89</sup> For that proposition, however, CGB relied on a 1998 Order that in turn cited the Commission’s 1990 order covering local exchange carrier rate-of-return as its ultimate authority.<sup>90</sup> CGB then adjusted the VRS providers’ profit data using the 11.25 percent return on investment, plus applicable tax allowances.

VRS providers unsurprisingly objected to this approach as arbitrary. Hands On, for example, commented that it would be far more rational to analogize the provision of TRS to government contracting, where reasonable profit is expected.<sup>91</sup> In a 2004 Order on Reconsideration, the Commission rejected Hands On’s suggestion because “the government does not contract with VRS providers,” and because “Congress mandated the provision of TRS as a condition of voice telephone providers being permitted to begin or continue in that business.”<sup>92</sup> The Commission recognized that the 11.25 percent figure bore no specific relation to VRS, but stated that it would apply a blanket rate of return rather than looking at TRS in isolation: “With regard to the rate of return on capital investment, in applying an 11.25% rate of return on investment to the TRS scheme we are not prescribing a separate rate of return specifically for

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<sup>88</sup> See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 18 FCC Rcd. 12,823 (CGB) (2003).

<sup>89</sup> *Id.* ¶ 35.

<sup>90</sup> See *id.*

<sup>91</sup> See *2004 TRS Report and Order*, 19 FCC Rcd. at 12,545 n.521.

<sup>92</sup> *Id.*

TRS. Rather, we are using the Commission’s current or rate of return on investment that the Commission has applied in a wide range of telecommunications contexts.”<sup>93</sup>

This discussion was unsatisfying even at the time of the 2004 Order on Reconsideration, and is even less so today. Today, there are no “voice telephone providers” providing VRS. VRS is provided by stand-alone companies with cost structures very different from those of traditional common-carrier voice telephone providers. And, as discussed directly below, the purportedly “wide range” of telecommunication contexts that the Commission cited in 2004 included none with the labor-intensive costs associated with VRS.<sup>94</sup> Accordingly, the Commission’s 2004 analysis does not provide a rational basis for application of the 11.25 percent rate-of-return.

*b. There Is No Rational Basis for Applying the 1990 Local Exchange Carrier Prescribed Rate-of-Return to VRS Because the Industries Are Not Analogous.*

The local exchange carrier prescribed rate-of-return of 11.25 percent was set in 1990, based on the capital costs and structure of the Regional Bell Companies from, at the most recent, the first seven months of 1990.<sup>95</sup> At that time, the Regional Bell Companies still had little local service competition, inasmuch as the landmark Telecommunications Act of 1996 had not yet opened local telecommunications markets to competition. Significant competition from wireless services had not yet emerged, as there were only two licensed cellular service providers in each

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<sup>93</sup> *Id.* at 12,544.

<sup>94</sup> The Commission noted that beyond local exchange carriers, the 11.25-percent rate of return applies to coinless pay phones, Universal Service, telephone service providers in small and rural communities, return of capital outlays for number portability, cable rate adjustments to compensate for earlier underestimates, and refund of fees from cable local franchise authority. *See id.* at 12,544 n.519.

<sup>95</sup> *See Rate Represcription Order*, 5 FCC Rcd. at 7511 ¶ 39.

area, and cellular rates were generally increasing.<sup>96</sup> The 1993 Omnibus Budget Reconciliation Act, which substantially reduced barriers to the deployment of wireless services and which led to the launch of additional wireless carriers in each market still lay in the future. In short, the Regional Bell Companies were subject to very little competition for their core services.

This is markedly different from today's VRS marketplace, in which Sorenson has at least nine competitors.<sup>97</sup> Although Sorenson has a large market share, every provider in the industry wages a daily battle for customers. If Sorenson does not satisfy its customers' desires, its customers can readily switch to other providers—even on a call-by-call basis given the FCC's dial-around mandate. Moreover, VRS providers, both individually and collectively, are nowhere near the size and scale of the Regional Bell Companies—and none are integrated with large common carriers—and thus present a significantly different risk profile to the capital markets. In addition, all VRS providers draw all, or nearly all, their revenues from the TRS Fund (through provision of one or more types of TRS), and thus face a concentrated regulatory risk that a Regional Bell Company, with rates set by regulators in each state plus the FCC, did not face. There is no basis for concluding that Sorenson or any other VRS provider has a cost of capital comparable to the Regional Bell Companies of 1990.

In addition, the FCC has no set formula or methodology for determining an appropriate cost of capital for VRS providers. The Part 65 rules were expressly designed for local exchange carriers. Even in that context (which has no logical bearing on VRS), a rate-of-return cannot be calculated simply by plugging inputs into a Part 65 formula. Part 65 provides no method for

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<sup>96</sup> See Presentation of Tom Sugrue, Fifth Annual CMRS Competition Report, slide 4, Aug. 3, 2000, *available at* <http://www.fcc.gov/reports/commercial-mobile-radio-services-cmrs-competition-report-5th-annual> (last visited Mar. 8, 2012).

<sup>97</sup> See TRS Providers, FCC, *available at* [www.fcc.gov/encyclopedia/trs-providers](http://www.fcc.gov/encyclopedia/trs-providers) (last visited Mar. 7, 2012).

calculating the cost of equity, one of two critical components of the weighted average cost of capital. Indeed, Rule 65.301 states only that “[t]he cost of equity shall be determined in represcription proceedings after giving full consideration to the evidence in the record.”<sup>98</sup> In declining to adopt a specific methodology, the Commission noted that “[e]quity prices are established in highly volatile and uncertain capital markets,” and “any cost of equity methodology we codify may not withstand the test of time.”<sup>99</sup>

The difficulty of accurately establishing a cost of equity is heightened with respect to privately held companies such as Sorenson. The Commission’s classic Discounted Cash Flow formula, which it used as part of its 1990 local exchange rate-of-return represcription, evaluates the annual dividend on common stock, the price of a share of common stock, and the estimated long-term growth rate of dividends on that common stock.<sup>100</sup> None of these inputs is relevant to Sorenson, whose common stock is not publicly traded and does not pay regular annual dividends. While Sorenson has an observable cost of debt, the cost of capital is typically much higher than the cost of debt.<sup>101</sup>

In short, there is no rational basis for calculating VRS compensation using a traditional rate-of-return formula and the 11.25-percent cost of capital prescribed for local exchange carriers in 1990. Indeed, there exists neither a methodology nor a basis for selecting any other rate of return for VRS. Rate-of-return regulation accordingly cannot be used to set VRS compensation rates, either for a scale-phase target rate or any other purpose.

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<sup>98</sup> 47 C.F.R. § 65.301.

<sup>99</sup> *Rate of Return Rules Order* ¶¶ 88, 90.

<sup>100</sup> *See id.* ¶ 81.

<sup>101</sup> *See, e.g., Rate Represcription Order*, 5 FCC Rcd. at 7508 ¶¶ 8-9 (Regional Bell Company cost of debt was 8.8%, but the range of reasonable estimates of the cost of equity was 12.5% - 13.5%).

**D. Transitioning to a Per-User Rate Structure Would Resolve Many Concerns About Waste, Fraud, and Abuse, But the Commission Must Address New Concerns Specific to a Per-User Regime.**

As the FNPRM explains, the current per-minute approach to compensating VRS providers is prone to waste, fraud, and abuse.<sup>102</sup> To a significant degree, these problems stem directly from the fact that the current per-minute system creates a strong (and for many, irresistible) incentive for providers to inflate the number of minutes they handle. Providers have concocted a variety of minute-pumping schemes over the short history of VRS—ranging from outright fraud (*e.g.*, paying people to make calls over a particular provider’s service) to “softer” strategies (*e.g.*, encouraging commercial call centers to employ deaf call-takers using a particular provider’s service)—but they are all driven by the goal of boosting compensation, and they all impose unreasonable burdens on the TRS Fund.

The per-minute compensation structure also has a more subtle flaw: per-minute compensation places a premium on providers garnering high-volume users. While this has some salutary effects such as encouraging shorter hold times, it de-prioritizes what should be a significant provider goal—expanding the total number of VRS users by helping all deaf, hard-of-hearing and speech-disabled individuals who can benefit from VRS to become active VRS users. As a result, it is not surprising that of all VRS providers, Sorenson is the only provider that devotes substantial effort to finding new-to-category users; all other VRS providers focus almost entirely on switching the more lucrative existing users away from their current provider. A per-user compensation structure would place a premium on expanding the number of individuals using VRS, which would in turn promote Section 225’s universal service objectives. A per-user compensation mechanism would also push all VRS providers to focus on meeting their users’

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<sup>102</sup> See FNPRM ¶ 59.

needs for both home and mobile connectivity with a single, “ring anywhere” unified communications offering.

Because transitioning to a per-user system would eliminate minute-pumping incentives instantly and promote Section 225’s objective of universal VRS adoption, Sorenson supports the proposed reform. But a per-user system would, of course, be prone to new schemes designed to maximize compensation. Sorenson’s support for a per-user system is therefore conditioned on Commission adoption of safeguards addressing new provider incentives to boost revenues at the expense of consumers that are specific to a per-user compensation regime.

For instance, the Commission must adopt and enforce clear rules barring providers from disfavoring high-volume subscribers, who will generate more interpreting costs than low-volume users, but will trigger identical compensation.<sup>103</sup> To address possible incentives to drive high-volume users away, the Commission should implement rules barring discrimination based on usage volume, prohibiting providers from assigning different interpreters (perhaps with different skill levels) based on a subscriber’s volume of use, altering speed of answer based on the subscriber’s volume of use, or manipulating any other quality-of-service metric to discourage high-volume users from making calls. The Commission must also adopt much clearer rules regarding porting and unauthorized provider changes (*i.e.* slamming),<sup>104</sup> and must also ensure both interoperability and consumers’ ability to port their own data (such as contact lists) from one provider to another.<sup>105</sup>

While implementing these critical safeguards will pose a challenge, as the FNPRM recognizes, creating safeguards for a per-eligible user compensation system is neither

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<sup>103</sup> See *infra* Section V.A.

<sup>104</sup> See *infra* Section VI.

<sup>105</sup> See *infra* Section IV.A.

unprecedented nor unique to VRS. As discussed above, Lifeline, for example, is a per-household subsidy for low-income voice telephone service (with only one subsidized user permitted per household and with expansion to broadband on a pilot-project basis).<sup>106</sup> As the Commission recently reaffirmed, Lifeline has been a resounding success in dramatically expanding telephone penetration rates among low-income Americans.<sup>107</sup> To control waste and fraud in that system, the Commission recently adopted a set of safeguards—including the establishment of a nationwide Accountability Database—to prevent eligible individuals from obtaining more than one supported service.<sup>108</sup> In addition, Lifeline subscribers are protected by the generally applicable porting and slamming rules, and the FCC has adopted Lifeline-specific quality-of-service requirements to ensure that providers make the same baseline service available to all Lifeline subscribers.<sup>109</sup> As the FNPRM recognizes, the Commission need not reinvent the wheel with respect to creating anti-fraud safeguards for a per-user compensation mechanism; it can apply the learning it has already gained from the Lifeline program.

In short, the Commission’s successful implementation of a per-household system in the Lifeline program demonstrates that it is aware of the risks that per-user compensation can pose, and that it has already developed and implemented many safeguards to address them. Provided

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<sup>106</sup> The fact that Lifeline is a “per household” support program and VRS would be a “per user” support program does not create a material difference here. Indeed, as Lifeline has demonstrated, it is more difficult to implement a “per household” approach than a “per user” approach because a user can be easily identified, whereas a household is a more elastic concept. In Lifeline, “per user” can be policed entirely with a duplicates matching database, whereas “per household” will require recipients to complete a more detailed worksheet regarding whether other Lifeline subscribers share household income and expenses. *See Lifeline / Link Up Transformation Order* ¶¶ 77-78.

<sup>107</sup> *See id.* ¶¶ 15-17.

<sup>108</sup> *See id.* § VII.A.

<sup>109</sup> *See id.* ¶ 48.

that the Commission adopts and enforces comparable safeguards in the VRS context to protect consumers and deter waste and fraud, Sorenson supports the adoption of a per-user compensation system.

**E. The Commission Should Adopt an “Active User” Definition that Promotes Wider VRS Deployment.**

Switching to a per-user compensation system raises the issue of who qualifies as a “user.” The FNPRM proposes a rate methodology under which providers are compensated for each “active user” they serve in a given month, and it proposes defining an “active user” as a VRS subscriber who makes outbound (deaf-to-hearing) VRS calls totaling at least two minutes during that month.<sup>110</sup> Sorenson agrees that a clear definition is required and that the Commission should set a minimum threshold of use; otherwise, providers could be compensated simply for signing up customers even if they never intended to use the service. That said, Sorenson believes that the FCC’s proposed threshold is too restrictive and would discourage providers from serving and recruiting low-volume users who would (and in many cases already do) benefit from VRS and point-to-point service. Accordingly, in place of the FCC’s proposed threshold of two outbound VRS minutes per month, Sorenson urges the Commission to set the minimum threshold at two minutes of VRS usage initiated by the user over the trailing six months or any 911 call in the trailing six months. As explained below, Sorenson’s proposed alternative would better meet the requirements of the ADA, would ease administrative burdens on consumers, the TRS Fund Administrator, and providers, and would have no impact on overall disbursements.

Adopting Sorenson’s alternative would directly advance core ADA policy goals by promoting VRS and associated point-to-point communications usage and deployment even in relatively low-usage populations. It is important to recognize that although VRS providers are

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<sup>110</sup> See FNPRM ¶ 60, App. C ¶¶ 8-9.

compensated only for providing VRS, they are required to provide an entire communications ecosystem for deaf, hard-of-hearing and speech-impaired persons. In particular, as required by the Commission’s orders, VRS providers must support point-to-point communications.<sup>111</sup> To facilitate those point-to-point communications, they must populate the iTRS database so that a ten-digit dialed deaf-to-deaf call can be completed directly between IP videophone endpoints, without the involvement of a VRS operator.<sup>112</sup> Indeed, one of the key objectives of the equipment standards proposals in the FNPRM is to better assure that any VRS access technology can communicate point-to-point with any other VRS access technology, regardless of whether that VRS access technology is hardware- or software-based, or operated on a proprietary or “off-the-shelf” platform. And while it is difficult to have a precise count of total point-to-point usage, by all accounts the point-to-point use of the VRS platforms and ecosystem dwarfs the amount of VRS usage.

The FNPRM’s proposal to count eligible “active users” based on a single month’s VRS usage ignores the existence of this larger, FCC-mandated telecommunications ecosystem that is part and parcel of its VRS rules. Because point-to-point use dwarfs VRS use, there is a large number of deaf, hard-of-hearing and speech-disabled individuals who may not place two minutes of VRS calls within a given month, but who nonetheless use the point-to-point capabilities created pursuant to the VRS rules.<sup>113</sup>

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<sup>111</sup> See *Telecommunications and Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Second Report and Order and Order on Reconsideration, 24 FCC Rcd. 791, 820 ¶ 65 (2010) (“*Second Internet-based TRS Order*”).

<sup>112</sup> See *id.*

<sup>113</sup> Approximately **\*\*\*BEGIN CONFIDENTIAL\*\*\*** ██████████ **\*\*\*END CONFIDENTIAL\*\*\*** Sorenson VRS customers, which is roughly **\*\*\*BEGIN CONFIDENTIAL\*\*\*** ██████████ **\*\*\*END CONFIDENTIAL\*\*\*** percent of its total VRS customer base, engage in point-to-point calls in a given month without placing two minutes of VRS calls.

Moreover, the fact that a user fails to place any VRS calls in a given month does not mean that he or she is not a *bona fide* VRS subscriber. With respect to hearing telephone service, some individuals subscribe to telephone service in order to receive calls and to have the *ability* to place calls—such as calls to 911—even if they rarely place outbound calls. The same is true with respect to VRS subscribers. Within Sorenson’s VRS customer base, only approximately **\*\*\*BEGIN CONFIDENTIAL\*\*\*** [REDACTED] **\*\*\*END CONFIDENTIAL\*\*\*** have placed two minutes of outbound VRS calls within the past month. However, approximately **\*\*\*BEGIN CONFIDENTIAL\*\*\*** [REDACTED] **\*\*\*END CONFIDENTIAL\*\*\*** have placed two minutes of VRS calls within the past three months, and approximately **\*\*\*BEGIN CONFIDENTIAL\*\*\*** [REDACTED] **\*\*\*END CONFIDENTIAL\*\*\*** have done so in the past six months. VRS users did not cease to exist in months in which they did not make calls, and they did not cease to be *bona fide* VRS subscribers in that they wanted to have the VRS system, including the ability to make 911 and point-to-point calls, available to them. Accordingly, Sorenson urges the Commission to adopt a more expansive definition that assesses outbound usage (including any 911 calls) in the trailing six months.

Sorenson concurs, however, that clear limits are necessary in order to deter waste, fraud, and abuse—providers cannot be compensated for lining up subscriber registrations from people who never actually use any kind of service. As such, a minimum usage threshold is necessary. A threshold of a total of two VRS minutes, or any 911 calls, in the six previous months strikes a more reasonable balance. Although it might be desirable to try to set a threshold based on both VRS and point-to-point usage, Sorenson is concerned that point-to-point usage is not necessarily easily tracked—and will likely become even less so in the future—such that point-to-point usage

will not be a stable enough metric. Thus, applying the threshold of outbound VRS use over a longer period of time is the best alternative.

Sorenson also agrees with the Commission’s proposal to link the “active user” definition to subscriber-initiated calls. As the Commission observes, limiting calls in this manner should deter some potential fraud by eliminating providers’ ability to “manufacture” active users by placing repeated calls to otherwise low-volume users.<sup>114</sup> But this “subscriber-initiated” limitation will of course reduce the pool of qualifying users, which counsels strongly in favor of adopting the more expansive definition that Sorenson proposes.

In addition to serving the core policy purposes described above, Sorenson’s proposed alternative would also be far less disruptive for the TRS Fund Administrator and for providers. By focusing only on outbound VRS activity within a single month, the Commission’s proposal is likely to generate striking variability from month to month—as seasonal considerations, weather events, and other factors could materially increase or suppress call volumes over such a short period of time. The TRS Fund Administrator’s tasks would be less burdensome under a more expansive definition, as there would be less month-to-month variability in the size and content of providers’ submissions, which should also create fewer audit problems. For the same reason, Sorenson’s alternative would benefit providers (and, indirectly, users as well), as providers’ compensation payments would be subject to far less month-to-month volatility. Reducing revenue volatility is a critical element in enabling enterprises to grow, innovate, and improve service. Therefore, in the interest of giving providers incentives to continue to improve service—and maximizing providers’ ability to secure the financing necessary to make those improvements—the Commission should avoid any definitional limitations that would

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<sup>114</sup> See FNPRM App. C ¶ 9.

unnecessarily increase revenue volatility. Instead, it should adopt Sorenson’s proposed alternative definition of “active user.”

Under Sorenson’s proposed transition plan, the aggregate burden on the TRS Fund should be the same regardless of the “active user” definition the Commission adopts.<sup>115</sup> Since the impact on the TRS Fund is the same either way, the definitional decision should be based on policy considerations—in particular the goals of making service broadly available and avoiding unnecessary disruptions, administrative burdens, and revenue volatility.

**F. The Commission Should Limit Each VRS User to a Single Provider for Personal Use, While Also Permitting Compensation for a Workplace Provider.**

Under a per-user compensation system, VRS consumers should be permitted to select providers for both personal and workplace use, but the TRS Fund should not support the selection of more than one provider for each setting.<sup>116</sup> There are several reasons for limiting users to a single provider for their personal use and for treating personal and workplace settings as distinct “users.”

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<sup>115</sup> That is because Sorenson proposes setting the initial per-user rate using the aggregate amount of payments made in the preceding month under the per-minute payment regime. *See* Section III.B.2, above. If this approach is used, the definition of “active user” will not affect the amount of compensation paid by the TRS Fund. For example, if the aggregate payment amount in the month preceding the switch to a per-user system is \$50 million, and the number of active users is calculated as 100,000, the per-user payment will be calculated as \$500 per month (\$50 million divided by 100,000); the next month’s per-user payment will again total \$50 million (\$500 times 100,000). If, however, a broader definition is used such that 125,000 individuals qualify as active users, the per-user payment will be calculated as \$400 (\$50 divided by 125,000); however the total payment for the next month under a per-user system will still be \$50 million (\$400 times 125,000).

<sup>116</sup> *See* FNPRM ¶¶ 79-82.

1. In the Personal-User Context, Each Subscriber Should Select Only One Provider.

Under a per-user compensation regime, allowing multiple providers to supply personal service to a single subscriber—for example, one provider for mobile service, one for PC-based service, and another for service on a VRS-provider’s branded videophone—could lead to multiple payments from the TRS Fund even for a single subscriber. By contrast, limiting subscribers to a single provider would be consistent with the Commission’s Lifeline rules, where a single user cannot have multiple Lifeline-supported services.<sup>117</sup>

Even if the single per-user payment were somehow apportioned among the various providers, permitting multiple providers to serve one individual would overtax the TRS Fund by spurring providers to push unneeded or unwanted services and equipment on the user. A provider would have an incentive, for example, to push mobile service on a subscriber even if he or she had no independent interest in it, simply because providing the service would qualify the provider for at least a portion of the fee for that subscriber. But plying VRS users with new unwanted services (and the associated equipment) would generate substantial and unnecessary costs, which in turn could lead to substantial and unneeded new burdens on the TRS Fund.

Permitting more than one provider to supply different or overlapping categories of personal service to one subscriber would also generate a host of administrative complexities. For instance, if the Commission decided to apportion partial payments to each of the providers that serve a single consumer, the Commission would need to assess how to allocate compensation fairly among them. The Commission could decide, for instance, to divide the payment equally

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<sup>117</sup> See *Lifeline / Link Up Transformation Order* ¶¶ 73, 182. In fact, a potential Lifeline user cannot receive Lifeline service if another person in his or her household has Lifeline service. See *id.* ¶¶ 74-75. However, applying a “per household” limitation to TRS services would violate functional equivalency, and thus could not be utilized with respect to compensation for the VRS service itself, as opposed to “new to category” incentives or broadband support.

among the providers who supply service to the consumer, but that approach would heighten the incentive for providers to push unneeded and unwanted services on consumers so that they could collect payments for providing services that the consumer may not want or use. Alternatively, the Commission could apportion payment based on the percentage of minutes the consumer used each provider's service each month, but that would create problems of its own. Most notably, apportioning payment based on volume of use would reintroduce the same minute-inflating incentives that the Commission is attempting to eliminate, as a single provider's portion would increase along with the relative size of that provider's minutes volume.

Regardless of the approach selected, apportioning payments would create an administrative nightmare for providers and for the TRS Fund Administrator. Not only would the TRS Fund Administrator face the daunting task of associating and analyzing multiple providers' records for a single customer before calculating and issuing payment to any of them, it would also create debilitating uncertainty for the providers, as they would have no means of estimating revenues in advance since they may not know how many others might be sharing it. Exacerbating that uncertainty, providers would face the prospect that the compensation received for a single customer could be adjusted downward (perhaps requiring a refund payment to the TRS Fund Administrator) in the future based on new or revised data that another provider submits.

Separately, without a rule limiting consumers to a single provider, the Commission would need to assess how to apply its "active user" limitation among multiple providers. The Commission could, for instance, adopt a rule under which all of a consumer's providers could claim the consumer as an active user if the consumer met the applicable threshold based on his or her usage of all providers' services in aggregate. That approach would require the TRS Fund

Administrator to implement processes to account for a single consumer’s usage data across multiple providers. Alternatively, the Commission could take the view that a consumer with multiple providers is “active” with respect to any particular provider’s service only if the consumer’s use of that service meets or exceeds the minimum use threshold. That approach, of course, would result in the possibility that a single consumer could make enough VRS calls in aggregate to qualify as “active,” but not enough with any single provider to entitle any of them to compensation.

The challenges are even more acute with respect to increasingly popular “multi-ring” features, which allow all of a consumer’s devices to ring when any one of them is called and enable the consumer to answer the call from any of them, regardless of which one is associated with the number that was dialed. There is no clearly reasonable approach to parceling out compensation in an environment where an incoming call may have been directed to a device served by one provider but answered on another device served by another. In addition, the Commission would need to develop protocols for routing such calls and determining which provider must interpret them—should the provider whose device was dialed handle the interpreting, or the provider whose device was used to answer the call? The answer is particularly important and elusive under a per-user regime. Because the providers’ compensation may be static regardless of who bears the interpreting expense, providers will have strong incentives to promote calling patterns and routing that force their competitors to handle the interpreting function.

2. A One-Provider-Per-User Rule Would Not Undermine Consumer Choice.

Implementing a one-provider-per-user rule would not result in consumer “lock in,” as VRS users would retain the right to switch providers whenever they choose (and to bring their

telephone numbers, address books, and speed-dial lists with them). The Lifeline program serves as a clear example. While a qualifying Lifeline subscriber is entitled only to a single supported connection (supplied by a single provider), Lifeline subscribers can and do change providers at their own discretion, preserving consumer choice. Moreover, the existing porting rules prohibit providers from refusing port requests because of contractual issues. As Sorenson explains above,<sup>118</sup> the Commission should incorporate the same porting rights and protections into the VRS rules, thereby ensuring consumer choice in a per-user compensation model.

3. The FCC Should Allow Consumers to Use Different Providers for Personal Service and Workplace Service.

As the Commission suggested in the FNPRM,<sup>119</sup> the one-provider-per-user limitation should apply only to personal non-workplace service. Personal and workplace service are sufficiently distinct that allowing different providers to serve them would not create the same risks for the TRS Fund or the same administrative complexities for the Commission. Drawing a line between workplace and personal service makes sense because, in most workplace or enterprise contexts (whether served by VRS or traditional voice service), the individual end user has no choice about the provider that supplies service. Applying a one-provider-per-user rule to both home and work would therefore often oblige consumers to accept home service from a workplace provider that they did not choose. Sorenson therefore agrees with the Commission that it should allow a single VRS user to have different providers for home and work.<sup>120</sup>

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<sup>118</sup> See *supra* Section III.D.

<sup>119</sup> See FNPRM ¶ 82.

<sup>120</sup> The data available to Sorenson do not currently justify setting a higher rate for work use than for personal use. See *id.* ¶ 61, App. C ¶¶ 19-23. Accordingly, Sorenson recommends using the same rate. However, the Commission should note that there is a paucity of data on this question and, as VRS becomes more common in the workplace, more deaf, hard-of-hearing

**G. The Commission Should Develop a VRS User Database that Includes Robust Privacy Safeguards.**

Switching to a per-user compensation system will require development of a VRS User Database as envisioned by the FNPRM.<sup>121</sup> By establishing a VRS User Database, the Commission will be better able to manage some of the complexities of a per-user approach to VRS compensation, and better able to combat waste, fraud, and abuse in such a compensation regime. As the Commission observes in the FNPRM, a VRS User Database would directly serve several policy purposes, including: (i) providing a system for ensuring that each VRS user has only one default provider; (ii) simplifying the identification of new-to-category users; (iii) facilitating the development and operation of the TRS Broadband Pilot Program; and (iv) promoting efficient program administration.<sup>122</sup> But—as the Commission has also recognized—any effort to establish a VRS User Database must be accompanied by robust measures to safeguard consumers' privacy.

1. A VRS User Database Would Ease Some of the Administrative Complexities of a Per-User Approach to VRS.

Sorenson agrees that the creation of a VRS User Database will result in efficiency gains in the administration of the VRS program.<sup>123</sup> A database that identifies subscribers, the default provider with which they are registered, their residential (not mailing) addresses, and other pertinent data would substantially assist the TRS Fund Administrator and Commission in

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and speech-disabled individuals may be hired into positions requiring substantial use of VRS and it may be desirable to revisit the question.

<sup>121</sup> See FNPRM App. D.

<sup>122</sup> See *id.* ¶ 1.

<sup>123</sup> See *id.* ¶¶ 5-6.

compiling data, reviewing trends, identifying anomalies and conducting audits.<sup>124</sup> These processes would require paper-intensive efforts absent a database, and such efforts would often produce comparably unreliable results. Developing a database would therefore not only reduce the administrative burden that providers face, it would also reduce the incidence (and associated cost) of the inadvertent noncompliance of the paper-drive process.

The VRS User Database would also greatly ease providers' burdens in ensuring compliance with the one-provider-per-user rule discussed above.<sup>125</sup> Apart from simply asking the consumer, at present providers have no means of determining whether a consumer also receives service from another provider. As the Commission has recognized in the analogous context of Lifeline service—where individuals are limited to a single subsidized line<sup>126</sup>—a database of VRS users would give providers an ability to determine instantly whether a consumer already receives service. Just as the Lifeline database will facilitate implementation of that program, a VRS User Database would help ensure that a consumer can port from one provider to another but cannot be served by more than one provider at a time.<sup>127</sup>

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<sup>124</sup> To ensure that the VRS User Database will assist in deploying the TRS Broadband Pilot Program, issuing “new to category” incentive payments, and applying a one-provider-per-user rule, the database must contain information sufficient to identify each subscriber reliably and assess his or her eligibility. In particular, reflecting the parallel data requirements the Commission has adopted in the Lifeline context, *see Lifeline/ Link Up Transformation Order* ¶ 184, the database should include each subscriber’s name, residential address, date of birth, the last four digits of the subscriber’s Social Security Number, the subscriber’s current default provider, and a confirmation that the subscriber has certified that he or she is hard-of-hearing or speech disabled.

<sup>125</sup> *See* FNPRM App. D ¶ 2.

<sup>126</sup> *See Lifeline / Link Up Transformation Order* ¶¶ 73-75; *see also* 47 C.F.R. § 54.419(f) (requiring annual one-per-household re-certification).

<sup>127</sup> It will be critical to ensure that the VRS User Database is fully populated and operational prior to implementing the one-provider-per-user rule. Otherwise, the Commission will need to develop an administratively complex and paperwork-intensive system for obtaining customer certifications that they are in compliance with the rule.

As a starting point designed to “cleanse” every provider’s existing pool of subscribers, the Commission should adapt the “Interim Duplicates Resolution Process” used in the Lifeline context to VRS.<sup>128</sup> More specifically, the Commission should appoint a third-party vendor (compensated by the TRS Fund) to request subscriber lists from each provider. The vendor would then analyze those lists to identify all subscribers served by more than one provider. The vendor (or TRS Fund Administrator) would contact each of those subscribers, inform them that they may select only a single default provider, and give them a fixed amount of time (perhaps thirty days) to make a selection. In the event a subscriber did not make a selection, the vendor would randomly assign that subscriber to a provider—with the number of assignments to each provider in aggregate reflecting the providers’ relative numbers of total subscribers.

2. A VRS User Database Would Substantially Reduce Waste, Fraud and Abuse.

In addition to streamlining core administrative functions, a VRS User Database would also combat waste, fraud, and abuse of the TRS Fund, particularly under a new per-user compensation regime. The Commission appropriately identified three areas in which the VRS User Database will substantially reduce the prospect of fraudulent conduct, and Sorenson concurs with each.<sup>129</sup> First, as discussed directly above, a successfully implemented database will enable the Commission, the TRS Fund Administrator and providers to ensure that no more than one provider is compensated for each subscriber. Second, as also discussed above,<sup>130</sup> Sorenson supports the Commission’s proposed TRS Broadband Pilot Program and believes that eligibility should be restricted to one connection per household. Sorenson believes that the VRS

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<sup>128</sup> See *Lifeline / Link Up Transformation Order* ¶¶ 214-16.

<sup>129</sup> See FNPRM App. D ¶¶ 2-4.

<sup>130</sup> See *supra* Section II.A.

User Database could serve as a useful safeguard against abuse of this program by, for example, preventing multiple funding demands for service to a single residential address. Finally, Sorenson believes that the most effective way to identify qualifying new-to-category users will be a centralized VRS User Database, which would allow immediate assessment of whether an applicant claiming to be new to VRS has in fact been served before or resides in a currently served household.

3. The Commission Should Adopt Robust Privacy Safeguards.

The creation of a VRS User Database must be coupled with the development and enforcement of robust safeguards to protect consumers' privacy. In particular, the Commission should appoint as database administrator a skilled and reputable entity with a long track record of fastidious data management—including the management of sensitive, personally identifying information. In addition, the Commission should ensure that only appropriate Commission staff, the TRS Fund Administrator, and the database administrator have complete access to the information in the database. A limited number of employees with each provider should be permitted to access and update only that providers' default subscribers' information to make corrections so as to ensure accuracy. Those employees should also be permitted to run limited reverse "look up" checks to determine whether a particular name or residential address already receives service. Apart from such limited access for specific employees, providers (and everyone else, of course) should be barred from obtaining the information in the database, and database administrators should similarly be barred from providing that information except in response to a court order.

**IV. CHANGES TO STANDARDS AND RULES**

**A. The Commission Should Address Interoperability and Portability Issues With an Eye to the Future, not the Past.**

Sorenson agrees with the FNPRM’s suggestion that the Commission should address interoperability and “Access to Advanced Technology” as part of this proceeding.<sup>131</sup> At the same time, however, Sorenson believes that ever-accelerating changes in advanced technology make it important for the Commission to ensure that it is addressing interoperability issues genuinely critical to the future of VRS, rather than trying to solve perceived problems from the past.

The fundamental backdrop for any discussion of standards is that VRS, like all communications services, is on a path toward software applications that run on a variety of hardware platforms. The future of VRS portability is one in which a consumer will be able to use any VRS provider’s service simply by downloading the provider’s software application on the consumer’s choice of hardware. Indeed, to a significant extent, that future is already here. Software-based VRS applications, like Sorenson’s ntouch Mobile and ntouch PC and similar products offered by other vendors, already permit the consumer to download and run the application associated with the provider he or she wishes to use, including any advanced features that provider supports. Even with respect to hardware, consumers have choices both among VRS providers, and—because of the increasing popularity and availability of software-based applications—among commercial off-the-shelf (“COTS”) open platforms. Frequently, consumers can obtain that VRS hardware (or in the case of the software applications, the software) at little or no cost, eliminating any consumer cost benefits of VRS access technology equipment portability.

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<sup>131</sup> FNPRM ¶ 41.

Against this backdrop, some of the access and equipment issues identified by the FNPRM are, in Sorenson’s view, far more important than others. In particular, standards-setting should focus initially on interoperability, defined in the FNPRM as “the ability of a VRS user to (1) freely connect to and communicate through any of several VRS providers, and (2) directly connect to and communicate with other individuals using various forms of VRS access technology,”<sup>132</sup> *i.e.*, the ability of a VRS user to “dial-around” and to make point-to-point calls, respectively.<sup>133</sup> As the Commission noted, such interoperability is already required by the Commission’s rules, but a lack of standards has made it impossible for any provider fully to meet them, and frustrated the effectiveness of those requirements.<sup>134</sup> In addition, initial efforts should also focus on defining a standard format allowing VRS consumers to transfer personal data they had inputted, such as contact lists and speed-dial lists, to another provider.

Achieving full portability for VRS access technology equipment should not be an immediate objective in the FCC’s reform agenda. As compared to interoperability, certain aspects of portability—defined by the Commission as “the ability of a VRS user to continue to use their existing VRS access technology, their assigned ten-digit phone number, and certain enhanced features when switching from their current VRS Provider to a different VRS Provider”<sup>135</sup>—will be much more expensive, time-consuming, and difficult to implement. Specifically, implementing portability standards for VRS access technology equipment would entail significant changes to back-office systems and would likely extinguish incentives to

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<sup>132</sup> FNPRM App. B ¶ 3.

<sup>133</sup> While the Commission has suggested eliminating the ability of VRS users to “dial-around” in a per-user regime, dial-around equipment interoperability should continue to be available until at least that time. *See* FNPRM ¶¶ 74-77.

<sup>134</sup> *See id.* ¶ 18.

<sup>135</sup> FNPRM App. B ¶ 4.

develop innovative VRS equipment and features, to the detriment of VRS users. Because implementing equipment portability standards at the start of the standards process would significantly slow the implementation of interoperability standards, portability of VRS access equipment should be a secondary, follow-on focus—if it is even necessary—that would commence after the implementation of interoperability standards.

By contrast, Sorenson supports the latter two portability proposals. In fact, the requirement to port consumers’ local ten-digit numbers so that consumers can continue to use those numbers already exists today. In addition, ensuring that consumers retain access to their inputted data is an important and valid near-term objective. Sorenson believes that industry should work together to define standards and processes to ensure that consumers can obtain their personal speed-dial lists and contacts lists (*i.e.*, address books) when they change providers, so that this information does not have to be manually re-entered. Such standards and processes would likely greatly reduce any perceived user “lock-in” stemming today from an inability to easily utilize those two “enhanced features that have proven to be of particular importance to end users”<sup>136</sup> after porting. In fact, resolving interoperability problems may itself eliminate the need to develop specific standards for equipment portability.

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<sup>136</sup> FNPRM ¶ 43; *see also id.* ¶ 17, App. B ¶ 30. Sorenson notes, however, that the Commission recently rejected additional requirements for a provider to continue to support enhanced features once a VRS user has ported to another provider, and agrees with the Commission’s rejection. *See Second Internet-based TRS Order*, 24 FCC Rcd. at 819-20 ¶ 63.

1. The Commission Should Not Dictate Technical Standards.

Sorenson strongly supports the Commission’s proposal that the VRS industry commence discussions under the auspices of an established forum to develop VRS access technology standards based primarily on SIP to benefit both VRS providers and users. As the Commission recognizes, SIP has become the leading call signaling standard, and a transition from H.323 to SIP will increase the ability for VRS providers both to interoperate and to innovate, while leveraging COTS components.

Yet, Sorenson urges the Commission not to mandate any particular standard, nor to incorporate any particular standard into the regulations. Even the most mature and defined standards are continually evolving with new technology. Integrating particular standards specifications into the Commission’s rules would freeze features and prevent VRS providers and COTS vendors from leveraging the technology and standards improvements that are constantly occurring in the telecommunications and VRS marketplace.

Professor Katz reaches the same conclusion in his declaration, observing that “[e]xcessive or overbroad standards can stifle product variety and innovation, thus denying users access to the most advanced technologies and attractive services.”<sup>137</sup> The risk is particularly acute in the VRS industry because, due to the absence of price competition, “[t]oo much standardization will actually limit competition and innovation.”<sup>138</sup> Professor Katz explains that “[e]xcessive standardization can lead to homogenization that denies consumers access to products and services that they might highly value but that do not fit into the standard.”<sup>139</sup> In

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<sup>137</sup> Katz Declaration ¶ 2 (emphasis omitted).

<sup>138</sup> *Id.* ¶ 88.

<sup>139</sup> *Id.* ¶ 86.

other words, “a technological standard can become a technological straightjacket that both limits product variety at a given time and stifles innovation over time.”<sup>140</sup>

2. A Neutral Third Party Should Facilitate Standards-Setting.

To ensure continuing innovation, VRS providers, COTS manufacturers and providers, and consumer groups should work together to develop workable, flexible standards, which the Commission could generally reference in its rules. Sorenson recognizes that its past efforts to spark industry-wide discussions of a standard did not take root.<sup>141</sup> It therefore supports the Commission’s proposal that providers work through and with existing third-party entities and organizations to organize a SIP standard. Sorenson would welcome the Commission’s participation as an active observer in the process.

Sorenson recommends establishing a working group under the already-defined public SIP Forum. The overarching SIP Forum holds interoperability events in the United States only once every 18 months, with other events held in Asia and Europe in the interim. Because these SIP Forum meetings are too infrequent to provide a vehicle for the timely development of VRS standards, Sorenson recommends that the Commission support semiannual events through a neutral third-party entity such as Neustar—which hosted a VRS industry SIP compatibility event in mid-January, 2012—or a similar entity to host a standards event three times per year. These events could be organized as a SIP Forum working group. The certified VRS providers could then coordinate documentation of the standards and the required testing and transition schedule.

Furthermore, because VRS is increasingly provided utilizing COTS video conferencing equipment, it is important that VRS interoperability standards be developed in concert with

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<sup>140</sup> *Id.* ¶ 87.

<sup>141</sup> *See* FNPRM App. B ¶¶ 11-13.

COTS manufacturers and providers. Standards facilitating interoperability for both proprietary and mass market hardware would spur competition and offer VRS users many choices. By contrast, it would be counterproductive and harmful to consumers for the FCC to mandate unique standards for VRS that may not, over time, reflect the trajectory of the rest of the video conferencing industry.

3. Standards-Setting Should Focus First on Interoperability and Portability of a Consumer's Own Data.

Sorenson applauds the Commission for identifying an array of functions, technologies and existing standards that may be appropriate discussion points in the development of VRS standards. The list of functions, technologies and existing standards is, however, daunting, highlighting the fact that the full range of changes that the FNPRM contemplates would require a fundamental redesign not only of VRS access technology, but also of the many provider systems with which the endpoints interact. Such a fundamental redesign of providers' internal systems would be highly disruptive, would require a much longer implementation period—if standards could eventually be reached at all—and could greatly reduce incentives for continued innovation. Moreover, although many of the issues the FCC flagged should be focal points for the discussion, others should be removed from the list because, for instance, they may not even apply to the COTS technologies that many VRS users employ to make VRS calls.

The Commission thus needs to prioritize standards development to first address those that most affect the ability of consumers to call one another and to switch from one provider to another, even while changing access technologies. Interoperability is a clear priority today. Lack of standardization and the difficulty of testing each combination of hardware or software-based VRS access technology means that some endpoints, particularly mobile and other software-based endpoints, have difficulty communicating point-to-point with endpoints not

served by the same provider. Setting a SIP standard will help to increase interoperability and reduce problems with respect to the ability of one endpoint to reach another point-to-point—but standards are not likely to eliminate incompatibility completely. That is because different solution developers can have slightly different ways of interpreting or implementing a standard. These inconsistencies, and the resulting incompatibilities, can generally be detected and resolved only through testing—usually facilitated through an industry forum. An example of the type of compatibility event that will continue to be necessary, even in a post-interoperability standards world—is the SIP compatibility event recently convened and hosted by Neustar for the VRS industry.

Furthermore, industry should work together in the near term to define standards and processes to ensure that consumers can obtain their personal data such as their speed-dial lists and personal contacts list (*i.e.*, address book) when they change providers. Such standards and processes would eliminate many of the frustrations that can arise when changing providers—like the need for manual re-entry of contact information—and thereby reduce any perceived user “lock-in.”<sup>142</sup> As the FNPRM suggests, consumers should, after porting, retain their ten-digit numbers—as they currently do under the porting rules—and be able to gain easy access to their personal contacts list (*i.e.* address book) and user speed-dial list, those “enhanced features that have proven to be of particular importance to end users.”<sup>143</sup> Sorenson also supports the Commission’s view “that a provider should not be responsible for actively supporting CPE that is being used to access another VRS provider’s service,”<sup>144</sup> because Sorenson and other VRS

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<sup>142</sup> As Professor Katz notes, the amount of porting and winbacks suggests that claims of user “lock-in” are overblown. *See* Katz Declaration ¶ 11.

<sup>143</sup> FNPRM ¶ 43; *see also id.* ¶ 17, App. B ¶ 30.

<sup>144</sup> *Id.* ¶ 43, n.125.

providers offer these features on a competitive basis, thus encouraging innovation, competition, and consumer choice.

The sheer number of additional standards required for equipment portability versus interoperability and data portability demonstrates why focusing first on setting and testing standards for interoperability—and portability of consumer personal contact information and speed-dial lists—will enable a faster transition to SIP and increase the convenience of switching providers when also changing equipment. For instance, the Commission suggests certain basic functional requirements that need to be met for VRS access technologies in four general areas: communications; remote feature access; user interface; and private data transfer.<sup>145</sup> The Commission furthermore proposes a VRS Access Technology Standards Profile framework of standards to meet those functional requirements.<sup>146</sup>

As shown in the table in Appendix B, which Sorenson developed based on the Commission’s proposed functional requirements, the number of standards required for equipment portability—eighteen—far exceeds the number of standards required for interoperability—six—while only three standards address consumer data portability. Similarly, shown in the table in Appendix C, only seven of the fourteen standards in the proposed VRS Access Technology Standards Profile suggested by the Commission<sup>147</sup> are required for interoperability (two of which are also required for portability), and two more address portability of consumer personal contact information and speed-dial lists. Five are required only for equipment portability among providers. In addition, the VRS Access Technology Standards Profile set out by the Commission is somewhat incomplete. In particular, with respect to the

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<sup>145</sup> See *id.* App. B ¶ 25.

<sup>146</sup> See *id.* ¶ 32, Table 1.

<sup>147</sup> See *id.*

Commission’s proposed videophone interfaces architecture,<sup>148</sup> Sorenson notes that the diagram is missing videophone upgrade services, including the distribution of software upgrades.

Similarly, the Commission’s proposed Communications Requirements<sup>149</sup> are missing support for a VRS access technology upgrade service. Given the standard requirement to upgrade devices to fix bugs or to add new required or optional features, each device needs to connect to an upgrade service.

In short, the Commission should prioritize interoperability and consumer data portability over equipment portability, and focus first on setting and testing standards for interoperability and consumer data portability. This sequence will enable a faster transition to SIP, and give consumers greater and more convenient control with respect to their own data. The FCC could further speed improvements in interoperability by signaling its support for server-based call routing, SIP, H.264, and VRS industry interoperability events.

4. The Commission and Industry Should Focus on Equipment Portability Only After Interoperability Standards are in Effect.

As noted above, achieving VRS access technology equipment portability will be far more expensive and difficult than ensuring interoperability. Today, despite the prevalence of video conferencing equipment, there are *no* commercial portability standards for SIP devices. Indeed, the much larger and more profitable video conferencing industry that includes Cisco-Tandberg, Polycom, Logitech, Microsoft, and others, does not offer equipment that is “portable” as defined by the Commission.

Equipment portability is, however, also much less necessary than interoperability—again, the provision of VRS, like that of other advanced technologies, is increasingly moving to a

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<sup>148</sup> *See id.*

<sup>149</sup> *See id.* ¶ 26.

model involving software applications that run on a variety of hardware platforms. Going forward, the critical issue is not whether consumers can use their “existing VRS technology” with other VRS providers, but rather ensuring that the end user experience is seamless as consumers move from application to application and thus from provider to provider.

Sorenson disputes the Commission’s suggestion<sup>150</sup> that there is a significant problem with user “lock-in” today.<sup>151</sup> Sorenson has built a substantial market share by providing superior technology and service to its users—including many enhanced features that consumers value greatly—and it is natural for them not to want to switch from a more helpful and useful VRS provider to a service that has fewer features. The fact that consumers prefer Sorenson’s deaf-friendly endpoints is not a reason forcibly to unbundle endpoints and service, and thereby require Sorenson to redesign both its equipment and backend systems so that its hardware-based videophones can be used as a platform for any other VRS provider’s service. Consumers can already choose to use a PC, a tablet or a mobile phone to access Sorenson VRS. And they have the same options for accessing Sorenson’s major competitors, as well as the videophone endpoint hardware that those competitors support. Today, every VRS provider from the smallest to the largest differentiates itself by the features and design it exposes through its access technology. By contrast, imposing the proposed VRS access technology equipment portability standards would freeze the innovation and interface of VRS access technology.

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<sup>150</sup> *See id.* ¶ 16.

<sup>151</sup> *See* Katz Declaration ¶ 11 (“Of those customers who ported away, Sorenson has been able to win back a substantial portion due to the introduction of new hardware and software as well as some users’ concluding that the providers to which they had switched had lower quality interpreters than does Sorenson. These winback rates suggest that (a) switching costs are not a significant factor in this industry; and (b) Sorenson offers a high-quality product that is attractive to customers.”) (citations omitted).

Moreover, the switching cost for users today is already very small: any VRS provider will gladly switch a user's service within a very short waiting time, and provide access technology designed for the VRS user with their own brand, innovations and features. Providers compete today by offering favorable—and often free—equipment to consumers.<sup>152</sup> The marketplace is itself already facilitating consumer choice when consumers wish to switch. The Commission has correctly recognized that allowing providers to offer enhanced features on a competitive basis only to their default users “encourage[d] innovation and competition.”<sup>153</sup> Indeed, Professor Katz explains in his declaration that standards can undermine innovation if they effectively require firms to share product advances with competitors: “If innovative features have to be shared with rivals in order to maintain compliance with the standard, then a firm will see relatively little benefit from innovating.”<sup>154</sup>

In addition, as noted above, the transition to applications-based provision of VRS is already lowering switching costs still further—and is already opening the door to use of COTS hardware to access VRS and to place point-to-point calls. With software-based VRS applications like Sorenson's ntouch Mobile and ntouch PC (as well as other providers' software products), consumers can readily download and run the application associated with the provider he or she wishes to use, including any advanced features that provider supports, on a PC, on a tablet or on a mobile phone. And, as also discussed above, consumers already have choices with respect to equipment both among providers, and—because of the increasing popularity and availability of software-based applications—among COTS open platforms.

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<sup>152</sup> See Buy A Z-Phone, ZVRS, available at <http://www.zvrs.com/products/hardware/buy-a-z-phone> (last visited Mar. 8, 2012) (offering free equipment to consumers who switch from a Sorenson videophone).

<sup>153</sup> *Second Internet-based TRS Order*, 24 FCC Rcd. at 820 ¶ 63.

<sup>154</sup> See Katz Declaration ¶ 88.

If—notwithstanding the lack of any real “lock-in” problem and the natural evolution toward portable applications already underway—the Commission is determined to impose equipment portability requirements, it must first solve the problem of how VRS providers would be compensated for developing new VRS technology in such a world. For example, if a VRS provider pays \$800 for a commercial videophone, and spends an additional \$5 million in developing advanced VRS access technologies and features for that phone, it is not reasonable to allow a consumer to take those technologies and features to a competing vendor days or hours after the customer receives the device.

Questions also remain regarding who will provide the support, upgrades, and payment of the licensing costs for ported technology. The FNPRM does not address these issues, but they would become pressing if the FCC mandated porting standards for physical equipment. For example, Sorenson currently pays **\*\*\*BEGIN CONFIDENTIAL\*\*\***  **\*\*\*END CONFIDENTIAL\*\*\*** each quarter for each Sorenson device that is using its software.

As the FCC considers requiring general support for enhanced features, it also needs to address fair compensation for VRS providers and others that have invented and been awarded patents for these technologies. As noted in footnotes in the table in Appendix B, Sorenson has patented numerous enhanced and other features related to VRS. Consistent with generally applicable patent law, Sorenson is entitled at a minimum to reasonable compensation for other providers’ use of its patented technology.<sup>155</sup>

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<sup>155</sup> In the event the Commission preserves any aspects of rate-of-return regulation, which it should not do, Sorenson is entitled to compensation from the TRS Fund reflecting its own imputed expense for using that technology (based on the reasonable fee third parties pay in the marketplace to use the patented technology).

5. The Commission Should Follow a Phased Transition to SIP, Rather than a Flash Cut.

A SIP to H.323 standards conversion must be handled with care, so as to not disrupt critical services for VRS users. Sorenson urges the Commission to set a deadline for full SIP implementation, but not to dictate the intermediate steps nor require a flash-cut from H.323 to SIP. Requiring an immediate transition to SIP and asking vendors to buy and implement a new SIP to H.323 gateway would lead to wasted effort, time and cost, and could lead to service interruptions if the transition does not go as smoothly as planned. For comparison purposes, it would be unthinkable to imagine converting today's PSTN network to an all-IP network instantaneously.

Instead, the Commission should permit a transitional, hybrid H.323 and SIP model in which all intermediate phases would support dual H.323 and SIP systems. This hybrid model proposal is supported by the fact that all VRS providers today already support H.323, and where necessary, have H.323 to SIP gateways currently in place.

The Commission should also allow sufficient time for a SIP transition. By themselves, SIP standards for VRS will take at least six to twelve months to develop, and likely another twelve to twenty-four months to implement fully. And standards will also require lead time to implement and be deployed to the embedded base of VRS consumers. New SIP interoperability standards will also require an adequate amount of time to replace legacy equipment with newer equipment capable of processing new industry standards. Sorenson estimates that this transition will take 18 to 36 months, as discussed above. A summary of Sorenson's proposed transition plan follows:

**Proposed Transition from H.323 to SIP**

Functionality	Now	Transition	SIP Interoperability	Portability (future, if necessary)
iTRS URI Format	IPV4 address in dotted notation	Fully Qualified Domain Name	Fully Qualified Domain Name	Fully Qualified Domain Name
Server-based routing	-	H.323 Gatekeeper, SIP Proxy	H.323 Gatekeeper, SIP Proxy	SIP Proxy
Internet data transport	IPv4, UDP, TCP, DNS, DHCP	same + IPv6	same + IPv6	same + IPv6
NAT traversal	-	-	ICE/STUN	ICE/STUN
Web access	-	-	-	HTTP/S
Time synchronization	-	-	-	SNTP
NG9-1-1 support	-	-	-	HELD, LoST, SIP
Device configuration	-	-	-	XCAP
Call signaling	H.323	H.323 + SIP	H.323 + SIP	SIP
Session description	H.323	H.323 + SDP	H.323 + SDP	SDP
Media transport	RTP/RTCP	RTP/RTCP	RTP/RTCP	RTP/RTCP
Audio and video	G.711, H.263, H.264	G.711, H.263, H.264	G.711, H.263, H.264	G.711, H.263, H.264
Real-time text	-	Optional	Optional	Optional
Contact list	-	-	-	vCard ex/im [server]
Speed dial list	-	-	-	Optional

**B. Limiting VRS to Off-the-Shelf Equipment Would Degrade Service and Eliminate Innovation Targeting the Deaf, Hard-of-Hearing and Speech-Disabled Community.**

Sorenson emphatically disagrees with the Commission’s suggestion that it “phas[e] in a requirement that all VRS access technology hardware used to make compensable VRS calls be

‘off-the-shelf.’”<sup>156</sup> As long as providers’ equipment is standards-compliant, the FCC should not prohibit providers from improving the consumer experience by competing against each other to develop the most useful and versatile equipment possible.

While Sorenson concurs that VRS providers and users may increasingly use COTS equipment, “it would be a mistake to impose a requirement to use off-the-shelf equipment.”<sup>157</sup> As Professor Katz explains, mandating the use of COTS equipment would “directly . . . limit and distort competition.”<sup>158</sup> “If off-the-shelf equipment is lower cost or more attractive to users, then VRS providers will have incentives to offer that equipment to VRS users in order to obtain competitive advantage. If a VRS provider can offer greater benefits to consumers using proprietary product designs that meet the interoperability requirements, then doing so will benefit consumers and make the program more efficient.”<sup>159</sup>

Importantly, today there is no COTS “VRS access technology hardware.” Rather, there are open COTS platforms upon which VRS vendors can build solutions. These platforms fall into two categories: 1) general computing devices like personal desktop computer, laptops, and tablets; and 2) telepresence equipment. No COTS product today converts a consumer’s home high-definition television, computer, mobile device, or COTS videophone into a VRS communications port. Even with ubiquitous COTS usage, VRS providers likely would need to continue to design and make available compatible software to provide the features and functions of VRS, including capturing and rendering video and audio; connecting to VRS providers; and registering and tracking location information for 911. In addition, providers would need to

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<sup>156</sup> FNPRM ¶ 48.

<sup>157</sup> Katz Declaration ¶ 90.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

integrate software to interface with other providers' back-end systems regardless of the delivery platform—whether propriety or COTS, fixed or mobile. VRS providers that create software applications for COTS equipment have an incentive to make their services compatible with a broad range of equipment so that users can employ endpoint devices that fit their needs. Moreover, competing VRS providers can all design for any open platforms.

More fundamentally, however, the Commission's focus on forcing a move to COTS equipment is misdirected, looking backward instead of forward. As discussed above, the provision of VRS is already moving to software applications operating on a variety of hardware platforms. Sorenson thus expects that organic innovation and consumer demand will naturally lead to increasing use of COTS equipment, with corresponding increases in features and functions, as well as a range of compatible VRS software. By contrast, a COTS-only requirement would hinder the effort to ensure interoperability, and limit VRS providers' flexibility and ability to innovate, to the detriment of VRS consumers. Furthermore, it would result in a massive disruption for consumers, tens-of-thousands of whom rely on custom VRS equipment supplied by VRS providers.

As Sorenson explained more fully in response to the Commission's Public Notice regarding the application of new and emerging technologies for VRS,<sup>160</sup> specialized equipment developed and supplied by providers has historically been a key driver of these services' growth, adoption and popularity. Sorenson, in particular, greatly facilitated the adoption of functionally-equivalent VRS by developing, manufacturing, and providing equipment that was designed to make VRS convenient and highly functional. In response to the needs of deaf, hard-of-hearing and speech-disabled individuals, Sorenson optimized its devices for VRS, developing convenient

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<sup>160</sup> See *Structure and Practices of the Video Relay Service Program*, Public Notice, 26 FCC Rcd. 1950 (2011).

ways to signal callers; introducing popular features such as contact lists and sign mail; dedicating bandwidth to video versus audio; and pioneering many other improvements tailored to the deaf, hard-of-hearing and speech-disabled marketplace.<sup>161</sup>

But today, economic forces increasingly oblige VRS providers to seek faster and more cost effective paths to deliver new products and features designed specifically for deaf, hard-of-hearing and speech-disabled users. As a result, the VRS market—including Sorenson—is embracing COTS equipment as a component of VRS access technology. Accordingly, deaf, hard-of-hearing or speech-disabled consumers can now use COTS equipment to access VRS and to make point-to-point calls, provided that the equipment has a forward-facing camera, a broadband Internet connection, and the ability to load, store and run compatible software. In fact, COTS equipment is currently the only access technology hardware platform for mobile VRS, given the widespread availability of mobile devices with front-facing cameras running on 3G and 4G mobile networks with data transmission speeds that support video conferencing.

Sorenson believes that VRS industry standardization based on SIP would encourage even more adoption and use of COTS equipment. Thus, to the extent that the Commission wishes to promote the utility of COTS platforms for VRS, it will need to ensure that any standards development includes not only VRS providers, but also the manufacturers of COTS platforms.

Sorenson cautions, however, that given the small size of the VRS market, VRS providers have little leverage to require COTS vendors—used to dealing with much larger markets—to join in defining VRS-specific standards. Moreover, because the key target markets for COTS

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<sup>161</sup> See also Comments of Sorenson Communications, Inc., CG Docket No. 10-51 (filed Apr. 1, 2011). Sorenson's service and feature innovation are reflected in, and protected by, the various patents it holds, as described in the footnotes to the table in Appendix B.

venders tend to be enterprise and government users, the configuration of COTS systems are typically designed for control by in-house IT staff, not service operators.

It also bears emphasis that while Sorenson believes that VRS will increasingly move toward software applications running on COTS equipment, a COTS-only mandate also fails to recognize that COTS equipment is designed and optimized for use by hearing individuals, not by deaf, hearing impaired and speech-disabled individuals. While COTS equipment is powerful and evolving, COTS manufacturers will never have an incentive to design their devices to serve the deaf, hard-of-hearing and speech-disabled community, because it is so comparatively small. By contrast, Sorenson has optimized its equipment for deaf, hard-of-hearing and speech-disabled individuals. For instance, Sorenson prioritizes video quality over audio quality; uses a wide camera angle to capture more than just “talking heads”; invented LightRing™ call signaling; and developed equipment that transmits video effectively at comparatively low bandwidths. None of these attributes would likely be present in a technology platform designed for the hearing.

Finally, contrary to the Commission’s suggestion,<sup>162</sup> COTS equipment is not less expensive than proprietary VRS equipment. For example, the least expensive Cisco video phone, the E20, retails for \$1,115.99; the least expensive Polycom video phone, the VVX 1500, retails for \$934.99; and the least expensive Apple Laptop retails for \$999.<sup>163</sup> (Low-end PC laptops can cost as little as \$300, but these devices are underpowered for video, and the built-in cameras have poor video quality.) VRS-specific hardware, by contrast, is generally less

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<sup>162</sup> See FNPRM ¶ 21.

<sup>163</sup> See CDW, Cisco IP Video Phone E20, <http://www.cdw.com/shop/products/Cisco-IP-Video-Phone-E20-IP-video-phone/2377458.aspx> (last visited Mar. 6, 2012); CDW, Polycom VVX 1500—IP Video Phone, <http://www.cdw.com/shop/products/Polycom-VVX-1500-IP-video-phone/1731250.aspx> (last visited Mar. 6, 2012); Apple, Compare all Macs, <http://www.apple.com/why-mac/compare> (last visited Mar. 6, 2012).

expensive (often far less) and also designed specifically with a deaf, hard-of-hearing or speech-disabled user in mind. Sorenson generally makes its equipment available to its default users free of charge, and it values the latest model (the ntouch VP) at **\*\*\*BEGIN CONFIDENTIAL\*\*\*** **\*\*\*END CONFIDENTIAL\*\*\***, including the cost of a router and installation. ZVRS prices its most expensive videophones at \$995, and makes other models available for as little as \$49.<sup>164</sup>

**C. Sorenson Agrees that the Commission Should Simplify Section 64.604**

Sorenson agrees that Section 64.604 of the Commission's rules<sup>165</sup> has become somewhat unwieldy and that, regardless of any substantive changes that are made as part of this proceeding, Section 64.604 should be broken into separate sections, each addressing a particular regulatory issue.<sup>166</sup> It may also be necessary to modify the Commission's TRS operational standards, or to establish separate operational standards for VRS, to ensure high quality VRS for all users, especially if the Commission adopts a per-user compensation system.<sup>167</sup> In particular, as discussed in Section V.A below, Sorenson agrees that it may be necessary to implement minimum standards to ensure that providers will not be motivated to discourage high-volume users from selecting them as default providers or from making VRS calls under a per-user compensation system.

Sorenson does not believe, however, that the Commission should establish specific training qualifications for VRS communications assistants ("CAs") that differ from or expand the

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<sup>164</sup> See ZVRS Pricing, available at [www.zvrs.com/products/hardware/buy-a-z-phone](http://www.zvrs.com/products/hardware/buy-a-z-phone) (last visited Mar. 7, 2012).

<sup>165</sup> See 47 C.F.R. § 64.604.

<sup>166</sup> See FNPRM ¶ 70.

<sup>167</sup> See *id.* ¶ 86.

requirements currently set forth in section 64.604(a)(1) of the Commission’s rules. Like other aspects of VRS subject to minimum standards—*e.g.*, speed of answer—VRS CA quality and training offers VRS providers the opportunity to exceed those standards and competitively differentiate themselves from competitors. This differentiation offers consumers choices with respect to their overall VRS experience, and encourages providers to innovate and provide superior service. For instance, Sorenson has developed a robust in-house training program in which its VRS CAs are instructed in depth on meeting the needs of deaf, hard-of-hearing and speech-disabled consumers; complying with the regulatory standards applicable to CAs, *i.e.*, that they are able to interpret effectively, accurately and impartially, both receptively and expressively, using any necessary specialized vocabulary; and the operational and technological aspects of Sorenson’s services and equipment. **\*\*\*BEGIN CONFIDENTIAL\*\*\*** [REDACTED]

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**V. FURTHER NECESSARY COMPONENTS OF A PER-USER COMPENSATION SYSTEM**

As discussed above, Sorenson generally supports the three-step process the Commission has proposed to transition from a per-minute compensation regime to per-user compensation.<sup>168</sup> As part of the initial “implementation phase,” there are a number of steps that the Commission should take to ease this transition. One particularly important step is developing a VRS User Database that includes robust privacy safeguards, already discussed in detail in Section IV.G.3, above. In addition, the transition to a per-user regime will require the Commission to adopt rules barring discrimination against high-volume users and to make clear that VRS providers may use service contracts and levy early termination fees in certain circumstances.

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<sup>168</sup> See *supra* Section III.B.

**A. In Transitioning to a Per-User Regime, the Commission Must Adopt Clear Rules Barring Providers from Discriminating Against High-Volume Users**

Sorenson's support for a transition to a per-user compensation system is conditioned on the adoption and enforcement of robust quality-of-service regulations to prevent unscrupulous providers from disfavoring high-volume VRS users.<sup>169</sup> These protections will be vital to the success of the Commission's proposed reform because, absent safeguards, providers will have a clear financial incentive to drive high-volume users away; since providers will receive the same compensation for every active user they serve, they will be motivated to populate their subscriber lists with low-volume VRS users who require comparatively little interpreting. As the Commission accurately noted, some VRS providers have exploited the existing per-minute regime to advance their financial interests at the expense of overall program integrity.<sup>170</sup> In an effort to prevent similar conduct going forward, the Commission should adopt clear rules at the outset, and it should reassess them with care and frequency thereafter to address misconduct designed to exploit the compensation regime—particularly misconduct that effectively favors some consumers over others.

A per-user compensation mechanism may alleviate some of the ills the VRS industry has experienced when subject to minute-based compensation, but the transition will require renewed vigilance to combat new strains of fraud, abuse, and waste. To address the consumer-unfriendly incentives that may arise under a per-user regime, the Commission should implement rules that clearly prohibit providers from discriminating against any customer (or any category of customer), most notably with respect to quality of service. The FCC should adopt rules, for example, that prohibit providers from assigning less-skilled interpreters to high-volume users,

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<sup>169</sup> See FNPRM ¶¶ 100-104.

<sup>170</sup> See *id.* ¶ 26.

slowing the speed of answer for high-volume users, or manipulating any other quality-of-service metric to discourage high-volume users from making calls. Not only should the Commission adopt such regulations, it must enforce them vigorously and it must amend them as necessary to close any loopholes that providers attempt to exploit. A combination of clear rules, robust enforcement, and vigilant amendment will send a clear message to providers to serve all consumers equally.

**B. In a Per-User Regime, the Commission Should Permit VRS Providers to Use Service Contracts and to Levy Early Termination Fees in Certain Circumstances.**

VRS providers should be permitted to require VRS users who are either new-to-category VRS users or who are switching from another VRS provider to enter into service contracts of varying lengths. Similarly, VRS providers should be permitted to require enterprise VRS customers to enter into service contracts.<sup>171</sup> In addition, providers should be permitted to impose an early termination fee (“ETF”) or equipment license fee (“ELF,” in situations where a provider maintains ownership of VRS access hardware and licenses its use) if an individual consumer or enterprise customer that was provided free or discounted VRS access hardware (but not software alone) exits a contract before its expiration. Sorenson urges the Commission to permit such competitive market practices at providers’ discretion, *e.g.*, providers should have the freedom to require service contracts—or not; the freedom to impose ETFs or ELFs—or not; and the freedom to set the other terms and conditions—including the duration—of service contracts.

Permitting such practices with respect to VRS is in line with providing a functionally-equivalent provider-customer relationship. As the Commission noted, service contracts and ETFs are common in other communications markets, particularly with respect to mobile wireless

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<sup>171</sup> *See id.* ¶ 83.

markets, where consumers often receive free or discounted equipment in exchange for entering into service contracts.<sup>172</sup> In those other markets, customers may port freely at any time, but that freedom to port does not shield them from the consequences of terminating service contracts early. The same ground rules should apply to VRS. Among other things, service contracts would allow VRS providers to guarantee their recovery of significant access hardware costs over time—or all at once, in cases when VRS providers charge an ETF or ELF to a user that breaks a contract. ETFs and ELFs would not be appropriate, however, and should not be permitted in situations where consumers use VRS providers’ software-based VRS access technologies on COTS hardware platforms that the consumers own, *e.g.* mobile devices or personal computers that the consumers purchased.

VRS consumers should have the freedom to select providers based on a range of competitive information and considerations, including both service quality and contract terms. For instance, similar to the wireless marketplace, a VRS provider could provide free equipment to users who sign a service contract of two years, subject to an ETF or ELF; provide partially-subsidized equipment to users who sign a service contract of six months or one year, subject to an ETF or ELF; or provide non-subsidized equipment for users who choose not to sign a service contract. For similar pro-competitive reasons, VRS providers should be permitted to “buy out” a VRS user’s or Enterprise VRS Employer’s ETF or ELF with a competing provider. In other words, in the event a customer’s decision to port from provider X to provider Y triggered an obligation to pay an ETF to provider X, the Commission should clarify that provider Y could reimburse the customer for the ETF payment (but could not pay the customer anything more).

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<sup>172</sup> *See id.*

**VI. THE COMMISSION MUST ADOPT CLEAR RULES PROHIBITING SLAMMING AND TAKE OTHER CRITICAL STEPS TOWARD REFORM WHETHER IT IMPLEMENTS PER-USER COMPENSATION OR RETAINS SOME VERSION OF THE CURRENT PER-MINUTE SYSTEM**

As discussed above, Sorenson believes that transitioning to a per-user regime as envisioned by the FNPRM is preferable to retaining the current per-minute compensation system. In the event that the Commission declines to adopt its proposed per-user methodology, however, Sorenson would support a per-minute approach provided that the Commission implements a variety of core reforms to avoid simply perpetuating the status quo.<sup>173</sup> Sorenson believes that a per-minute approach would support an efficient, sustainable and vibrant VRS marketplace only if coupled with the following six reforms—in addition, of course, to the elimination of tiers discussed in Section III.A, above.

First—regardless of whether the Commission transitions to a per-user system or preserves a minute-based system—it should adopt clear rules governing the porting process and prohibiting slamming. Because this reform is critical, we discuss it here in some detail. As the Commission has previously stated, slamming is a problem of the highest order because it

nullifies the ability of consumers to select the telecommunications providers of their choice, and distorts the telecommunications market [by] . . . reward[ing] those companies who engage in deceptive and fraudulent practices by unfairly increasing their customer base at the expense of those companies that market in a fair and informative manner and do not use fraudulent practices.<sup>174</sup>

While the Commission has not to date adopted detailed slamming rules for VRS, it has “emphasize[d] that the unauthorized change of an Internet-based TRS user’s default provider and the unauthorized disclosure of an Internet-based TRS user’s personal information are both

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<sup>173</sup> See *id.* ¶¶ 140-141.

<sup>174</sup> See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd. 11,591, 11,633 ¶ 120 (2008) (internal citations and quotations omitted).

prohibited.”<sup>175</sup> Yet, Sorenson has observed that slamming and misuse of personal information continue to occur.

Sorenson has long been a strong supporter of establishing clear “rules-of-the-road” with respect to provider changes, porting and the use of customers’ personal information. Sorenson proposed draft slamming and customer proprietary network information (“CPNI”) rules modeled on and incorporated into the existing common carrier slamming and CPNI rules, respectively, in an ex parte filed in 2008.<sup>176</sup> Sorenson reiterated its support for and explanation of its proposed slamming rules after the Commission initially sought comment on the issue later that summer.<sup>177</sup> Sorenson continues to believe that VRS-specific slamming and CPNI rules are needed to protect VRS users from unauthorized default provider changes and other misuse of personal information.

While Sorenson recommends that VRS slamming and CPNI rules closely parallel the existing carrier slamming rules, there are a number of differences between TRS and telecommunications services that are relevant to the implementation of the prohibition on unauthorized changes of provider. Thus, by necessity the VRS rules should differ from the common carrier rules in several respects. For example, VRS users do not pay their relay providers, while customers of telecommunications carriers generally do pay carriers for the services they receive. Also, unlike a telecommunications service customer, who would learn that he or she has been slammed by getting a bill from the new (and unauthorized) carrier, a relay

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<sup>175</sup> See *Second Internet-based TRS Order*, 24 FCC Rcd. at 824 ¶ 71.

<sup>176</sup> See Letter from Ruth Milkman, Counsel, Sorenson Communications, Inc., to Marlene H. Dortch, Secretary, FCC, CG Docket No. 03-123, at 2-3 & Attach. 1, at 3 (filed May 15, 2008); Letter from Ruth Milkman, Counsel, Sorenson Communications, Inc., to Marlene H. Dortch, Secretary, FCC CG Docket No. 03-123, Attachment (filed May 19, 2008).

<sup>177</sup> See Comments of Sorenson Communications, CG Docket No. 03-123 at 12-17 (filed Aug. 8, 2008).

user may not be aware that his or her telephone number has been switched to a new provider.

Therefore, any penalty provisions should provide for payments by the unauthorized provider to both the authorized provider and the TRS Fund, rather than to the authorized carrier and the customer. In addition, VRS slamming rules should permit both providers and users to file complaints. Finally, the Commission should allow a VRS user to complete a Letter of Authorization (“LOA”) to port his or her ten-digit phone number via a recorded ASL conversation.

The Commission should also expressly extend to VRS the common carrier prohibition against using customer information gained from a port request to initiate “winback” marketing, as articulated in the *Bright House* decision.<sup>178</sup> The *Bright House* decision rested on the Commission’s recognition that Verizon, as a carrier providing telecommunications services subject to Title II of the Communications Act, could not market based on porting information without violating Section 222(b)’s protections for carrier proprietary network information.<sup>179</sup> Sorenson believes that the rule’s rationale applies in the TRS context as well. Consistent with the *Bright House* decision, “winback” efforts should be barred while the port is in progress but permitted as soon as the port is complete.<sup>180</sup> This rule would strike an appropriate balance: VRS providers should not interfere with a user’s decision to port to another provider, but VRS

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<sup>178</sup> See *Bright House Networks, LLC v. Verizon California, Inc.*, 23 FCC Rcd. 10,704, 10,713 ¶ 22 (2008) (“[W]hen a customer’s current carrier obtains carrier-change information from a competing carrier solely because of the current carrier’s existing relationship with the customer, the current carrier may not use that information to attempt to disrupt the carrier change . . . until the carrier change is completed.”) (aff’d *Verizon California v. FCC*, 555 F.3d 270 (D.C. Cir. 2009)).

<sup>179</sup> See *id.*

<sup>180</sup> See *id.*

providers should be permitted to encourage users to reconsider after they have experience with the other provider.

Second, the Commission must once and for all replace the rate-of-return structure frequently invoked for VRS with a price-cap structure to incentivize continued efficiency.<sup>181</sup> As described in Section III.C.2., above, rate-of-return methodology provides returns only on capital plant—an approach that is particularly ill-suited for a non-capital-intensive business like VRS where the largest single cost is the expense of paying interpreters to relay calls. In place of the discredited rate-of-return approach, the FCC should set rates based on price-cap principles and, for the reasons set forth above, it should employ an industry-wide rate of \$5.14 per minute and use price-cap principles to adjust the rate thereafter.<sup>182</sup> For the reasons set forth in Section III.C.1., above, a price-cap rate would create a strong incentive for providers to reduce costs in order to expand their margin on every minute of service provided.

Third, in the event it preserves any rate-of-return elements, the Commission should adopt a more realistic measure of providers' costs when setting rates.<sup>183</sup> Providing VRS under the FCC's rules is a demanding enterprise, as providers must develop systems that support not only VRS but also point-to-point calling. They must also develop endpoint systems (whether proprietary hardware or applications for COTS equipment) that support both VRS and point-to-point communications. Developing these systems and technology requires the creation (at great

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<sup>181</sup> See *supra* Section III.C. Indeed, the Commission recognized more than twenty years ago that rate-of-return regulation generates “distorted incentives” that discourage “socially beneficial behavior” on the part of the regulated entities. *Policy and Rules Concerning Rates for Dominant Carriers*, Report and Order and Second Further Notice of Proposed Rulemaking, 4 FCC Rcd. 2873, 2889 ¶¶ 29-30 (1989); see also Comments of Sorenson Communications, Inc. at 2-3, CG Dockets 10-51 and 03-123 (filed May 16, 2011) (cataloging the Commission's own critiques of rate-of-return regulation).

<sup>182</sup> See *supra* Section III.B.

<sup>183</sup> See *supra* Section III.C.3.

cost) of intellectual property, and the Commission’s rate-setting calculus must recognize that providers’ use of their own intellectual property as an imputed expense equal to what it would cost to license the technology on the open market. In addition, the rate must reflect the reality that VRS providers pay actual taxes—not the fraction of actual taxes currently treated as compensable—and that building innovative and efficient companies requires securing outside financing at a cost.

As the Commission well knows, the current rate-setting process relies on cost data submissions from which providers are required to exclude many actual costs. This limitation was crafted with the view that integrated common carriers would provide VRS, and that many of their costs would be supported by other revenue streams related to the carriers’ core offerings. But the VRS industry has evolved away from that model, and *no* traditional common carriers provide VRS anymore. All VRS providers are now standalone operations without material revenue streams unrelated to relay service. Accordingly, the VRS rate needs to cover all of the actual costs of providing service, including financing, taxes, equipment development and distribution, and all general and administrative costs.

Fourth, the Commission should clarify that service contracts including provisions requiring early termination payments are permissible, but only for service provided in conjunction with VRS access technology in hardware form (or, if software-based, for associated hardware platforms).<sup>184</sup> As Sorenson explains in Section V.B., above, service contracts and termination fees are necessary to help providers recover their costs of providing, servicing, and upgrading equipment.

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<sup>184</sup> See *supra* Section V.B.

Fifth, the Commission should clarify situations in which providers can market their services to certain customers—especially enterprise customers—that result in substantial increases in relayed minutes and corresponding burdens on the TRS Fund. The Commission should explain clearly, for instance, whether and in what circumstances a provider may collaborate actively with a call center operation (*e.g.*, for an insurance company, or for a hotel reservation center) to place VRS users as call center staff. There are strong public policy reasons to encourage such activities—namely, expanding employment opportunities for the deaf, hard-of-hearing and speech-disabled, creating new opportunities for deaf and hearing integration, and offering companies new ways to diversify their workforces. On the other hand, such efforts would of course put greater strains on the TRS Fund, as increasing numbers of workers with calling-intensive jobs would use VRS to perform them. On balance, Sorenson believes that the Commission should expressly authorize such collaborative efforts in order to better achieve the goals of the ADA, but only as long as the provider supplies no incentive to the company beyond the kinds of public policy benefits listed above. But regardless of how the Commission elects to proceed, it should articulate its views on such collaborations clearly, so that VRS providers can operate and compete on a level playing field.

Sixth, the Commission must actively enforce its rules barring VRS providers from subcontracting out call center and interpreting functions or using communications assistants who work from home.<sup>185</sup> The Commission has witnessed a variety of minute-pumping schemes in the past—including schemes that have resulted in criminal convictions—and it must remain vigilant to deter further schemes in the future if it preserves per-minute compensation. In

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<sup>185</sup> See 47 C.F.R. § 64.604(c)(5)(iii)(N)(1)(ii); *Structure & Practices of the Video Relay Service Program*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 5545, 5556-59, 5574-75 ¶¶ 16-20, 57-61 (2011).

particular, to protect the integrity of the TRS Fund, the Commission should actively assess whether any providers are working in partnership with uncertified call center operations notwithstanding the rules, and it should take firm enforcement action as necessary based on its findings.

**VII. CONCLUSION**

For all of the foregoing reasons, Sorenson applauds the Commission's commitment to reforming and improving the provision of VRS. Sorenson concurs that the implementation of a TRS Broadband Pilot Program and the commencement of an incentive-payment system for new-to-category recruiting will advance the core ADA goal of making VRS service universally available to deaf, hard-of-hearing and speech-disabled consumers. Sorenson also generally supports the Commission's proposed transition to a per-user compensation system, and Sorenson fully endorses the proposed elimination of separate rate tiers and the use of price-cap principles to set and adjust the rate going forward.

**REDACTED –  
FOR PUBLIC INSPECTION**

**Subject to Request for Confidential Treatment  
Pursuant to 47 C.F.R. §§ 0.457, 0.459**

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March 9, 2012

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**Subject to Request for Confidential Treatment  
Pursuant to 47 C.F.R. §§ 0.457, 0.459**

Comments of Sorenson Communications, Inc.  
CG Dockets Nos. 10-51, 03-123  
March 9, 2012

**Appendix A**

**AN ECONOMIC ANALYSIS OF VRS POLICY REFORM**

**Declaration of Michael L. Katz**

**REDACTED –  
FOR PUBLIC INSPECTION**

**Subject to Request for Confidential Treatment  
Pursuant to 47 C.F.R. §§ 0.457, 0.459**

**AN ECONOMIC ANALYSIS OF VRS POLICY REFORM**

**Declaration of Michael L. Katz**

**March 9, 2012**

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## I. INTRODUCTION AND OVERVIEW

1. In its recent Further Notice of Proposed Rulemaking (*FNPRM*), the Federal Communications Commission (Commission) solicits comment on<sup>1</sup>

a series of options and proposals to improve the structure and efficiency of the [Video Relay Service] program, to ensure that it is available to all eligible users and offers functional equivalence – particularly given advances in commercially-available technology – and is as immune as possible from the waste, fraud, and abuse that threaten the long-term viability of the program as it currently operates.

2. At the request of counsel for Sorenson Communications, Inc., I have conducted an economic analysis of the likely effects on consumer welfare and the attainment of the goals described above of several proposals to modify the Video Relay Service (VRS) program.

Briefly, my specific findings are the following:

- *The Commission's fundamental approach to promoting program efficiency and consumer welfare in the VRS marketplace should be to promote undistorted competition. As the FNPRM importantly observes, the Commission's "duty is 'to protect competition, not competitors.'"*<sup>2</sup> Rather than trying to impose a particular structure and vision on market participants, the Commission should adopt policies that promote undistorted competition. Doing so will best serve VRS user interests because it will allow those interests (as expressed through market forces) to drive the services and equipment that are successful and, thus, are offered to consumers. A program that

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<sup>1</sup> *Structure and Practices of the Video Relay Service Program and Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, Further Notice of Proposed Rulemaking*, CG Docket No.s 10-51 and 03-123, (released December 15, 2011) (hereinafter *FNPRM*), ¶ 1.

These goals are set for the Commission by statute (47 U.S.C. § 225).

<sup>2</sup> *FNPRM*, ¶ 66.

promotes undistorted competition will be more efficient and will create improved incentives for providers to serve all eligible users.

- *A system of declining compensation rate tiers is inefficient and harms deaf, hard-of-hearing, and speech-disabled consumers—and people with whom they communicate—by supporting inefficient competitors and distorting competition more broadly.*

Economic analysis clearly supports the Commission’s conclusion that “the tiered rate structure supports an unnecessarily inefficient market structure, and apparently provides insufficient incentive for VRS providers to achieve minimal efficient scale.”<sup>3</sup>

The higher rate tiers allow a firm to offer service even if it is less efficient than other firms compensated, in part, at lower rates. Moreover, the current structure can discourage certain activities (*e.g.*, mergers) that might otherwise allow small VRS providers to lower their costs while growing larger. As a result of this inefficient structure, VRS users receive lower quality of service than they would under a more efficient program, holding total expenditures on the program constant. This conclusion follows from the fact that, for a given level of total program expenditure, declining tiers lead to lower compensation rates for VRS providers with high levels of output. Hence, declining compensation tiers reduce the incentives of successful VRS providers to compete to attract customers via increased quality. Similarly, declining compensation tiers reduce VRS providers’ incentives to attract new customers.

Declining tiers thus reduce the availability of VRS to eligible users.

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<sup>3</sup> FNPRM, ¶ 141 [footnotes omitted].

- *A single-tiered compensation system would better serve the Commission’s goals and would benefit deaf, hard-of-hearing, and speech-disabled consumers, people with whom they communicate, and telecommunications users more generally.* By avoiding the incentive distortions discussed in the previous bullet point, a single-tiered compensation system would promote increased quality and availability, which would benefit consumers. Moreover, by helping to attain the Commission’s statutory objective of operating the VRS program as efficiently as possible, use of a single rate tier would reduce the burden placed on other telecommunications users, who contribute toward the cost of VRS program.<sup>4</sup> The Commission’s proposal to revert to a single-rate structure would benefit consumers and/or lead to reduced budgetary needs.<sup>5</sup>
- *An examination of economies of scale demonstrates that declining compensation tiers are not needed to promote quality competition.* The current VRS program successfully relies on competition to stimulate providers to offer high-quality services. It thus is important to ask whether the use of single-tiered compensation system is consistent with promoting quality competition. The answer is a clear “yes” for two reasons. First, as discussed above, in comparison with a system of declining compensation tiers, a single-tier system increases provider incentives to provide high-

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<sup>4</sup> 47 U.S.C. § 225(b)(1).

<sup>5</sup> The Commission proposes to utilize a single per minute rate if a per-minute rate methodology is retained. (*FNPRM*, ¶ 140.)

In this Declaration, I do not take a position on the appropriateness of a per-minute versus a per-user rate methodology.

quality services. Second, an examination of economies of scale plainly demonstrates that the cost structure of the industry is compatible with having multiple providers competing to serve consumers when all are paid the same rate.<sup>6</sup> This is so because economies of scale are largely exhausted at a scale that is a small fraction of the overall industry output. As numerous parties have noted, VRS costs largely comprise variable labor costs for translators.<sup>7</sup> Beyond a relatively low threshold, these labor costs are not subject to significant economies of scale. Many other costs—including most of the costs associated with call centers—increase in proportion with a VRS supplier’s overall volume once that volume exceeds a small percentage of industry output. Moreover, the fixed costs associated with providing VRS services are small and, thus, not a source of significant scale economies.

- *A cost-based compensation system stifles innovation and promotes inefficiency.* Under a cost-based system, the rate at which a provider is compensated is closely tied to an accounting measure of its costs. This approach discourages the provider from lowering its costs because doing so will trigger a reduction in its compensation. This is not how competitive markets operate. Instead, it is very similar to traditional cost-of-service, or rate-of-return, regulation. It is well established that cost-of-service regulation reduces firms’ incentives to lower costs because it limits the extent to which firms can benefit from becoming more efficient. For that reason, the Commission and

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<sup>6</sup> For reasons described briefly below, this conclusion holds regardless of whether the Commission ultimately adopts a per-user or per-minute reimbursement methodology.

<sup>7</sup> *FNPRM*, ¶ 55 (and cites contained therein).

many other telecommunications regulators have moved away from cost-of-service regulation.

- *Compensation rates should be set in such a way as to incentivize providers to invest in quality and to lower costs.* Experience has shown that users benefit from “incentive regulation,” which allows firms to retain some or all of the benefits of cost reductions, quality improvements, or other innovations. In the VRS industry, incentive regulation can encourage service providers to reduce their costs and improve their product quality, which will improve program efficiency and benefit VRS users. Although a VRS compensation system modeled on incentive regulation is clearly preferable to one modeled on cost-of-service regulation, there are some subtle issues for which the Commission will need to develop a more extensive record before implementing specific processes. There are, however, certain principles that are clear at the outset:
  - The base, or initial, compensation rate should be set sufficiently high to encourage an efficient provider to compete by offering high-quality services to users. All else equal, lowering the compensation rate reduces the incentives for VRS providers to compete to attract new users and retain existing ones.
  - Adjustments to the compensation rate made over time should not seek to recapture all of the gains associated with increased provider efficiency. Otherwise, providers will have diminished incentives to achieve efficiency, which will then have negative effects on the degree of competition to serve VRS users.

- The compensation rate should be reviewed periodically. However, doing so too frequently creates risk associated with the VRS program that can discourage providers' investment in VRS and raise their cost of capital.
- *Excessive or overbroad standards can stifle product variety and innovation, thus denying users access to the most advanced technologies and attractive services.*

Although appropriate standards can promote interoperability and the realization of network effects, standards can also limit the incentive for VRS providers to meet user needs. First, excessive standardization can lead to homogenization that denies consumers access to products and services that they might highly value but that do not fit into the standard. Second, excessive standards can limit the incentive of a firm to differentiate itself from its rivals to the extent that innovative features must be shared with rivals in order to maintain compliance with the standard.

3. The remainder of this declaration explains these findings in greater depth and provides details of the facts and analysis that led me to reach them.

## **II. THE CURRENT COMPENSATION MECHANISM HARMS CONSUMERS BY DISTORTING COMPETITION**

4. In this section, I summarize relevant features of the current compensation system and discuss mechanisms through which it promotes competition but fails to do so efficiently.

### **A. OVERVIEW OF THE CURRENT SYSTEM**

5. The current VRS compensation scheme provides compensation on a per-minute basis, with the compensation rates calculated as the average of (i) per-minute rates calculated by the TRS Fund Administrator as a measure of actual, historical “allowable” provider costs and (ii)

the rates adopted for the 2009-2010 fund year.<sup>8,9</sup> The compensation scheme also has three tiers, under which the marginal rate of compensation varies with a provider’s volume. For the 2010-2011 fund year, the Commission adopted interim rates of \$6.2390 for Tier I, \$6.2335 for Tier II, and \$5.0668 for Tier III.<sup>10</sup> For the 2011-2012 fund year, the Consumer and Governmental Affairs Bureau (CGB) chose to extend the existing interim rates while the Commission concluded its evaluation of the issues and record developed in response to the present proceeding.<sup>11</sup>

**B. THE CURRENT SYSTEM PROMOTES BENEFICIAL QUALITY COMPETITION**

6. As the Commission recognizes, the current system does not allow for price competition. Rather “the program supports more than one provider to allow VRS users choice between providers who compete on factors such as quality of service, customer service, and technological development.”<sup>12</sup> Promoting quality competition is a sound public policy, and such competition is evident in the VRS marketplace.<sup>13</sup>

7. Sorenson’s success demonstrates the effects of offering superior quality service to customers. Sorenson started out as a small provider and has grown to account for a majority

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<sup>8</sup> *FNPRM*, ¶ 8.

<sup>9</sup> This does not include all the costs that a provider might incur to provide VRS service.

<sup>10</sup> Tier I rates apply to the first 50,000 monthly VRS minutes; Tier II rates apply to volumes between 50,001 and 500,000 minutes per month; and Tier III rates apply to volumes above 500,000 minutes per month. (*FNPRM*, ¶ 8 and note 30.)

<sup>11</sup> *FNPRM*, ¶ 9.

<sup>12</sup> *FNPRM*, ¶ 14.

<sup>13</sup> Here and below, I use the term “quality” to refer to any non-price characteristic of a service or product that users find attractive.

of VRS minutes.<sup>14</sup> Sorenson achieved this success by developing high-quality services and complementary equipment that VRS users manifestly prefer.

8. An important element of Sorenson’s competitive strategy has been to offer higher quality interpreters than do its rivals. Sorenson has invested in training and monitoring video interpreters, and it has required them to be located in Sorenson call centers. Sorenson believes this approach allows it to offer higher-quality interpreters than its competitors.<sup>15</sup> Until recently, many of Sorenson’s competitors relied on interpreters hired through agencies and allowed them to work out of their homes, which made monitoring and quality control more difficult.<sup>16</sup> For example, Sorenson has instituted uniform procedures for handling and processing calls that it implements across all of its call centers. Sorenson’s management believes that such procedures are difficult or impossible to implement when relying on agency interpreters.<sup>17</sup>

9. In terms of equipment, Sorenson first developed a device (the VP-100 videophone) that was designed explicitly for serving the deaf community at a time when competitors were largely offering PC-based applications of inferior quality.<sup>18</sup> In 2007, Sorenson developed the VP-200 videophone, which the Commission recognized as “the most popular VRS enhanced

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<sup>14</sup> *FNPRM*, ¶ 24.

<sup>15</sup> Interview with Chris Wakeland, Vice President, Interpreting, Sorenson Communications, Inc., March 1, 2012.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> Interview with Scott Sorensen, Chief Financial Officer, Sorenson Communications, Inc., and Reed Steiner, Vice President, Finance, Sorenson Communications, Inc., February 16, 2012.

videophone.”<sup>19</sup> VP-200 offered several valuable features targeted specifically to the needs of VRS users, including lights (customizable to specific callers) to indicate incoming calls and RJ9 jacks that allow the phone to be connected to external flashers.<sup>20</sup> Sorenson continues to innovate in order to win customers. In 2011, Sorenson launched the ntouch VP video phone, which offers several advanced features, including higher-quality video and an enhanced user interface designed specifically for the deaf community; Sorenson also launched two software-based applications, ntouch PC and ntouch Mobile, which are PC and mobile handset clients, respectively.<sup>21</sup> Sorenson expects to distribute ntouch VP to all of its subscribers over the next 12-18 months.<sup>22</sup>

10. A few of Sorenson’s competitors rely on off-the-shelf videophones, such as those produced by Ojo, that have not been modified for VRS use.<sup>23</sup> Nonetheless, these competitors have been able to compete successfully as these phones have added new features or offer such things as higher-quality screens. Indeed, it is my understanding that rival VRS providers’

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<sup>19</sup> *FNPRM*, Appendix B, ¶ 1.

<sup>20</sup> Interview with Grant Beckmann, Vice President, Engineering, Sorenson Communications, Inc., February 17, 2012.

<sup>21</sup> For product details, see [http://www.sorensonvrs.com/ntouchvp\\_product](http://www.sorensonvrs.com/ntouchvp_product) (site visited February 18, 2012).

<sup>22</sup> Interview with Grant Beckmann, Vice President, Engineering, Sorenson Communications, Inc., February 17, 2012.

<sup>23</sup> ZVRS and Snap both currently offer phones that are manufactured by Ojo. ZVRS also offers phones manufactured by Tandberg. See <http://www.zvrs.com/products/hardware> (site visited February 27, 2012); <http://www.snapvrs.com/phones/> (site visited February 27, 2012).

I also understand that most of Sorenson’s other competitors are not distributing hardware, but instead are focusing on software and application-based solutions.

introduction of new hardware at the end of the VP-200 lifecycle enabled some competitors to win customers away from Sorenson.<sup>24</sup>

11. Of those customers who ported away, Sorenson has been able to win back a substantial portion due to the introduction of new hardware and software, as well as some users' concluding that the providers to which they had switched had lower-quality interpreters than does Sorenson.<sup>25</sup> These winback rates suggest that (a) switching costs are not a significant factor in this industry;<sup>26</sup> and (b) Sorenson offers a high-quality product that is attractive to customers.

12. Quality competition and innovation in the VRS industry continue. Today, several VRS providers, including Sorenson, are offering software for new technologies such as netbooks, smartphones, and tablet computers (*e.g.*, Apple's iPad, Samsung's Galaxy).<sup>27</sup> For example, Sorenson offers software that runs on PCs as well as applications designed for the iOS (Apple) and Android mobile operating systems.<sup>28</sup> Similarly, Purple Communications,

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<sup>24</sup> Interview with Grant Beckmann, Vice President, Engineering, Sorenson Communications, Inc., February 17, 2012.

<sup>25</sup> Interview with Mike Maddix, Director of Government and Regulatory Affairs, Sorenson Communications, Inc., February 27, 2012.

<sup>26</sup> Switching costs may not be a significant factor either because they do not exist at all or because VRS providers find it commercially rational to cover them. The fact that many customers switch providers, often multiple times, suggests that net switching costs are small relative to quality differences.

<sup>27</sup> *FNPRM*, ¶ 48.

<sup>28</sup> See <http://www.sorensonvrs.com/ntouch> (site visited February 27, 2012).

ZVRS, and Convo all offer applications for PCs, Macs, and mobile operating systems.<sup>29</sup>

These applications allow users to access VRS using off-the-shelf hardware.

13. In summary, the history of quality competition in the VRS industry demonstrates that:

(a) a provider that is able to introduce a superior service or product can expect to see its market share grow; and (b) both proprietary and off-the-shelf equipment can best serve consumer interests, depending on the situation.

**C. THE CURRENT SYSTEM DISTORTS COMPETITION BY PROMOTING INEFFICIENT PROVIDERS, DISCOURAGING QUALITY COMPETITION, AND RAISING THE COST OF THE PROGRAM AND RESULTING IN FEWER CONSUMER BENEFITS PER DOLLAR OF PROGRAM FUNDS**

14. Although the current system has, in many ways, been successful in promoting quality competition, it has done so in an inefficient manner that results in inflated program costs and less availability to users. Specifically, a system of decreasing compensation rate tiers distorts competition and reduces consumer welfare through several mechanisms.

15. One effect of having tiers that pay higher compensation for firms with smaller market shares is to reward those firms that have been less successful at offering services that VRS users find attractive. Moreover, to the extent that very small service providers have higher costs than larger providers—whether due to economies of scale or because the smaller firms are less well-managed and, thus, have higher costs and a lower ability to attract VRS users—the system encourages the provision of VRS at higher-than-efficient cost levels. In

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<sup>29</sup> See, e.g., <http://www.purple.us/trynow> (site visited February 27, 2012); <http://www.zvrs.com/products/softwareapps> (site visited February 27, 2012); <http://www.convorelay.com/desktop.html> and <http://www.convorelay.com/mobile.html> (site visited February 27, 2012).

comparison with a single compensation rate set at the tier-weighted average, the multi-tier system results in less industry output for a given level of total program expenditures.

16. The current system of declining compensation tiers is inefficient and harms users in others ways as well. In comparison with a single-tier structure with a rate equal to the average rate of the current multi-tier structure, the current multi-tier rate structure reduces a VRS provider's incentives to grow. This relationship holds because, under the current structure, the incremental revenue that firm earns as it becomes larger is compensated at lower rates. Although the Tier I and Tier II rates are nearly identical (\$6.24 versus \$6.23), the Tier III rate is significantly lower (\$5.07). Once a supplier crosses the 500,000-minutes-per-month threshold, the compensation for each additional minute served falls by 18.6 percent. The tiered rate structure therefore offers the least reward to those firms that have been the most successful in offering VRS users the equipment and services that serve their needs. The issue is not simply one of fairness or concern with producer welfare: the lower marginal rate generates less incentive for VRS providers to offer high-quality services to attract and retain users. The current system of declining compensation tiers thus reduces the availability of VRS to eligible users.

17. Another way to see this point is to suppose that instead of the current tiers, the Commission compensated all firms at the weighted average rate of \$5.31.<sup>30</sup> In this case, the incremental rate paid to the most efficient firms would rise by approximately five percent, while keeping overall disbursements fixed. Although it might seem like a minor increase,

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<sup>30</sup> This illustrative calculation is based on the numbers reported in the *FNPRM*. (*FNPRM*, ¶ 24.)

this change would nonetheless increase the incentives of efficient providers to improve quality to attract new customers and therefore expand output. Consequently, for any given amount of money spent on the program, consumers would be better off with a single compensation rate rather than tiered rates.<sup>31</sup>

18. The current structure can also discourage certain activities that might otherwise allow small VRS providers to lower their costs. In particular, the current tier structure acts as a tax on mergers of small providers. Suppose, for example, that two firms each serve 350,000 minutes per month and that they have determined that a merger would allow them to lower their costs by \$100,000 per month and, thus, compete more vigorously. Under the current tier structure, such a merger would be unattractive. Absent the merger, each firm would earn an average of \$6.23 per minute. If the two firms merge and their combined volume remains constant at 700,000 minutes per month, they will earn an average of only \$5.90 per minute. Consequently, merging would reduce their revenues by \$232,500 per month.

### **III. THE ELIMINATION OF RATE TIERS WILL PROMOTE COMPETITION AND CONSUMER WELFARE**

19. For reasons just discussed in Section II.C above, declining compensation rate tiers distort competition and reduce consumer welfare. Given these costs, it is evident that the declining rate tiers should be eliminated unless there are offsetting benefits. In the past, the

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<sup>31</sup> Indeed, economic logic clearly demonstrates that having compensation rates that rise with volume would provide even greater incentives for any given level of total expenditure. Non-constant compensation could, however, increase uncertainty regarding program payments and could distort competition in favor of larger firms even if they were not necessarily more efficient than smaller firms. The use of a single compensation rate as proposed by the Commission thus strikes a reasonable balance.

Commission concluded that economies of scale justified the use of declining rate tiers because setting a single rate at the level of Sorenson's unit costs would drive other suppliers from the VRS marketplace, eliminating quality competition. Whatever the merits of this argument in the past, it does not hold today. Today, at least three firms operate at volumes above minimum efficient scale, and there is reason to believe that other firms could readily attain scale if they were to invest in offering attractive products and services to VRS users.<sup>32</sup>

20. The use of single-rate system is fully consistent with promoting quality competition. As discussed above, a single-tier system increases provider incentives to provide high-quality services. And, as I will explain in the remainder of this section, a careful examination of VRS provider operations and relevant data demonstrate that the cost structure of the industry is compatible with having multiple providers competing to serve consumers when all are paid the same rate; economies of scale are largely exhausted at a scale that is a small fraction of the overall industry output. Hence, moving to a single rate equal to the average rate of the current tiers would not weaken quality competition in the VRS marketplace. Adopting the Commission's proposal to eliminate the current multi-tier compensation structure and adopt a single rate would benefit consumers.

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<sup>32</sup> *FNPRM*, ¶¶ 24, 141.

**A. VIGOROUS QUALITY COMPETITION DOES NOT REQUIRE THE EXISTENCE OF MANY INEFFICIENT SUPPLIERS**

21. The Commission first implemented tiered compensation rates for VRS providers in 2007.<sup>33</sup> The Commission justified its use of tiers based on the argument that smaller providers generally have higher per-minute costs.<sup>34</sup> Several commenters subsequently supported the Commission’s use of rate tiers.<sup>35</sup> For example, CSDVRS argued that, by protecting smaller entrants that have not achieved economies of scale, tiered rates “encouraged competition, resulting in both improved service levels by all providers and product innovation that ultimately benefit the deaf and hard-of-hearing consumers.”<sup>36</sup> Purple argued that “small providers such as Purple and the rest of the industry have significantly higher cost structures.”<sup>37</sup>

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<sup>33</sup> *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CG Docket No. 03-123, Report and Order and Declaratory Ruling, 22 FCC Rcd 20140, 20145, (released November 9, 2007) (hereinafter *2007 TRS Rate Methodology Order*) ¶ 47.

<sup>34</sup> *2007 TRS Rate Methodology Order*, ¶¶ 47, 52.

<sup>35</sup> See, e.g., *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Written Ex Parte (January 21, 2011) (expressing support for tiered compensation from CSDVRS, Snap Telecommunications, Inc., Purple Communications, Inc., Convo Communications, and AT&T Services, Inc.).

<sup>36</sup> *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Comments of CSDVRS (August 18, 2010), at 17.

<sup>37</sup> *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CG Docket No. 03-123, Comments on NECA’s Proposed Payment Formulae and Fund Size Estimates for the Interstate TRS Fund for the 2010-11 Fund Year, Purple Communications, Inc. (May 14, 2010) (hereinafter *Purple May 14, 2010 Comments*) at 5.

See also, *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Comments of Sprint Nextel (August 18, 2010), at 7 (“the per minute cost of the video interpreter working for the established provider will likely be lower than the per minute cost of the VI working for a new entrant for the simple reason the established

22. In the most recently available data, eight firms received VRS reimbursements.<sup>38</sup> Of these eight firms, Purple, Sorenson, and ZVRS alone account for a large percentage of total VRS volume.<sup>39</sup> According to Sorenson executives, Sorenson and ZVRS routinely qualify for Tier III rates and Purple qualifies in some but not all months.<sup>40</sup> The remaining firms handle significantly less volume.<sup>41</sup>

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provider's VI is likely handling a greater volume of traffic than the new entrant's VI.”); *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CG Docket No. 03-123, Comments of AT&T on NECA Interstate TRS Fund Submission for 2010-2011 Fund Year, AT&T, Inc. (May 14, 2010) (hereinafter *AT&T Comments*) at 3 (noting that “one provider has an overwhelmingly dominant market share position in VRS” and “[t]hat provider's costs are generally lower than the costs of smaller TRS providers”).

<sup>38</sup> Rolka Loube Saltzer Associates, “Interstate TRS Fund Performance Status Report: Funding Year July 2011 – June 2012,” December 2011, available at <http://www.r-l-s-a.com/TRS/reports/2011-12TRSSStatus.pdf> (site visited February 27, 2012).

<sup>39</sup> Although there can be differences in the sizes of call centers across service providers, the numbers of call centers operated by different VRS providers can be used as a rough proxy for firm size. Sorenson operates more than 100 call centers. In contrast, ZVRS operates 18 call centers, Purple operates 14 call centers. Convo, which notes that it is “among the top five largest VRS providers,” operates just four call centers. See <http://www.zvrs.com/about-us/job-opportunities/1> (site visited March 1, 2012); <http://www.purple.us/locations> (site visited March 1, 2012); <http://www.convorelay.com/company.html> (site visited March 1, 2012).

<sup>40</sup> Interview with Mike Maddix, Director of Government and Regulatory Affairs, Sorenson Communications, Inc., February 27, 2012.

<sup>41</sup> For example, in October 2011 (the last month for which Rolka Loube Saltzer Associates reports tier-specific minutes) nine firms accounted for 261,700 Tier I minutes, 1,400,320 Tier II minutes, and 7,533,396 Tier III minutes. If both ZVRS and Purple qualified for Tier III rates in that month, that implies that the remaining six firms averaged just  $((261,700 - 3 \times 50,000) + (1,400,320 - 3 \times 450,000))/6 = 27,003$  minutes. Rolka Loube Saltzer Associates, “Interstate TRS Fund Performance Status Report: Funding Year July 2011 – June 2012,” October 2011, available at <http://www.r-l-s-a.com/TRS/reports/2011-10TRSSStatus.pdf> (site visited February 27, 2012).

23. The Commission characterizes the market structure as comprising “a single large provider with numerous subscale providers.”<sup>42</sup> Market data indicate that the true state of the industry is more nuanced. Specifically, the marginal advantages of scale quickly diminish. As I discuss below, it is feasible for a firm that operates at or above 500,000 minutes per month (which Sorenson executives believe is the approximate scale at which Purple and ZVRS operate) to achieve the vast majority of the benefits of scale. To the extent that a firm operating at that traffic volume had significantly higher costs than does Sorenson, it would likely be due to management decisions rather than failure to achieve sufficient scale. That said, the record does support the Commission’s assertion that the remaining VRS providers are very likely operating below efficient scale and, given their present strategies, are able to cover their costs only because of the Commission’s tiered rate structure.<sup>43</sup>

24. The current tier structure supports a large number of inefficient firms. As the Commission has repeatedly stated, its objective is to protect competition and not competitors, especially inefficient competitors.<sup>44</sup> I have seen no evidence to support the notion that it is necessary to have eight or more VRS providers in order to generate strong VRS quality competition. The main locus of quality competition today involves Purple, Sorenson, and ZVRS, and this competition has generated significant quality improvements

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<sup>42</sup> *FNPRM*, ¶ 25.

<sup>43</sup> *FNPRM*, ¶ 24.

<sup>44</sup> *FNPRM*, ¶ 66 (“We seek to enhance competition in the provision of VRS services because it appears to be an effective way of furthering the goals of section 225, but will not act to preserve any particular competitor. We do not believe that any provider has an inherent entitlement to receive compensation from the Fund, and so do not regard as a goal the protection of VRS providers who are high cost and/or uncompetitive.” [Footnotes omitted.]

over the last several years.<sup>45</sup> In 2011, the CEO of ZVRS stated that “[w]e believe the Sorenson ntouch was developed in response to the Z4 mobile and the impact it is having on the Sorenson base. Sorenson developed the Sorenson ntouch to slow the significant market penetration by ZVRS products.”<sup>46</sup> Sorenson’s executives believe that Purple and ZVRS have been its primary competitors.<sup>47</sup> Moreover, the fact that the smaller rivals are so small in itself suggests that these firms have not been offering services that VRS users find attractive and, thus, these firms have not been making substantial contributions to consumer welfare.

**B. ECONOMIES OF SCALE IN THE PROVISION OF VRS ARE LIMITED**

25. The *FNPRM* asserts that “many of a VRS provider’s costs do not vary directly with the number of minutes of service provided (*e.g.*, equipment, call center infrastructure, CA supervision, marketing/outreach, general and administrative (G&A) expenses).”<sup>48</sup> Although some costs do not vary directly with the number of minutes of service provided in the short run, the vast majority of costs—including costs identified by the Commission in the quotation

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<sup>45</sup> *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Comments on Notice of Inquiry, Purple Communications, Inc. (August 18, 2010) (hereinafter *Purple August 18, 2010 Comments*) at 5-6. See also, *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Reply Comments on Notice of Inquiry, Purple Communications, Inc. (September 2, 2010) (hereinafter *Purple September 2, 2010 Comments*) at 4.

<sup>46</sup> Interview with Sean Belanger, CEO of ZVRS, available at <http://www.zvrs.com/about-us/media-and-events/news/5> (site visited February 22, 2012).

<sup>47</sup> Sorenson executives also note that they respond to all competitive threats and Snap and Convo have also been important competitors. (Interview with Mike Maddix, Director of Government and Regulatory Affairs, Sorenson Communications, Inc., February 27, 2012.)

<sup>48</sup> *FNPRM*, ¶ 23. See also *FNPRM*, ¶ 56 (“[W]e note that there are no other significant cost items that scale on a per minute basis. Indeed, all the other items (*e.g.*, iTRS access technology, installation, customer care, G&A, call center infrastructure, etc.) are either fixed or scale directly or indirectly with the number of users served.”).

above—do, in the long run, vary with the number of minutes of service provided.<sup>49</sup> Hence, the degree of economies of scale in the provision of VRS is limited.<sup>50</sup>

26. Table 1 shows the breakdown of allowable costs averaged across all providers for 2009 (the last year for which complete data are available from NECA).<sup>51</sup> As can be seen from this table, interpreter costs and call center costs account for approximately two-thirds of total allowable costs. As described below, costs in both categories vary in proportion to a VRS provider's number of minutes of service. Other significant costs are also likely to scale with the volume.

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<sup>49</sup> For example, as discussed below, when a service provider adds new customers or its existing customer utilize its services more intensively, its call center costs rise.

<sup>50</sup> As noted above, this conclusion holds regardless of whether the Commission compensates providers on a per-minute or per-user basis as long as the average number of minutes per user remains roughly constant across firms (which the Commission appears to assume (*FNPRM*, ¶ 55)). When the number of users rises, the number of minutes of use will rise proportionately, triggering increments in those costs that vary with minutes of use.

<sup>51</sup> *In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CG Docket NO. 03-123, Interstate Telecommunications Relay Services Fund, Payment Formula and Fund Size Estimate, NECA, April 30, 2010, at 18 (hereinafter *2009 NECA Report*).

Allowable costs exclude certain costs associated with financing and taxes. The current system also does not cover certain equipment costs, though the *FNPRM* proposes to change that. (*FNPRM*, Appendix C, ¶ 15.)

The NECA reports weighted average costs for the industry. As a result of its large shares, Sorenson costs receive substantial weight in these calculations. I address this point in Section III.B.4 below.

**Table 1: NECA Estimate of VRS Costs (2009)**

<b>Cost Category</b>	<b>Description</b>	<b>Cost per Minute</b>	<b>Share of total cost</b>
Annual Recurring Fixed Expenses	Rent, utilities, maintenance, property tax, furniture, office equipment	0.2487	6.0%
Interpreter Costs	Salaries and benefits (including subcontractors)	2.0742	49.9%
Relay Center other than Interpreter	Salaries and benefits to non-interpreter staff; telecommunications; misc. call center expenses	0.4649	11.2%
Administrative Expense	Finance/accounting; legal/regulatory; engineering; R&D; operations support; HR; billing	0.6688	16.1%
Depreciation Expense	Depreciation associated with capital investment including telecommunications equipment	0.2210	5.3%
Marketing Expense	Marketing and advertising	0.0302	0.7%
Outreach Expense	Educational outreach	0.3662	8.8%
Other Expense	Other	-	-
Return on Investment		0.0855	2.1%
<i>Total</i>		<i>4.1595</i>	

Sources:

*In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Docket 03-123, Interstate Telecommunications Relay Services Fund, Payment Formula and Fund Size Estimate, NECA, April 30, 2010, at 18 and Appendix B2.

**1. Interpreter economies of scale are exhausted at a low percentage of industry output.**

27. Interpreter costs account for approximately 50 percent of total allowable costs based on the NECA industry-wide data.<sup>52</sup> Most interpreters work on a part-time basis, and efficient

<sup>52</sup> 2009 NECA Report at 18.

firms can schedule interpreters to meet demand (*i.e.*, can adjust the number of paid hours as the need for interpreters varies over time). The Commission has already recognized that these costs vary directly with the number of minutes.<sup>53</sup>

28. Nonetheless, because the expenditures on interpreters account for such a high percentage of overall costs, it is useful to examine these expenditures in closer detail. Specifically, it is useful to address the claim made by some commenters, such as Purple, that significant economies of scale arise due to queuing (or, as they refer to the phenomenon, trunking) efficiencies.<sup>54</sup> As I will now show, queuing efficiencies exist, but they are largely exhausted by the time a VRS provider's traffic volume reaches 250,000 minutes per month. Hence, even a firm with a market share of less than three percent of current industry volume would have the scale necessary to achieve the preponderance of available queuing efficiencies.

29. Queuing efficiencies are a well-known phenomenon in the telecommunications industry, as well as in any industry involving call centers, service desks, or cashiers. They occur because the stream of customers making a call, requesting service, or checking out varies over time. Firms that process larger volumes are able to take greater advantage of statistical averaging to smooth out the stochastic variation in their traffic volumes. This smoothing allows them to utilize interpreters efficiently while maintaining competitive levels of service.

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<sup>53</sup> *FNPRM*, ¶ 55.

<sup>54</sup> *Purple May 14, 2010 Comments* at 5 (“[t]he most notable cost reduction a large provider enjoys compared to smaller providers is in the trunking efficiency which can be achieved in utilization of interpreters.”).

30. In part because queuing efficiencies are such a widespread phenomenon, there exist standard, off-the-shelf models that can be used to determine the optimal call-center staffing levels needed to attain a target level of service quality given various parameters of demand. Sorenson uses one such model, an Erlang C model, to plan staffing at its call centers.<sup>55</sup> Given data on the expected call volume, length of call, time required for set-up and tear-down, and service level (*i.e.*, the percent of calls to be answered within a specified period of time), the Erlang C model estimates the number of agents required to staff a call center.

31. By applying this model to a range of traffic volumes, a call-center staffing model can also be used to identify the magnitude of queuing efficiencies and the traffic volume at which these efficiencies diminish. Earlier commenters in the present dockets have utilized Erlang C staffing models to assess the magnitude of queuing efficiencies.<sup>56</sup> Because interpreter costs are such a significant percentage of total allowable costs, I apply an Erlang C model to assess queuing efficiencies as well.

32. I assess the extent to which queuing efficiencies are an important factor in the VRS industry by calibrating the Erlang C model using Sorenson data on the distribution of minutes

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<sup>55</sup> Interview with Jason Dunn, Vice President, Operations, Sorenson Communications, Inc., February 16, 2012.

<sup>56</sup> See, *e.g.*, *In re Telecommunications Relay Services for Deaf and Hard of Hearing and Speech Disabled Persons*, CG Docket No. 03-123, Petition for Rulemaking, GoAmerica, Inc. (January 23, 2009) at 4-6 (hereinafter *GoAmerica Comment*); *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Reply Comments of Sorenson Communications, Inc. (May 21, 2010), Attachment A, ¶¶ 16-17 (hereinafter *Sorenson May 21, 2010 Comments*).

over time and the average talk time for each call.<sup>57</sup> The model predicts the optimal number of interpreters and the average percent of time that each interpreter is actively engaged in handling the compensable portion of a call at various call volumes. This percentage (*i.e.*, the ratio of compensable conversation time to total minutes worked) is known as *VRS efficiency*. It is my understanding that, because of the need to prevent repetitive-motion injury and for translators to perform other necessary tasks for which the Commission does not compensate providers (*e.g.*, set-up and tear-down time), Sorenson and other industry participants believe that VRS efficiency levels significantly above 50 percent are infeasible.<sup>58, 59</sup>

33. Both Sorenson's VRS minute volume and average talk time are relatively high during business hours and relatively low during nights and weekends.<sup>60</sup> To account for this, I assume that providers would face approximately the same distribution of calls across the week,

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<sup>57</sup> Specifically, I base my calculations on data provided by Sorenson for the week of February 5-11, 2012.

Consistent with previous submissions and regulatory requirements, I also assume that the set-up and tear-down time is 30 seconds per call and providers answer 80 percent of calls within 120 seconds (service level). (*GoAmerica Comment*, note 3; *Sorenson May 21, 2010 Comments*, Appendix 2; Federal Communications Commission, Guide: Video Relay Services, available at <http://www.fcc.gov/guides/video-relay-services> (site visited February 27, 2012).)

Entering different parameters (*e.g.*, different levels of service quality) in the model would change the numerical results, but not the basic conclusions.

<sup>58</sup> For example, GoAmerica, Inc. (the predecessor to Purple Communications, Inc.) previously submitted a similar model of trunking efficiency that capped VRS efficiency at 50 percent in order "to avoid repetitive stress injuries." (*GoAmerica Comment* at 5.) See also Interview with Chris Wakeland, Vice President, Interpreting, Sorenson Communications, Inc., March 1, 2012.

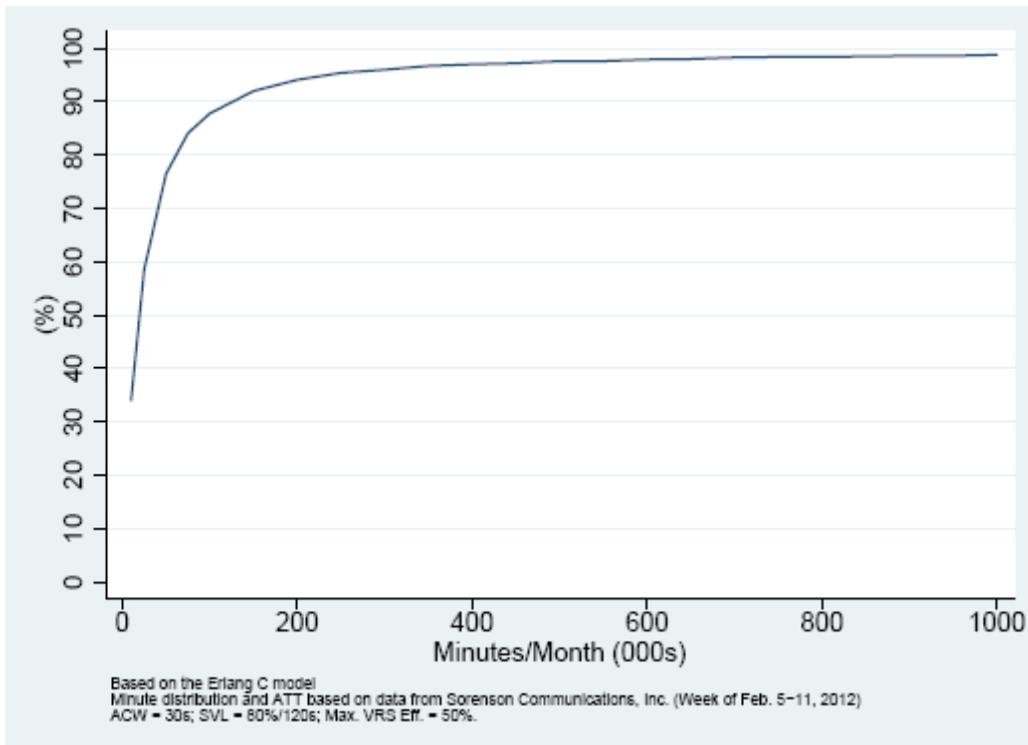
<sup>59</sup> For this reason, if the model predicts a VRS efficiency rate greater than 50 percent, I compute the number of agents required to keep the VRS efficiency rate at or below 50 percent.

<sup>60</sup> Purple has previously argued that, because the minutes are concentrated during working hours of weekdays, smaller providers are at a significant disadvantage. (*Purple September 2, 2010 Comments* at 5.)

regardless of the aggregate level of output. I then compute the VRS efficiency for each hour of the week based on the minute density and average talk time for that hour. I compute a weighted average of the overall VRS efficiency at each aggregate output level. Although smaller providers can experience lower levels of efficiency during slow periods, these periods account for a small portion of overall interpreter costs because few interpreters are required to work during this period. The weighted average accurately captures this fact.

34. Figure 1 shows that the providers can attain high VRS efficiency at relatively low call volumes, and incremental VRS efficiency gains quickly fall as volume increases. For example, using the assumptions described above, the model demonstrates that: a provider operating at 100,000 minutes per month can attain 15 percent greater VRS efficiency than can a provider operating at 50,000 minutes per month; a provider operating at 200,000 minutes per month can attain a VRS efficiency seven percent greater than can a provider operating at 100,000 minutes per month; and a provider operating at 400,000 minutes per month can attain a VRS efficiency just three percent greater than can a provider operating at 200,000 minutes per month.

Figure 1: VRS Efficiency as a Percentage of the Maximal Feasible Efficiency



35. Said differently, a provider operating at 250,000 minutes per month can achieve 95.4 percent of the maximal feasible VRS efficiency. Because video interpreters account for approximately 50 percent of total costs (based on NECA industry-wide data), this implies that, once a provider reaches 250,000 minutes per month, it can lower its costs due to the realization of interpreter economies of scale (*i.e.*, queuing efficiencies) by at most two to three percent. To put this traffic volume in perspective, 250,000 minutes per month corresponds to a market share of less than three percent at current industry traffic volume. The implied

economies of scale related to queuing efficiencies are just one percent once providers reach the scale achieved by Purple and ZVRS.<sup>61</sup>

**2. Call center costs vary in direct proportion to volume.**

36. Costs directly associated with operating call centers—including rent, utilities, furniture and equipment, salaries and benefits for non-interpreter call center staff, and telecommunications costs—account for an additional 17 percent of total allowable costs in the NECA data. Contrary to the assertion made in the *FNPRM*, the bulk of call center costs vary proportionately with minutes when viewed over the appropriate time scale and incremental value. That is, an increase of one minute of traffic in a day would almost certainly have no effect on costs. But over the course of a year, a one-percent increase in Sorenson’s traffic could well trigger an approximately one-percent increase in the number and cost of Sorenson’s call centers. Hence, these costs are not the source of significant economies of scale.

37. This point is clearly demonstrated by the way Sorenson and other VRS providers operate their businesses. The most striking and salient fact is that Sorenson operates more than 100 call centers. Sorenson’s call centers average 15 full-time equivalent (FTE) interpreters.<sup>62</sup> Each center also has one or more managers. \*\* BEGIN CONFIDENTIAL \*\*



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<sup>61</sup> Previous commenters have reached a similar conclusion. For example, Purple (formerly GoAmerica) concluded that increasing minutes from 80,000 to 160,000 per month led to an increase in queuing efficiency of eight percent whereas an increase from 160,000 to 320,000 led to an increase in queuing efficiency of just two percent. (*GoAmerica Comment* at 5-6.)

<sup>62</sup> *In the Matter of Structure and Practices of the Video Relay Services Program*, CG Docket No. 10-51, Ex Parte, Counsel for Sorenson Communications, Inc., September 23, 2010 at 2.

[REDACTED]

[REDACTED]<sup>63</sup> \*\* END

CONFIDENTIAL \*\* Hence, the cost of call-center managers is variable.

38. \*\* BEGIN CONFIDENTIAL \*\* [REDACTED]

[REDACTED]

[REDACTED]<sup>64</sup>

[REDACTED]

[REDACTED] \*\* END CONFIDENTIAL \*\*

Other VRS providers appear to have adopted similar business models. For example, Purple recently “open[ed] several call centers across the United States” and operates at least 14 call centers across the country.<sup>65</sup> ZVRS operates at least 18 call centers across the country.<sup>66</sup>

Even a smaller provider such as Convo operates four call centers spread across the country.<sup>67</sup>

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<sup>63</sup> Interview with Jason Dunn, Vice President, Operations, Sorenson Communications, Inc., February 16, 2012.

<sup>64</sup> Interview with Chris Wakeland, Vice President, Interpreting, Sorenson Communications, Inc., March 1, 2012.

<sup>65</sup> Notwithstanding the fact that Purple has argued that “[the larger provider] can house more interpreters per call center, saving on lease costs,” Purple’s business strategy clearly indicates that such efficiencies are not significant.

Purple Communications, Inc., Press Release, “Purple Communications™ Recruits for More than 100 Positions, Opens New Call Centers,” December 5, 2011, *available at* <http://www.purple.us/Purple-Growth-2011?title=Purple+Communications%E2%84%A2+Recruits+for+More+than+100+Positions+%2c+Opens+New+Call+Centers+> (site visited February 21, 2012); <http://www.purple.us/locations> (site visited February 21, 2012); Purple May 14, 2010 Comments at 5.

<sup>66</sup> <http://www.zvrs.com/about-us/job-opportunities/1> (site visited March 1, 2012).

<sup>67</sup> <http://convorelay.com/company.html> (site visited February 21, 2012).

This behavior indicates that, whatever the extent of economies of scale associated with the operation of call centers, other factors (*e.g.*, local labor market conditions) limit the ability of any VRS provider to take advantage of such economies. Consequently, an efficient VRS provider's call-center costs increase roughly in proportion to its traffic volume.

**3. Outreach and marketing exhibit constant returns to scale.**

39. Educational outreach accounts for 8.8 percent of total allowable costs in the NECA data, and marketing accounts for an additional 0.7 percent of total allowable costs.<sup>68</sup> I understand that Sorenson's outreach efforts focus on human contact, including sponsoring parties and picnics, appearing at trade shows, convening town hall meetings, and conducting public product roll outs.<sup>69</sup> Although the Commission is correct that the costs for marketing and outreach are not incurred on a per-minute basis, these costs nonetheless tend to scale with volume.<sup>70</sup> For example, I understand that providers with very little marketing and outreach (*e.g.*, American Networks) have few customers and low volumes, while those VRS providers with larger outreach/marketing efforts have much greater volumes.<sup>71</sup>

40. Figure 2 shows historical marketing and outreach expenses incurred by Sorenson. Not surprisingly, Sorenson's costs per minute were substantial in the first months of operation; the firm was new to the market so that its need to promote itself was very large relative to its

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<sup>68</sup> *FNPRM*, ¶ 31 (“A VRS provider's legitimate marketing and outreach costs are currently compensable from the Fund as part of the per-minute rate.”)

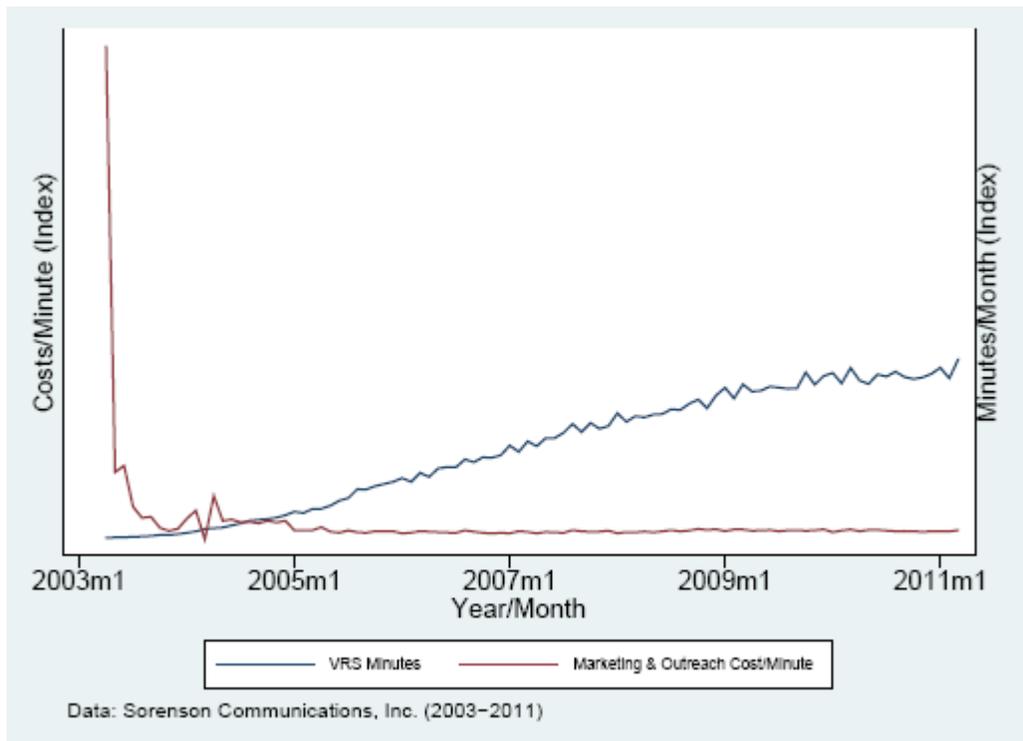
<sup>69</sup> Interview with Mike Maddix, Director of Government and Regulatory Affairs, Sorenson Communications, Inc., February 27, 2012.

<sup>70</sup> *FNPRM*, note 97.

<sup>71</sup> Interview with Mike Maddix, Director of Government and Regulatory Affairs, Sorenson Communications, Inc., February 27, 2012.

traffic volume. However these costs quickly declined on a per-minute basis, then leveled off, and have remained roughly constant even as Sorenson’s volume has increased significantly. Thus, Sorenson’s historical experience has shown that marketing and outreach costs exhibit roughly constant returns to scale after an initial start-up phase.

**Figure 2: Sorenson VRS Marketing/Outreach Costs and Minutes**



**4. Other fixed costs are limited and thus do not generate large economies of scale.**

41. Purple has argued that economies of scale arise from administrative costs.<sup>72</sup> Although administrative costs give rise to some economies of scale, the magnitude is very likely small. This conclusion is supported by two types of evidence.

42. First, an examination of the activities that generate administrative costs reveals that many of these costs grow as traffic volume increases and, thus, these costs do not generate economies of scale. The administrative expenses reported by the NECA include finance and accounting; legal and regulatory; engineering; research and development; operations support; human resources; billing; contract management; risk management; and other corporate overhead.<sup>73</sup> The tasks associated with many of these administrative functions increase in scope and complexity as a VRS provider grows. Consequently, the number of staff needed to complete these functions grows as well. This conclusion is supported by the growth in Sorenson's staffing levels over time. \*\* BEGIN CONFIDENTIAL \*\*

[REDACTED]

[REDACTED]

[REDACTED]<sup>74</sup> \*\* END CONFIDENTIAL \*\* This relationship

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<sup>72</sup> *Purple May 14, 2010 Comments at 5; Purple August 18, 2010 Comments at 7; Purple September 2, 2010 Comments at 5-6.*

<sup>73</sup> The 2009 NECA Report contains additional details on activities included in each expense category. (2009 NECA Report at B2.)

<sup>74</sup> Communication from Reed Steiner, Vice President, Finance, Sorenson Communications, Inc., March 5, 2012.

between traffic volume and staffing levels implies that important components of administrative costs are not fixed.

43. It is not surprising that many of these costs rise as a firm's size increases. For example, additional human resources staff members are required as firms hire more interpreters to meet greater demand. Billing involves the IT group's preparing reports and maintaining databases. These activities grow with the volume of traffic handled. Similarly, I understand that RLSA challenges certain minutes each month, each challenge triggers incremental costs, and that a firm with a larger volume of traffic is likely to face a larger number of costly challenges, all else equal. In addition, smaller firms are unlikely to require the same level of senior management relative to a larger firm like Sorenson.

44. A second indication that administrative costs are not sources of significant economies of scale beyond a low level of output is provided by a simple algebraic model. I explain the details of this model in the Technical Appendix, but the primary reason for the conclusion that administrative costs are not sources of significant economies of scale is that they are a small percentage of total allowable VRS costs. The NECA data demonstrate that, in 2009, administrative expenses accounted for just 16.1 percent of total costs.<sup>75</sup> As described above, not all of these expenses are fixed over the relevant range of volume. For the purposes of this calculation, I assume that fixed administrative expenses account for 41 percent of all administrative expenses. This assumption is conservative in two respects. First, as indicated in the Technical Appendix, 41 percent is an upper bound on the actual percentage. Second, as

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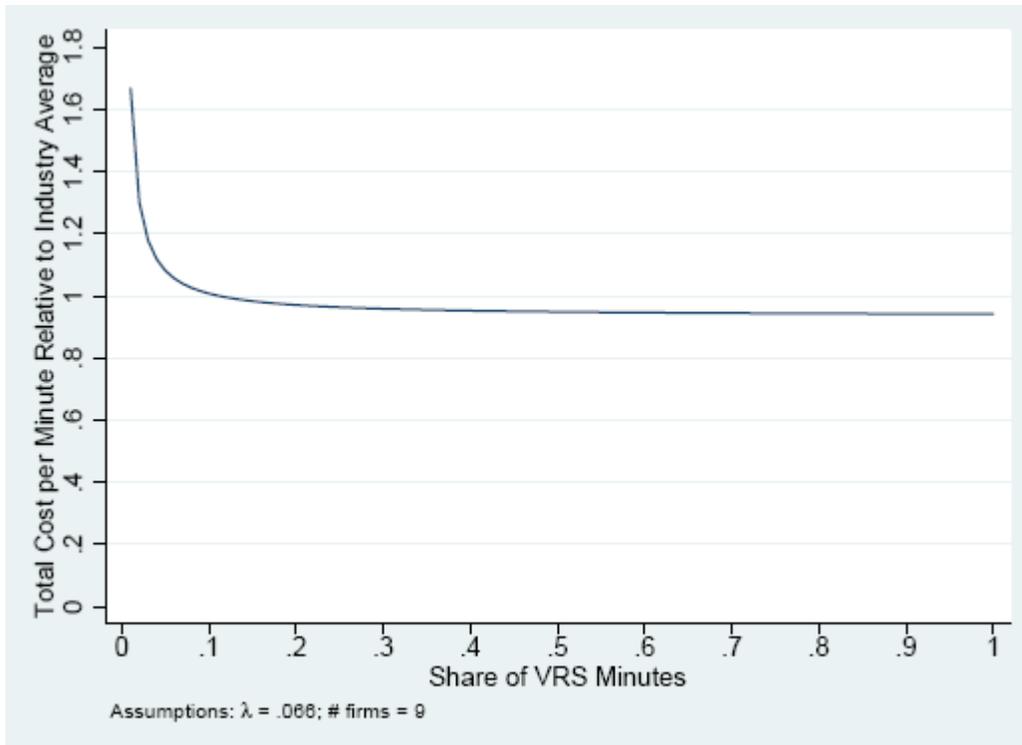
<sup>75</sup> 2009 NECA Report at 18.

industry traffic volume grows, fixed costs will account for an ever-smaller percentage of total industry costs. I also assume that nine firms provide VRS services and that marginal costs are the same for all firms.<sup>76</sup> Under this set of assumptions, six equally sized firms could attain per-minute costs just four percent higher than those of a single firm that accounted for 100 percent of VRS volume. Figure 3 depicts the relationship between firm size and average cost for the case in which fixed administrative expenses account for 41 percent of all administrative expenses. As shown by the figure, the incremental benefits of scale quickly diminish. Because 41 percent was calculated to be an upper bound, I also consider a value of 30 percent. In this case, eight equally sized firms could attain per-minute costs less than four percent higher than those of a single firm that accounted for 100 percent of VRS volume, and six equally sized firms could attain per-minute costs just three percent higher than those of a single firm that accounted for 100 percent of VRS volume. Coupled with the analysis of the previous parts of this section, these calculations indicate that any economies of scale in the VRS industry are sufficiently small that multiple providers can operate efficiently.

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<sup>76</sup> Rolka Loube Saltzer Associates data indicate that nine VRS providers were paid from the fund in 2009: AT&T, CAC, Hands On, Sorenson, Sprint, Healinc, GoAmerica, SNAP, and CSDVRS. (Rolka Loube Saltzer Associates, “Interstate TRS Fund Reports,” *available at* <http://www.r-l-s-a.com/TRS/Reports.htm> (site visited March 7, 2012).)

**Figure 3: Calculated Upper Bound on Total Costs per Minute as a Percentage of Industry Average**



**5. The Commission should not confuse the effects of superior management and learning with economies of scale.**

45. The fact that economies of scale are largely exhausted at a small percentage of industry output does not imply that all suppliers will have equally low costs. As in almost any market, some firms can be expected to have lower costs than others due to superior management or greater past investments in cost reduction and learning. Indeed, even focusing on a single firm, one may observe that firm's costs falling over time as it learns from experience or its past investments in cost-reduction bear fruit. The Commission must be

careful not to incorrectly infer the existence of economies of scale from the existence of variation in costs across firms or within a given firm over time.<sup>77</sup>

46. The Commission has observed that “providers with a relatively small number of minutes generally have higher costs.”<sup>78</sup> This observation does not undermine the analysis of the earlier parts of the section, which demonstrated that economies of scale are not large once a firm attains a scale that is only a small fraction of industry output. This is so for two reasons. First, as discussed above, this finding is consistent with the existence of economies of scale at very low volumes. Second, the most successful firms may well have the lowest costs, but this does not imply that their costs are lower because the firms are large. Indeed, there is reason to believe that causality runs in the reverse direction: those firms that are most successful in attaining low costs can be expected to gain market share. This is true even in the absence of price competition: firms that earn higher margins through more efficient operations have a greater incentive to attract new customers by offering attractive services. This pattern of growth generates a negative correlation between firm size and average cost that is unrelated to economies of scale.

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<sup>77</sup> Professor Syverson makes a similar point about the need to infer the existence of production economies of scale from firm heterogeneity:

A curious between-producer form of scale economies is implied: producers in denser markets will be both larger and more efficient, on average, even if there are no internal scale economies in production. The observed scale effect is instead the product of selective survivorship; less productive establishments are eliminated when markets become denser. This competition-driven selection process creates empirical patterns very much like those driven by the spatial agglomeration mechanisms discussed in the urban and trade literatures: producers in dense markets are more efficient.

(Chad Syverson (2004), “Market Structure and Productivity: A Concrete Example,” *Journal of Political Economy*, 112(6): 1181-1222.)

<sup>78</sup> *FNPRM*, ¶ 141.

47. Similarly, the Commission should be careful not to infer economies of scale from the observation that a provider's average costs have fallen over time as the firm's volume has grown.<sup>79</sup> Instead of economies of scale, the fall in costs may be the result of learning and ongoing innovation.

48. There is good reason to believe that both cross-firm heterogeneity in management practices and learning over time are important factors in the VRS industry. Sorenson made several management decisions that have led it to realize lower costs. First, in contrast with many of its rivals, Sorenson chose early on to make all interpreters employees and require that they operate in call centers.<sup>80</sup> When firms pursue different strategies, they can be expected to get different results. Second, I understand that Sorenson believes that many of its rivals obtain substantially lower VRS efficiency.<sup>81</sup> As discussed in Section III.B.1, at least in the case of ZVRS and Purple, any differences in VRS efficiency are not likely to be a result of queuing efficiencies, but rather of management decisions made by each firm.<sup>82</sup>

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<sup>79</sup> Purple has argued that the fact that costs have fallen over time as minutes have increased and the fact that Sorenson has lower costs than its competitors are evidence of economies of scale. (*Purple September 2, 2010 Comments* at 6.)

<sup>80</sup> Interview with Chris Wakeland, Vice President, Interpreting, Sorenson Communications, Inc., March 1, 2012.

<sup>81</sup> *Id.*

<sup>82</sup> I understand that Purple's business model is similar to that of Sorenson's. Both hire interpreters directly and those interpreters work in call centers. On the other hand, until recently, I understand that the other providers, including ZVRS, LifeLinks, and Snap, contracted with interpreter agencies and allowed interpreters to work from home. (*Id.*)

49. Sorenson has improved its VRS efficiency as it has innovated over time.<sup>83</sup> For example, I understand that Sorenson was able to increase its VRS efficiency in mid- to late-2005 as it learned how to open and operate its call centers more efficiently.<sup>84</sup> Sorenson further improved its efficiency in mid-2006, when it switched to the use of an Erlang C staffing model. As shown by the Erlang C model in Section III.B.1, greater scale is not a significant factor in allowing VRS firms to operate interpreters at high rates of efficiency once these firms reach a certain minimum threshold.

**6. Nothing in the VRS industry's cost structure precludes a competitive outcome under a single compensation rate.**

50. The analysis of this section has shown that economies of scale are exhausted at a sufficiently low level that a compensation scheme with a single rate could induce an industry structure that promotes quality competition without over-compensating the largest providers. Hence, the nature of economies of scale in this VRS industry does not justify a multi-tiered compensation scheme.

51. Similarly, the fact that different firms may have different costs due to factors such as managerial aptitude and the success of past innovation does not justify a multi-tiered compensation scheme. Cost heterogeneity is common in competitive industries, and the VRS industry is no different. The fact that some firms may have somewhat higher costs, especially in the first few years of operation does not justify subsidizing inefficient firms.

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<sup>83</sup> Interview with Mike Maddix, Director of Government and Regulatory Affairs, Sorenson Communications, Inc., February 27, 2012.

<sup>84</sup> *Id.*

52. It is also important to recognize that scale and cost efficiency are not permanent firm characteristics. Setting a single compensation rate will allow all firms to compete to achieve scale and cost efficiency. Sorenson has attained significant scale, but it started out as a very small firm.<sup>85</sup> Entrepreneurs start small businesses with the intention of creating large enterprises every day. As discussed above, by paying a lower marginal price to the most successful firms, the tiered compensation structure reduces the incentives of inefficient, low-volume providers to become more efficient and attain higher service volumes.

53. In short, there is nothing in the technology and cost structure of the VRS industry that would preclude achieving competitive outcomes with a single reimbursement rate.

#### **C. SUMMARY**

54. Economic analysis supports the Commission's conclusion that a single compensation rate is more appropriate than the current tiered structure. A single rate, appropriately calibrated to allow efficient firms to earn a reasonable rate of return on their investments, would allow multiple firms to compete on quality dimensions, while not penalizing firms for competing successfully to attract customers. Thus, a single compensation rate would further the Commission's goal of promoting competition in quality.

55. It is important to recognize the scope of this conclusion. First, it provides guidance should the Commission wish to lower the average compensation rate: the Commission should lower the high-cost tiers first in order to preserve incentives at the margin. Second, it provides guidance about other elements of the VRS compensation system. Some proposals in

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<sup>85</sup> Purple and ZVRS entered the VRS business at approximately the same time as did Sorenson. This indicates that Sorenson did not attain its position through a first-mover advantage.

the *FNPRM* appear to be designed to use some of these other elements to disadvantage larger competitors relative to smaller ones. For example, as I discuss below, the Commission proposes to allocate marketing incentive payments in a way that favors smaller providers.<sup>86</sup> Favoring particular providers in this way harms efficiency, availability, and consumer welfare through the same sorts of mechanisms as do declining compensation tiers. In each case, the policies make inefficient service providers larger by diverting share from more efficient service providers, which will raise program costs. Attempts to favor or privilege certain classes of VRS provider in any form should be rejected.

#### **IV. INCENTIVE COMPENSATION IS FAR PREFERABLE TO COST-BASED COMPENSATION**

56. Whether the Commission moves to a single-rate compensation system or not, it is necessary to have a rate-setting methodology. There are several different approaches that can be taken. One is to set cost-based compensation rates in a manner similar to that of rate-of-return regulation. Under rate-of-return regulation, the regulatory agency sets price such that the regulated firm earns a specific rate of return based on its costs. Rate-of-return regulation is subject to well-known deficiencies that I discuss in more detail below. In response to these shortcomings, in the late 1980s and early 1990s, the Commission moved toward price cap regulation for the incumbent local exchange carriers.<sup>87</sup> Under price cap (or incentive) regulation, the regulatory agency sets prices at initial rates that allow firms to earn a

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<sup>86</sup> See Section V.A.3(b).

<sup>87</sup> David E.M. Sappington and Dennis L. Weisman (2010), “Price cap regulation: what have we learned from 25 years of experience in the telecommunications industry?” *Journal of Regulatory Economics*, 38:227-257.

reasonable rate of return and then adjusts those rates by inflation and productivity factors.<sup>88</sup>

Incentive regulation allows firms to retain the gains from achieving cost efficiencies and therefore generates incentives for firms to become more efficient.

57. The *FNPRM* recognizes the issues with cost-based regulation and endorses a price cap approach, at least once it reaches the “scale phase” of its preferred per-user pricing regime.<sup>89</sup>

The Commission recognizes that the potential benefits of a price cap regime include: (i) stronger incentives to lower costs; (ii) greater certainty with respect to revenue streams; and (iii) lower administrative costs.<sup>90</sup> For the reasons described below, I generally agree with the Commission’s assessment.<sup>91</sup>

**A. COST-BASED COMPENSATION LEADS TO MISALIGNED INCENTIVES**

58. Cost-based regulation or compensation leads to misaligned incentives. Specifically, when the regulatory agency adjusts rates on the basis of costs, firms have lessened incentives to become more cost-efficient. This is so because the provider will be unable to capture all of

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<sup>88</sup> *FNPRM*, ¶ 134. The regulatory agency may also include provisions to compensate firms for exogenous shocks to cost such as those generated by new service-level requirements.

<sup>89</sup> *FNPRM*, ¶ 133 (“we propose to adopt for the scale phase a price cap mechanism consistent with that adopted by the Commission for IP Relay in the 2007 Rate Order. Under that plan, the compensation rate is set for a period of three years, ‘during which time the rates would be adjusted upward annually for inflation (according to a pre-defined inflation factor) and downward to account for efficiency gains (according to a factor also set at the outset of price caps).’” [footnotes omitted])

<sup>90</sup> *FNPRM*, ¶ 134.

<sup>91</sup> There may be at least one exception. If the Commission retains a per-minute rate methodology, the *FNPRM* proposes to adopt a “per-minute rate based on weighted average actual per-minute provider costs for the most recently completed fund year.” (*FNPRM*, ¶ 140.) Based on the analysis of cost-of-service and incentive pricing discussed in the text, I conclude that economic analysis does not support this proposal.

the benefits of achieving lower costs: if firms achieved lower costs, this would lead to lower reimbursement rates in future fund years.

59. In a price-setting mechanism in which rates are based on averages across all providers, the extent to which the rate-setting mechanism misaligns incentives depends on how large a firm is and therefore how much weight its costs get in the rate-setting process. Given Sorenson's size, its costs receive significant weight in a calculation of weighted average costs and the current pricing regime will be more closely related to a cost-based pricing regime. On the other hand, smaller providers receive relatively little weight in the cost-setting process and therefore the price-setting mechanism may be more akin to price cap regulation (albeit with less certainty about rates in future years).

60. Cost-based regulation also can give rise to odd quality-provision effects. For example, a firm could raise its quality in order to raise costs, knowing that it would receive greater compensation in future years.<sup>92</sup> Although this might appear to be a benefit to consumers, it is not. It could lead to the (over)provision of quality that costs more than it is worth to consumers. In the presence of a fixed program budget, VRS users will suffer along some other dimension. And, if the budget grows, then other telecommunications users would have to bear increased costs.

**B. INCENTIVE COMPENSATION IS PREFERABLE**

61. Incentive regulation solves many of the incentive problems associated with cost-based regulation. Under incentive regulation, prices are set at a level that allows a reasonably

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<sup>92</sup> This conclusion depends, in part, on how large a percentage of the relevant rate base is accounted for by the firm.

efficient firm to attain an adequate return on investment.<sup>93</sup> A firm that is able to attain superior performance is allowed to retain some or all of the resulting profits as a reward for its innovation and efficiency. This, in turn, gives firms incentives to engage in innovation to improve its offerings to consumers.<sup>94</sup>

62. The history of price cap regulation in the United States demonstrates the advantages of incentive regulation. The academic literature has found that<sup>95</sup>

[I]ncentive regulation plans like [price cap regulation (PCR)] tend to promote increased network modernization, productivity growth rates, and lower prices for some services while admitting higher earnings for regulated suppliers. Recent studies also suggest that PCR may promote some cost reduction, particularly in the presence of substantial industry competition.

63. One concern about price cap regulation in a monopoly setting is that it may not properly incentivize firms to provide the right level of service quality (for example, a regulated monopoly might reduce quality in order to lower costs). This concern does not arise in the present market, where there are multiple service providers seeking users' patronage through quality competition.<sup>96</sup> The *2007 Rate Methodology Order* set rates and tiers for a period of three years with annual adjustment factors.<sup>97</sup> The *2010 Rate Methodology Order* adopted interim rates for a period of one year, and the Commission extended those rates for

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<sup>93</sup> See, e.g., Sappington and Weisman (2010).

<sup>94</sup> Intuitively, it might seem that cost-reducing innovation would not benefit consumers in a market where the retail price is zero. This intuition is incorrect: when a firm has lower marginal costs, it has greater incentive to increase its quality in order to attract additional users and traffic volume.

<sup>95</sup> Sappington and Weisman (2010) [footnotes omitted].

<sup>96</sup> See Section II.B.

<sup>97</sup> *2007 Rate Methodology Order*, ¶ 72.

the 2011-12 fund year while the Commission evaluates its options under this proceeding.<sup>98</sup> It generally has been recognized that the period during which this price cap methodology was in place coincided with substantial improvements in VRS service.<sup>99</sup>

## **V. APPROACHES TO SETTING PRICES IN A PRICE-CAP REGIME**

64. Setting prices under an incentive pricing regime requires the determination of an initial compensation rate and the subsequent application of adjustment factors.<sup>100</sup> The compensation rate is set for a specified period of time and then the performance of the industry can be reviewed and adjustments can be made to the compensation rate on a going-forward basis. I consider each of these elements separately.

### **A. INITIAL RATE**

65. There are three fundamental approaches to initializing the base rate: (a) using current rates; (b) using a market process such as an auction to set the rate; or (c) building the rate from the ground up based on cost data. I discuss each one in turn.

#### **1. Develop initial rates based on current rates**

66. The current weighted-average industry compensation rate provides a sensible basis for an initial single rate going forward. Under the present system of decreasing tiers, Sorenson is compensated at an average rate that is below the industry average rate. That lower rate evidently is sufficiently high to allow an efficient firm to operate effectively in the market and to serve the Commission's goal of providing functionally equivalent service.

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<sup>98</sup> *FNPRM*, ¶¶ 8-9.

<sup>99</sup> *Sorenson May 21, 2010 Comments*, Attachment A, ¶ 8 (and cites contained therein).

<sup>100</sup> *FNPRM*, ¶ 134.

67. The Commission has proposed that, in the event that it retains a per-minute compensation methodology, it would substantially lower the compensation rate.<sup>101</sup> There is significant risk to lowering the rate by a large amount below the current weighted average. In the VRS industry, there is a direct trade-off between cost and quality. For example, firms can increase their quality by hiring more interpreters to serve a given traffic volume (thereby reducing hold times), conducting additional interpreter training, or investing in developing new features. All of these quality-improving activities are costly. It is economically rational for VRS providers to incur the costs of additional interpreters, training, or research and development only if the compensation rate is sufficiently high. More broadly, for the reasons described above, the lower the compensation rate, the less incentive there is for providers to expand output (either by attracting new VRS users or improving services in a way that incentivizes greater use of the service). And, of course, a compensation rate set too low could drive efficient providers from the industry. Consequently, VRS users would be harmed.

**2. Use a market process to set rate**

68. The *FNPRM* asks if the Commission should bid contracts for one or a limited number of VRS providers to offer VRS service. As the Commission observes, “such contracts would likely result in efficiency gains for the Fund by inducing price competition for the contract and/or eliminating the need to perpetually support sub-scale providers at higher rates.”<sup>102</sup> Even if the Commission does not adopt a formal bidding procedure, it could use such a procedure as a benchmark for setting an administratively determined compensation rate. The

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<sup>101</sup> *FNPRM*, ¶ 140.

<sup>102</sup> *FNPRM*, ¶ 18.

principles that follow from such a benchmark are: (a) set a single rate, which is an approximation to the competitive price; (b) set the rate so that it allows the most efficient firms to earn an adequate return on investment; and (c) allow firms to benefit if they are able to operate more efficiently than are their rivals.

69. Although, in principle, bidding is an attractive means of using competition to set efficient prices, the use of a bidding process in the VRS program is complicated by the objective of relying on competition among VRS providers to induce them to offer high-quality services. It would be very difficult for the Commission to specify a full set of quality standards and, indeed, there is little reason to believe that a single quality standard would best serve the needs of all VRS users. In order to continue to rely on market forces (rather than regulatory fiat) to set quality levels, any bidding process must be structured such that multiple firms remain in the industry.

70. Because designing an appropriate bidding process is complicated, it would be premature for the Commission to adopt such a process immediately. However, certain principles regarding how a bidding process would function can be used to guide the administrative rate-setting that will occur before competitive bidding is implemented. In particular, under a competitive bidding process that seeks to fund  $N$  service providers in order to facilitate quality competition, the winning bid, or market rate, would be equal to the cost level of the  $N+1^{\text{st}}$  lowest-cost potential service provider.<sup>103</sup> This fact illustrates the point that,

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<sup>103</sup> Because quality is a strategic choice of each service provider, a firm's cost level in this discussion should be understood to refer to the function that relates the firm's cost to its quality level evaluated at the quality level at which the firm will find it optimal to compete.

in the presence of heterogeneous VRS providers, it would be a mistake to set the compensation rate equal to marginal cost of the lowest-cost provider. Such a rate could drive all other firms out of the market. Instead, setting a compensation rate equal to the cost level of the  $N+1^{\text{st}}$  provider will mimic the competitive process and provide competitive incentives for providers to lower their costs.

### 3. Build rates from ground up (based on observed costs)

71. Another alternative for setting the initial compensation rate would be to develop the rate based on a review of observed costs. The Commission proposes this approach.<sup>104</sup> In particular, the Commission proposes basing compensation on three cost categories: (i) interpreter-related costs (including interpreter salary and benefits and related overhead); (ii) equipment costs (including product development, installation, and customer support); and (iii) general and administrative costs (including general managerial staff).<sup>105</sup>

72. This approach to rate-setting is both difficult and risky. It is difficult, because costs can be hard to measure. It is risky because, if the rate is too low, then VRS users will suffer because providers will have less incentive to offer high-quality services, conduct marketing and outreach activities, and invest in R&D that could lead to improved products and services. Hence, should the Commission choose this route, it must take into account all costs involved in providing VRS service.<sup>106</sup> Here, I comment on the treatment of three cost categories.

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<sup>104</sup> *FNPRM*, ¶ 140.

<sup>105</sup> *FNPRM*, Appendix C, ¶¶ 13-18.

<sup>106</sup> It is my understanding that current methodology does not cover several cost categories, including: costs of research and development related to maintaining mandatory minimum TRS

(a) *Customer Equipment Costs*

73. Under the current methodology, the Fund does not directly compensate providers for the costs of customer equipment.<sup>107</sup> The *FNPRM* proposes an equipment subsidy to cover the cost of access equipment and installation.<sup>108</sup> Economic analysis supports the conclusion that equipment costs should be covered. Logic suggests that many users, particularly low-income users, will be unable or unwilling to take advantage of VRS services if forced to pay the full cost of the associated customer equipment. Hence, the core objectives of the VRS program are best served by subsidizing customer equipment, either directly or through VRS providers. Hence, the Commission’s goal of providing functionally equivalent universal service would be served by compensating VRS providers for equipment costs.

(b) *Marketing Costs*

74. The Commission proposes to eliminate marketing incentive payments for providers that “already have more than the number of users it takes to achieve scale.”<sup>109</sup> Favoring particular providers in this way harms efficiency, availability, and consumer welfare through the same types of mechanisms as do declining compensation tiers. The elimination of incentive payments to those providers that have most successfully demonstrated an ability to

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standards; costs to develop, manufacture, install, and test videophones; costs to instruct customers on the use of videophones and VRS; costs of porting ten-digit numbers; costs associated with raising and servicing capital; working capital requirements; and most taxes. (*Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities and Structure and Practices of the Video Relay Service Program*, CG Docket No.s 03-123 and 10-51, Comments of Sorenson Communications, Inc., (May 14, 2010), note 35.)

<sup>107</sup> *FNPRM*, ¶¶ 49-52.

<sup>108</sup> *FNPRM*, Appendix C, ¶ 15.

<sup>109</sup> *FNPRM*, ¶ 38.

offer attractive services to users is particularly likely to undermine making VRS meaningfully available to all eligible users. Hence, attempts to favor or privilege certain classes of VRS provider in any form should be rejected.

75. It should also be noted that, when a VRS provider invests in promotional or educational activities that increase the demand for VRS generally, its actions may benefit other providers. Because the investing firm does not account for the benefits accruing to rivals, such spillovers create a divergence between the private and social incentives to making this investment and can lead to an inefficiently low level of investment.<sup>110</sup> Higher incentive payment rates—including those for VRS providers that have been successful at attracting users in the past—can help overcome this incentive problem. By the same token, lower incentive payment rates will exacerbate the problem.

*(c) Return on Investment*

76. The Commission has stated that “the ‘reasonable’ costs of providing service for which providers are entitled to compensation do not include profit or mark-up on expenses” and that providers are entitled to an 11.25 percent rate of return on capital investment.<sup>111</sup> This approach to investment fails to approximate the competitive process. As discussed in Section V.A.2 above, a competitive process would set compensation rates to cover the  $N+I^{\text{st}}$  lowest-cost provider’s costs. Such a process would allow more efficient providers to capture

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<sup>110</sup> For statements of this general principle in the context of R&D investment, see Michael L. Katz and Janusz A. Ordover (1990), “R and D Cooperation and Competition,” *Brooking Papers on Economic Activity, Microeconomics*, 137-203; Suzanne Scotchmer (2004), *Innovation and Incentives*, Cambridge, MA: The MIT Press, at 269.

<sup>111</sup> *FNPRM*, Appendix C, note 8.

additional profits, and it would incentivize firms both to reduce costs and enhance quality to attract new subscribers. This approach also appears to go against the principle that VRS providers need to be able to earn an adequate return on investment in order to attract financing and remain in business.

77. Private firms are motivated to make investments by the prospect of profits generated by those investments. The decision to invest depends on the level of initial investment required and the distribution of returns. All else equal, the greater the expected financial return from a given level of investment, the greater are the incentives to undertake that investment. Conversely, a compensation policy that provides limited financial returns to investment will generate weak investment incentives.

78. It is vital to recognize that the return on investment should account for the full range of investments by the firm—not just investment in physical capital. Although investment in physical capital is limited in the VRS industry relative to, say, traditional local exchange carriers, a VRS provider may invest in many other aspects of the business, including, for example, IT processes, user software improvements, developing management expertise, and interpreter training. These investments contribute both to the value of the firm and to the benefits that the firm generates for consumers. If the effective overall rate of return on investment is set too low—whether because the allowed rate of return is itself set too low or because the investment base on which the return is allowed is defined too narrowly—firms will find it unprofitable to continue to offer high-quality VRS services and will very likely degrade the quality of their services in the short run and exit the industry in the long run.

79. It is also important to recognize that the returns to many significant investments in the VRS industry are uncertain. For example, as I discussed in Section II.B above, Sorenson's success is due at least in part to the fact that it developed video phones (first the VP-100, followed by the VP-200 and the ntouch VP) that appealed to VRS users. It is my understanding that the development of the device that became the VP-100 cost Sorenson approximately \*\* BEGIN CONFIDENTIAL \*\* [REDACTED] \*\* END CONFIDENTIAL \*\*. <sup>112, 113</sup> The returns on this investment were far from guaranteed. Sorenson faced both technological risk and competitive, or market, risk. Investment uncertainty makes it essential to adjust the cost of capital to account for risk when calculating the economic profits associated with a project. A failure to account properly for investment risk will yield inaccurate estimates of economic profits and misleading conclusions about the appropriate compensation rate.

**B. ADJUSTMENT FACTORS**

80. The *FNPRM* lists three adjustment factors to be applied to the initial rate: (i) the rate of inflation, which captures economy-wide price changes; (ii) an efficiency ("X") factor, which reflects productivity growth of the industry relative to the economy overall; and (iii) an exogenous shock adjustment, which accounts for factors beyond the industry's control.<sup>114</sup> The

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<sup>112</sup> Interview with Reed Steiner, Vice President, Finance, Sorenson Communications, Inc., March 5, 2012.

<sup>113</sup> It is important to note that R&D appears to be much less costly today due to developments in related technologies driven by developments in other sectors of the economy. As I discussed in Section II.B above, Sorenson's competitors successfully compete using video phones developed by third-parties as well as by creating applications that work on third-party hardware such as laptops and tablet computers.

<sup>114</sup> *FNPRM*, ¶ 134.

*FNPRM* proposes to set the X-factor such that the compensation rate would decrease by 0.5 percent each year in order to “encourage VRS providers to become more efficient in providing the service.”<sup>115</sup> Because the biggest component of VRS service is interpreter labor, the VRS industry is unlikely to experience dramatic productivity gains relative to the rest of the economy.<sup>116</sup> Hence, the proposed X-factor may be overly aggressive. Finally, the Commission notes that, to the extent that factors that are beyond the control of providers—such as new service requirements—affect costs, the Commission will consider further adjustments. This is a sensible approach.

### **C. REVIEW PERIOD**

81. The *FNPRM* proposes to set the compensation rate for a three-year period and then review the performance of the program.<sup>117</sup> It is sensible to periodically review the performance of the industry and adjust rates as needed. However, the shorter the review period, the closer is the price-cap regime to a cost-based regime with the associated shortcomings discussed above (*e.g.*, it discourages innovation and can generate uncertainty that increases providers’ costs of capital). Short review periods also trigger administrative cost burdens for both the Commission and industry participants. On the other hand, if the review period is too long, the Commission risks significantly under- or over-compensating providers during the period. These considerations suggest that any period shorter than three years

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<sup>115</sup> *Id.*

<sup>116</sup> Indeed, to the extent that the demand for interpreters is shifting outward faster than supply, wages for interpreters may outstrip overall inflation.

<sup>117</sup> *FNPRM*, ¶ 134.

would be harmful, and a period longer than three years, say five, would strike a sensible balance.

**D. SUMMARY RECOMMENDATIONS FOR PRICE CAPS**

82. The Commission should use initial rates as the basis for setting the initial price cap, for a period of at least three years, during which it could lower the two high-cost tiers. During that time the Commission could also develop a market mechanism for adjusting compensation rates going forward. The Commission should not utilize a cost-of-service approach to set compensation rates.

**VI. INAPPROPRIATE EQUIPMENT STANDARDS WILL STIFLE INNOVATION AND HARM CONSUMERS**

83. The Commission seeks comment on whether the creation of VRS access technology standards would further the attainment of the goals of the Commission’s interoperability and portability rules.<sup>118</sup> These<sup>119</sup>

rules are intended to (i) allow VRS users to make and receive calls through any VRS provider, and to choose a different default provider, without changing the VRS access technology they use to place calls, and (ii) ensure that VRS users can make point-to-point calls to all other VRS users, irrespective of the default provider of the calling and called party.

The *FNPRM* identifies facilitating the use of off-the-shelf equipment and reducing possible adverse effects of equipment lock in on consumer choice as two specific objectives that might be advanced through the adoption of VRS access technology standards.<sup>120</sup>

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<sup>118</sup> *FNPRM*, § IV.B.2.

<sup>119</sup> *FNPRM*, ¶ 16.

<sup>120</sup> *FNPRM*, ¶¶ 43, 48.

84. Properly designed standards can promote economic efficiency and consumer welfare by: ensuring interoperability that allows the realization of network effects (*e.g.*, ensures that any VRS user can make point-to-point calls to any other VRS user, without regard to the two users' default VRS providers); reducing switching or porting costs; and providing a well-defined platform on which various suppliers can develop complementary products and services.

85. Standards can, however, have very significant downsides. There are at least two broad mechanisms through which overreaching standards could harm the structure and efficiency of the VRS program and limit consumer choice by denying them access to a range of innovative services and equipment that might otherwise be available.

86. The first mechanism is through limiting suppliers' *ability* either to offer a range of different products and services or to innovate. Consumers have different tastes, and competitive suppliers will seek to satisfy consumers' heterogeneous demands by offering a range of different services and products. Excessive standardization can lead to homogenization that denies consumers access to products and services that they might highly value but that do not fit into the standard. Moreover, a standard can limit the ability of firms to innovate by utilizing new techniques and processes. A new standard today is the legacy standard of the future, and legacy standards can make it harder to innovate and to adopt new technologies. To take an extreme example, if all mobile telecommunications providers had been forced to continue to adhere to the AMPS analog cell phone standard, we would never have witnessed the explosion of wireless broadband services and devices, which has generated hundreds of billions of dollars in benefits. Moreover, by limiting the range of

options available to providers, a standard can undermine experimentation, and premature adoption of a standard can lock in a technology that is inefficient.

87. The Commission has recognized the possibility that standards could have an adverse, unintended effect on innovation: specifically, that locking providers into a particular set of protocols “could have the effect of discouraging or impairing the development of improved technology.”<sup>121</sup> In summary, a technological standard can become a technological straightjacket that both limits product variety at a given time and stifles innovation over time.

88. The second avenue for standards to reduce consumer choice is through stifling service providers’ *incentive* to innovate. Too much standardization will actually limit competition and innovation, especially given that there is no price competition. These adverse effects arise when a standard limits the ability of a firm to differentiate itself from its rivals. If innovative features have to be shared with rivals in order to maintain compliance with the standard, then a firm will see relatively little benefit from innovating. The Commission has previously recognized the potential for incentive problems of this sort:<sup>122</sup>

We note that the Commission previously rejected a request that the Commission require “a default provider that furnishes CPE to a consumer must ensure that the CPE’s enhanced features (e.g., missed call list, speed dial list) can be used by the consumer if the consumer ports his or her number to a new default provider and uses the CPE with the new default provider,” on the grounds that “[p]roviders may offer such features on a competitive basis, which will encourage innovation and competition.”

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<sup>121</sup> *FNPRM*, ¶ 46.

<sup>122</sup> See *Second Internet-based TRS Numbering Order*, 24 FCC Rcd at 819-20, ¶ 63. (*FNPRM*, note 125.)

89. As noted above, the *FNPRM* identifies facilitating the use of off-the-shelf equipment and reducing possible adverse effects of equipment lock in on consumer choice as two specific objectives that might be advanced through the adoption of VRS access technology standards. These two objectives raise very different issues from one another. The use of standards or other incentives to promote the use of off-the-shelf equipment raises questions of the particular standards adopted and whether they align with standards or common protocols used by much larger economic ecosystems on which the VRS equipment providers might piggyback. The choice of specific standards can involve difficult tradeoffs and may favor one provider over another. This is another reason to exercise caution with respect to adopting extensive standards.

90. Even if it chooses to facilitate the use of off-the-shelf equipment, the Commission should not mandate its use. To do so would be directly to limit and distort competition.

As discussed in Section II.B above, the history of quality competition in the VRS industry demonstrates that: (a) a firm that is able to introduce a superior service or product can expect to see its market share grow; and (b) both proprietary and off-the-shelf equipment can best serve consumer interests, depending on the situation. If off-the-shelf equipment is lower cost or more attractive to users, then VRS providers will have incentives to offer that equipment to VRS users in order to obtain competitive advantage. If a VRS provider can offer greater benefits to consumers using proprietary product designs that meet the interoperability requirements, then doing so will benefit consumers and make the program more efficient. In short, it would be a mistake to impose a requirement to use off-the-shelf equipment. The

Commission should let users decide which equipment best serves their needs. Different consumers may well make different choices.

91. The *FNPRM* asks<sup>123</sup>

Should VRS providers that issued, leased, or otherwise provided VRS access technology to VRS users be required to ensure that such legacy VRS access technology is fully compliant with any standards adopted or, alternatively, removed from use within some discrete period of time (*e.g.*, 12-18 months)?

Presumably, the Commission seeks to ensure interoperability for point-to-point calling and to address the Commission's perceived lock-in problem. This is a costly means to address either issue because the proposal ignores the wastefulness of terminating equipment before its useful life is over. It is a particularly wasteful means of dealing with the Commission's perceived lock-in problem. In effect, the solution to the problem of switching costs is to make everyone incur these switching costs whether or not they actually switch providers. Before it adopts such a requirement, the Commission should examine the use of backward-compatibility requirements or the creation of adapters. The Commission should also determine whether a lock-in problem truly exists.<sup>124</sup> As discussed in Section II.B above, there is market evidence that users are, in fact, willing to switch providers.

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<sup>123</sup> *FNPRM*, ¶ 45.

<sup>124</sup> If equipment becomes obsolete as quickly as is implicit in the view that it would not be wasteful to force the removal of legacy equipment within a year, then any lock-in effects associated with durable, uninteroperable equipment should be minimal. Given the rapid turnover rate, a provider would have many opportunities to attract customers as their legacy equipment quickly became obsolete.

**VII. CONCLUSION**

92. By distorting competition and attenuating innovation and investment incentives, the continued use of a system of decreasing compensation tiers would harm consumers and undermine attainment of the Commission's objectives for the VRS program. Other means of favoring certain providers over others would have similar adverse effects, as would overreaching standards regulation. A single compensation rate determined according to the principles of incentive regulation will promote undistorted competition, which will benefit users and further the realization of the Commission's objectives for the VRS program.

I declare, under penalty of perjury, that the foregoing is true and correct.



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Michael L. Katz

March 9, 2012

## TECHNICAL APPENDIX

93. In this appendix, I describe a simple algebraic model that illustrates the relationship between a firm's market share and the degree to which it enjoys economies of scale due to the presence of fixed costs.

94. I begin by introducing some notation and simplifying assumptions. Assume that the total cost incurred by firm  $i$  is equal to  $F + mXs_i$ , where  $F$  indicates fixed costs,  $m$  is the marginal cost per minute served,  $X$  is total industry volume in minutes, and  $s_i$  is firm  $i$ 's share of industry minutes. Total cost for industry is then equal to  $NF + mX$ , where  $N$  is the total number of firms in the industry.

95. To assess the significance of economies of scale, I examine how firm  $i$ 's average total cost per minute,  $A_i = \frac{F + mXs_i}{s_iX} = \frac{F}{s_iX} + m$ , varies with firm  $i$ 's share,  $s_i$ . This quantity can usefully be expressed in terms of the percentage of industry costs that are fixed,

$\frac{NF}{NF + mX} \equiv \lambda$ , and the number of providers,  $N$ . Average fixed cost per minute for the

industry are equivalent to  $\frac{F}{X} = \frac{\lambda}{N} \frac{NF + mX}{X} = \frac{\lambda}{N} A$ , where  $A$  is the total cost per minute for

the industry. Note that  $\frac{mX}{NF + mX} = (1 - \lambda)$  and  $m = (1 - \lambda)A$ . Combining these facts:

$$A_i = \frac{F}{s_iX} + m = \left( \frac{\lambda}{s_iN} + 1 - \lambda \right) A.$$

Therefore, data on  $\lambda$ ,  $N$ , and  $s_i$  allow one to infer the ratio between firm  $i$ 's total cost per minute and the industry average total cost per minute.

96. A conservative upper bound on  $\lambda$  can be calculated as follows. Suppose that one observes that, adjusted for inflation, Sorenson's administrative costs grew from  $x_0$  to  $x_1 = \gamma x_0$  over some time period. Then the fixed-cost component of Sorenson's administrative costs must be less than or equal to  $x_0$ , which is then an upper bound on the fixed cost component of other VRS providers. Hence, the proportion of industry administrative costs that are fixed ( $\tau$ ) must be less than or equal to

$$\frac{Nx_0}{(N-1)x_0 + x_1} = \frac{N}{N-1+\gamma}.$$

97. One can refine this upper bound by making use of additional data. In 2004, Sorenson's average traffic volume was approximately \*\* BEGIN CONFIDENTIAL \*\*  \*\* END CONFIDENTIAL \*\*, which is approximately equal to Sorenson's understanding of the current traffic volumes of Purple and ZVRS. Suppose Sorenson's G&A + engineering costs in 2004 were  $\alpha$  times its costs in 2003, for some  $\alpha > 1$ .<sup>125</sup> These data would suggest that  $(\alpha - 1)/\alpha$  of Purple's and ZVRS's administrative costs are not fixed. This fact yields a refined upper bound of

$$\tau \leq \frac{Nx_0}{(N-3)x_0 + 2\alpha x_0 + x_1} = \frac{N}{N-3+2\alpha+\gamma}.$$

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<sup>125</sup> While Sorenson did not start recording minutes until March 2003, it incurred G&A and engineering expenses in January and February 2003 that were not dramatically lower than those incurred throughout the remainder of the year.

Finally,  $\lambda$  is equal to the share of total industry costs accounted for by administrative expenses multiplied by  $\tau$ .

98. Nine firms filed NECA cost reports in 2009 (*i.e.*,  $N = 9$ ).<sup>126</sup> Sorenson data for G&A and engineering costs, indicate that \*\* BEGIN CONFIDENTIAL \*\* [REDACTED] \*\* END CONFIDENTIAL \*\*. <sup>127</sup> These values yield an upper bound on  $\tau$  of 41 percent, which corresponds to  $\lambda = 6.6$  percent. Because this is an upper bound for  $\tau$ , in the text I also present the results of assuming a value of 30 percent, which corresponds to  $\lambda = 4.8$  percent.

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<sup>126</sup> Rolka Loubé Saltzer Associates data indicate that nine VRS providers were paid from the fund in 2009: AT&T, CAC, Hands On, Sorenson, Sprint, Healinc, GoAmerica, SNAP, and CSDVRS. (Rolka Loubé Saltzer Associates, “Interstate TRS Fund Reports,” *available at* <http://www.r-l-s-a.com/TRS/Reports.htm> (site visited March 7, 2012).)

<sup>127</sup> I use G&A and engineering expenses because these categories most closely match the description of administrative expenses used by the NECA. G&A includes IT, which corresponds to NECA’s operations support category.

I adjust for inflation using seasonally adjusted Consumer Price Index for all urban consumers (CPI-U). (Bureau of Labor Statistics, “Databases, Tables, & Calculators by Subject,” *available at* <http://www.bls.gov/data/#prices> (site visited March 8, 2012).)

**APPENDIX: QUALIFICATIONS**

99. I hold the Sarin Chair in Strategy and Leadership at the University of California at Berkeley. I hold a joint appointment in the Haas School of Business Administration and in the Department of Economics. At the Haas School, I serve as the Director of the Institute for Business Innovation and the Chair of Economic Analysis and Policy Group. I have also served on the faculty of the Department of Economics at Princeton University and the Stern School of Business at New York University. I received my A.B. from Harvard University *summa cum laude* and my doctorate from Oxford University. Both degrees are in Economics.

100. I specialize in the economics of industrial organization, which includes the study of antitrust and regulatory policies. I regularly teach courses on microeconomics and business strategy. I am the co-author of a microeconomics textbook, and I have published numerous articles in academic journals and books. I have written academic articles on issues regarding the economics of network industries, two-sided markets, systems markets, and antitrust enforcement. I am a co-editor of the *Journal of Economics and Management Strategy* and serve on the editorial boards of *Information Economics and Policy* and the *Journal of Industrial Economics*.

101. In addition to my academic experience, I have consulted on the application of economic analysis to issues of antitrust and regulatory policy. I have served as a consultant to both the U.S. Department of Justice and the Federal Communications Commission on issues of antitrust and regulatory policy. I have served as an expert witness before state and federal courts. I have also provided expert testimony before a state regulatory commission and the U.S. Congress.

102. From January 1994 through January 1996, I served as the Chief Economist of the Federal Communications Commission. I participated in the formulation and analysis of policies toward all industries under Commission jurisdiction. As Chief Economist, I oversaw both qualitative and quantitative policy analyses.

103. From September 2001 through January 2003, I served as the Deputy Assistant Attorney General for Economic Analysis at the U.S. Department of Justice. I directed a staff of approximately fifty economists conducting analyses of economic issues arising in both merger and non-merger enforcement. My title as Deputy Assistant Attorney General notwithstanding, I am not an attorney.

104. I have also served on advisory panels related to spectrum policy issues. I served on the Committee on Wireless Technology Prospects and Policy Options for the Computer Science and Telecommunications Board of the National Research Council of the National Academies. This Committee examined innovation in wireless communications technologies and its implications for public policy toward spectrum allocation and assignment.

Comments of Sorenson Communications, Inc.  
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**Appendix B**

**Protocols Required for Interoperability and Portability Mapped to  
VRS Access Technology Requirements—General Capabilities<sup>1</sup>**

<b>Functionality</b>	<b>Protocols</b>	<b>Interoperability</b>	<b>Equipment Portability</b>	<b>Data Portability</b>
<i>Communications Requirements</i>				
Generation and exchange of a UUID URN	Not Specified		X	
Acquisition of IP and DNS settings from the user’s ISP	DHCP		X	
Acquisition of the VRS access technology’s public IP address from the user’s ISP	STUN		X	
Establishment of firewall and NAT traversal technique	ICE/STUN	X	X	
Acquisition of UTC	SNTP		X	
Acquisition of initial configuration information from the VRS Provider, including the address at which to register and registration credentials	HTTP/HTTPS <sup>2</sup>		X	
Acquisition of addresses for LIS and LoST servers for 9-1-1 service	LIS/LOST		X	
VRS access technology authentication and registration by the VRS Provider	Not Specified		X	
Acquisition of user private data, such as contact and speed-dial lists from the VRS provider	vCard			X
Updating VRS Provider user location registration for 9-1-1 service from the VRS access technology.	Not Specified		X	

<sup>1</sup> See FNPRM, App. B ¶¶ 25-30.

<sup>2</sup> HTTP/HTTPS by itself will not provide the required functionality. Another standard (unspecified, but possibly XCAP) would be needed for device configuration.

<b>Functionality</b>	<b>Protocols</b>	<b>Interoperability</b>	<b>Equipment Portability</b>	<b>Data Portability</b>
Priority outbound identification and handling of 9-1-1 emergency calls from the VRS access technology.	Not Specified <sup>3</sup>	X	X	
For relay and point-to-point calls, outbound calling from the VRS access technology via the default provider using 10-digit numbers; outbound calling via SIP URLs is also allowed	Not Specified		X	
For relay and point-to-point calls, outbound calling from the VRS access technology via a non-default provider (dial-around) with automatic pass through of the called party's 10-digit number to the non-default VRS Provider.	SIP <sup>4</sup>	X	X	
For relay and point-to-point calls, inbound calling to the VRS access technology	SIP	X		
Conveyance of the 10-digit calling party number on calls from and to the VRS access technology on call setup.	SIP	X		
<b><i>Remote Feature Access</i></b>				
Visual incoming call alerting feature	None <sup>5</sup>			
Visual message waiting feature	SIP MWI		X	

<sup>3</sup> If all providers agree that a call to 911 constitutes an emergency call, then this is handled by the provider's infrastructure, not the endpoint.

<sup>4</sup> Automatic pass-through of the called party number to a VRS provider is covered by a Sorenson patent.

<sup>5</sup> This is an endpoint feature, and is not specifically provided by any particular protocol. Sorenson has a patent protecting some forms of visual call alerting.

<b>Functionality</b>	<b>Protocols</b>	<b>Interoperability</b>	<b>Equipment Portability</b>	<b>Data Portability</b>
<b><i>User Interface</i></b>				
Entry of a VRS Provider’s DNS domain, the 10-digit number assigned to the VRS access technology, a username and an associated password	None		X	
Entry of an updated user location for E911 location registration, when no network-provided location data is available	Not Specified		X	
Entry of personal contact list information and speed-dial list information	XCAP		X	
Entry of a 10-digit phone number of the called party is required; entry of a URL of the called party is optional	SIP		X	
Entry of basic VRS feature preferences	Not Specified <sup>6</sup>	X	X	
<b><i>User Private Data Transfer</i></b>				
User personal contacts list	vCard			X
User speed dial list	Not Specified			X

<sup>6</sup> Sorenson holds patents covering various functionalities related to the provision of VRS, including (but not limited to): certain voice-carry-over functions; hold-server functions to handle multiple simultaneous VRS calls; called-party telephone-number pass through; service-type identification; and user profiles to determine preferred communications devices. Sorenson reserves all of its rights to enforce its patents as allowed under applicable U.S. patent law.

Comments of Sorenson Communications, Inc.  
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**Appendix C**

**FNPRM-Suggested Standards Required for Interoperability and Portability**

<b>Functionality</b>	<b>Protocols</b>	<b>Standards</b>	<b>Interoperability</b>	<b>Equipment Portability</b>	<b>Data Portability</b>
Internet configuration and transport	IPv4, IPv6, TCP, UDP, TLS, DHCP, DNS		X	X	
NAT traversal	STUN, ICE/STUN	RFCs 3489, 5389	X	X	
Web access	HTTP, HTTPS	RFCs 2616, 2817		X	
Time synchronization	SNTP	RFC 4330		X	
NG9-1-1 support	HELD, LoST, DHCP location extensions, SIP extensions	draft BCP phonebcp		X	
Device configuration	XCAP	RFCs 4825, 4826, 6011		X	
Call signaling	SIP	RFC 3261	X		
Message waiting indication*	SIP MWI	RFC 3842		X	
Session description	SDP	RFC 4566	X		
Media transport	RTP/RTCP	RFC 3550	X		
Audio and video	G.711, G.722, H.263v2, H.264	G.711, G.722, H.263 1998, H.264	X		
Real-time text	RTT	RFC 4103	X		
Personal contact list	vCard	RFCs 2425, 2426, draft vcardxml			X
Speed dial list	TBD				X